IMPULSE OSCILLOMETRY IN THE DIAGNOSIS OF ASTHMA

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A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE MD BRANCH XVII (TUBERCULOSIS AND RESPIRATORY MEDICINE) EXAMINATION OF THE TAMILNADU DR. M.G.R. MEDICAL UNIVERSITY, CHENNAI TO BE HELD IN APRIL 2015.

DECLARATION

This is to declare that this dissertation titled "**IMPULSE OSCILLOMETRY IN THE DIAGNOSIS OF ASTHMA"** is my original work done in partial fulfillment of rules and regulations for MD Tuberculosis and Respiratory Medicine examination of the Tamil Nadu Dr.M.G.R Medical University, Chennai to be held in April 2015.

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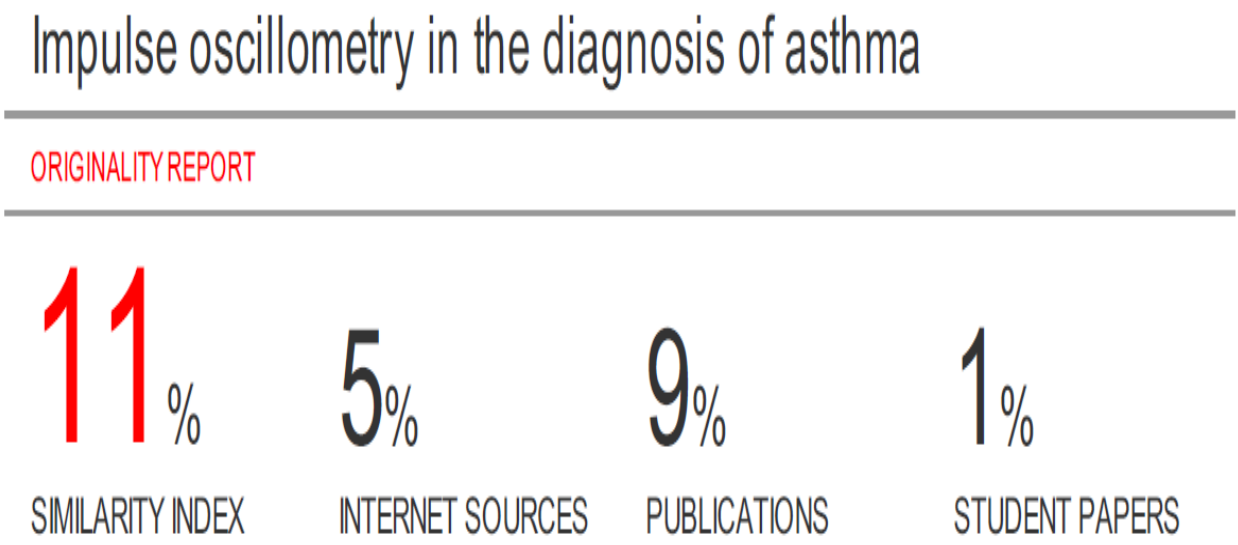

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ABSTRACT

Title: Impulse oscillometry in the diagnosis of asthma

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Name of the Candidate: Dr. Jebin Roger Sasikumar

Degree and subject: MD Tuberculosis and Respiratory Medicine

Name of the Guide: Dr. Balamugesh T., Professor, Pulmonary Medicine.

Objectives:

The primary objective of this study was to find out reference value for significant reversibility of R5 after bronchodilator by impulse oscillometry with spirometry as the gold standard and the secondary objectives were to grade severity of airway obstruction by impulse oscillometry by correlating with FEV1 by spirometry in patients with a clinical diagnosis of asthma.

Methods:

The study was conducted in a South Indian tertiary care hospital. We included a total of 636 patients with a clinical diagnosis of asthma and 177 healthy individuals into the study. All patients and healthy individuals filled up an asthma questionnaire, after which they performed impulse oscillometry and spirometry both before and after bronchodilator. Statistical analysis was performed using Spearman's correlation coefficients between impulse oscillometry parameters pre bronchodilator R5% predicted, pre bronchodilator R5 kPa/(L/s) and spirometry parameter pre bronchodilator FEV1% predicted and pre bronchodilator FEV1 (liters). Receiver-operator characteristics analysis was done between cases and controls with impulse oscillometry parameters R5 to find out the sensitivity, specificity, area under the curve and cutoff value at the best sensitivity and specificity for the above said impulse oscillometry parameters for significant reversibility, airway obstruction and severe airway obstruction as compared to the above said spirometry parameters.

Conclusion:

This study to our knowledge is the first Indian study which has evaluated impulse oscillometry parameters by comparing them with spirometry parameters in patients with asthma to find out the significant bronchodilator reversibility of R5%, derive cutoff values of pre bronchodilator R5% predicted for airway obstruction in Indian patients with asthma and to grade airway obstruction in patients with asthma. We suggest that a value of more than 20% change in R5% post bronchodilator may be considered significant reversibility, a value of more than 180% for pre bronchodilator R5% predicted to diagnose airway obstruction and more than 230% for pre bronchodilator R5% predicted to diagnose severe airway obstruction in adult Indian patients with asthma. More studies with larger sample sizes may be required to confirm our findings but we suggest using our cutoff values in Indian patients with asthma till we get better evidence. Impulse oscillometry can be used not only in patients who are not able to perform spirometry but also as a routine practice in patients who have asthma as it is a very convenient and patient friendly test for the patients and requires only passive co operation from the patient.

1. INTRODUCTION

About 30 crore people around the globe suffer from asthma and this number is rising.(1) World-wide, deaths from this condition have reached over 1.8 lakhs annually and most of them occur in the low and lower-middle income countries.(2) The number of disability adjust life years lost due to asthma is estimated to be around 1.5 crores per year. India has an estimated 1.5-2 crore asthmatics according to WHO.(2) A study done in different parts of India showed a prevalence of 2.05% in adults aged ≥ 15 years (2.28% in rural India and 1.64% in urban India)(3) and according Global Initiative for Asthma (GINA) the prevalence of clinically diagnosed asthma in India is 3%.(1)

Bronchial asthma is a disease of the airways in which patients will have recurrent episodes of breathing difficulty, wheezing and cough particularly at night or in the early morning. It is defined by the history of respiratory symptoms such as wheeze, shortness of breath, chest tightness and cough that vary over time and in intensity, together with variable expiratory airflow limitation.(4) The most common risk factors for asthma are allergens (like house dust mites, animals with fur, cockroaches, molds, pollen, etc), tobacco smoke, exercise, occupational irritants, strong emotions, chemical irritants, drugs like aspirin or beta blockers and respiratory infections. Bronchial asthma is diagnosed when there is a history of variable respiratory symptoms such as wheeze, shortness of breath, chest tightness and cough that often very over time and in intensity can be triggered by

any of the above mentioned factors.

The diagnosis of bronchial asthma is confirmed when there is evidence of variable expiratory flow limitation which can be done by documenting excessive variability in lung function with spirometry and bronchodilator reversibility testing, peak expiratory flow (PEF) variability testing, bronchial challenge testing or exercise challenge testing to assess the grade of obstruction and presence or absence of reversibility (pre and post bronchodilator study) and a low forced expiratory volume in 1 second (FEV1) with FEV1/FVC ratio less than < 0.7 in adults.(4) The grades of airflow limitation are shown in **Table 2.** In adults, an increase in FEV1 ≥ 12% and ≥ 200ml from baseline, 10-15 minutes after administration of bronchodilator (200-400mcg of Salbutamol or equivalent) is considered significant bronchodilator reversibility which is consistent with a diagnosis of asthma.(4) Other tests like diurnal PEF variability of > 10% in adults, exercise induced fall in FEV1 by more than 10% and > 200ml from baseline, fall in FEV1 ≥ 20% with standard doses of methacholine or histamine and a fall of ≥ 15% with standardized hyperventilation, hypertonic saline or mannitol challenge, significant (>12% and >200ml) improvement in FEV1 after 4 weeks of anti inflammatory treatment and excessive (>12% and >200ml) variation in lung function between visits when there is no evidence of respiratory infection can be used to aid in the diagnosis and monitoring of treatment in patients with asthma.(4)

Table 1. Classification of asthma by level of control – for adults on treatment(4)

Characteristics (over the past 4 weeks)	**Controlled (All of the following)**	**Partly controlled (Any measure below)**	**Uncontrolled**
Day time symptoms	None (twice or less/week)	More than twice a week	Three or more features of partly controlled asthma.
Limitation of activities	None	Any	
Nocturnal symptoms	None	Any	
Need for reliever	None (twice or less/week)	More than twice/week	

Table 2. The grades of airflow limitation based on FEV1 measured by spirometry in asthma are as follows:(5)

Degree of severity	FEV1% predicted (prebronchodilator)
Mild	>80
Moderate	80-60
Severe	<60

After a diagnosis of asthma, it is assessed based on symptom control and the risk for future exacerbations.(4)

Asthma exacerbation is defined as a progressive increase in shortness of breath, cough, wheezing or chest tightness with a progressive decrease in lung function which represents a change in patient's usual status and necessitates a change in treatment.(6) The potential risk factors identified for exacerbations even in the presence of controlled symptoms (as shown in **Table 1.**) are excessive short acting beta agonist (SABA) use, uncontrolled asthma symptoms, inadequate inhaled corticosteroids (ICS) – not prescribed, poor technique or adherence, low FEV1 (<60% predicted), major psychological or socioeconomic problems, exposures like smoking or allergens if sensitized, comorbidities like obesity,

rhinosinusitis, confirmed food allergy, sputum or blood eosinophilia, pregnancy, any intubation or intensive care admission for asthma, ≥ 1 severe exacerbations in the last 12 months.(4)

As discussed above, spirometry plays an important role not only in the diagnosis and monitoring of asthma patients but also helps in the assessment of future exacerbation risk. Spirometry requires active cooperation of the patient and a lot of effort from the patient to be performed in a satisfactory manner. This may be difficult for some people including the young, the elderly and the pediatric population. We see a lot of patients with respiratory symptoms suggestive of asthma who are not able to perform spirometry as they are not able to blow satisfactorily or have severe cough while trying to do so. In these set of patients we usually start inhaled bronchodilators and steroids and assess them after sometime to decide on further management. The diagnosis, assessment of severity of airflow limitation, knowledge about the presence or absence of bronchodilator reversibility, monitoring of the patient and assessing the risk for future exacerbations becomes more difficult in this set of patients.

Impulse oscillometry (IOS) is a convenient and effort free method of testing pulmonary function which is based on the forced oscillation technique which was first described as early as 1956.(7) The impulse oscillation technique uses an impulse shaped, time discrete external forcing signal. The characteristic feature of IOS is the generation of recurrent aperiodic impulse-shaped forcing signals of

alternating direction. The measurement is done as below: while the patient breathes spontaneously, air via the tubing between mouthpiece and terminating resistor, the loud speaker generator transmits brief pressure impulses via Y-adapter, pneumotachograph and mouthpiece into the respiratory tract. The pneumotachograph and the pressure transducer register the signals which contain the breathing activities and the forcing impulse signal for further processing. Impulse oscillometry being an easier test to perform as it does not require forced expiration or active cooperation by the patient, it be done easily in the above mentioned set of patients who are not able to perform spirometry. Knowledge about the patient's degree of severity of airflow limitation, presence or absence of bronchodilator reversibility, risk for future exacerbations can thus be acquired with the help of impulse oscillmetry which can help in better management of this group of patients. As all classifications and guidelines are currently based on spirometry values like FEV1, there is a need to correlate and find out the significant values in impulse oscillometry technique like R5. There is limited knowledge at present about the reference values for impulse oscillometry including the value of R5 measured by impulse oscillometry which will correlate with significant reversibility of FEV1 as measured by spirometry and about the degrees of airflow limitation of R5 measured by impulse oscillometry. As mentioned earlier, knowing the significant bronchodilator reversibility and degrees of airflow limitation by using R5 in impulse oscillometry will help us to manage patients with asthma who are not able to perform spirometry, in a more effective way.

2. AIM

To find out the significant bronchodilator reversibility as measured by impulse oscillometry with spirometry reversibility as the gold standard in patients with bronchial asthma.

3. OBJECTIVES

Primary objective: 1) To find out reference value for significant reversibility of R5 after bronchodilators by impulse oscillometry with spirometry as the Gold standard.

Secondary objectives: 1) To grade severity of airway obstruction by impulse oscillometry by correlating with FEV1 by spirometry, 2) To compare pulmonary function test of normal individuals by spirometry and impulse oscillometry.

4. **REVIEW OF LITERATURE**

4.1 Global:

Impulse oscillometry as mentioned earlier is a very easy, convenient and non-invasive method of testing lung function as it is not effort dependent and is based on forced oscillation technique with can measure both airway resistance and airway reactance.(8),(9) Impulse oscillometry has found its application in different kinds of age groups including adult, pediatric and geriatric population. It has also been used in veterinary medicine for evaluation of pulmonary function in horses and other animals, which only confirms the fact that performing the test requires no active cooperation from the subject. A study was done to evaluate pulmonary function of underperforming horses due to subclinical diseases.(10) Studies have been done for quantitative and qualitative evaluation of respiratory mechanics in equine population.(11)(12) Impulse oscillometry has also been used to study pulmonary function during methacholine bronchoprovocation in horses.(13)

Impulse oscillometry has been widely studies in children. The ease of performing it has attracted physicians worldwide to study the different applications of impulse oscillometry in different kinds of lung diseases and especially asthma in the pediatric population.(14) (15)(16) Lung function has been assessed after bronchiolitis in the age group of 5-7 years by using impulse oscillometry.(17) One of the problems with impulse oscillometry is that there are no set reference values

recommended for it so far. Many investigators have tried to find out the reference values for impulse oscillometry in the pediatric age group.

Reference values for children of different age groups have been studied in different racial groups. Preschool age group is the most studied group across different countries like Korea, Iran, were included in two studies which were aimed at finding out reference values for impulse oscillometry in this age group.(18)(19)(20) There have been several studies done to evaluate the lung function of healthy children with the help of measuring respiratory resistance by impulse oscillometry owing to the ease with which it is performed in this age group. (21)(22)(23)(24)(25)

Impulse oscillometry has been widely used in children with asthma to study the various aspects of asthma like determining the severity of asthma, assessing asthma control, finding out the effects of different modalities of asthma treatment, looking at airway hyperresponsiveness following bronchial challenge testing, diagnosing exercise induced asthma and to assess bronchodilator response in children with asthma. Assessing the severity of asthma is very important in deciding the plan of management and to know the risk of future exacerbations and this has been studied by investigators using impulse oscillometry in children. (26)(27)(28)

Knowledge of the level of asthma control is very important in guiding treatment for patient with asthma. According to recent asthma guidelines, level of control in asthma has been suggested as the main guide in deciding on stepping up or stepping down treatment. The level of asthma control has been studied by

researchers worldwide in children by using impulse oscillometry as performing spirometry may not be possible for many children. (29)(30)

Diagnosing exercise induced asthma can be very challenging and it is more so in the pediatric population. Exercise induced asthma has been studied in children by using impulse oscillometry in some studies which show that impulse oscillometry can be used as a diagnostic tool in exercise induced asthma.(31)(32)

Airway hyperresponsiveness is an important finding in patients with asthma. It can be tested by using many substances like methacholine, mannitol, exercise, hypertonic saline, histamine and standardized hyperventilation procedures. The studies on diagnosing airway hyperresponsiveness by using impulse oscillometry parameters like R5 when compared with spirometry values like FEV1 have shown mixed results. Some studies showed that FEV1 by spirometry is a better test for diagnosing airway hyperresponsiveness.(33)(34) Other studies have shown that impulse oscillometry is a very good diagnostic tool for airway hyperresponsiveness and some have shown that impulse oscillometry may in fact be a better test than spirometry for diagnosing airway hyperresponsiveness. (35)(36)(37)(38)(39)

Treatment of asthma is guided by the level of symptom control and with the help of lung function testing. Different medications have been tried in treating asthma and treatment of asthma has come a very long way in improving therapeutic goals in asthma and reducing side effects of asthma medications. Inhaled corticosteroids have revolutionized the treatment of asthma by way of improving the asthma control in most patients with asthma. Studies have been done to assess the

effects of treatment with different classes and doses of corticosteroids like combined inhaled steroids and long acting bronchodilators, oral steroids, difference between long acting and short acting bronchodilators and Montelukast by using impulse oscillometry to assess the improvement in lung function after using the medications as tidal breathing analysis might be more sensitive than forced expiratory maneuvers.(40)(41)(42)(43)(44)

Bronchodilator response is an important information used in diagnosis of asthma, taking a decision on the kind of treatment to be given to a particular patient and in assessing future risk of exacerbations. Bronchodilator response is usually checked by using FEV1 in spirometry. FEV1 is checked prior to giving bronchodilator once and then about 10-15 minutes after giving an inhaled short acting beta agonist. The current guidelines say that bronchodilator reversibility of FEV1 is considered to be significant if it is more than 12% and 200ml. For children who are not able to perform spirometry bronchodilator reversibility can be assessed with pre and post bronchodilator R5 in impulse oscillometry. One study published in 1998 performed impulse oscillometry pre and post bronchodilator in 281 preschool children and concluded that a change in R5 of 40% post bronchodilator has to be considered as significant bronchodilator reversibility. (45)

Other studies were conducted to compare the performance of impulse oscillometry parameters with spirometry parameters in assessing bronchodilator response in children. A study conducted with 33 preschool children looked at the correlation and reproducibility of impulse oscillometry and spirometry in assessing bronchodilator response and found that impulse oscillometry correlated well with

spirometry values. (46) Two studies, one of which studied 4 year old children with asthma and the other preschool children from Korea compared spirometry with impulse oscillometry in assessing bronchodilator response and concluded that impulse oscillometry is a diagnostic tool in early asthma and is a helpful objective measure of early intervention. (47)(48) Another study published on comparison of spirometry with impulse oscillometry in assessing bronchodilator response concluded that accuracy was increased by combining spirometry with impulse oscillometry. (49)

Comparison of impulse oscillometry with spirometry was done in a study which included children with mild to moderate asthma and concluded that impulse oscillometry might offer additional insights into the response of asthmatic children to treatment. (50)

Lung functions in several diseases other than asthma which compromise lung function have also been studied with the help of impulse oscillometry in children. Some of them are cystic fibrosis, sickle cell disease, cerebral palsy and skeletal dysplasia. One study performed in children with cystic fibrosis showed that impulse had insufficient sensitivity to detect and follow up airway obstruction in children with cystic fibrosis. (51) Another study performed in patients with cystic fibrosis in All India Institute of Medical Sciences showed that impulse oscillometry is a viable option to assess bronchial obstruction in children with cystic fibrosis when they are not able to perform spirometry. (52)

Impulse oscillometry has been used in a study to diagnose airway obstruction in patients with sickle cell disease due to increased pulmonary capillary blood volume.(53) In a study, children with different kinds of skeletal dysplasia were evaluated for the thoracoabdominal motion with the help of impulse oscillometry and were found to have abnormal lung reactance and central airway involvement.(54)

A study was done in pre pubertal children with cerebral palsy to show the effects of different wheel chair components on lung function using impulse oscillometry.(55) Thus we see that impulse oscillometry has a wide range of application in assessing pulmonary function in different kinds of diseases in children.

Impulse oscillometry has found a wide range of applications in assessing lung function in adults also as in the pediatric age group. It has been used in a variety of diseases which affect the lungs and in all adult age groups. Impulse oscillometry has been used in situations where spirometry cannot be done or contraindicated in adults like in patients who underwent recent surgery, in patients who have history of recurrent pneumothoraces or in patients for whom spirometry induced bronchospasm is a concern as there is no need for the forced expiratory maneuver when performing impulse oscillometry and the test can be done during normal tidal breathing. (56) Studies have been done to see if impulse oscillometry will be a useful tool in the elderly age group as this is an age group which finds it difficult to perform spirometry.

In adults studies have been done to obtain reference values for impulse oscillometry as all current guidelines and recommendations are based on spirometry variables for all pulmonary disorders. A study was done among a group of Australian men and women to find out the reference values and they produced a preliminary set of predictive equations for impulse oscillometry and compared it with international equations and they concluded that impulse oscillometry has its applications in different kinds of pulmonary disorders and that it can be used as tool for population screening for occupational hazards. (57) A study was done in a group of Japanese adults to derive reference values for impulse oscillometry in this particular population which concluded that they were able to determine a predictive equation with a high degree of reliability of impulse oscillometry parameters in Japanese population. (58) In a group of asymptomatic elderly who were aged more than 70 years, a study was done with an aim to obtain reference values among an elderly population group in Norway which concluded that they were able to present reference values for this age group. (59)

As mentioned earlier, as there is limited data on reference values in different racial groups, a study was done among caucasians between the age group of 45-91 years and the researchers concluded that their study provided reference values for caucasians between the age of 45-85 years and suggested the use of these equations especially in the elderly age group to detect airway dysfunction. (60)

A number of studies have been done with impulse oscillometry in patients of advanced age as they might have physical or mental limitations due to which they might not be able to perform spirometry. In a study conducted in Poland, a group of elderly patients aged between 65-96 years were included and underwent both spirometry and impulse oscillometry and it was concluded that impulse oscillometry parameter R5-R20 which is a measure of peripheral airway resistance can be used in patients of this age group as a complement to spirometry or even as an alternative to spirometry as patients of this age group as they are usually not able to perform spirometry due the physical demands of the procedure. (61) Another study was done in elderly asthmatics to study the role of transdermal long acting beta 2 agonist patch by using impulse oscillometry and spirometry and found that impulse oscillometry which can separately measure airway resistance in peripheral and central airway is an useful adjunct to spirometry in assessing lung function especially in the elderly patients due to the ease of performance and the availability of separate parameters to assess peripheral and central airways. (62) Two other studies were done to find out reference values for impulse oscillometry in the elderly population by using as it can be a very useful tool for measuring lung function particularly in patients of this age group. (59)(60)

A number of studies have been done with impulse oscillometry to assess pulmonary function in healthy subjects. A study was done in healthy adults who received long and short acting anticholinergic agents namely Tiotropium bromide and Ipratropium bromide and concluded that impulse oscillometry could distinguish between the effects of Tiotropium and Ipratropium in addition to spirometry. (63)

Impulse oscillometry was used along with spirometry in a study which looked at the airway changes in healthy individuals during exercise and the effects of short acting anticholinergic and short acting beta 2 agonist on the airways of healthy individuals. (64) A study was performed in Germany to look at the diurnal variation of impulse oscillometry parameters in healthy subjects. (65) Lung elasticity can be studied using pulmonary compliance measured by esophageal pressure method which is an invasive method of assessing lung compliance. A study was done in a group of healthy adult males to assess pulmonary compliance during which the subjects underwent spirometry, body plethysmography and impulse oscillometry and the researchers concluded that impulse oscillometry can be used as an alternative to the invasive esophageal pressure method to assess pulmonary compliance. (66)

Welders are prone to occupational lung disorders as the process of welding emits fine particles which are potentially harmful to the lungs. A study was done among healthy welders to look for long term and short term effects of welding on the respiratory system using spirometry, impulse oscillometry and capnovolumetry, and it was concluded that impulse oscillometry showed more pronounced effects on pulmonary function than spirometry. (67)

Several environmental and dietary factors have been found to cause airway inflammation. A study was done to assess for airway inflammation in a group of healthy adults by using impulse oscillometry following a single high fat meal and the protective effects of omega 3 fatty acid supplementation with fish oil on airway inflammation. (68)

One other study was performed in healthy adults to assess the effects of thoracic percussion on lung parenchyma by using respiratory impedance parameters in impulse oscillometry and found that thoracic percussion did cause some transient changes in lung parenchyma which were reversed following deep inspirations. (69)

There is a lot of interest to assess pulmonary function in asymptomatic cigarette smoke. Cigarette smoking has been found to be associated with a number of lung diseases. Some of the lung diseases that have been found to be strongly associated with smoking are chronic obstructive pulmonary disease, lung malignancies, some kinds of interstitial lung diseases like respiratory bronchiolitis associated interstitial lung disease and so on. Smoking has been found to be an adverse factor in patients with asthma also as asthmatics who smoke have been found to have poorer asthma control, lesser bronchodilator reversibility and lesser response to steroids when compared with asthmatics who are non smokers. A study was performed among a group of individuals who were exposed to second hand smoke and the effects of which on the lung were studied using impulse oscillometry which showed that there were increases in airway resistance following exposure to second hand smoke. (70) A group of smokers were compared with non smokers in a study which used impulse oscillometry, sputum biomarkers and spirometry which showed that there was an increase in airway resistance, small airway dysfunction and decreased lung compliance in smokers. (71) The effect of smoking on the lung has attracted a lot of interest and a study was done among a group of healthy smoking naïve individuals to look for the effects of smoking a single cigarette by using impulse oscillometry parameters like respiratory

resistance, respiratory reactance and respiratory impedance and concluded that even smoking a single cigarette does alter lung mechanics. (72)

As mentioned earlier just like in pediatric population, impulse oscillometry has been studied in various diseases in adults, like asthma, chronic obstructive pulmonary disease, bronchopulmonary dysplasia, obstructive sleep apnea, central airway obstruction, interstitial lung disease, cystic fibrosis, bronchiectasis, congestive heart failure, spinal cord injuries, vocal cord dysfunction, emphysema, gastro esophageal reflux disease, irritable bowel syndrome and occupational and environmental irritant exposure. (56)

A study was done in Middle East among a group of patients who had gastro esophageal reflux disease with no respiratory symptoms to assess the relationship between gastro esophageal reflux disease and airway diseases by using impulse oscillometry and spirometry and they concluded that airway resistance was increased in patients with gastro esophageal reflux disease even without any respiratory symptoms and that impulse oscillometry might be a more sensitive tool to assess lung function in this set of patients when compared with spirometry. (73)

Some studies have been done to assess lung function in patients with congestive heart failure. One such study looked at the airway resistance measured by impulse oscillometry in patients with congestive heart failure and found that there was increased airway resistance and reduced reactance measured with the help of impulse oscillometry when compared with normal subjects. (74) Another study was done in 40 patients with acute left ventricular failure to assess the respiratory

mechanics behind orthopnea in this set of patient by using impulse oscillometry in sitting and supine positions and concluded that respiratory reactance by impulse oscillometry was increased in patients with acute left ventricular failure and that it correlated with the severity of orthopnea. (75) Another study published in patients with congestive heart failure to assess mechanical pulmonary changes in patients with congestive heart failure with the help of impulse oscillometry and concluded that R5 was increased in this set of patients and that impulse oscillometry can assess peripheral airway resistance more reliably and more comfortably in this group of patients when compared with spirometry. (76)

Irritable bowel syndrome has been found to be associated with bronchial asthma. A study was conducted to measure airway resistance by impulse oscillometry in patients with irritable bowel syndrome who did not have any respiratory symptoms and found that airway resistance measure by impulse oscillometry was high in this group of patient when compared with healthy subjects. (77)

Obstructive sleep apnea is a disease which has attracted a lot of interest lately and a lot of research has been concentrated to find out the different complications of obstructive sleep apnea and the improvement in complications with therapy for obstructive sleep apnea. Although obesity is one of the main etiological factors in the development of obstructive sleep apnea, craniofacial abnormalities have also been found to play an important role in obstructive sleep apnea which has been found to be more significant in the Asian population. A study done in Japan among 134 Japanese adults studied the relative contributions of obesity, craniofacial structure, pulmonary function and airway resistance by impulse oscillometry to the

severity of obstructive sleep apnea and a subgroup analysis showed that neck circumference and R20 measured by impulse oscillometry were predominantly related to apnea hypopnea index (AHI). (78)

Systemic and airway inflammation have been suggested to play an important part in the pathogenesis and development of complications in patients with obstructive sleep apnea. A study was done to see the relationship between systemic and airway inflammation in obstructive sleep apnea and it found that sputum biomarkers for inflammation were significantly related to proximal airway resistance as measured by impulse oscillometry. (79) A study was done to evaluate the effects of laser assisted uvulopalatoplasty on oral airway resistance measured by impulse oscillometry in patients with obstructive sleep apnea. (80) There are several mechanisms by which patients with obstructive sleep apnea have increased upper airway resistance. A study was done to evaluate the effect of posture on airway resistance measured by impulse oscillometry in patients with obstructive sleep apnea and found that amount of change in airway resistance is larger in patients with obstructive sleep apnea and that impulse oscillometry parameters like Zrs, R5 and R20 were moderately associated with apnea hypopnea index (AHI). (81) A study was performed to evaluate whether there was an increase in upper airway resistance measured by impulse oscillometry in sitting and supine position in patients with hypercapnic obstructive sleep apnea syndrome when compared with patients having eucapnic obstructive sleep apnea syndrome and normal subjects and showed that there was abnormal increase in upper airway resistance in both sitting and supine positions in patients with

hypercapnic obstructive sleep apnea syndrome when compared with patients having eucapnic sleep apnea syndrome and normal individuals. (82) Another study was done in patients with obstructive sleep apnea syndrome to evaluate the changes in the impulse oscillometry parameters and concluded that impulse oscillometry is a valuable tool in assessing upper airway obstruction in patients with obstructive sleep apnea syndrome and that it might also help in understanding the pathological mechanisms behind the process. (83)

Patients with central airway obstruction are usually assessed with spirometry before and after interventional bronchoscopic procedures but the usual problems with it are that it might not be feasible in these patients especially when they have critical stenosis, does not pinpoint the site of obstruction and might not correlate well with the functional impairment of the patient. A study was done on 20 patients with central airway obstruction with impulse oscillometry and spirometry before and after interventional bronchoscopic procedures and they concluded that impulse oscillometry parameters correlated well with the patients symptoms and that impulse oscillometry might be able differentiate between variable and fixed central airway obstruction. (84) Another study found that forced oscillation technique is a very good way of assessing central airway obstruction in patients with tracheal stenosis and that it is not confounded or altered even in the presence of peripheral obstruction. (85) A case report of an adolescent patient with tracheal stenosis was published in the journal of bronchology and interventional pulmonology which describes the use of impulse oscillometry to monitor the patency of the tracheal stent. (86)

Vocal cord paralysis causes loss of voice and medialisation of the vocal cord is a surgery which can restore voice in such patients but the effect of this procedure on the airway is not well known. A study was done on patients who underwent this procedure and airway dynamics were measured using impulse oscillometry and spirometry and the investigators concluded that the above procedure does not have a clinically significant effect on airway dynamics. (87)

Chronic cough is a common problem encountered in patients usually coming to the outpatient department. A lot of these patients are treated as asthma or gastro esophageal reflux disease though vocal cord dysfunction might be the primary abnormality or a coexisting problem in these patients. A study was done on patients with a diagnosis of bronchial asthma who were not improving with treatment and all these patient underwent direct visualization of vocal cords, impulse oscillometry and spirometry and it was found that impulse oscillometry was a useful tool in diagnosing this condition and that it was more sensitive than spirometry. (88)

The role of impulse oscillometry was studied in a group of patients with interstitial lung disease, chronic obstructive pulmonary disease and asthma and it was concluded that respiratory reactance X5 is a characteristic feature in patients with interstitial lung disease which was not seen in patients with chronic obstructive pulmonary disease or asthma. (89)

Bronchial hygiene therapy is an important component in the management of patients with bronchiectasis. Different kinds of airway clearance techniques have been studied. A study was done with flutter valves to clear airway secretions and its efficacy was assessed with impulse oscillometry parameters like respiratory resistance and the researchers concluded that impulse oscillometry is a user friendly tool in assessing the efficacy of airway clearance techniques on airway mechanics. (90)

Chronic obstructive pulmonary disease is the next most common disease in which impulse oscillometry has been studied next to asthma. Chronic obstructive pulmonary disease is usually seen in smokers and in the elderly age group who usually find it difficult to perform the forced expiratory maneuver by spirometry for assessing the degree of airflow limitation which is very important in this particular disease as it used in the staging of the disease and helps in making important decisions on management of the patient. The importance of assessing airflow limitation in patients with chronic obstructive pulmonary disease was reiterated in an article published by Cooper et al. which said that impulse oscillometry might be a better option as it can measure airway dynamics in the small and larger airways separately. (91) Effects of different kinds of treatment on improvement in symptoms or airway measurements in patient with chronic obstructive pulmonary disease have been studied by using impulse oscillometry. A study done in patients with chronic obstructive pulmonary disease to compare the effects of inhaled Tiotropium bromide alone with Tiotropium bromide with transdermal Tulobuterol by using impulse oscillometry measures of peripheral airway

resistance and concluded that both arms of treatment showed beneficial effects on peripheral airway resistance as measured by impulse oscillometry. (92)

ECLIPSE study was one of the largest studies done in patients with chronic obstructive pulmonary disease to predict the surrogate end points in these patients and it used impulse oscillometry as one of the tests along with spirometry and body plethysmography to assess lung function in these patients during the study. (93) A study was conducted in patients with chronic obstructive pulmonary disease to assess lung function using different methods like impulse oscillometry to measure respiratory resistance and respiratory reactance, spirometry and body plethysmography and the investigators concluded that impulse oscillometry measure of respiratory reactance indicated changes in pulmonary compliance due to airflow obstruction. (94)

FEV1 measured by spirometry is used in classifying patients with chronic obstructive pulmonary disease but it has been shown to have limited value and so a study was done with different measures of lung function with body plethysmography, single breath helium dilution with CO diffusion and concluded that different kinds of lung function measurement will be required to characterize and understand the disease in a better way. (95) Another study conducted in Japan showed that impulse oscillometry has a complimentary role to spirometry in assessing and managing patients with chronic obstructive pulmonary disease. (96)

Another study which used impulse oscillometry in patients with chronic obstructive pulmonary disease also concluded that respiratory reactance measured by impulse oscillometry related more closely to other pulmonary function measurements than respiratory resistance and that respiratory reactance measured by impulse oscillometry appears to indicate changes in pulmonary compliance which is caused by airflow obstruction. (97) A study included a group of patients with chronic obstructive pulmonary disease, chronic bronchitis and emphysema who were examined with a questionnaire, spirometry and impulse oscillometry and found that there was a higher respiratory resistance and lower pulmonary reactance in patients who had chronic obstructive pulmonary disease, chronic bronchitis or emphysema both among subjects who had chronic obstructive pulmonary disease by the GOLD criteria and concluded that impulse oscillometry may be able to detect abnormalities in the airways associated with chronic obstructive pulmonary disease earlier than spirometry. (98)

Recurrent exacerbations of chronic obstructive pulmonary disease causes worsening of quality of life and lung functions in patients and a study was done to look at sputum biomarkers which might help to predict an exacerbation and this study used impulse oscillometry to assess lung function in these patients. (99) Another study done in patients with chronic obstructive pulmonary disease evaluated the accuracy of impulse oscillometry during inspiration and expiration in patients with chronic obstructive pulmonary disease and concluded that impulse oscillometry parameters during inspiration might be more accurate in patients with

chronic obstructive pulmonary disease possibly due to presence of airflow limitation during expiration in these patients. (100)

A study was done with an aim to compare the variability and sensitivity of impulse oscillometry, spirometry and body plethysmography to find out the best technique to assess bronchodilation in patients with chronic obstructive pulmonary disease and concluded that impulse oscillometry and body plethysmography should be preferred over spirometry to assess bronchodilation in patients with chronic obstructive pulmonary disease. (101)

Effects and outcomes of different kinds of treatment in patients with chronic obstructive pulmonary disease have been assessed with impulse oscillometry parameters as they are more sensitive than spirometry parameters in assessing treatment effects. A study was done to see the effect of tripe therapy with inhaled steroid, long acting bronchodilator and long acting anticholinergic agent with the help of impulse oscillometry parameters. (102) Two other studies have been done to see the effect of short acting bronchodilators on the lung functions of patients with chronic obstructive pulmonary disease using impulse oscillometry parameters. (103)(104) A study was done in patients with chronic obstructive pulmonary disease to find out the relationships dyspnea, impulse oscillometry and spirometry and concluded that neither impulse oscillometry nor spirometry correlated well with dyspnea in patients with chronic obstructive pulmonary disease. (105) Another study was done in patients with chronic obstructive pulmonary disease to evaluate the effect of inhaled phosphodiesterase 4 inhibitor with the help of impulse oscillometry parameters. (106) A study looked at the

diagnostic value of impulse oscillometry in patients with chronic obstructive pulmonary disease and concluded that impulse oscillometry is an useful test of lung function in patients with chronic obstructive pulmonary disease and that it can even be used in patients who have acute exacerbation as it requires only passive cooperation of the patient. (107)

Another study was done which looked at the role of impulse oscillometry in detecting the site or airway obstruction in patient with emphysema and concluded that impulse oscillometry is better than spirometry as it can identify central and peripheral airway obstruction separately. (108)

Combined pulmonary fibrosis and emphysema is a new entity in which patients have upper lobe emphysema and lower lobe fibrosis with or without airflow limitation and a study was done to assess the lung function in these patients using impulse oscillometry. (109)

Cystic fibrosis is another disease which has been studied with the help of impulse oscillometry both in adults and in children. A study included a group of patients with cystic fibrosis to assess airway resistance with impulse oscillometry and concluded that impulse oscillometry is a promising test to evaluate lung function in patients with cystic fibrosis. (110) Another study looked at the use of more sensitive tests of lung function like impulse oscillometry than spirometry in patients with cystic fibrosis. (111) One study evaluated the difference in impulse oscillometry parameters in patients with asthma and cystic fibrosis and concluded

that parameters of impulse oscillometry vary according to the disease studied. (112)

The applications and advantages of impulse oscillometry have been studied most widely in asthma. Several aspects of asthma have been studied in patients with asthma using impulse oscillometry. Most of the studies have compared impulse oscillometry with spirometry to look for correlation between the two types of lung function tests. The diagnostic accuracy of asthma, small airway obstruction in asthma, airway resistance in patients with allergic rhinitis, bronchial challenge with different substances like methacholine, mannitol, hyperventilation, evaluation of patients with exercise induced asthma, airway abnormalities during pregnancy in asthma patients are some of the areas of interest that have been studied. Patients with allergic rhinitis are at risk for developing asthma and have been found to have bronchial hyperresponsiveness. A group of patients with allergic rhinitis and bronchial hyperresponsiveness and a group of patients with allergic rhinitis and symptoms of asthma were evaluated to look for difference in airway resistance in these two groups using impulse oscillometry and concluded that patients with allergic rhinitis and symptoms of asthma had greater peripheral airway obstruction measured by impulse oscillometry than patients who had allergic rhinitis and bronchial hyperresponsiveness. (113)

It has been postulated that smokers with bronchial hyperresponsiveness have a greater degree of lung function deterioration than other smoker and this concept was evaluated in a study by checking bronchial hyperresponsiveness in smokers with dry air hyperventilation and assessment of lung function using impulse

oscillometry and concluded that there was a greater decline of lung function in the group of smokers who had bronchial hyperresponsiveness. (114) Testing bronchial hyperresponsiveness with indirect stimuli like exercise or mannitol have been proposed to reflect airway inflammation better than methacholine which directly acts on airway smooth muscles and for evaluation of lung function during bronchial challenge testing with different substances, impulse oscillometry was used. (115) A study was done to evaluate the different methods of lung function testing like impulse oscillometry, spirometry and body plethysmography to look bronchial hyperresponsiveness following methacholine challenge testing and found that impulse oscillometry is the most sensitive test in assessing bronchial hyperresponsiveness after methacholine challenge. (116) A study was done to look at the effect of emotional stimuli on the airway resistance as measured by impulse oscillometry in patient with asthma.(117)

The role of impulse oscillometry in bronchial provocation testing has not been well studied and a study was done with impulse oscillometry and spirometry for evaluation of lung function following bronchial provocation with leukotriene D4 and concluded that impulse oscillometry had a diagnostic power similar to that of spirometry in bronchial provocation testing. (118) Another study was done with patients undergoing eucapnic hyperventilation and exercise challenge testing using impulse oscillometry and spirometry for assessing change in lung function following bronchial challenge and concluded that impulse oscillometry is a more sensitive test in measuring change in airway function. (119) Subjects with bronchial hyperresponsiveness with no respiratory symptoms were evaluated in a

study by using impulse oscillometry parameters to assess small airway function and found that asymptomatic subjects with bronchial hyperresponsiveness had lesser small airway dysfunction. (120) Another study which evaluated impulse oscillometry and spirometry during methacholine challenge testing concluded that impulse oscillometry is more sensitive than spirometry and correlated better with symptoms when compared with spirometry. (121) A study evaluated the effect of beta blockers and beta 2 agonist on the airway parameters measured by impulse oscillometry and spirometry and found that impulse oscillometry is more sensitive test to look at the outcome response to these drugs. (122)

Exercise induced asthma is another field of interest where impulse oscillometry has been evaluated. A study was done with some physically active individuals who had probable exercise induced bronchoconstriction and lung function pre and post exercised was assessed with impulse oscillometry and spirometry and the investigators concluded that impulse oscillometry is a more sensitive test to detect the change in airway function following exercise. (123) Another study performed on young asthmatics to assess lung function using impulse oscillometry following exercise showed that impulse oscillometry parameters might be more sensitive and might help us in improving our knowledge and understanding about exercise induced asthma. (124)

One of the main advantages of impulse oscillometry over spirometry has been found to be the ability of impulse oscillometry parameters to be able to assess the small and larger airways separately. A lot of studies have been done to evaluate patients for small airway dysfunction in asthma. A study was done in patients with

asthma to assess the small airway function by using impulse oscillometry and found that a most of the patients with asthma included in the study had small airway dysfunction as measured by impulse oscillometry which did not improve even with inhaled steroid treatment. (125) Another study evaluated the small airway function by using impulse oscillometry in patients with asthma who continued to have symptoms despite good inhaled steroid treatment and found that small airway dysfunction was present as measured by impulse oscillometry in majority of these patients and treatment with extra fine inhaled steroids might help in improving symptoms in these patients. (126)(127) A study evaluated alveolar component to exhaled nitric oxide and impulse oscillometry to measure small airway function in a group of patients with asthma and found that impulse oscillometry and alveolar component to exhaled nitric oxide may prove to be useful tools in assessing small airway function in patients with asthma. (128)

Patients with obesity have respiratory symptoms but spirometry shows normal large airway function. A study was done to evaluate the small airway function by using impulse oscillometry in patients with obesity before and after weight loss following bariatric surgery and concluded that there was significant improvement in small airway function as measured by impulse oscillometry in obese individuals after weight loss. (129) Studies done in patients with asthma evaluated the small airway function using impulse oscillometry concluded that small airway dysfunction as measured by impulse oscillometry parameter R5-R20 contributed to the clinical expression of asthma. (130) (131)

Pregnancy and asthma have been studied by several researchers. Asthma has been found to worsen, stay stable or improve in different patients during pregnancy. Lung function assessment in these patients with spirometry might be difficult because of elevation of diaphragm and most patients find it difficult to perform spirometry during pregnancy. A study was done in pregnant females with asthma by using impulse oscillometry to assess lung function and concluded that impulse oscillometry can be used as an appropriate alternative test of lung function in this group of patients with asthma. (132)

The above data suggests that impulse oscillometry has found its application in different kinds of situations, different kinds of lung diseases, in measuring airway function at different levels of the tracheobronchial tree, in assessing bronchodilator response, in assessing the level of airflow limitation and in different kinds of bronchial challenge testing. The aim of this study is to find out the significant reversibility following bronchodilators while using impulse oscillometry parameter R5 by correlating it with spirometry parameter FEV1 reversibility which is the gold standard at present. The other objectives of this study are to correlate the levels of airflow limitation in asthma as measured by spirometry parameter FEV1 with impulse oscillometry parameter R5 and to compare pulmonary function test with spirometry and impulse oscillometry in healthy adults.

Significant bronchodilator reversibility of FEV1 has been identified as ≥12% and ≥200ml as per the current GINA guidelines for asthma. (4) There are very studies which have compared the bronchodilator reversibility between spirometry and impulse oscillometry parameters. (133) A study done by Nair et al. correlated

FEV1 by spirometry with R5 by impulse oscillometry and concluded that FEV1 by spirometry correlated with R5 by impulse oscillometry and the change post bronchodilator could be predicted by linear regression. Linear regression modeling demonstrated that 1 unit change in %FEV1 corresponds to a 2.5% change in %R5. (134) A change in R5 by 30% to 35% following bronchodilator has been found in different studies. (56) One study done by Park et al. evaluated the usefulness of impulse oscillometry in assessing airflow obstruction in patients with asthma and other pulmonary diseases when compared with spirometry and concluded that impulse oscillometry may compliment spirometry and the discriminative power of impulse oscillometry for airway obstruction was comparable to that of spirometry. (37)(135)(136) Another study compared impulse oscillometry and spirometry in diagnosing obstructive airway disorders and found that the sensitivity of impulse oscillometry in relation to asthma was 31.3% and 19.6% for spirometry. In patients with chronic obstructive pulmonary disease, spirometry was found to have better sensitivity (47.4%) than impulse oscillometry (38.95%). The specificity was comparable for impulse oscillometry and spirometry both asthma and chronic obstructive pulmonary disease. Impulse oscillometry had better sensitivity (45.8%) in detecting normal subjects than spirometry (28.8%), while specificity was comparable (80.5% and 86.2%).(137)

A lot of interest is there to find out the relationship between asthma and obesity as both problems have become are on the rise in the community. Non obese patients with asthma have been found to have a better asthma control when compared with obese patients. Studies have suggested that high fat diet with low levels of omega

3 fatty acids could promote both obesity and inflammation. A study was done to evaluate the effect of omega 3 fatty acid supplementation in obese patients with asthma and impulse oscillometry parameters were used to look at the differences in airway resistance after supplementation with omega 3 fatty acid. (138) Another study looked at the differences in lung function following weight loss in obese normal individuals and obese asthmatics in which lung function measurements were done with impulse oscillometry and spirometry and concluded that weight loss improves lung elastance in both asthmatics and normal individuals but the peripheral lung is more prone to collapse in obese patients with asthma and this differentiation between peripheral airways and central airways was possible as impulse oscillometry parameters were used which can differentiate peripheral from central airway resistance. (139)

The other problem with obesity is that obese patients who come with respiratory symptoms are labeled as asthmatics even without proper evidence for the same. A study was done in obese patients to evaluate and under and over diagnosis of asthma in this group patients with evaluation of lung function by impulse oscillometry and concluded that there was both underdiagnosis and overdiagnosis of asthma in obese patients and dyspnea was correctly or wrongly attributed to obesity with a proposal to do lung function in all obese patients before making a diagnosis of asthma.(140)

Allergic rhinitis is a common problem encountered in patients with asthma. Allergic rhinitis can precede symptoms of asthma and patients with allergic rhinitis are at risk for developing asthma. Patients with untreated allergic rhinitis and asthma have been found to have a poorer asthma symptom control than in patients without allergic rhinitis. A study was done to evaluate the airway resistance in patients with asthma using impulse oscillometry by comparing the airway resistance in patient who had allergic rhinitis and in patients who did not have allergic rhinitis and found that lung function measured by impulse oscillometry showed better results for patients with asthma and allergic rhinitis than in patients who had only asthma. (141) Another study was done in children to look at the association of allergic rhinitis with airway inflammation and bronchial hyperresponsiveness and bronchodilator response with the help of impulse oscillometry and concluded that reversible airflow limitation was seen in children with allergic rhinitis and that impulse oscillometry can be used as a tool to diagnose involvement of lower airways in patients with allergic rhinitis even without methacholine challenge test for bronchial hyperresponsiveness. (142)

Some studies were done to look at the sensitivity of impulse oscillometry in differentiating asthma from chronic obstructive pulmonary disease. One study showed which included both patients with asthma and chronic obstructive pulmonary disease performed lung function with impulses oscillometry and found that whole breath analysis of impulse oscillometry might not be sensitive in differentiating asthma from chronic obstructive pulmonary disease and that when inspiratory-expiratory analysis was done separately by impulse oscillometry, it was

able to differentiate these two diseases which was thought to be probably due to the more pronounced dynamic airway narrowing in patients with chronic obstructive pulmonary disease. (143)

The physiological properties of the airways vary in many ways in asthma and chronic obstructive pulmonary disease but not much has been studied about it as spirometry does not give intricate details like site of obstruction. A study was done with an aim to clarify the differences in airway physiology in patients with asthma and chronic obstructive pulmonary disease with the help of impulse oscillometry. The study included patients with chronic obstructive pulmonary disease, asthma and healthy individuals who performed lung function testing by impulse oscillometry and the investigators concluded that impulse oscillometry may be useful in detecting pathophysiological changes even in the airways of patients whose spirometry did not show features of airway obstruction and that larger within breath changes happened in patients with chronic obstructive pulmonary disease. (144) Another study evaluated the sensitivity and specificity of impulse oscillometry in differentiating between asthma and chronic obstructive pulmonary disease and found that the sensitivity of impulse oscillometry in diagnosing asthma was 31.3% and 19.6% for conventional pulmonary function test, impulse oscillometry had better sensitivity (45.8%) in detecting normal subjects than spirometry (28.8%) and concluded that impulse oscillometry can replace spirometry in conditions where that patient is not able perform spirometry. (137)

Most of the studies done for evaluation of impulse oscillometry as a viable option of testing lung function have compared impulse oscillometry parameters with spirometry parameters and some studies with parameters of body plethysmography. (73)(116)(95)(63)(145)(146) In one study by Williamson et al., which assessed small airway disease with impulse oscillometry and alveolar nitric oxide, a group of healthy volunteers, a group of patients with mild to moderate asthma, a group of patients with severe asthma and a group of patients with chronic obstructive pulmonary disease were included. In a group of 24 volunteers who did not have airway obstruction, R5 was in the range of 0.34–0.43 kPa/L/s, while in a group of 21 patients with severe asthma it was 0.36–0.64, and in 24 COPD patients who had a mean FEV1%pred of 56.6%, it was 0.49–0.70 kPa/L/s. (128) Another study by Tomalak et al. evaluated the application of impulse oscillometry in elderly patients and found that impulse oscillometric parameters namely R5, R5-R20 and Fn showed a strong and significant correlation with FEV1 values: r = –0.503, –0.570 and –0.673, respectively. (61)

4.2 Indian:

There are very few studies done on impulse oscillometry in India. A study done in All India Institute of Medical Sciences, Delhi, evaluated children with cystic fibrosis who were not able to perform spirometry and found that impulse oscillometry can be used in children with cystic fibrosis to assess lung function and more so in patients who are not able to perform spirometry. (52)

Another study published in the journal Lung India, evaluated the use of impulse oscillometry to evaluate patients with vocal cord dysfunction and the researchers concluded that impulse oscillometry is more sensitive than spirometry in assessment of patients with vocal cord dysfunction. (88)

The other study from India for evaluation of impulse oscillometry in patients with emphysema and concluded that impulse oscillometry was a better test when compared with spirometry as it can differentiate peripheral airway obstruction from central airway obstruction. (108)

4.3 Tamil Nadu:

There are no studies conducted to date on impulse oscillometry from the state of Tamil Nadu in India. Ours might be the first such study on evaluation of impulse oscillometry published from the state of Tamil Nadu.

4.4 Justification:

As seen from the above data there is scarcity of data in evaluating impulse oscillometry as a viable option in assessing lung function in patients with asthma and especially in patients who are unable to perform spirometry due to the physical and mental demands that is involved in performing spirometry. Although there are few studies which have compared bronchodilator reversibility measured by impulse oscillometry with spirometry, no specific value has been suggested so far to be considered significant which might help directing treatment options in patients with asthma. Furthermore, there are very few studies which have correlated the degree of airflow limitation as measured by spirometry FEV1 with impulse oscillometry parameter R5 which will help in assessing the risk for future exacerbations especially in patients who are unable to perform spirometry. Our study was done to try and overcome the shortcomings of the previous studies and to be able to give a specific values of R5 by impulse oscillometry in terms of significant bronchodilator reversibility and in terms of airflow limitation by correlating them with spirometry parameter FEV1 which will help improve the management and assessment of patients with asthma who are unable to perform spirometry.

5. METHODS

Impulse oscillometry is a convenient and effort free method of assessing pulmonary function. Performing pulmonary function test by impulse oscillometry is much easier and no added effort or active cooperation is required from the patient's part to perform it. In the department of Pulmonary Medicine, Christian Medical College, Vellore, about 350-400 patients undergo pulmonary function tests on an average per week. There is a lack of adequate data about the significant change in airway resistance (R5) after bronchodilators and the grades of airway obstruction in patients with bronchial asthma that is measured by impulse oscillometry. The aim of this study is to find out the significant change in airway resistance (R5) using impulse oscillometry after bronchodilators by comparing it with reversibility of FEV1 using spirometry after bronchodilators and to grade airway obstruction as mild, moderate and severe by comparing the grades of obstruction using FEV1 by spirometry as the gold standard.(5) Significant bronchodilator response by spirometry is defined as an increase in FEV1 and/or FVC ≥ 12% of control and ≥ 200ml constitutes a positive bronchodilator response.(4) By finding out the above values, we will be able to use impulse oscillometry in patients with bronchial asthma to check for reversibility with bronchodilators and by doing so, we will be able to decide on the line of management in a very easy and effort free manner for the patient.

5.1 Subjects:

We recruited all patients referred from the outpatient department with a clinical diagnosis of bronchial asthma to the pulmonary function test laboratory for spirometry from May 2013 to August 2014. All patients were asked to fill up an asthma questionnaire after obtaining informed consent. The patient filled up the asthma questionnaire (found in **Fig 1**), after which he/she underwent pulmonary function test by impulse oscillometry and spirometry.

Figure 1. Asthma questionnaire:

Please answer "yes" or "no" to the following:

- Wheezing – high pitched whistling sounds when breathing out ☐
- History of any of the following:

1. Cough, worse particularly at night ☐
2. Recurrent wheeze ☐
3. Recurrent breathing difficulty ☐
4. Recurrent chest tightness ☐

- Symptoms occur or worsen at night, awakening the patient ☐
- Symptoms occur or worsen in a seasonal pattern ☐
- The patient also has eczema, hay fever, or a family history of asthma or atopic diseases ☐
- Symptoms occur or worsen in the presence of:

1. Animals with fur ☐
2. Aerosol chemicals ☐
3. Changes in temperature ☐
4. Domestic dust mites ☐
5. Drugs (aspirin, beta blockers) ☐
6. Exercise ☐
7. Pollen ☐
8. Respiratory (viral infections) ☐
9. Smoke ☐
10. Strong emotional expression ☐

- Symptoms respond to anti-asthma therapy ☐
- Patients colds “go the chest” or take more than 10 days to clear up ☐

- Treatment history:
- On inhalers – specify – long acting bronchodilators (LABA)/Steroids/LABA+Steroids
- Since when -
- Compliance – Compliant/Non compliant

A total of 650 patients with ages ranging from 15 years – 62 years were initially included in the study group. These patients initially filled up the asthma questionnaire and then underwent pulmonary function testing as per the study protocol mentioned earlier. Patients who were unable to complete spirometry procedure were excluded from the study. A total of 14 patients had to be excluded from the study group as they could not perform spirometry.

In the control group, a total 188 healthy individuals with ages ranging from 18 years – 75 years were included. The healthy individuals also filled up the asthma questionnaire and then underwent pulmonary function testing as per the study protocol mentioned earlier. 2 individuals in the control group were found to have asthma based on the questionnaire, 5 individuals could not perform spirometry and 4 individuals did not complete the test due to other reasons and so a total of 11 patients were excluded from the control group. Finally a total of 636 patients were included in the study group and 177 healthy individuals were included into the control group, as shown in **Fig 2**. All patients signed an informed consent form before filling up the questionnaire. The study was approved by the institutional review board (IRB).

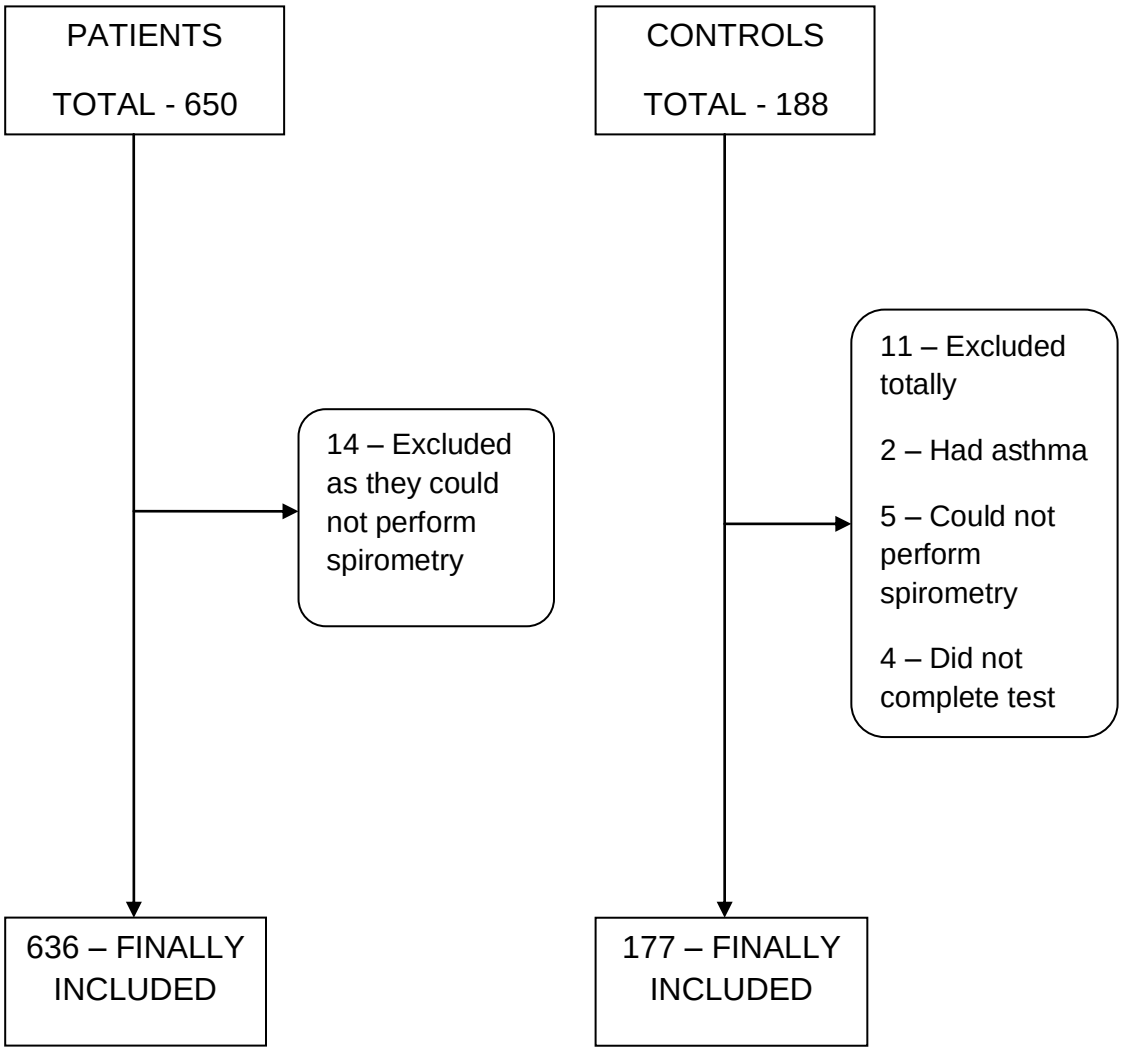

PATIENTS
TOTAL - 650
CONTROLS
TOTAL - 188
14 – Excluded as they could not perform spirometry
11 – Excluded totally
2 – Had asthma
5 – Could not perform spirometry
4 – Did not complete test
636 – FINALLY INCLUDED
177 – FINALLY INCLUDED

Figure 2.

Inclusion criteria:

1. Patients with signs and symptoms of asthma as per GINA (Global Initiative for Asthma) guidelines (4), aged ≥ 15 years will be included in the study.
2. Normal individuals, aged > 15 years, who do not have any of the above symptoms, will be included in the control group.

The exclusion criteria:

1. Patients aged < 15 years of age
2. Acute exacerbation of bronchial asthma (characterized by acute worsening of breathing difficulty, cough or wheezing) at the time of testing,
3. Suspected to have COPD,
4. Restrictive lung disorders,
5. Upper airway obstruction,
6. Patients undergoing preoperative work up for surgery
7. Patients for whom a pulmonary function test is contraindicated
8. Patients who are unable to perform spirometry after filling up the asthma questionnaire

5.2 Study design:

Impulse oscillometry was always done prior to spirometry as deep inspiration which is required in doing spirometry may cause a temporary increase in bronchial tone. (147) One arm of the study included the patients with bronchial asthma for whom first pre bronchodilator impulse oscillometry was done and then spirometry pre bronchodilator following which inhaled 400mcg of Salbutamol, which is a short acting beta 2 agonist was given via spacer. About 10 minutes after administration of bronchodilator, post bronchodilator testing was done again first by impulse oscillometry followed by spirometry. Patients who could not perform spirometry were excluded from the study group as mentioned earlier. The other arm of the study included normal individuals who were selected based on a standard asthma questionnaire (shown in **Fig 1**). Individuals who had symptoms suggestive of asthma based on the asthma questionnaire were excluded from the control group. Normal individuals who could not perform spirometry and who did not complete the test due to other reasons were also excluded as mentioned earlier. The normal individuals also underwent impulse oscillometry first followed by spirometry both pre bronchodilator and then after administration of 400mcg of Salbutamol as described earlier.

5.3 Pulmonary function tests:

Impulse oscillometry:

Impulse oscillometry (IOS) is a convenient and effort free method of testing pulmonary function. The impulse oscillation technique uses an impulse shaped, time discrete external forcing signal. The characteristic feature of IOS is the generation of recurrent aperiodic impulse-shaped forcing signals of alternating direction. The measurement is done as below: while the patient breathes spontaneously air via the tubing between mouthpiece and terminating resistor, the loud speaker generator transmits brief pressure impulses via Y-adapter, pneumotachograph and mouthpiece into the respiratory tract. A schematic diagram of impulse oscillometry system measuring head and connectors is shown in **Fig 3.** The pneumotachograph and the pressure transducer register the signals which contain the breathing activities and the forcing impulse signal for further processing.

Both impulse oscillometry and spirometry were performed using MasterLab (Jaeger). Impulse oscillometry Impulse oscillometry has to be performed with the patient in sitting position. The device has to be calibrated everyday as advised by the manufacturer. (148) Impulse oscillometry is performed with the patient sitting and breathing at tidal volume. The head of the patient should be held in neutral position, a nose clip should be used and the cheeks have to be firmly supported by either the patient. (149) Positioning of the patient during the test is important to reduce the influence of compliance of the cheeks and prevent shunting of the

applied impulses through the upper airway. (150)(149) The test should be performed with the legs uncrossed to reduce extraneous intrathoracic pressure. (16) The procedure takes approximately 20 to 90 s to complete. (56) The testing procedure of impulse oscillometry is shown below.

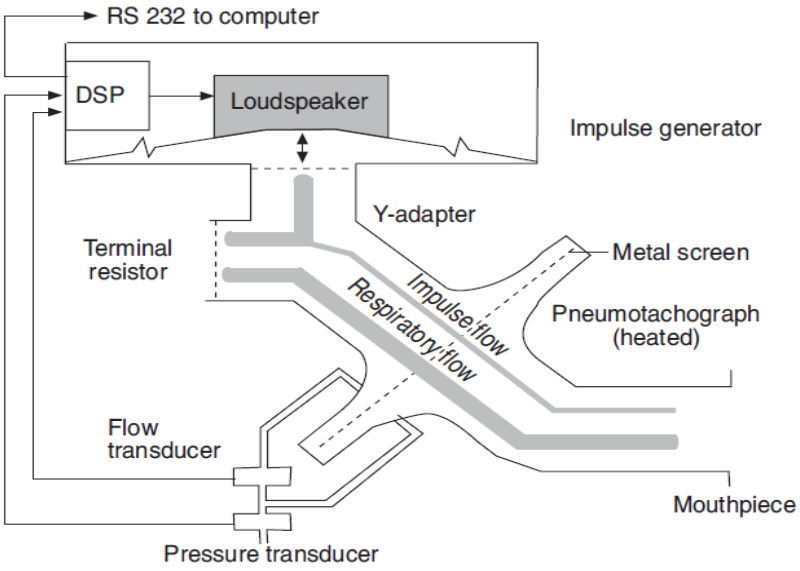


Figure 3. Schematic diagram of impulse oscillometry system measuring head and connectors

Interpretation(151) **of impulse oscillometry:**

Respiratory Resistance is referred to as R and Respiratory Reactance is referred to as X. The oscillation frequencies are 5-30 Hz. The resistance R includes proximal and distal airways which can also be referred to as central and peripheral respectively, lung tissue and chest wall resistance. In proximal airways obstruction, R is elevated evenly in all whereas in distal airways obstruction, R is highest at low frequencies and decreases with increasing frequency. R5 will be taken as the total resistance of airways and R5-R20 will be taken as the resistance of peripheral airways. There is no adequate knowledge at present about the pre and post bronchodilator values of R5 that can be taken as significant or values of R5 that can be graded as mild, moderate, severe or very severe obstruction. A lot of studies have been done to compare the efficacies of spirometry and impulse oscillometry to diagnose airway diseases and have proven that impulse oscillometry is not inferior to spirometry. Studies have been done to compare the bronchodilator response by spirometry and impulse oscillometry but some of these were done in children and the studies which were done in adult population were not able to come to a conclusion about the percentage change in R5 post bronchodilator that can be considered significant.

Impulse oscillometry testing procedure:

Enter the patient's data in the system.

Preparing the machine:

Before starting the measurement a new, disinfected elbow piece is to be attached to the side of the pneumotach marked with the "PATIENT" symbol. Also attach a disinfected mouthpiece. A zero adjustment of the connected pneumotach is to be carried out before every measurement. Please ensure that the patient is not yet connected to the mouthpiece.

The system is ready for the measurement if a clicking can be heard. The patient is asked to close his/her nose with the nose clip and to approach the mouthpiece. The patient sits upright, he/she should keep his/her head straight or slightly extended.

In order to reduce the shunt impedance of the cheeks, the patient should hold his/her hands tightly against his/her cheeks. This is a special feature of impulse oscillometry. In contrast to conventional function diagnostics, measuring signals are not produced by the lung itself, but by an external pulse generator which applies the signals at the mouth. If the cheeks were not fixed by the patient's hands, the measuring signal would escape through the cheeks without reaching the lung. In order to avoid artifacts in the mouth, the patient is asked to put the mouthpiece between his/her teeth and keep his/her mouth firmly sealed around

the mouth-piece. A picture of the impulse oscillometry system is shown in **Fig 4.** Even small leakages, for example at the corner of the mouth,

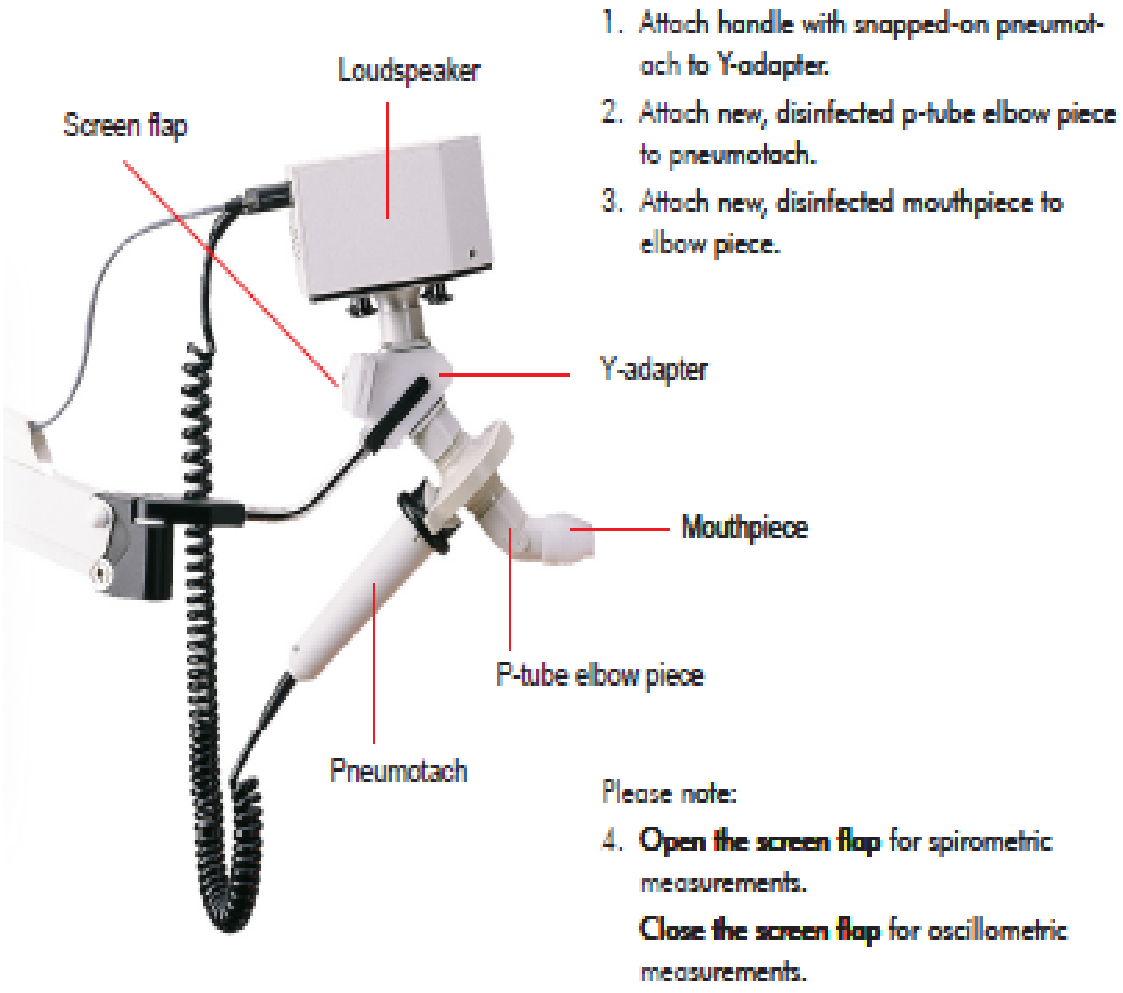


Figure 4. The impulse oscillometry system

result in a decrease of mouth pressure so that the recorded respiratory resistance is too low. The patient should breathe quite normally. A picture of the screen display during data recording is shown in **Fig 5.**

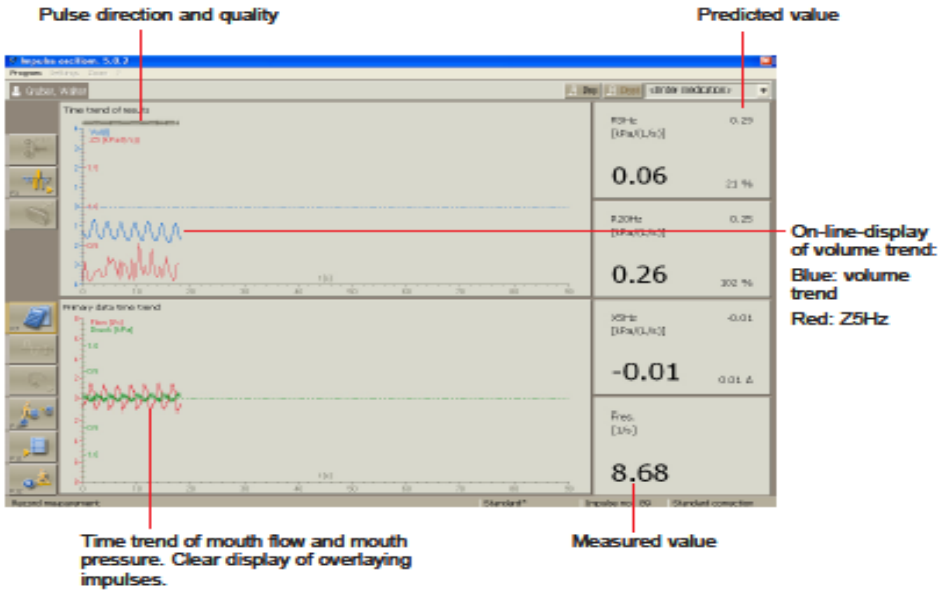


Figure 5. Screen display during data recording

After a minimum of 4 breaths or normally after a defined period of time (about 30 sec) has passed, the measurement can be ended manually, otherwise it will be stopped automatically after a maximum period of 90 secs. For manual end and evaluation with “F7”.

After data evaluation, the measurement results will be displayed on the screen graphically and numerically. The screen display after evaluation of tidal breathing is shown in **Fig 6.** The measuring values shown in the parameter window are global mean values calculated from all impulses during tidal breathing. The assessment of the measuring values and the analysis of the curves provide information on the presence of obstructive ventilation disorders that is differentiated between distal (peripheral) and proximal (central) components.

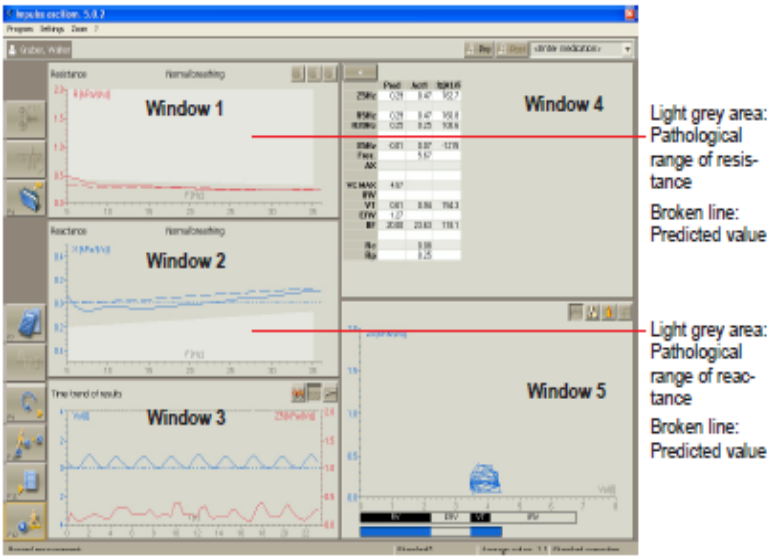


Figure 6. Screen display after evaluation of tidal breathing

Window 1: Resistance spectrum in the range of 5 to 35 Hz

Window 2: Reactance spectrum in the range of 5 to 35 Hz

Window 3: The following graphs can be displayed: Primary data time trend graph, Coherence spectrum, Power spectra for pressure and flow and Time trend of results.

Administer bronchodilator (Salbutamol 400mcg) via spacer and repeat the above procedures for post bronchodilator testing after 10-15 minutes.

Spirometry:

Spirometry was performed immediately after impulse oscillometry pre and post bronchodilator. The testing procedure for spirometry is shown in **Fig 5**.

Instructions for patients who are referred for spirometry:

- Avoid caffeine products and smoking on the day of testing
- Withhold short acting bronchodilators for 8 hours and long acting/oral bronchodilators for 24 hours before the scheduled time of appointment
- Patients can continue using other medicines as usual.

Final Report should contain:

1. Level of the effort and cooperation by the subject
2. Equipment functioning or malfunction
3. A statement about the technician's or therapist's assessment of test quality and specify which acceptability criteria were not met
4. Acceptability of the maneuver and reproducibility of FVC & FEV1

Spirometry testing procedure:

Check for contraindications –

No absolute contraindication exist but relative contraindications are

Hemoptysis of unknown origin

Pneumothorax

Unstable cardiovascular status

Thoracic, abdominal, cerebral aneurysm

Recent eye surgery

Presence of an acute disease that might interfere in test performance

Recent surgery of thorax or abdomen

Check for sputum AFB results (at least two samples) if suspected to have TB

Check whether patient has withheld the bronchodilators

Test preparation:

Check for calibration

Calibration procedure: has to be done on daily basis before starting the test or whenever there is doubt regarding machine functioning

Check patient's height and weight

Enter the patient details (Hosp. No., Age, height, weight, sex) in the computer and confirm it

Explain the procedure in their own language if possible if not call the patient's relative to make them understand.

Patient can stand or sit but he must be in a upright posture

Make the patient comfortable, loosen clothing and remove loose dentures

Important points during the procedure:

Mouth breathing

Importance of use of diaphragm and use of respiratory muscles during the test

Use of nose clip

Hold mouth piece with teeth and seal lips tightly around it

Breathing instructions:

Ask the patient to inhale to the maximum and blow out forcefully to the maximum and inhale back to the maximum

Ask the patient to breathe normally (TV) and at the end of normal exhalation ask the patient to inhale completely (IC) and blow out as fast and as possible and try to continue it till maximum (FVC) and then inhale back (FVCin). A flowchart for performing spirometry is shown in **Fig.8.**

For patients having severe obstruction and for patients whose IC is not good , ask the patient to breathe normally and breathe out slowly and completely after normal inhalation and then inhale up to the maximum and blow out forcefully and completely till the maximum and inhaled back

Exhalation should be like candle blowing

Maximum of up to 8 trials can be performed

Check points:

Whenever the inspiratory volume is more the expiratory volume in the flow volume loop check for proper preceding inspiration

If the expiratory volume is more than the inspiratory volume it may be due to poor inhalation or due to zeroing error (pneumotach zeroing should be done or calibration should be done to ensure the proper function of the device.

Acceptability:

Adequate inspiration before starting to exhale

No hesitation or false start

No cough during the early part of the forced expiration

No early termination of exhalation

No artifact due to tongue in the mouthpiece

An acceptable flow volume loop is shown in **Fig.7.**

Reproducibility:

Minimum of three trials should be taken.

The difference between the two largest FVC and FEV1 should be

Within 150ml for FVC greater than 1 liter

Within 100ml for FVC less than 1 liter

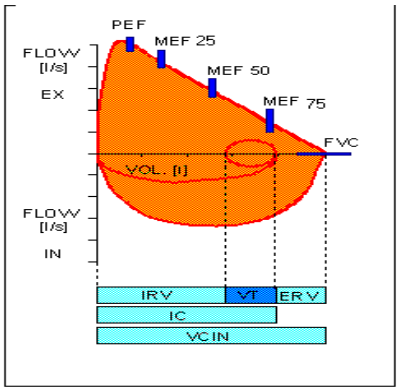


Figure 7. Acceptable flow volume loop

At least 6 seconds of exhalation and no cough in first second

Notch in the initial part indicates a cough or hesitant start. After the initial flow, the first peak appears and then the glottis is closed, leading to the notch flow restarts making a second peak. The test should be repeated.

No cough in first second

Blunt peak (Sand mound): such appearances indicates inadequate effort and the test needs to be repeated

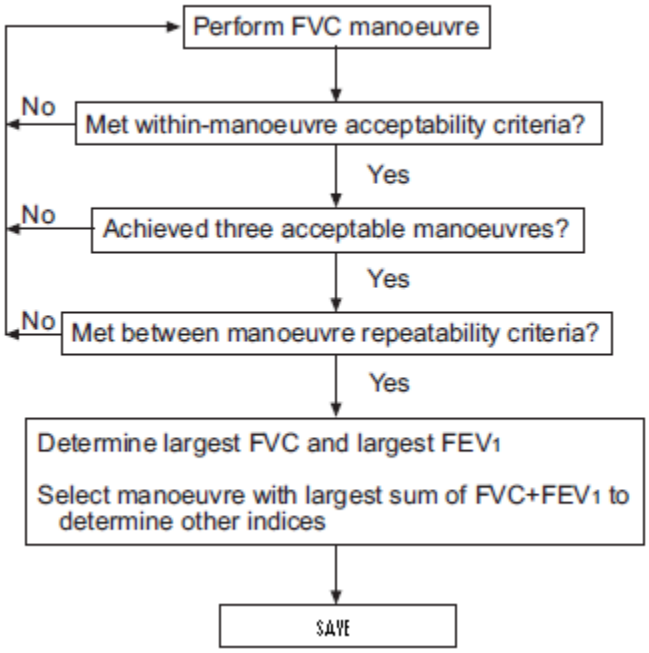


Figure 8. Flow chart for performing spirometry

Post-bronchodilator spirometry:

Determine the baseline FEV1

Administer 4 puffs of salbutamol via chambered devices

Repeat spirometry ≥ 10min and upto 15 min

A positive reversibility test shows an increase in FEV1 by more than 12% and at least by more than 200ml in comparison to baseline

5.4 Statistical analysis:

Data entry was done with Epidata software and statistical analysis was done with Statistical Package for Social Sciences (SPSS) software.

The sample size for patients with asthma was originally calculated as 606 and the sample size for normal individuals was originally calculated as 175 during the study period May 2013 to August 2014. The sample size required to show a correlation of 0.4 among asthma patients between FEV1 and R with 80% power, and an anticipated correlation of 0.3 with 5% level of significance was found to be 606 patients. Regression methods are shown in **Table 3.**

Table 3. Regression methods - Sample size for correlation coefficient analysis (testing against population value)

Sample correlation coefficient	0.4	0.4	0.4	0.4	0.4
Population correlation coefficient	0.2	0.25	0.3	0.35	0.45
Power (1- beta) %	80	80	80	80	80
Alpha error (%)	5	5	5	5	5
1 or 2 sided	2	2	2	2	2
Required sample size	164	280	606	2320	2109

Table 4. Regression methods - Sample size for correlation coefficient analysis (testing against population value)

Sample correlation coefficient	0.75	0.95	0.8	0.8	0.9	0.8	0.7
Population correlation coefficient	0.6	0.9	0.7	0.75	0.7	0.6	0.6
Power (1- beta) %	80	80	80	80	80	80	80
Alpha error (%)	5	5	5	5	5	5	5
1 or 2 sided	2	2	2	2	2	2	2
Required sample size	103	64	150	500	24	51	262

The sample size required to show a correlation of 0.9 among normal individuals between FEV1 and R5 with 80% power, and an anticipated correlation of 0.8 with 5% level of significance was found to be 175 subjects. Regression methods are shown in **Table 4.**

The sample size was calculated based on the primary objective which is to find out the significant bronchodilator reversibility as measured by Impulse oscillometry with Spirometry reversibility as the Gold standard. Classifying the patients as mild, moderate and severe is one of our secondary objectives and hence we have not calculated the sample size for each of the sub categories.

Correlation coefficient between the 2 methods was calculated by Spearman's correlation coefficient to assess the diagnostic accuracy between the two tests.

Mean and Standard Deviation was used to summarize each of the two methods. Comparing the pulmonary function tests by both methods across normal and diseased individuals was done by using T test and Mann Whitney U test. Grades of severity were compared using Anova test. Variability was assessed using standard deviations and Intra Class Correlation (ICC) was calculated. Correlation coefficients between the tests were calculated. Signed Rank test was used to find the significance across the tests. Receiver-operator characteristics analysis was done between cases and controls with impulse oscillometry parameters to find out the sensitivity and specificity of the test.

6. RESULTS

A total of 650 patients with asthma and 188 healthy individuals were screened initially, and of the 650 patients, 14 patients were excluded as they were unable to perform spirometry, and of the 188 healthy individuals, 2 had bronchial asthma, 5 were unable to perform spirometry and 4 did not complete the test. Finally a total of 636 patients with asthma and 177 healthy individuals were included in the study.

6.1 Demographics:

Details of the remaining 636 patients with asthma and 177 healthy individuals are given in **Table 5**. In the group which had patients with asthma, there were totally 338 (53.14%) males and 298 (46.8%) females. The mean age in the group containing patients with asthma was 40.5 (standard deviation, 26.96). In the group which had healthy individuals, there were totally 90 (50.8%) males and 87 (49.15%) females. The mean age in the group which contained healthy individuals was 37.48 (standard deviation, 12.13). The age distribution in the group which had patients with asthma and in the group with healthy individuals is shown in **Fig 9.**

Table 5. Baseline lung function measurements and demographics in the study and control groups

	Patients N = 636	Healthy volunteers n = 177	Difference, 95% CI, P
Age(yr)*	40.53 (26.96)	37.48 (12.13)	-3.05 (-7.14 – 1.03), 0.143
Male (Female)	338 (298)	90 (87)	P- 0.588
FEV1%predicted*	68.34 (0.82)	85.9 (1.07)	-17.32 (-20.58 - -14.05), <0.001
FEV1(Liter)**	1.97 (0.79)	2.49 (0.66)	-0.52 (-0.65 - -0.39), <0.001
R5 %predicted*	202.19 (3.69)	158.53 (4.37)	43.65 (29.17 – 58.13), <0.001
R5 kPa/(L/s)**	0.64 (0.32)	0.5 (0.21)	0.14 (0.09 -0.19), <0.001

FEV1 – forced expiratory volume in 1 second; R5 – resistance at 5 Hz

*Mean (SD)

**Mean (SEM)

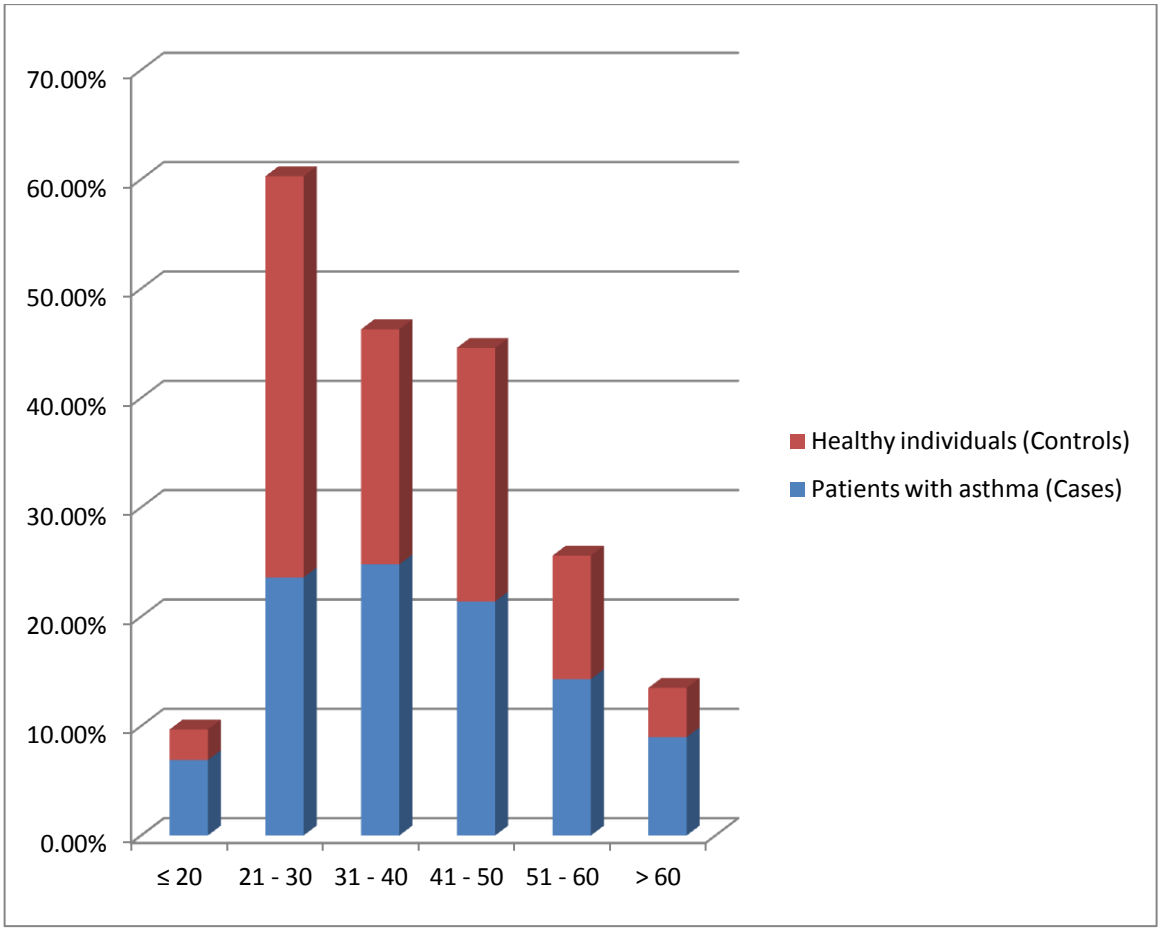


Figure 9. Age distribution among cases and controls

6.1.1Baseline lung function measurements:

Spirometry:

In patients with asthma, the mean pre bronchodilator FEV1% predicted was found to be 68.34% [standard error of mean (SEM), 0.82] as shown in **Table 2.** In the healthy individuals the mean pre bronchodilator FEV% predicted was 85.69% [standard error of mean (SEM), 1.07]. In patients with asthma the mean pre bronchodilator FEV1 in liters was 1.97 liters (standard deviation, 0.79) and in healthy individuals the mean pre bronchodilator FEV1 in liters was 2.49 liters (standard deviation, 0.66).

Impulse oscillometry:

In patients with asthma, the pre bronchodilator R5% predicted was 202.19% [standard error of mean (SEM), 3.69] and in healthy individuals the mean pre bronchodilator R5% predicted was 158.53 [standard error of mean (SEM), 4.37]. In the group which had patients with asthma, the mean pre bronchodilator R5 kPa/(L/s)was found to be 0.64 kPa/(L/s) (standard deviation, 0.32) and in the group which had healthy individuals, the mean pre bronchodilator R5 kPa/(L/s) was found to be 0.5 (standard deviation, 0.21).

Significant reversibility of FEV1 (forced expiratory volume in 1 second) by spirometry after administration of bronchodilator is defined as > 12% and > 200ml. (4) There is no recommended value of significant reversibility of R5 by impulse oscillometry that has been proposed in any guidelines. R5 represents the total resistance of the respiratory system (extrathoracic, central and peripheral airways resistance). (61) In the group which had patients with asthma, a Receiver-operator characteristics (ROC) analysis was performed to calculate the specificity, sensitivity and cut off value of impulse oscillometry parameter of R5% bronchodilator reversibility (R5% post bronchodilator – R5% pre bronchodilator / R5% pre bronchodilator) in assessing significant post bronchodilator reversibility as compared to spirometry parameter FEV1. It showed a sensitivity of 61.8%, specificity of 68% at a R5% bronchodilator reversibility value of -20.75 with an area under the curve (AUC) of 0.69. The Receiver-operator characteristic (ROC) curve and the details are shown in **Fig 10 and Table 6.**

In the group which had patients with asthma, out of the 636 patients, a total of 213 (33.5%) patients had significant reversibility of FEV1 by spirometry after administration of bronchodilator and 423 (66.5%) had no significant reversibility of FEV1 by spirometry after administration of bronchodilator. In the group which had healthy individuals, out of the 177 healthy individuals, only 2 (3.5%) had significant reversibility of FEV1 by spirometry after administration of bronchodilator and 175 (96.5%) of them had no significant reversibility of FEV1 by spirometry after administration of bronchodilator, shown in **Fig 11.**

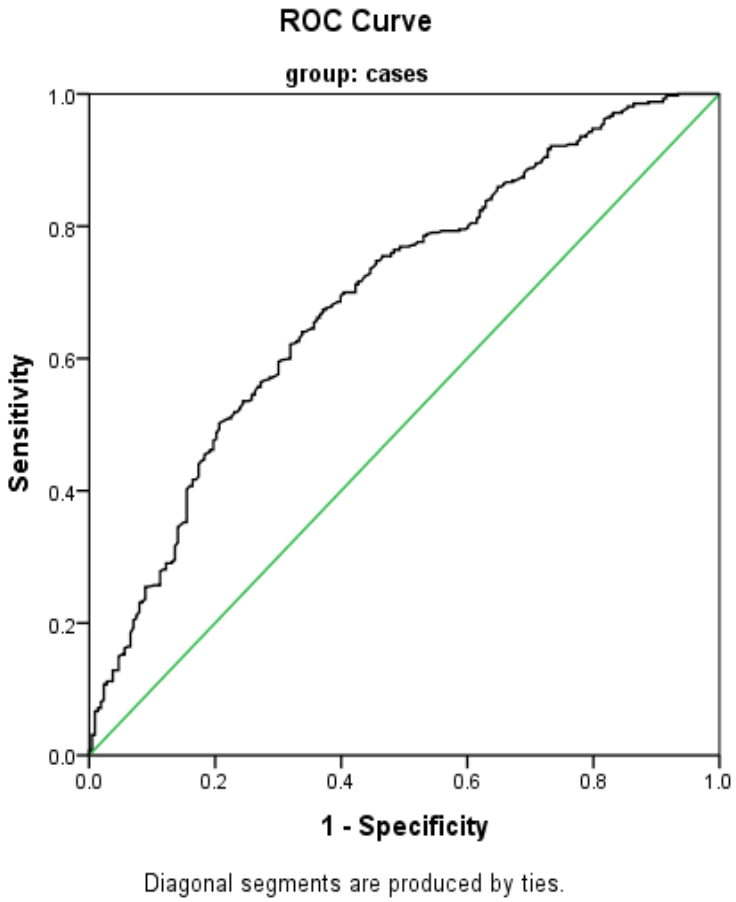


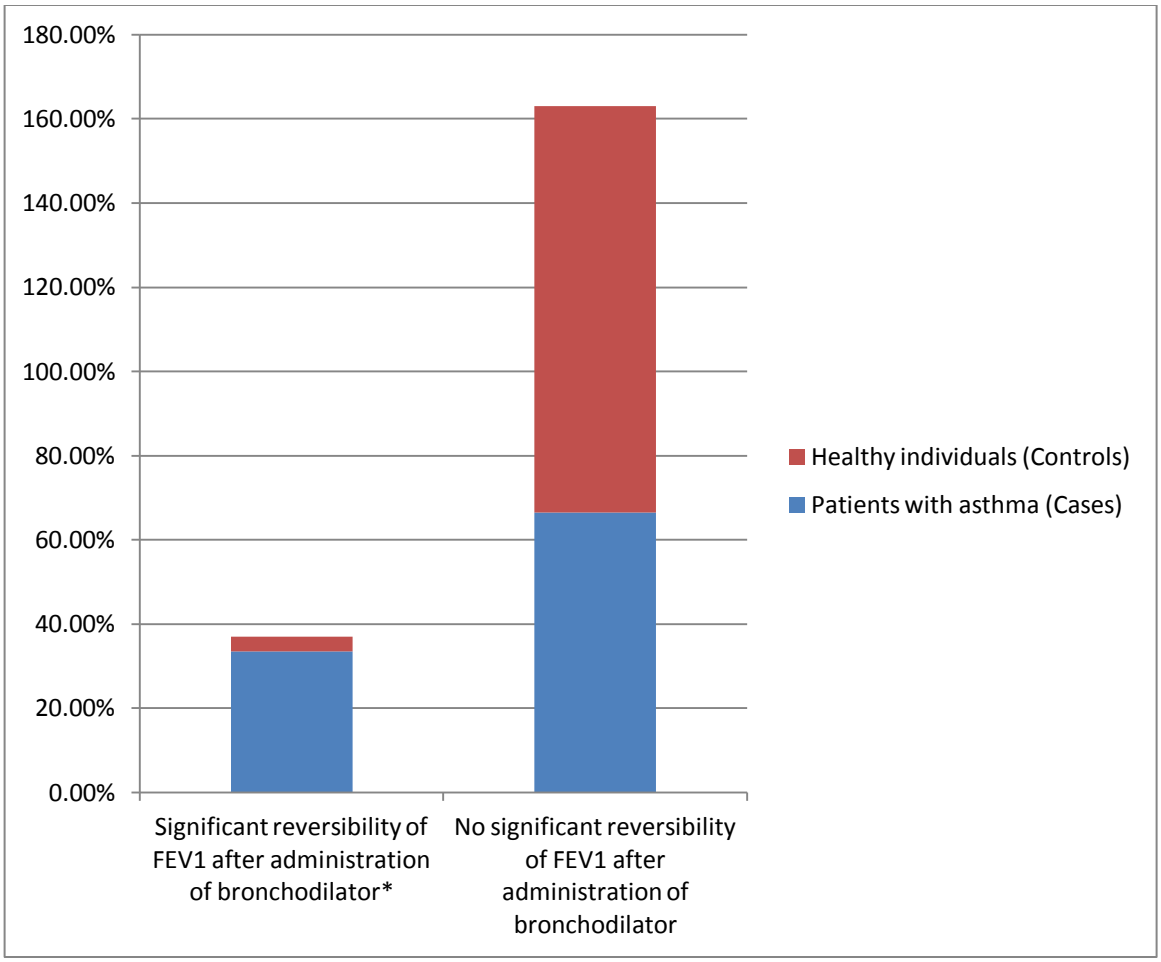
Figure 10. ROC curve for sensitivity and specificity of IOS parameter R5% bronchodilator reversibility*

* R5% post bronchodilator - R5% pre bronchodilator / R5% pre bronchodilator

Table 6. Specificity, sensitivity, cut off value and AUC of R5% bronchodilator reversibility* by impulse oscillometry

	Sensitivity	Specificity	AUC	Cut off value
R5% bronchodilator reversibility*	62.1%	68.1%	0.695	**-20.75**

* R5% post bronchodilator - R5% pre bronchodilator / R5% pre bronchodilator



***** >12% and 200ml change in FEV1 after administration of bronchodilator

Figure 11. Significant reversibility of FEV1 in cases and controls

The correlation coefficient between the post bronchodilator R5% (R5% post bronchodilator – R5% pre bronchodilator / R5% pre bronchodilator) measured by impulse oscillometry and FEV% bronchodilator reversibility (FEV1% post bronchodilator – FEV% pre bronchodilator / FEV% pre bronchodilator) reversibility measured by spirometry was - 0.334 ($p < 0.001$) in patients who had asthma and -

0.220 (p - 0.003) in the healthy individuals. The scatter plot of the above relationship is shown in **Fig 12 and Fig 13.**

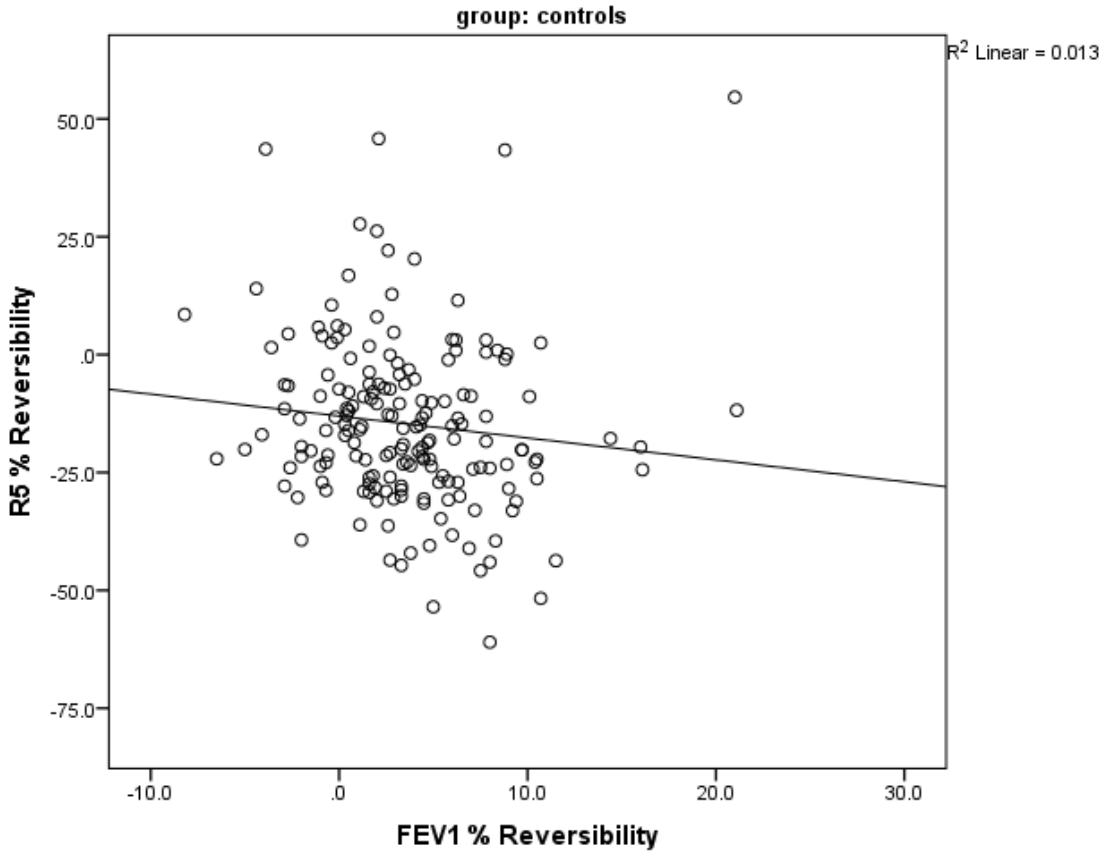


Figure 12. Scatterplot for the correlation between R5% bronchodilator reversibility* and FEV1% bronchodilator reversibility in the healthy individuals**

*R5% post bronchodilator – R5% pre bronchodilator / R5% pre bronchodilator

** FEV1% post bronchodilator – FEV% pre bronchodilator / FEV% pre bronchodilator

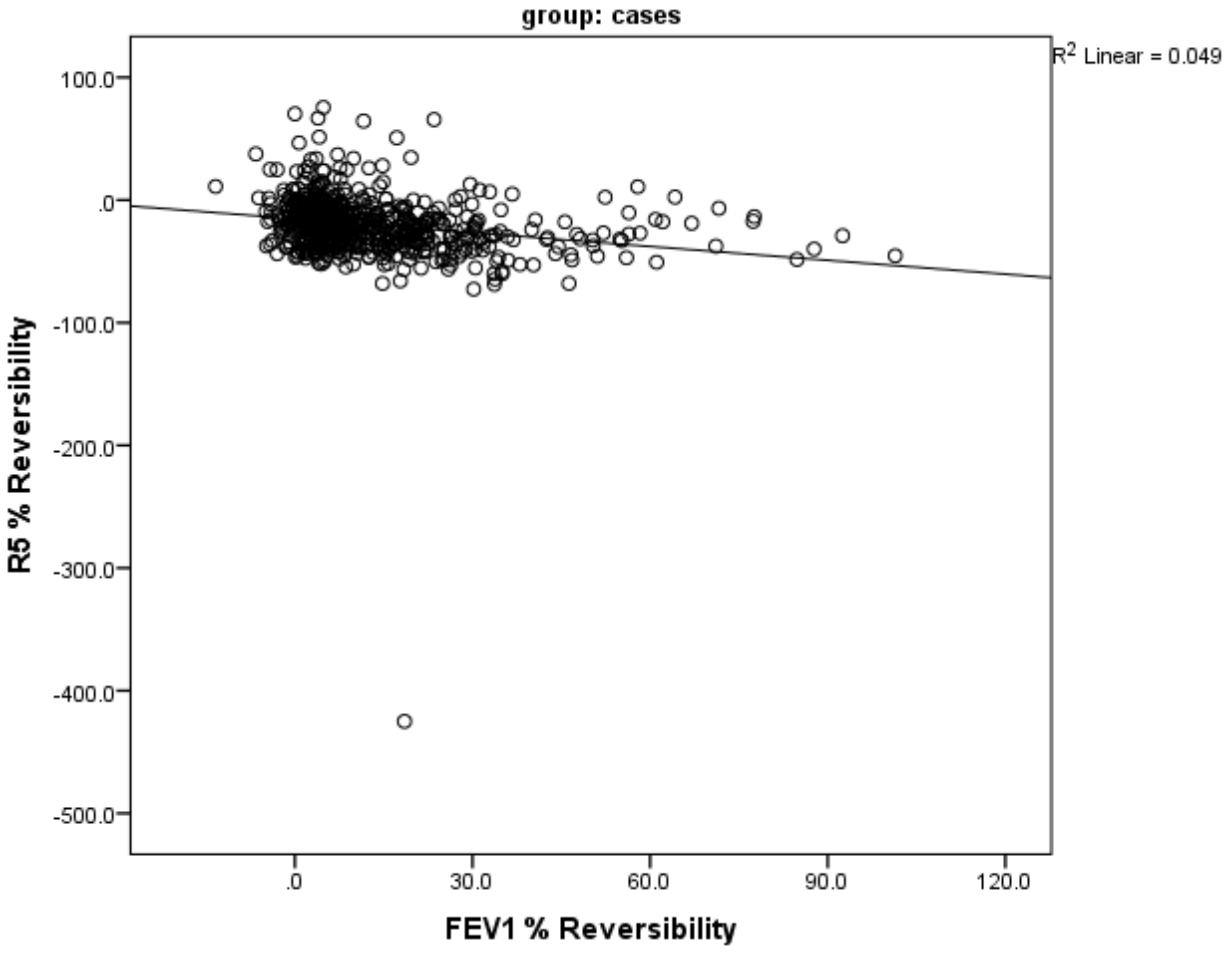


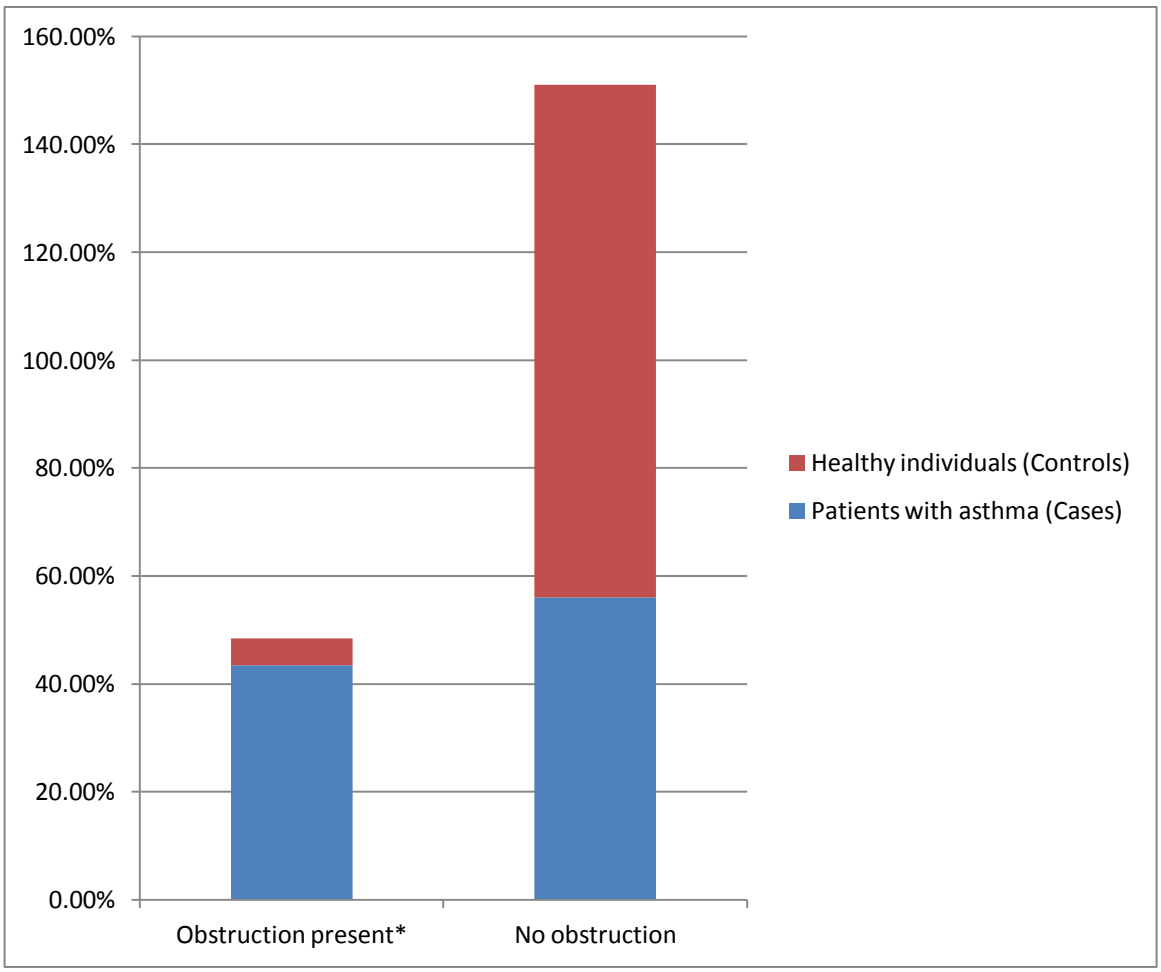
Figure 13. Scatterplot for the correlation between R5% bronchodilator reversibility* and FEV1% bronchodilator reversibility in patients with asthma**

*R5% post bronchodilator – R5% pre bronchodilator / R5% pre bronchodilator

** FEV1% post bronchodilator – FEV% pre bronchodilator / FEV% pre bronchodilator

Airflow limitation or airway obstruction is defined as an FEV1/FVC ratio of < 0.7 by spirometry. (4) Further airway obstruction is divided into mild, moderate and severe obstruction based on the pre bronchodilator FEV% predicted values of patients who have obstruction by the above criteria. Mild obstruction is defined as pre bronchodilator FEV1% predicted > 80%, moderate obstruction is a pre bronchodilator FEV1% predicted 80% – 60% and severe obstruction is a pre bronchodilator FEV1% predicted of < 60% in patients who have a FEV1/FVC ratio of < 0.7 by spirometry.(5) The second objective of this study was to correlate the values of pre bronchodilator FEV% predicted by spirometry with pre bronchodilator R5% predicted by impulse oscillometry and pre bronchodilator FEV1 (liters) by spirometry with pre bronchodilator R5 kPa/(L/s) by impulse oscillometry in patients who have a FEV1/FVC ratio of < 0.7 by spirometry.

In the group which had patients with asthma, out of 622 patients who had information about obstruction in spirometry (14 – missing data on obstruction), 271 (43.5%) patients had airway obstruction on spirometry and 351 (56.5%) did not have airway obstruction on spirometry. In the group which had healthy individuals, 9 individuals (5%) were found to have airway obstruction on spirometry and 168 (95%) did not have airway obstruction on spirometry, shown in **Fig 14.** Out of the 280 patients who had airway obstruction, 19 (6.7%) had mild airway obstruction, 83 (29.6%) had moderate airway obstruction and 178 (63.5%) had severe airway obstruction, shown in **Fig 15.**



***** FEV1/FVC ratio < 0.7

Figure 14. Airway obstruction in patients and controls

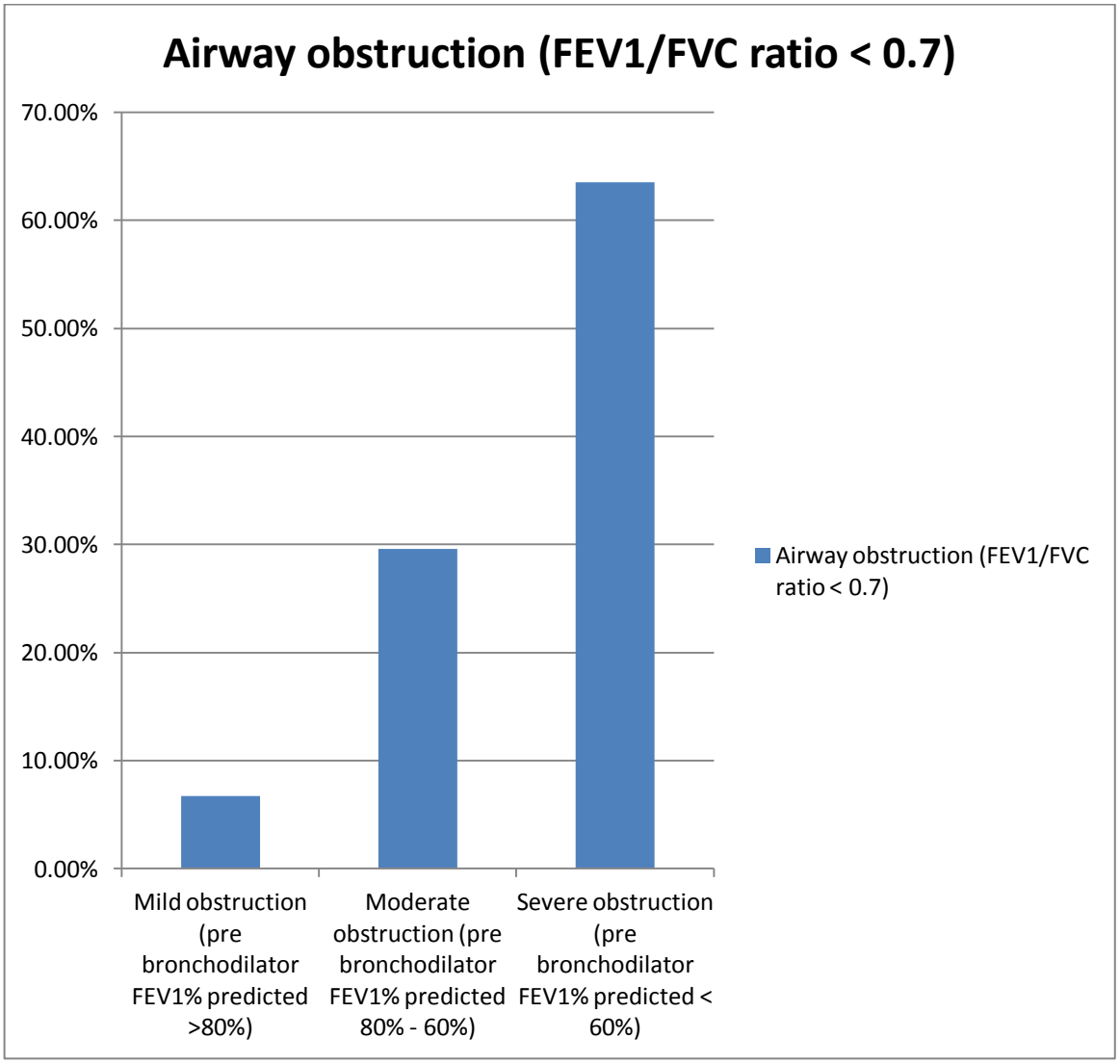


Figure 15. Grades of airway obstruction severity in patients with asthma

Among the patients who had asthma with airway obstruction (FEV1/FVC ratio < 0.7) by spirometry, the mean pre bronchodilator FEV1% predicted was 52.71% (standard deviation, 17.66) and in the patients who did not have airway obstruction by spirometry, the mean pre bronchodilator FEV% predicted was 80.7% (standard deviation, 13.44). Among the patients who had airway obstruction by spirometry, the mean pre bronchodilator FEV1 liters was 1.44 liters (standard deviation, 0.63) and among the patients who did not have airway obstruction by spirometry, the mean pre bronchodilator FEV1 in liters was 2.39 liters (standard deviation, 0.64). R5 is the respiratory system resistance at 5 Hz which represents the total resistance of the respiratory system which is measured by impulse oscillometry. In the patients who had airway obstruction by spirometry, the mean pre bronchodilator R5% predicted was found to be 250.34% (standard deviation,) and in the patients who did not have airway obstruction by spirometry, the mean pre bronchodilator R5% predicted by impulse oscillometry was found to be 164.69% (standard deviation, 60.53). In patients who had airway obstruction by spirometry, the pre bronchodilator R5 kPa/(L/s) was 0.81 kPa/(L/s) (standard deviation, 0.38) and in patients who did not have airway obstruction by spirometry, the mean pre bronchodilator R5 kPa/(L/s) was 0.51 kPa/(L/s) (standard deviation, 0.21) as shown in **Table 7.**

Table 7. Values of impulse oscillometry parameters in patients with and without obstruction*

Parameter	Obstruction*		No obstruction		P
	Range	Median Mean ± SD	Range	Median Mean ± SD	
FEV1% predicted (Pre bronchodilator)	13.6 – 109.1	53 52.71 ± 17.66	31.9 – 124.1	80.9 80.7 ± 13.44	0.001
FEV1 (Liter) (Pre bronchodilator)	0.29 – 3.46	1.36 1.44 ± 0.63	0.73 – 5.1	2.37 2.39 ± 0.64	0.019
R5% predicted (Pre bronchodilator)	0.19 – 2.28	0.72 0.81 ± 0.38	0.2 – 2.21	0.47 0.51 ± 0.21	0.001
R5 kPa/(L/s) (Pre bronchodilator)	72.7 – 674.4	232.5 250.34 ± 106.19	58.7 – 598.2	152.75 164.69 ± 60.53	0.011

FEV1 – forced expiratory volume in 1 second; R5 – resistance at 5 Hz; FVC – forced vital capacity

*Obstruction – FEV1/FVC ratio < 0.7

Among the patients who had airway obstruction (FEV1/FVC ratio < 0.7) by spirometry, the patients who had a mild (pre bronchodilator FEV1% predicted > 80%) airway obstruction were found to have a mean pre bronchodilator FEV1% predicted of 87.19% (standard deviation, 6.51), mean pre bronchodilator FEV1 (liters) of 2.33 (standard deviation, 0.53), mean pre bronchodilator R5% predicted of 141.6% (standard deviation, 47.51) and mean pre bronchodilator R5 kPa/(L/s) of 0.46 (standard deviation, 0.19). In patients who had moderate (pre bronchodilator FEV1% predicted 8% - 60%), mean pre bronchodilator FEV1% predicted was 68.2% (standard deviation, 5.7), mean pre bronchodilator FEV1 (liters) was 1.96 (standard deviation, 0.52), mean pre bronchodilator R5% predicted was 212.66% (standard deviation, 86.15) and mean) pre bronchodilator R5 kPa/(L/s was 0.67 (standard deviation, 0.3). In patients who had severe (pre bronchodilator FEV1% predicted < 60%) airway obstruction, the mean pre bronchodilator FEV1% predicted was 42.49% (standard deviation, 11.5), mean pre bronchodilator FEV1 (liters) 1.12 (standard deviation, 0.42), mean pre bronchodilator R5% predicted was 279.27% (standard deviation, 105.49) and mean pre bronchodilator R5 kPa/(L/s) was 0.91 (standard deviation, 0.38), as shown in **Table 8.**

Table 8. . Values of impulse oscillometry and spirometry parameters in patients with mild*, moderate and severe*** obstruction**

	Mild obstruction*	Moderate obstruction**	Severe obstruction***
FEV1% predicted (pre bronchodilator)	87.19 ± 6.51	68.2 ± 5.7	42.49 ± 11.5
FEV1(liters) predicted (pre bronchodilator)	2.33 ± 0.53	1.96 ± 0.52	1.12 ± 0.42
R5% predicted (pre bronchodilator)	141.16 ±47.51	212.66 ± 86.15	279.27 ± 105.49
R5 kPa/(L/s) (pre bronchodilator)	0.46 ±0.19	0.67 ± 0.3	0.91 ± 0.38

*pre bronchodilator FEV1% predicted > 80%

**pre bronchodilator FEV1% predicted 80% – 60%

***pre bronchodilator FEV1% predicted < 80%

The correlation coefficients between pre bronchodilator R5 kPa/(L/s) measured by impulse oscillometry and pre bronchodilator FEV1 (L) measured by spirometry was found to be – 0.597 ($p < 0.001$) in the control group and – 0.619 ($p<0.001$) in the patient group. The scatterplots of the above correlation are shown in **Fig 16 and Fig 17.** The correlation coefficient between pre bronchodilator R5% predicted measured by impulse oscillometry and pre bronchodilator FEV1% predicted measured by spirometry was found to be -0.393 ($p<0.001$) in the control group and – 0.583 ($p<0.001$) in the patient group. The scatterplots for the above relationships are shown in **Fig 18 and Fig 19.**

Receiver-operator characteristics (ROC) analysis was done to calculate the specificity, sensitivity and cut off values for impulse oscillometry parameters. Receiver-operator characteristics (ROC) analysis was done to look for sensitivity, specificity, area under the curve (AUC) and cut off value of pre bronchodilator R5 kPa/(L/s) and pre bronchodilator R5% predicted in the patients who had asthma. ROC curve and details shown in **Fig 20, Table 9 and Fig 21, Table 10** respectively.

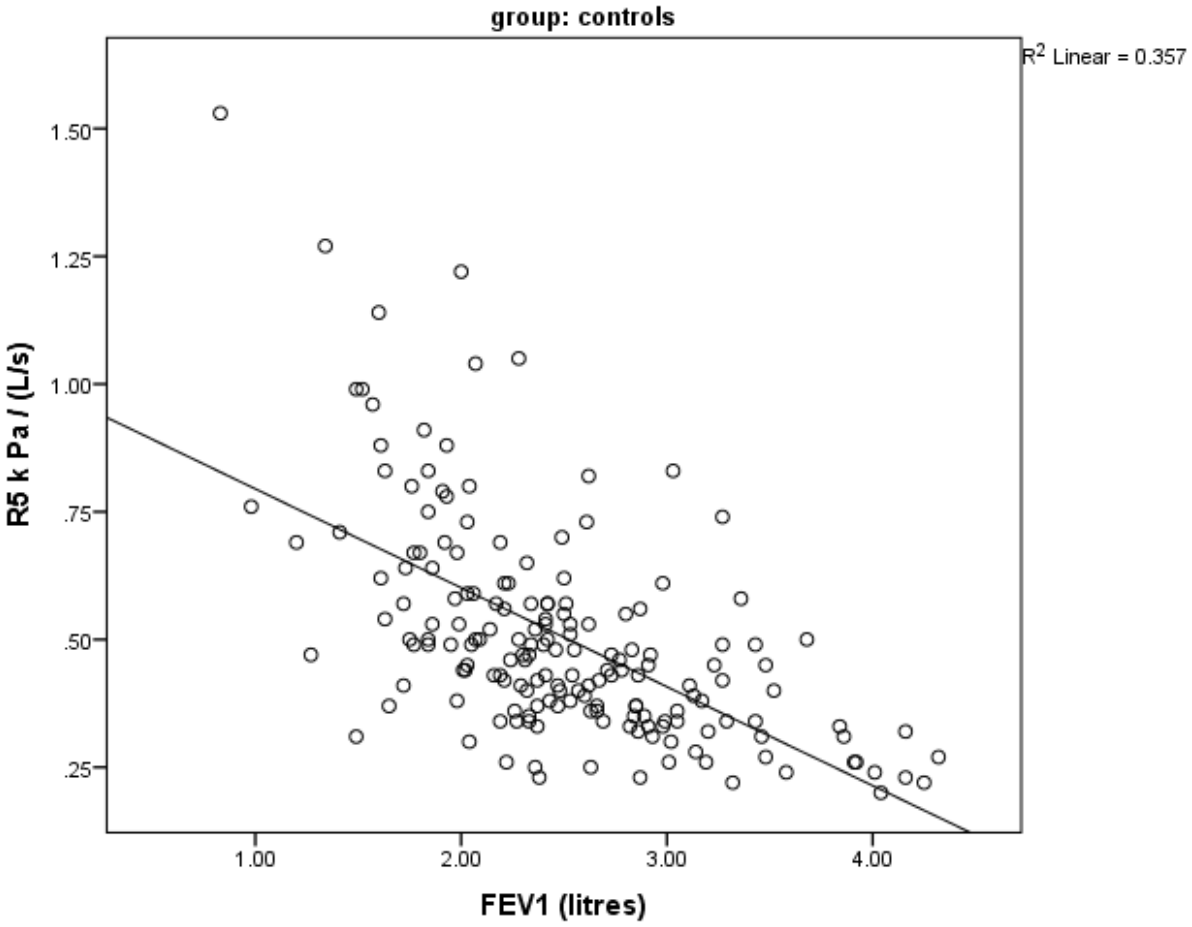


Figure 16. Scatterplot for the correlation between pre bronchodilator R5 kPa/(L/s) with pre bronchodilator FEV1 (Liters) in the control group

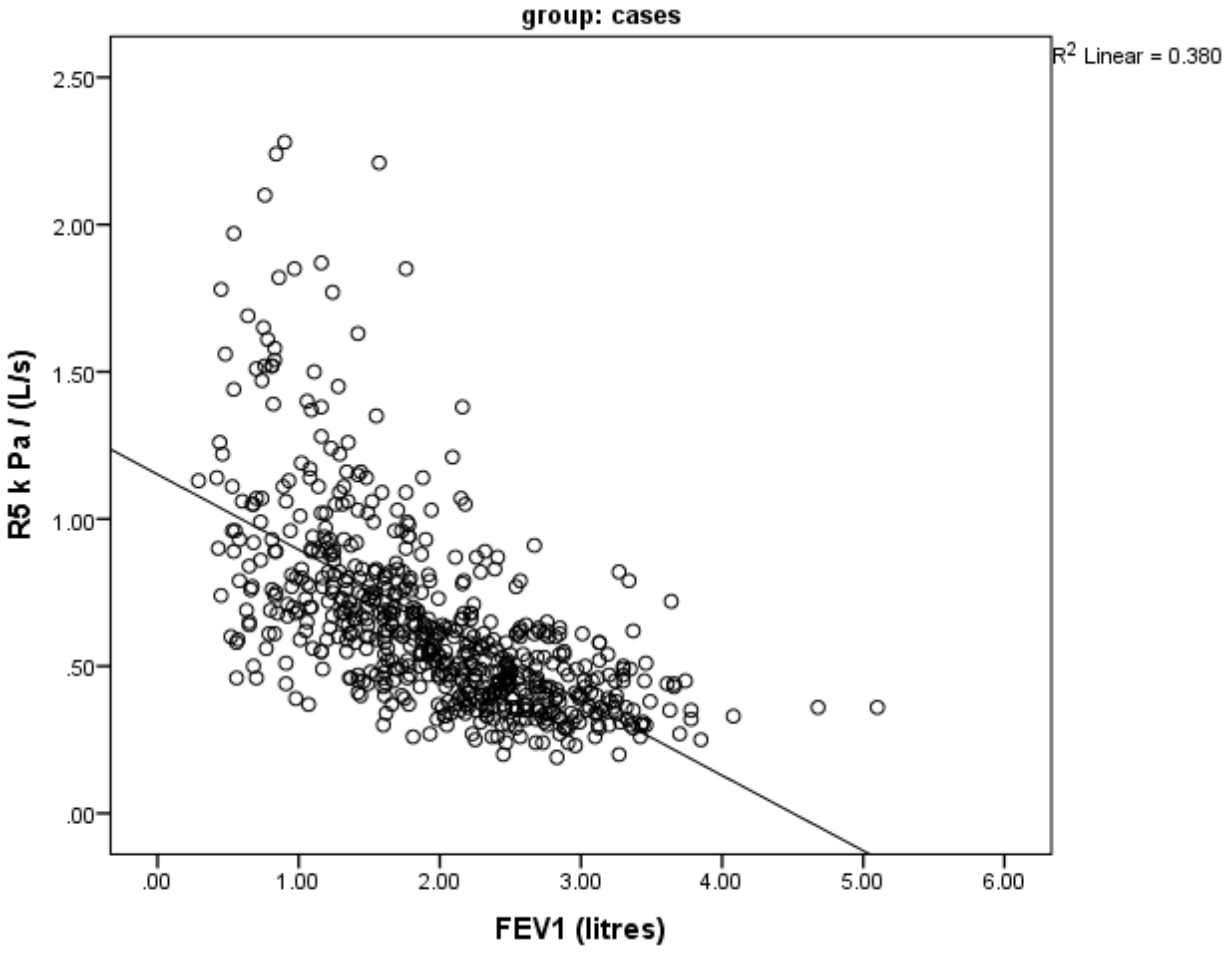


Figure 17. Scatterplot for the correlation between pre bronchodilator R5 kPa/(L/s) with pre bronchodilator FEV1 (Liters) in the patient group

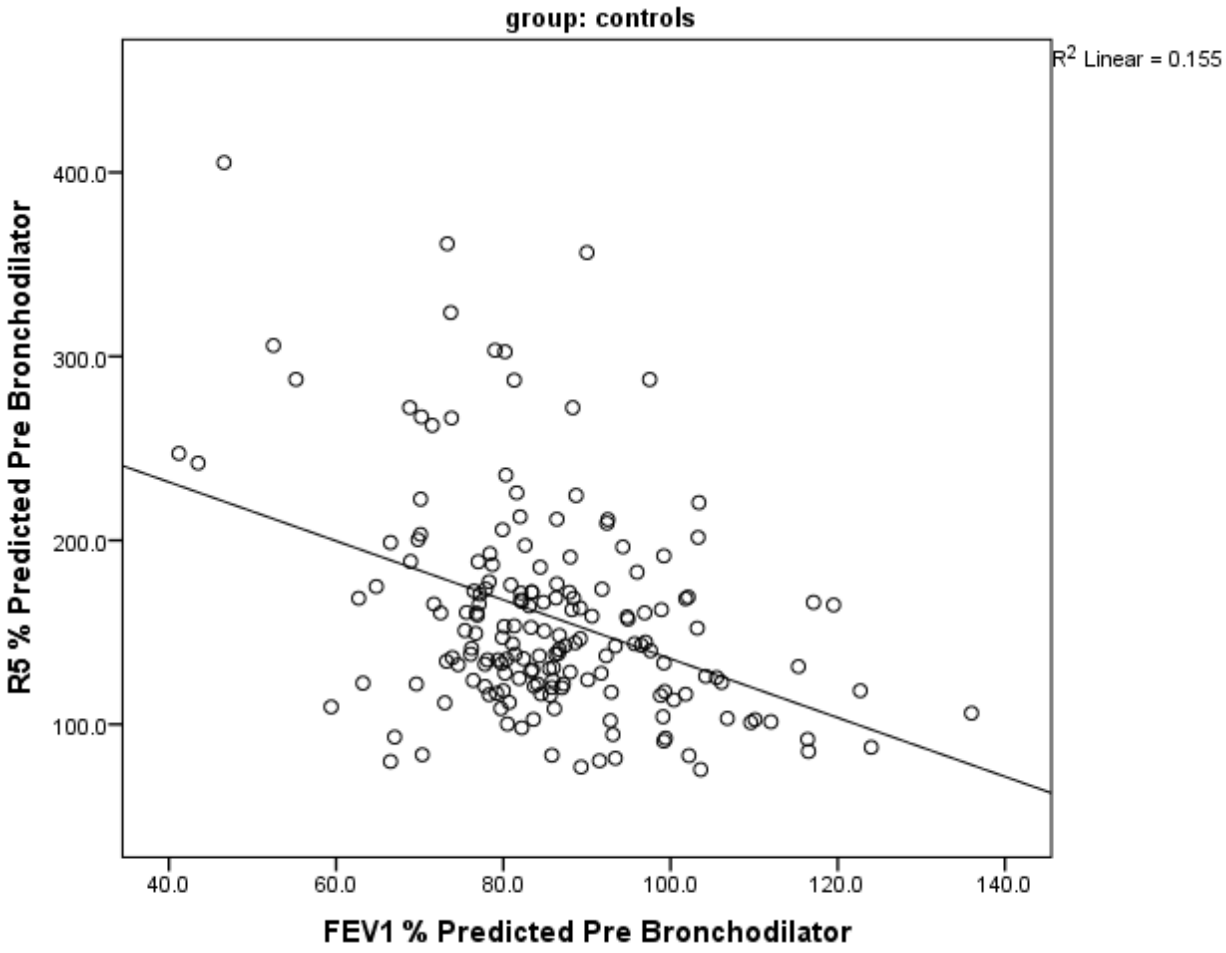


Figure 18. Scatterplot for the correlation between pre bronchodilator R5% predicted and pre bronchodilator FEV1% predicted in the control group

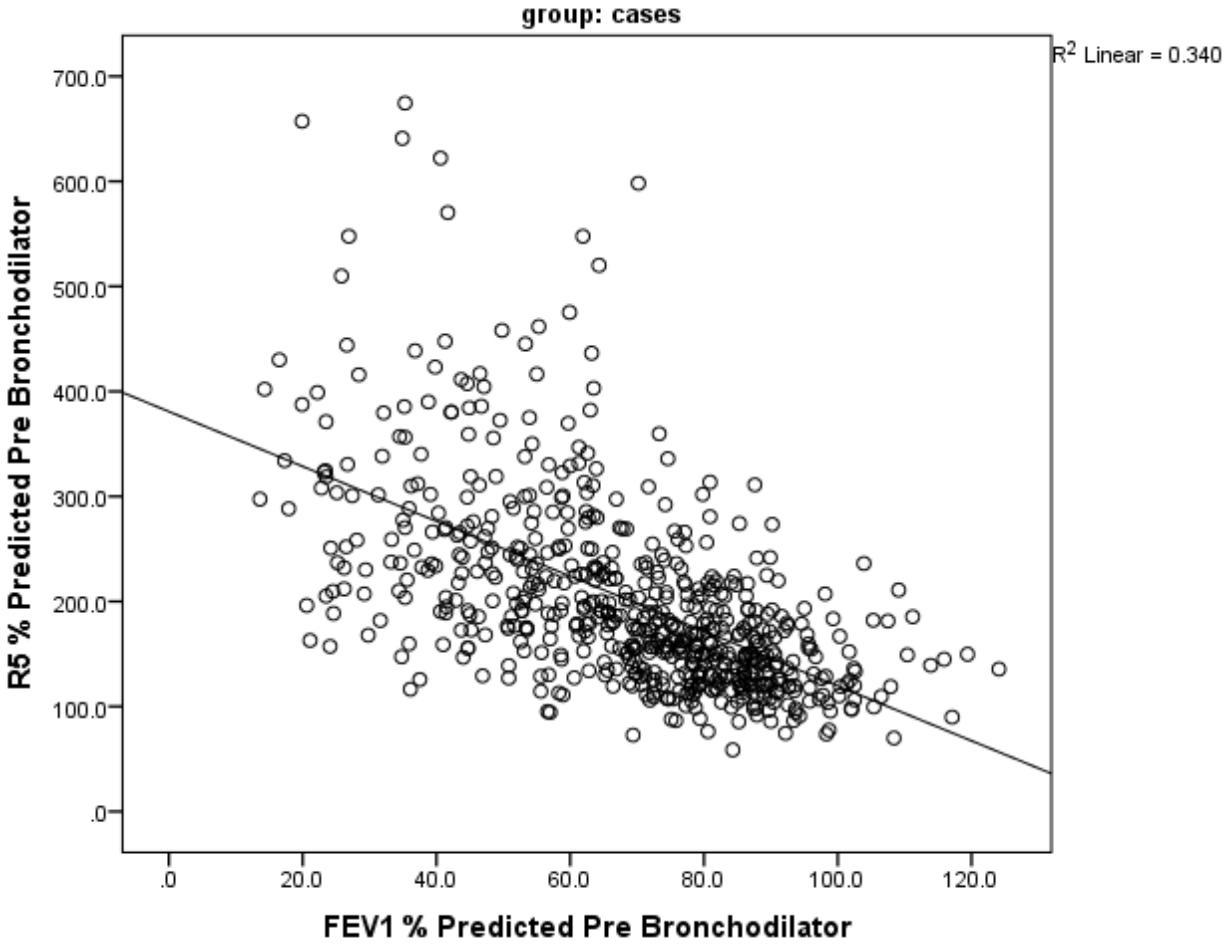


Figure 19. Scatterplot for the correlation between pre bronchodilator R5% predicted and pre bronchodilator FEV1% predicted in the patient group

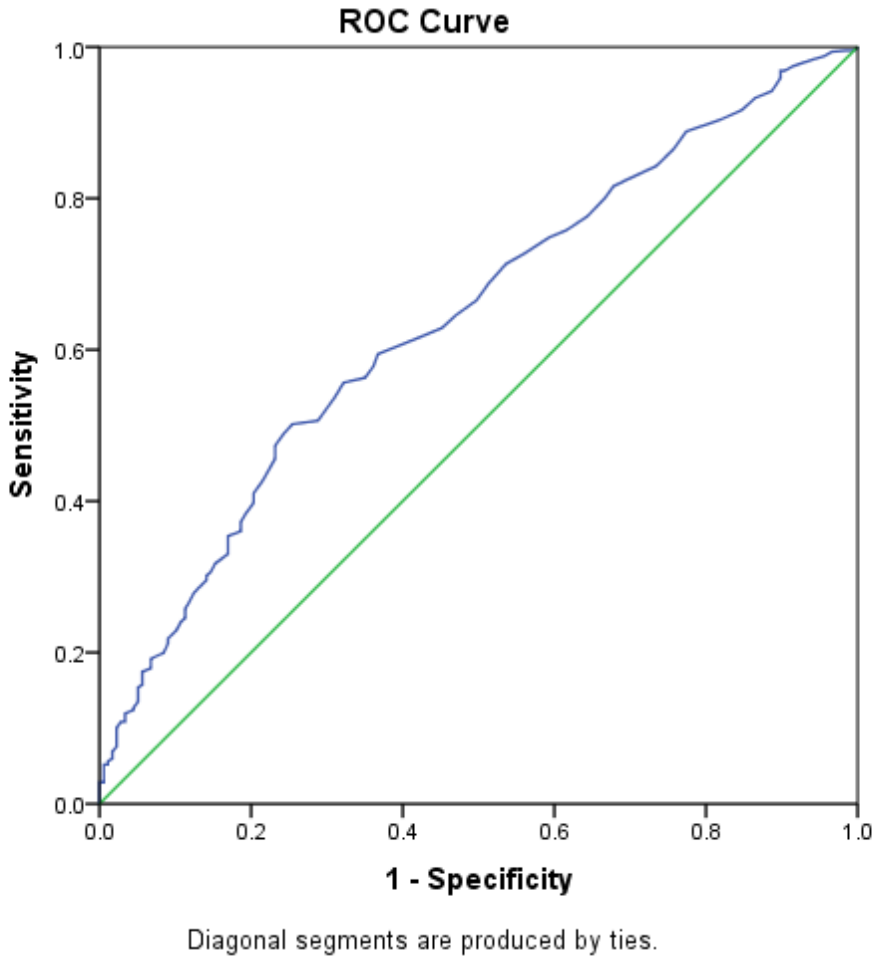


Figure 20. ROC curve for sensitivity and specificity of impulse oscillometry parameter pre bronchodilator R5 kPa/(L/s) in patients with a clinical diagnosis of asthma as compared to healthy individuals

Table 9. Sensitivity, specificity, cut off value and AUC of impulse oscillometry parameter pre bronchodilator R5 kPa/(L/s) in patients with a clinical diagnosis of asthma as compared to healthy individuals

	Sensitivity	Specificity	AUC	Cut off value
R5 kPa/(L/s)*	59.4%	64.3%	0.641	0.505

*pre bronchodilator

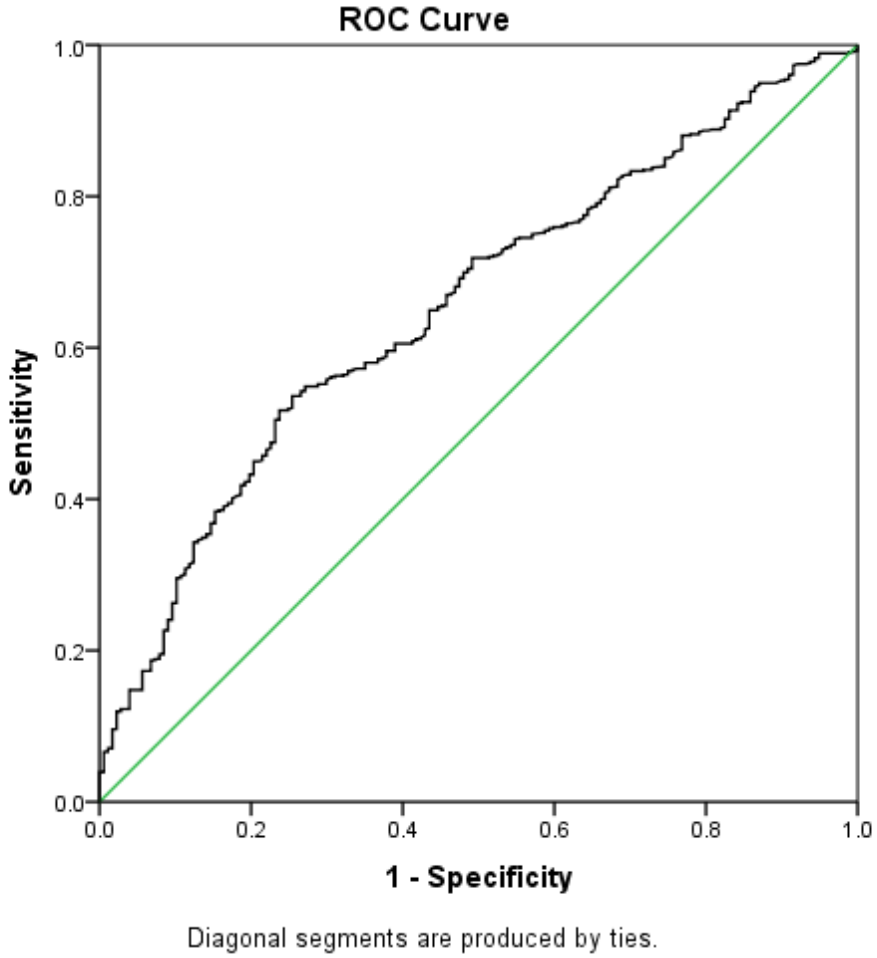


Figure 21. ROC curve for sensitivity and specificity of impulse oscillometry parameter pre bronchodilator R5% predicted in patients with a clinical diagnosis of asthma as compared to healthy individuals

Table 10. Sensitivity, specificity, cut off value and AUC of impulse oscillometry parameter pre bronchodilator R5% predicted in patients with a clinical diagnosis of asthma as compared to healthy individuals

	Sensitivity	Specificity	AUC	Cut off value
R5% predicted*	59.3%	62.1%	0.654	162.9%

*pre bronchodilator

Receiver-operator characteristics (ROC) analysis was done to look for sensitivity, specificity, area under the curve (AUC) and cut off value of pre bronchodilator R5 kPa/(L/s) and pre bronchodilator R5% predicted in patients with asthma who had airway obstruction (FEV1/FVC ratio < 0.7) by spirometry. ROC curve and details are shown in **Fig 22, Table 11 and Fig 23 , Table 12** respectively.

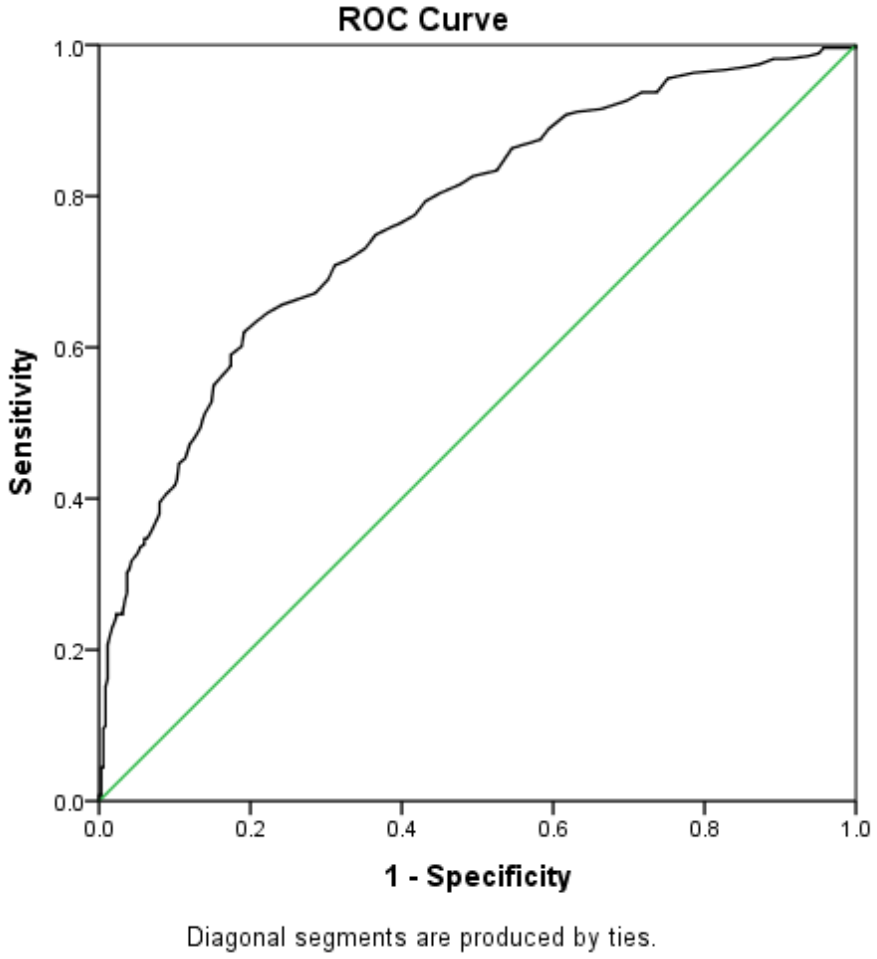


Figure 22. ROC curve for sensitivity and specificity of impulse oscillometry parameter pre bronchodilator R5 kPa/(L/s) in patients with asthma who had airway obstruction (FEV1/FVC ratio < 0.7) by spirometry

Table 11. Sensitivity, specificity, cut off value and AUC of impulse oscillometry parameter pre bronchodilator R5 kPa/(L/s) in patients with asthma who had airway obstruction (FEV1/FVC ratio < 0.7) by spirometry

	Sensitivity	Specificity	AUC	Cut off value
R5 kPa/(L/s)*	72%	66.6%	0.77	0.565

***pre bronchodilator**

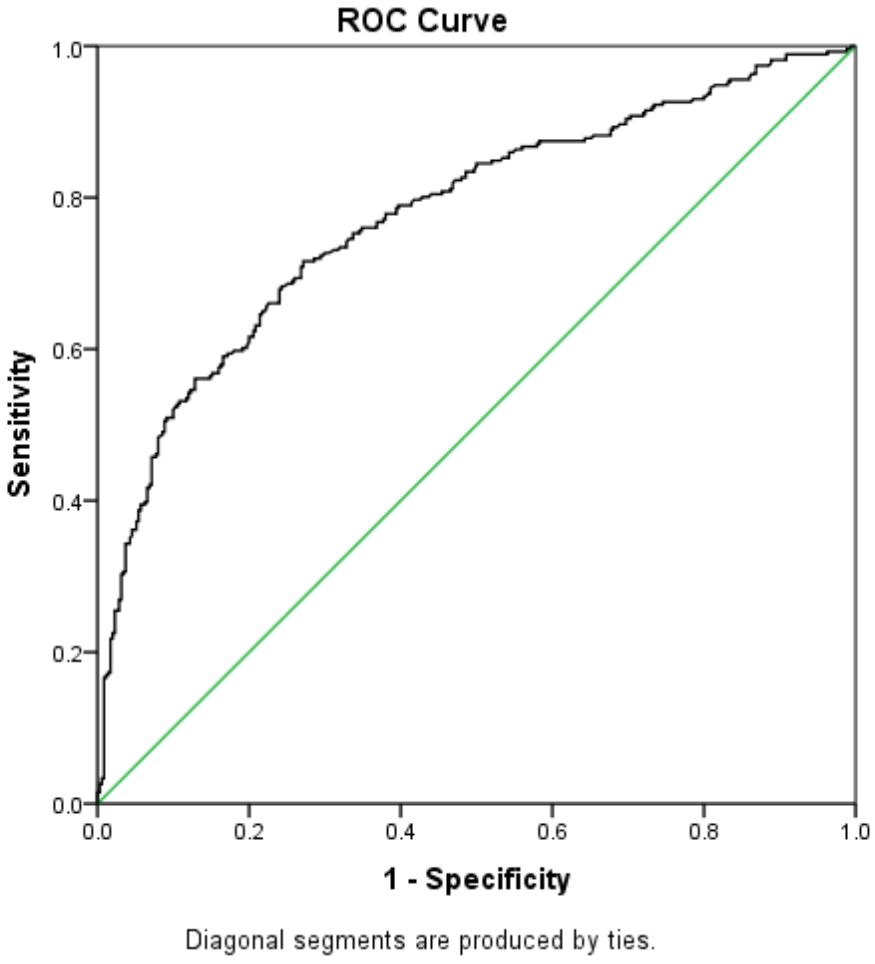


Figure 23. ROC curve for sensitivity and specificity of impulse oscillometry parameter pre bronchodilator R5% predicted in patients with asthma who had airway obstruction (FEV1/FVC ratio < 0.7) by spirometry

Table 12. Sensitivity, specificity, cut off value and AUC of impulse oscillometry parameter pre bronchodilator R5% predicted in patients with asthma who had airway obstruction (FEV1/FVC ratio < 0.7) by spirometry

	Sensitivity	Specificity	AUC	Cut off value
R5% predicted *	72.7%	70%	0.776	180.8%

***pre bronchodilator**

Receiver-operator characteristics (ROC) analysis was done to look for sensitivity, specificity, area under the curve (AUC) and cut off value of R5 kPa/(L/s) pre bronchodilator and pre bronchodilator R5% predicted in patients with asthma who had severe (pre bronchodilator FEV1% < 60%) airway obstruction (FEV1/FVC ratio < 0.7) by spirometry. ROC curve and details are shown in **Fig 24, Table 13 and Fig 25 , Table 14** respectively.

Table 13. Sensitivity, specificity, cut off value and AUC of impulse oscillometry parameter pre bronchodilator R5 kPa/(L/s) in patients with asthma who had severe (pre bronchodilator FEV1%<60%) airway obstruction (FEV1/FVC ratio < 0.7) by spirometry

	Sensitivity	Specificity	AUC	Cut off value
R5 kPa/(L/s) *	67.8%	68%	0.733	0.685

***pre bronchodilator**

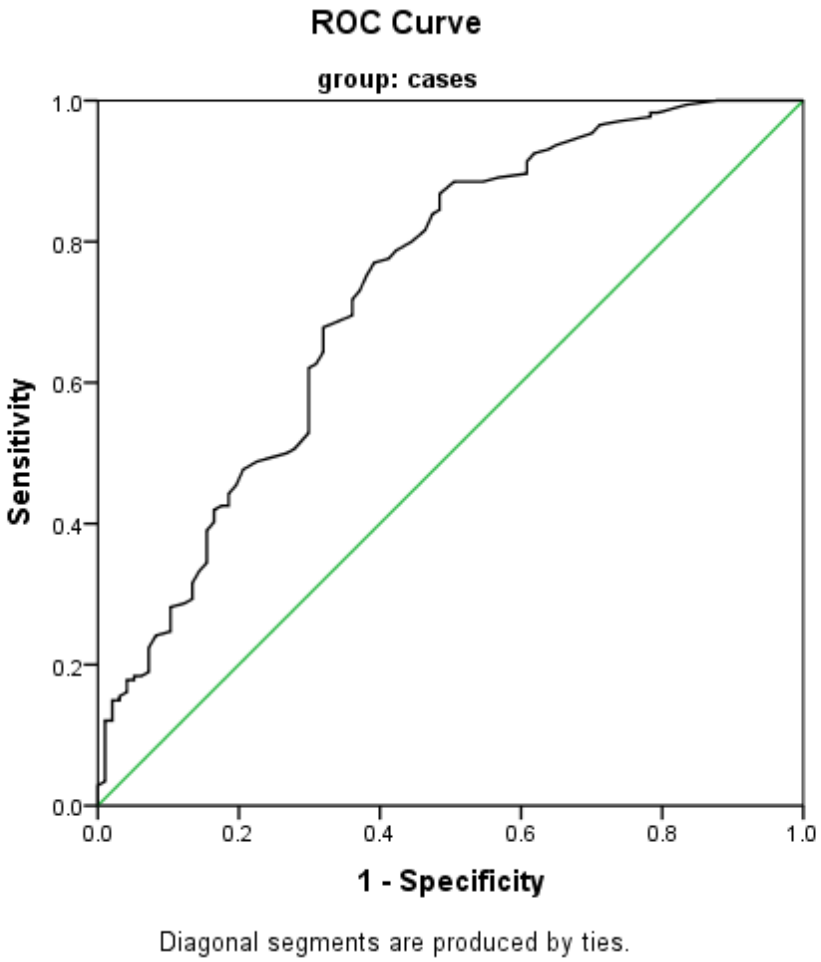


Figure 24. ROC curve for sensitivity and specificity of impulse oscillometry parameter pre bronchodilator R5 kPa/(L/s) in patients with asthma who had severe (pre bronchodilator FEV1% < 60%) airway obstruction (FEV1/FVC ratio < 0.7) by spirometry

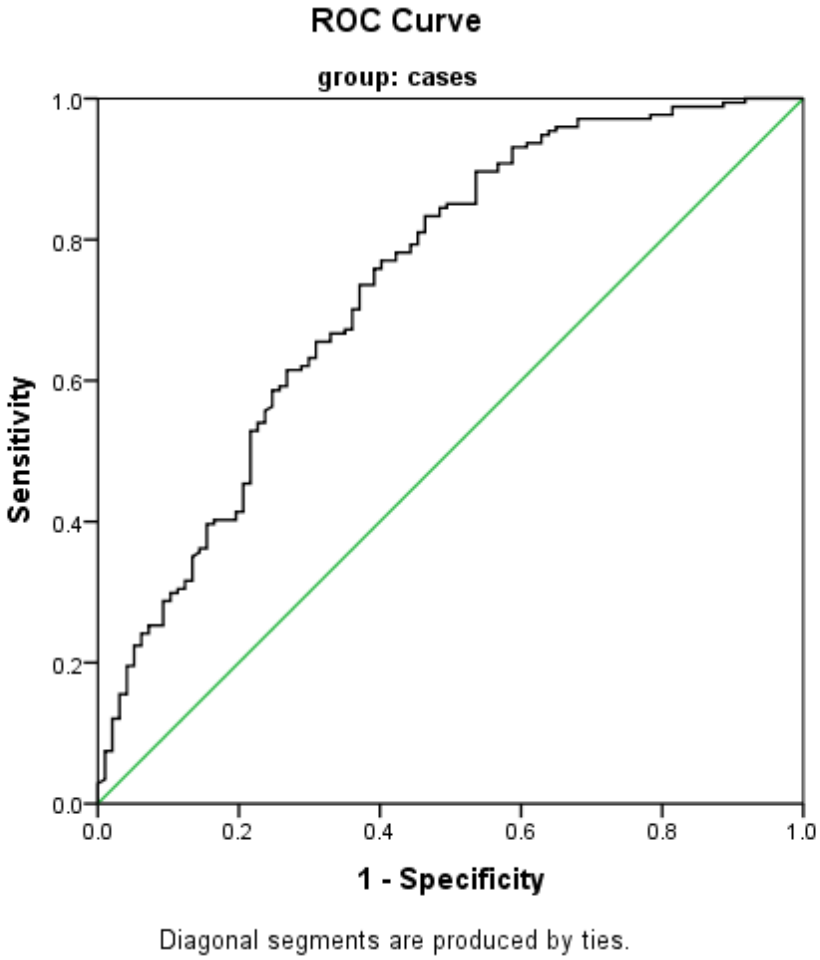


Figure 25. ROC curve for sensitivity and specificity of impulse oscillometry parameter pre bronchodilator R5% predicted in patients with asthma who had severe (pre bronchodilator FEV1% < 60%) airway obstruction (FEV1/FVC ratio < 0.7) by spirometry

Table 14. Sensitivity, specificity, cut off value and AUC of impulse oscillometry parameter pre bronchodilator R5% predicted in patients with asthma who had severe (pre bronchodilator FEV1% < 60%) airway obstruction (FEV1/FVC ratio < 0.7) by spirometry

	Sensitivity	Specificity	AUC	Cut off value
R5% predicted *	63.2%	70.1%	0.739	230.15%

***pre bronchodilator**

A linear regression prediction model was used to determine the change in R5% after bronchodilator and we found that a 1% increase in FEV1% would be equal to a 2.6% decrease in R5%

R5% = 380.8 + (- 2.61) FEV1%

7. DISCUSSION

Impulse oscillometry as a pulmonary function test has lot of advantages over the conventional pulmonary function tests as it is easy to perform and requires only passive cooperation from the patient, the time taken for the measurements is shorter with relatively good reproducibility of the results.(61) In spite of the knowledge of all these advantages it is not being used routinely in clinical practice due to a number of reasons. Some of the most important reasons are that impulse oscillometry is not widely available in all the centers which have a pulmonary function laboratory, knowledge about the interpretation and clinical applications of impulse oscillometry parameters is very limited and research is ongoing in this field and reference values for all races and ages are still not available.(56) Moreover, there are quite a number a patients referred for a spirometry who end up not being able to perform it because of the physical and mental demands of the test. Taking into account the potential uses of impulse oscillometry in pulmonary function testing and the ease with which it can be performed in almost anyone including animals and unconscious patients who are on ventilatory support (152) (148) (11) (10), we decided to do this study in a tertiary care center in Vellore, India, to explore the various parameters of impulse osllometry and to see if they correlate with spirometry parameters with an aim to find out the significant reversibility of R5 as measured by impulse oscillometry by comparing it with FEV1 reversibility as measured by spirometry in patients with asthma. We also wanted to correlate the impulse oscillometry parameter R5 with FEV1 for the different degrees of airflow limitation in patients with asthma.

About 350 - 400 patients undergo pulmonary function tests in our lab on an average for evaluation of different diseases. About 2-3% of patients are usually not able to perform spirometry due to the difficulties involved in performing it. In our study, we included a total of 650 patients initially out of which 14 (≈ 2%) patients could not perform spirometry and out of 188 healthy individuals, 5 (≈ 2.5%) individuals could not perform spirometry. We hope that the results of our study will help to improve the knowledge about impulse oscillometry, its interpretation, use in patients with asthma and create an awareness among physicians about impulse oscillometry and its uses.

Impulse oscillometry measures the respiratory resistive and reactive components of respiratory impedance, while spirometry measures flow or volume which is generated by the patient over time. The impulse oscillometry parameter R measures resistance of proximal and distal airways, lung tissue and chest wall resistance. (134) Resistance at 5 Hertz (R5) shows the total resistance of respiratory system (extrathoracic, central and peripheral airways). (61) R5 values less than 150% predicted is considered to be normal and increasing R5 values are seen with proximal or distal airway obstruction. (151) Some studies have been done on bronchodilator reversibility testing with impulse oscillometry. A study published by Hellinckx et al. in the year 1998 in children with asthma suggested a cutoff value of 40% delta percentage of initial R5 for a ‘positive’ bronchodilator response. (45) Nielson et al. studied children with asthma in the year 2001 to quantify and compare bronchodilator response in children with asthma and healthy children. They reported cutoff values of 27% – 29% delta percentage of initial R5.

(133) In 2003, Marotta et al. showed that delta changes of 20% - 25% R5 is a good indicator of bronchodilator response. Nair et al. published a study in the year 2011 in which they demonstrated that impulse oscillometry resistance measurements R5 and R20 had significant response to bronchodilator testing in asthmatics and healthy individuals, the correlation coefficients from FEV1 and R5 in asthmatics showed a significant negative correlation for baseline and post bronchodilator response. (134) In the year 2005, Olaguibel et al. published a study on asthmatic children which showed a statistically significant but weak negative correlation between R5 and FEV1. (46) Though impulse oscillometry measurements and spirometry measurements correlate, the agreement between these two measurements might not be reliable as they measure different aspects of lung function. (134) The current and past guidelines on asthma give spirometry parameter FEV1 for calculation of significant bronchodilator reversibility which has to be > 12% and > 200ml. (4) In our study we tried to find out the sensitivity and specificity of impulse oscillometry parameter R5% bronchodilator reversibility (Post bronchodilator R5% predicted - Pre bronchodilator R5% predicted / Pre bronchodilator R5% predicted) by Receiver-operator characteristics (ROC) analysis by keeping significant reversibility of FEV1 as the gold standard. It showed a sensitivity of 61.8%, specificity of 68% of R5% bronchodilator reversibility (Post bronchodilator R5% predicted - Pre bronchodilator R5% predicted / Pre bronchodilator R5% predicted) at a value of -20.75% with an area under the curve (AUC) of 0.69. < - 20% R5% bronchodilator reversibility may be taken as a cutoff value for significant bronchodilator reversibility measured by

impulse oscillometry. We suggest using this cutoff value of bronchodilator reversibility R5% (< - 20%) to diagnose bronchodilator reversibility in adult Indian patients with asthma by impulse oscillometry which means that there should be a decrease in R5% after bronchodilator by > 20%.

Nair et al. showed a negative correlation between FEV1% and R5 (-0.35, P < 0.01) at baseline and -0.4 (P < 0.01) for bronchodilator response in patients with asthma. (134) In our study, impulse oscillometry parameters R5% bronchodilator reversibility (R5% post bronchodilator – R5% pre bronchodilator/R5% post bronchodilator) and FEV1% bronchodilator reversibility (Post bronchodilator FEV1% – Pre bronchodilator FEV1%/Post bronchodilator FEV1%) showed a moderate and significant correlation of -0.334 (p < 0.001) in patients with asthma and -0.220 (p – 0.003) in the healthy individuals.

Nair et al. used a linear regression prediction model to determine that a 1% change in FEV1% would be equal to a 2.5% change in R5% in the year 2011. (134) In our study, a linear regression prediction model was used to determine the change in R5% after bronchodilator and we found that a 1% increase in FEV1% would be equal to a 2.6% decrease in R5% which was very similar to the finding in the study done by Nair et al.

Airflow limitation or airway obstruction is defined as a FEV1/FVC ratio of < 0.7 by spirometry. (4) Airway obstruction in asthma is further graded into mild if pre bronchodilator FEV1% predicted is > 80%, moderate if pre bronchodilator FEV1% predicted is 80% - 60% and severe if pre bronchodilator FEV1% predicted is <

60%. (5) Williamson et al. published a study in the year 2011 in which 24 volunteers without airway obstruction by spirometry, 21 patients with severe asthma, 15 mild to moderate asthmatics and 24 patients with chronic obstructive pulmonary disease (mean FEV1% predicted of 56.6%) were included in the study. In the 24 volunteers (without obstruction) the range for R5 was 0.34 – 0.43 kPa/(L/s), in the group of 21 patients with severe asthma, the range for R5 was 0.36 - 0.64 and in the 24 patients who had chronic obstructive pulmonary disease, the range for R5 was 0.49 – 0.7 kPa/(L/s). (128) In another study published recently in the year 2014, Tomalak et al. evaluated the application of impulse oscillometry in the elderly patients and found that patients without airway obstruction had a R5 value between 0.23 and 1.16 kPa/(L/s) and patients who had airway obstruction (mean FEV1% predicted of 43.7%) had R5 values in the range of 0.18 – 1.63. (61) Patients in these two studies are not comparable as the patients included by Tomalak et al. were much older. In our study we found that the range for pre bronchodilator R5 kPa/(L/s) was 0.19 – 2.28 kPa/(L/s) in patients with asthma who had airway obstruction by spirometry and 0.2 – 2.21 in patients with asthma who did not have airway obstruction by spirometry. The mean values of pre bronchodilator R5% predicted and pre bronchodilator R5 kPa/(L/s) in patients with airway obstruction were significantly higher statistically as shown in **Table 7.**

Impulse oscillometry parameters like R5 have shown good correlation with FEV1 in some previous studies. Tomalak et al. showed that there is a strong, significant correlation between R5 and FEV1 (-0.66). (153) Anderson and Lipworth studied a

group of 57 patients with chronic obstructive pulmonary disease and reported that the correlation coefficient between FEV1 and R5-R20 was -0.499. (105) In the year 2014, a study published by Tomalak et al. on application of impulse oscillometry in the elderly patients showed a strong, significant correlation of R5 with FEV1 (-0.503). In our study the correlation coefficients between pre bronchodilator FEV1% predicted and pre bronchodilator R5% predicted showed a strong, significant correlation of -0.588 ($p < 0.01$) in the patient group and -0.619 ($p < 0.01$). The correlation coefficient between pre bronchodilator FEV1 (liters) and pre bronchodilator R5 kPa/(L/s) in the patient group showed moderate, significant correlation of 0.393 ($p < 0.01$) and a strong, significant correlation of -0.597 ($p < 0.01$) in the control group.

Receiver-operator characteristics (ROC) analysis was done in our study to look for sensitivity, specificity, area under the curve (AUC) and cutoff value at the best sensitivity and specificity of impulse oscillometry for pre bronchodilator R5% predicted in patients with a clinical diagnosis of asthma as compared to healthy individuals. ROC analysis showed a sensitivity of 59.3%, specificity of 62.1%, AUC of 0.654 at a cutoff value of 162.9% for pre bronchodilator R5% predicted in patients with a clinical diagnosis of asthma and a sensitivity of 59.4%, specificity of 64.3%, AUC of 0.641 at a cutoff value of 0.505 for pre bronchodilator R5 kPa/(L/s) in patients with a clinical diagnosis of asthma. Many previous studies done on impulse oscillometry have shown that impulse oscillometry is more sensitive test when compared with spirometry to diagnose airway obstruction. In our study, only 43.8% of the patients with a clinical diagnosis of asthma were found to have

airway obstruction by spirometry and 33.5% of patients with a clinical diagnosis of asthma had significant reversibility by spirometry. This ROC analysis suggests that impulse oscillometry might help us in diagnosing asthma in adult Indian patient who have a clinical diagnosis of asthma and we suggest using a cutoff value of >160% of pre bronchodilator R5% predicted in patients with a clinical diagnosis of asthma.

Receiver-operator characteristics (ROC) analysis done by Tomalak et al. in the year 2014 was done to calculate sensitivity and specificity of impulse oscillometry parameters which showed a sensitivity of 70%, specificity of 66% and area under the curve (AUC) of 0.72 for R5. In our study the Receiver-operator characteristics (ROC) analysis was performed to derive the specificity, sensitivity, area under the curve (AUC) and cutoff values at the best sensitivity and specificity for impulse oscillometry parameter pre bronchodilator R5 kPa/(L/s) and pre bronchodilator R5% predicted for patients with asthma, patients with airway obstruction and for patients with severe airway obstruction as compared with spirometry parameters according to current guidelines. The ROC analysis showed a sensitivity of 72.7%, specificity of 70%, AUC of 0.776 at a cutoff value of 180.8% for pre bronchodilator R5% predicted to diagnose airway obstruction in patients with asthma. Though data from other countries have suggested a cut off of > 150% for airway obstruction, (151) we suggest a cutoff value of > 180% of pre bronchodilator R5% predicted might be taken for adult Indian patients with asthma. The details of sensitivities, specificities, cutoff values at the best sensitivity and specificity and

AUC for pre bronchodilator R5 kPa/(L/s) and pre bronchodilator R5% predicted are shown in **Table 15.**

The ROC analysis with sensitivity, specificity, AUC and cutoff value at the best sensitivity and specificity of pre bronchodilator R5% predicted to diagnose severe airway obstruction was found to be 63.2%, 70.1%, 0.739 and 230.15% respectively in patients with asthma. Indian adult patients with asthma who have a pre bronchodilator R5% predicted of > 230% may be diagnosed to have severe airway obstruction according to our study. We suggest using these values in Indian adults who have a clinical diagnosis of asthma to diagnose airway obstruction and significant reversibility by impulse oscillometry.

Table 15. Sensitivities, specificities, AUCs and cut off values at the best sensitivities and specificities for impulse oscillometry parameters in patients with a clinical diagnosis of asthma, in patients with asthma and airway obstruction and in patients with asthma and severe airway obstruction by ROC analysis

	Asthma[1]		**Asthma with obstruction[2]**		**Asthma with severe[3] obstruction**	
	R5%*	**R5****	**R5%***	**R5****	**R5%***	**R5****
Sensitivity (%)	59.3	59.4	72.7	72	63.2	67.8
Specificity (%)	62.1	64.3	70	66.6	70.1	68
AUC	0.654	0.641	0.776	0.77	0.739	0.733
Cutoff value	**162.9%**	**0.505**	**180.8%**	**0.565**	**230.15%**	**0.685**

***pre bronchodilator R5% predicted

****pre bronchodilator R5 kPa/(L/s)

[1]Patients with a clinical diagnosis of asthma

[2]FEV1/FVC ratio < 0.7 by spirometry

[3]pre bronchodilator FEV1% predicted < 60% by spirometry

8. CONCLUSION

This study to our knowledge is the first Indian study which has evaluated impulse oscillometry parameters by comparing them with spirometry parameters in patients with asthma to find out the significant bronchodilator reversibility of R5%, derive cutoff values at the best sensitivity and specificity of pre bronchodilator R5% predicted for airway obstruction in Indian adult patients with asthma and to grade airway obstruction in Indian adult patients with asthma.

The aim of this study was to find out the significant bronchodilator reversibility of impulse oscillometry parameter R5 by comparing it with spirometry parameter FEV1. In our study we have found the following:

- Impulse oscillometry parameters R5% bronchodilator reversibility and FEV1% bronchodilator reversibility showed a moderate and significant correlation with a correlation coefficient of -0.334 ($p < 0.001$) in adult Indian patients with a clinical diagnosis of asthma.
- The ROC analysis showed a cutoff value of -20.75% at the best sensitivity and specificity of R5% bronchodilator reversibility. < - 20% R5% bronchodilator reversibility may be taken as a cutoff value for significant bronchodilator reversibility measured by impulse oscillometry. We suggest using this cutoff value of R5% bronchodilator reversibility (< - 20%) to diagnose significant bronchodilator reversibility in adult Indian patients with asthma by impulse oscillometry which means that there should be a decrease in R5% after bronchodilator by > 20%.

- A linear regression prediction model done in our study between R5% and FEV1 showed that a 1% increase in FEV1% would be equal to a 2.6% decrease in R5%.

The secondary objective of the study was to compare and derive cutoff values at the best sensitivity and specificity to diagnose airway obstruction and different grades of severity of airway obstruction in adult Indian patient with asthma. In our study we found the following:

- Pre bronchodilator FEV1 (liters) with pre bronchodilator R5 kPa/(L/s) showed a moderate and significant correlation with a correlation coefficient of 0.393 ($p < 0.01$) and pre bronchodilator FEV1% predicted with pre bronchodilator R5% predicted showed a strong, significant correlation with a correlation coefficient of -0.588 ($p < 0.01$) in patients with a clinical diagnosis of asthma.
- ROC analysis done in patients with a clinical diagnosis of asthma as compared to controls showed a cutoff value of 162.9% at the best sensitivity and specificity for pre bronchodilator R5% predicted and a cutoff value of 0.505 at the best sensitivity and specificity for pre bronchodilator R5 kPa/(L/s). Our study suggests that impulse oscillometry might help us in diagnosing asthma in adult Indian patients who have a clinical diagnosis of asthma and we suggest using a cutoff value of >160% of pre bronchodilator R5% predicted in patients with a clinical diagnosis of asthma.

- ROC analysis done to derive cutoff values at the best sensitivity and specificity of pre bronchodilator R5% predicted for airway obstruction in adult Indian patients with asthma as compared with spirometry showed a cutoff value of 180.8% for pre bronchodilator R5% predicted to diagnose airway obstruction in adult Indian patients with asthma. We suggest using a cutoff value of > 180% of pre bronchodilator R5% predicted to diagnose airway obstruction in adult Indian patients with asthma.
- ROC analysis done to look at the sensitivity, specificity, AUC and cutoff value at the best sensitivity and specificity of pre bronchodilator R5% predicted to diagnose severe airway obstruction found a cutoff value of 230.15% for pre bronchodilator R5% in patients with asthma. We suggest that Adult Indian patients with asthma who have a pre bronchodilator R5% predicted of > 230% may be diagnosed to have severe airway obstruction by impulse oscillometry.

More studies with larger sample sizes may be required to confirm our findings but we suggest using our cutoff values in Indian patients with asthma till we get better evidence. Impulse oscillometry can be used not only in patients who are not able to perform spirometry but also as a routine practice in patients who have asthma as it is a very convenient and patient friendly test for the patients and requires only passive co operation from the patient.

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10. APPENDIX

10.1 Appendix 1: Patient information sheet

Dear Sir/Madam,

You are being invited to take part in a research study as part of a post graduate dissertation. Before you decide it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Please ask if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part.

The main aim of this study is to derive reference values in patients with bronchial asthma using impulse oscillometry as it is a much easier and convenient method for the patient to perform when compared with spirometry.

Normally after you have been diagnosed to have bronchial asthma by your doctor you will have to undergo a pulmonary function test called spirometry. In this you will have to undergo another test along with spirometry.

When you perform a spirometry you will have (to) breathe in through a tube (like sucking in juice and blow out as forcefully (candle blowing) as you can, to the maximum. You may have to repeat the same for three or more times but maximum of eight times. In addition to this, in this study we would like you to perform another test called impulse oscillometry which is a much easier method of assessing your pulmonary function.

While performing this test, you will have to keep your mouth with your lips pursed over a mouthpiece and breathe normally till a satisfactory reading is obtained. It might take an addition ten or fifteen minutes to complete this test. By doing this we will able to derive reference values for this new test by comparing it with the present gold standard test which is spirometry. You do not have to pay any fee for this extra test.

If you are a normal individual, we would like to perform this test (impulse oscillometry) along with spirometry to be able to compare both these tests in normal individuals. You do not have to pay any fees to take these two tests.

There (are) no added risks associated with this test. You may have to spend approximately 10-15 min extra to participate in this study as explained earlier.

Your details will be kept confidential and will not be disclosed with any one who is not associated with the study. Your participation in this study is entirely voluntary and you are also free to decide to withdraw permission to participate in this study. If you do so, this will not affect your usual treatment at this hospital in any way.

The results of this study will be published in a medical journal but you will not be identified by name in any publication or presentation of results. However, your medical notes may be reviewed by people associated with the study, without your additional permission, should you decide to participate in this study.

In case of any further questions, please contact Dr. Jebin Roger S. (Tel: 04162282551) or email: resmed@cmcvellore.ac.in

10.2 Appendix 2: Consent form

Subject's Initials: _____ Subject's Name: _____

Date of Birth / Age:_____

		Please tick box(subject)
(i)	I confirm that I have read and understood the information sheet for the above study and have had the opportunity to ask questions.	[ ]
(ii)	I understand that my participation in the study is voluntary and that I am free to withdraw at any time, without giving any reason, without my medical care or legal rights being affected.	[ ]
(iii)	I understand that the Ethics Committee and the regulatory authorities will not need my permission to look at my health records both in respect of the current study and any further research that may be conducted in relation to it, even if I withdraw from the trial. I agree to this access. However, I understand that my identity will not be revealed in any information released to third parties or published.	[ ]

(iv) I agree not to restrict the use of any data or results that arise from this study provided such a use is only for scientific purpose(s) [ ]

(v) I agree to take part in the above study [ ]

Signature/Thumb print of the Subject/Legally Acceptable Representative:_____

Date: _____/_____/_____

Signatory's Name: _____

Signature of the Investigator: _____

Date: _____/_____/_____

Study Investigator's Name: Dr. Jebin Roger S

Signature/Thumb print and name of the Witness: _____

Date:_____/_____/_____

Name of the Witness: _____

10.3 Appendix 3: Pro forma

1. Serial Number:
2. Name: 3. Hospital number:
4. Age: 5. Sex: Male/Female
6. Marital status: Married/ Unmarried 7. Profession:
8. **Asthma questionnaire:**

Please answer "yes" or "no" to the following:

- Wheezing – high pitched whistling sounds when breathing out ☐
- History of any of the following:

5. Cough, worse particularly at night ☐
6. Recurrent wheeze ☐
7. Recurrent breathing difficulty ☐
8. Recurrent chest tightness ☐

- Symptoms occur or worsen at night, awakening the patient ☐
- Symptoms occur or worsen in a seasonal pattern ☐
- The patient also has eczema, hay fever, or a family history of asthma or atopic diseases ☐
- Symptoms occur or worsen in the presence of:

11. Animals with fur ☐
12. Aerosol chemicals ☐
13. Changes in temperature ☐
14. Domestic dust mites ☐
15. Drugs (aspirin, beta blockers) ☐
16. Exercise ☐
17. Pollen ☐
18. Respiratory (viral infections) ☐

19. Smoke ☐
20. Strong emotional expression ☐

- Symptoms respond to anti-asthma therapy ☐
- Patients colds “go the chest” or take more than 10 days to clear up ☐

9. Treatment history:
    - On inhalers – specify – LABA/Steroids/LABA+Steroids
    - Since when -
    - Compliance – Compliant/Non compliant

10. Previous spirometry: Yes/No
    - FEV1/FVC(pre) – Obstruction – Present/Absent, If present – Mild/Moderate/Moderately severe/Severe/Very severe
    - Significant reversibility – Present/Absent

11. Asthma control: Controlled/Partly controlled/Uncontrolled

12. Spirometry:
    - FEV1/FVC (pre) – Obstruction – Present/Absent, If present – Mild/Moderate/Moderately severe/Severe/Very severe
    - Reversibility - Pre – pre bronchodilator, Post – post bronchodilator

	Pred	Pre/Pred.(%)	Post/Pred.(%)	Pre(ml)	Post(ml)	%(Post - Pre/Pre)	Ml (Post – Pre)
FEV1							

13. Impulse oscillometry:

	Pred.	Actual (KPa/(L/s))	% (Actual/Pred)
R5			
R20			
R5-R20			

- Reversibility – Pre – pre bronchodilator, Post – post bronchodilator

	Pred	Pre(%) (Actual/pred.)	Post(%) (Actual/Pred.)	%(Post-Pre/Pre)
R5				

14. Duration of symptoms:

15. Year of diagnosis:

16. Smoking/Passive smoking/Biomass exposure – ☐

10.4 Appendix 4: Data sheets for patients and controls

sno	name	hno	age	sex	mstatus	prof	wheez	cough	recwhee	recbreath	recchest	wornt	worsea	eczema	animal	aerosol	chngtemp	domdust	drugs	exer
1	Yuvarani	515433OD	27	2	2	RT	2	2	2	2	2	2	2	2	2	2	2	2	2	2
2	Bharath Kumar	073455D	28	1	2	RT	2	2	2	2	2	2	2	2	2	2	2	2	2	2
3	Augustin Paul Sudan	121496A	43	1	1	Attender	2	2	2	2	2	2	2	2	2	2	2	2	2	2
4	Chitra	IOS3	18	2	2	Student	2	2	2	2	2	2	2	2	2	2	2	2	2	2
5	Sanjeet Kumar	IOS2	23	1	2	Student	2	2	2	2	2	2	2	2	2	2	2	2	2	2
6	Manoj Kumar	IOS4	35	1	1	Marketing	2	2	2	2	2	2	2	2	2	2	2	2	2	2
7	Kazisumaya Rahman	IOS5	21	2	2	Student	2	2	2	2	2	2	2	2	2	2	2	2	2	2
8	Bappa Ditya	IOS6	39	1	1	LIC Agent	2	2	2	2	2	2	2	2	2	2	2	2	2	2
9	Premnath	IOS7	26	1	2	Student	2	2	2	2	2	2	2	2	2	2	2	2	2	2
10	Asif	IOS8	27	1	2	Office Worker	2	2	2	2	2	2	2	2	2	2	2	2	2	2
11	Md Marof Morshad	IOS9	44	1	1	Clerical Job	2	2	2	2	2	2	2	2	2	2	2	2	2	2
12	Parasuraman	515513D	27	1	2	PT + RT	2	2	2	2	2	2	2	2	2	2	2	2	2	2
13	Andrew Franklin	836695D	28	1	2	PT	2	2	2	2	2	2	2	2	2	2	2	2	2	2
14	Mebalari Lyngdoh	635048F	22	2	2	RT Student	2	2	2	2	2	2	2	2	2	2	2	2	2	2
15	Wantei Borlang	635046F	22	1	2	RT Student	2	2	2	2	2	2	2	2	2	2	2	2	2	2
16	Earnest Jeyaanthi	711339A	52	2	1	Staff Nurse	2	2	2	2	2	2	2	2	2	2	2	2	2	2
17	Kumar rai	IOS10	48	1	1	Business	2	2	2	2	2	2	2	2	2	2	2	2	2	2
18	Gobinda	IOS11	24	1	2	Carpender	2	2	2	2	2	2	2	2	2	2	2	2	2	2
19	Kavitha	322584D	30	2	1	Staff Nurse	2	2	2	2	2	2	2	2	2	2	2	2	2	2
20	Bharathi	272861C	40	2	1	Ward Clerk	2	2	2	2	2	2	2	2	2	2	2	2	2	2
21	Uma Devi	234436D	31	2	1	Staff Nurse	2	2	2	2	2	2	2	2	2	2	2	2	2	2
22	Asha	260579F	22	2	2	RT Student	2	2	2	2	2	2	2	2	2	2	2	2	2	2
23	Sheela	960718D	26	2	2	Staff Nurse	2	2	2	2	2	2	2	2	2	2	2	2	2	2
24	Jansi Rani	915057D	25	2	2	Staff Nurse	2	2	2	2	2	2	2	2	2	2	2	2	2	2
25	Febi Anna Punnoose	480246C	27	2	1	Staff Nurse	2	2	2	2	2	2	2	2	2	2	2	2	2	2
26	Jasmine Flora	871664D	26	2	2	Staff Nurse	2	2	2	2	2	2	2	2	2	2	2	2	2	2
27	Richard Rajkumar	795284C	27	1	2	Staff Nurse	2	2	2	2	2	2	2	2	2	2	2	2	2	2
28	Mercy	205946D	30	2	1	Staff Nurs	2	2	2	2	2	2	2	2	2	2	2	2	2	2

	Flora					e														
29	Manopriya	635146F	21	2	2	Student	2	2	2	2	2	2	2	2	2	2	2	2	2	2
30	Jeevitha	635148F	21	2	2	Student	2	2	2	2	2	2	2	2	2	2	2	2	2	2
31	Merlin D	335504C	28	2	1	Ward Incharge	2	2	2	2	2	2	2	2	2	2	2	2	2	2
32	Shakina Esther Rani	472355A	28	2	2	Ward Incharge	2	2	2	2	2	2	2	2	2	2	2	2	2	2
33	Arunan	836901C	29	1	2	Dialysis Therapist	2	2	2	2	2	2	2	2	2	2	2	2	2	2
34	Selva Kumar	567404D	24	1	2	RT	2	2	2	2	2	2	2	2	2	2	2	2	2	2
35	Sudha G.	811003B	41	2	1	Secretary	2	2	2	2	2	2	2	2	2	2	2	2	2	2
36	John Devarathinam	984536C	28	1	2	Dialysis Therapist	2	2	2	2	2	2	2	2	2	2	2	2	2	2
37	Nadhiya	538960D	26	2	1	Typist	2	2	2	2	2	2	2	2	2	2	2	2	2	2
38	Priya	837222D	26	2	2	Pharmasist	2	2	2	2	2	2	2	2	2	2	2	2	2	2
39	Tek Narayanan Saw	IOS55	32	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
40	G.Ragavendra	IOS56	24	1	2	Student	2	2	2	2	2	2	2	2	2	2	2	2	2	2
41	S. V. Venu	IOS57	28	1	1	Contract worker	2	2	2	2	2	2	2	2	2	2	2	2	2	2
42	Shanthi Sharma	IOS12	51	2	1	Housewife	2	2	2	2	2	2	2	2	2	2	2	2	2	2
43	Anbazhagan K.V.	IOS13	52	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
44	Sital Ghosh	IOS15	34	1	1	Business	2	2	2	2	2	2	2	2	2	2	2	2	2	2
45	R.R.Sharma	IOS14	52	2	1	House Wife	2	2	2	2	2	2	2	2	2	2	2	2	2	2
46	Asokan G.	IOS17	46	1	1	Farmer	2	2	2	2	2	2	2	2	2	2	2	2	2	2
47	Ranjith Singh	IOS18	28	1	1	Business	2	2	2	2	2	2	2	2	2	2	2	2	2	2
48	Alok Singh Mahapatra	IOS19	35	1	1	Farmer	2	2	2	2	2	2	2	2	2	2	2	2	2	2
49	Rabin Kumar Karmaram	IOS20	65	1	1	Rtd.Govt.Employee	2	2	2	2	2	2	2	2	2	2	2	2	2	2
50	Sam Selvarajj	IOS21	63	1	1	Pastor	2	2	2	2	2	2	2	2	2	2	2	2	2	2
51	Farhat	IOS22	28	2	2	Student	2	2	2	2	2	2	2	2	2	2	2	2	2	2
52	Sagitha	IOS23	31	2	1	Teacher	2	2	2	2	2	2	2	2	2	2	2	2	2	2
53	Rooma Devi	IOS24	26	2	1	Housewife	2	2	2	2	2	2	2	2	2	2	2	2	2	2
54	Shika Chakrabarty	IOS25	46	2	1	Housewife	2	2	2	2	2	2	2	2	2	2	2	2	2	2
55	Bhaskar	IOS26	30	1	1	Carpender	2	2	2	2	2	2	2	2	2	2	2	2	2	2
56	Swapan Sinha Mahapatra	IOS27	52	1	2	Social Worker	2	2	2	2	2	2	2	2	2	2	2	2	2	2
57	Subash Chowdry	IOS28	42	1	1	Business	2	2	2	2	2	2	2	2	2	2	2	2	2	2
58	N.Dhanasekaran	IOS29	45	1	1	Business	2	2	2	2	2	2	2	2	2	2	2	2	2	2
59	Tapas Ghosh	IOS30	39	1	1	Farmer	2	2	2	2	2	2	2	2	2	2	2	2	2	2
60	Renu Gayan	IOS31	30	2	1	Housewife	2	2	2	2	2	2	2	2	2	2	2	2	2	2
61	Ajay	IOS3	43	1	1	Govt.	2	2	2	2	2	2	2	2	2	2	2	2	2	2

	Kumar Day	2				Service															
62	S.Sampath	IOS33	38	1	2	Farmer	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
63	Ribi Eety	IOS34	24	2	1	Govt. Service	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
64	Mizanur Molla	IOS35	21	1	2	Student	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
65	Swapan Kumar Majumolar	IOS36	59	1	1	Govt. Service	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
66	Indira	IOS37	47	2	1	Housewife	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
67	Gopal	IOS38	47	1	1	Barbender	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
68	Farjana Chowdry	IOS39	34	2	1	Housewife	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
69	Lipika Ray	IOS40	49	2	1	Housewife	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
70	Sanjay Shaw	IOS42	32	1	1	Bank Employee	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
71	B.K.Roy	IOS43	38	1	1	Teacher	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
72	Rama Naik	IOS45	38	1	1	Railway Employee	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
73	Aparna Das	IOS46	42	2	1	Housewife	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
74	Khama Kundu	IOS48	30	2	1	Teacher	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
75	Archana Mukerten	IOS47	40	2	1	Govt. Employee	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
76	Ahindra Goswami	IOS49	48	1	1	Business	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
77	Bharathi	IOS50	20	2	2	College Student	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
78	Anup Mandal	IOS51	32	1	1	G0vt. Employee	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
79	Anoop Kumar Kar	IOS53	45	1	1	Buainess	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
80	Sivraj Kumar Chowdry	IOS54	24	1	2	Student	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
81	Mohamud Rabiul Islam	IOS59	32	1	1	Teacher	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
82	Alvin Khundrakpam	IOS60	18	1	2	Schol Student	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
83	Gopal Singh	IOS61	42	1	1	Advocate	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
84	Nandan Kumar Singh	IOS62	28	1	1	Govt. Employee	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
85	Mega natha n	IOS63	51	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
86	M.K. Chaitanya	IOS64	24	1	2	Software Engineer	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
87	Susantha Maiji	IOS65	41	1	1	Farmer	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
88	Bharbha	IOS66	28	2	2	Ecologist	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
89	Shiv Sambu Duby	IOS67	42	1	1	Govt. Employee	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
90	Venila	IOS68	30	2	1	Teacher	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
91	Arjun Bhan	IOS70	52	1	1	Farmer	2	2	2	2	2	2	2	2	2	2	2	2	2	2	

92	dar Fr.Paulson Thaliath	IOS71	49	1	2	Priest	2	2	2	2	2	2	2	2	2	2	2	2	2	2
93	Amit Kumar Dutta	IOS72	29	1	2	Asst. Professor	2	2	2	2	2	2	2	2	2	2	2	2	2	2
94	Arun Biswar	IOS73	45	1	1	Business	2	2	2	2	2	2	2	2	2	2	2	2	2	2
95	Samba Siva Rao	IOS74	54	1	1	Business	2	2	2	2	2	2	2	2	2	2	2	2	2	2
96	Ramanathan G.	IOS75	23	1	2	Student	2	2	2	2	2	2	2	2	2	2	2	2	2	2
97	Ramesh M.	IOS76	29	1	1	Business	2	2	2	2	2	2	2	2	2	2	2	2	2	2
98	Janardan Mondal	IOS77	28	1	1	Marketing Professional	2	2	2	2	2	2	2	2	2	2	2	2	2	2
99	Srinivasan R.	IOS78	30	1	2	Medical Rep.	2	2	2	2	2	2	2	2	2	2	2	2	2	2
100	Dr.Ameena Sahabudin	806060F	26	2	1	Doctor	2	2	2	2	2	2	2	2	2	2	2	2	2	2
101	Roshan Kumar Naik	IOS83	32	1	2	Software Engineer	2	2	2	2	2	2	2	2	2	2	2	2	2	2
102	S.Partha Sarathy	IOS84	39	1	1	Army	2	2	2	2	2	2	2	2	2	2	2	2	2	2
103	Dr.Pavithra Srinivasan	IOS81	30	2	1	Doctor	2	2	2	2	2	2	2	2	2	2	2	2	2	2
104	Arun Kumar	IOS117	48	1	1	Business	2	2	2	2	2	2	2	2	2	2	2	2	2	2
105	Pramod Kumar	IOS116	26	1	1	Salesman	2	2	2	2	2	2	2	2	2	2	2	2	2	2
106	Shirley	IOS86	50	2	1	Housewife	2	2	2	2	2	2	2	2	2	2	2	2	2	2
107	Mousumi Bog	IOS87	24	2	1	Student	2	2	2	2	2	2	2	2	2	2	2	2	2	2
108	Gopal Chandra Saha	IOS89	56	1	1	Teacher	2	2	2	2	2	2	2	2	2	2	2	2	2	2
109	D.Chatterji	IOS90	19	1	2	Student	2	2	2	2	2	2	2	2	2	2	2	2	2	2
110	Pradap Kumar Singh	IOS92	45	1	1	Office	2	2	2	2	2	2	2	2	2	2	2	2	2	2
111	Archana Saha	IOS93	40	2	1	Housewife	2	2	2	2	2	2	2	2	2	2	2	2	2	2
112	Pushpagiri	IOS94	37	2	1	Housewife	2	2	2	2	2	2	2	2	2	2	2	2	2	2
113	Anand Nonia	IOS95	33	1	1	Steel Plant Employee	2	2	2	2	2	2	2	2	2	2	2	2	2	2
114	Sangeeta Devi	IOS96	37	2	1	Housewife	2	2	2	2	2	2	2	2	2	2	2	2	2	2
115	R.Nalini	IOS98	50	2	1	Housewife	2	2	2	2	2	2	2	2	2	2	2	2	2	2
116	Sonali Dey	IOS99	44	2	1	Housewife	2	2	2	2	2	2	2	2	2	2	2	2	2	2
117	Prasanna Manikanda	IOS100	44	2	1	Housewife	2	2	2	2	2	2	2	2	2	2	2	2	2	2
118	Biraj Taluk Das	IOS101	54	1	1	Govt. Employee	2	2	2	2	2	2	2	2	2	2	2	2	2	2
119	Champa Bhuiya	IOS107	50	2	1	Housewife	2	2	2	2	2	2	2	2	2	2	2	2	2	2
120	Ravindranath Chowdry	IOS103	65	1	1	Rtd.Govt.Employee	2	2	2	2	2	2	2	2	2	2	2	2	2	2
121	Tapan	IOS104	50	1	1	Printing	2	2	2	2	2	2	2	2	2	2	2	2	2	2

	Karu					Press worker														
122	Uma Chowdry (Sen)	IOS106	38	2	1	Houewife	2	2	2	2	2	2	2	2	2	2	2	2	2	2
123	Sumithra	IOS105	38	2	1	Teacher	2	2	2	2	2	2	2	2	2	2	2	2	2	2
124	R.Ramani	IOS108	37	2	1	Housewife	2	2	2	2	2	2	2	2	2	2	2	2	2	2
125	Krishna Chatterji	IOS109	61	2	1	Housewife	2	2	2	2	2	2	2	2	2	2	2	2	2	2
126	Sabitha Devi	IOS110	33	2	1	Housewife	2	2	2	2	2	2	2	2	2	2	2	2	2	2
127	Sharmila S.	IOS157	37	2	1	Housewife	2	2	2	2	2	2	2	2	2	2	2	2	2	2
128	Punam Gupta	IOS159	54	1	1	Business	2	2	2	2	2	2	2	2	2	2	2	2	2	2
129	Putul Dutta	IOS114	47	2	1	Housewife	2	2	2	2	2	2	2	2	2	2	2	2	2	2
130	Subal Kumar Dutta	IOS115	63	1	1	Business	2	2	2	2	2	2	2	2	2	2	2	2	2	2
131	Manava Devi	IOS120	35	2	1	Housewife	2	2	2	2	2	2	2	2	2	2	2	2	2	2
132	Dorji Chawang	IOS119	59	1	1	Govt. Employee	2	2	2	2	2	2	2	2	2	2	2	2	2	2
133	Gangadam Khan	IOS118	42	1	1	Business	2	2	2	2	2	2	2	2	2	2	2	2	2	2
134	Archana Bar	IOS121	47	2	1	Housewife	2	2	2	2	2	2	2	2	2	2	2	2	2	2
135	Shukla Deli	IOS122	58	2	1	Housewife	2	2	2	2	2	2	2	2	2	2	2	2	2	2
136	Kavitha	IOS123	33	2	1	Christian Missioary	2	2	2	2	2	2	2	2	2	2	2	2	2	2
137	Rethina Goswami	IOS124	61	2	1	Housewife	2	2	2	2	2	2	2	2	2	2	2	2	2	2
138	Ramesh Chandra Basu Roy	IOS125	64	1	1	Govt. Employee	2	2	2	2	2	2	2	2	2	2	2	2	2	2
139	Rajini	IOS129	38	2	1	Housewife	2	2	2	2	2	2	2	2	2	2	2	2	2	2
140	Kamala Santra	IOS130	40	2	1	Housewife	2	2	2	2	2	2	2	2	2	2	2	2	2	2
141	Modheshwari	IOS131	38	2	1	Housewife	2	2	2	2	2	2	2	2	2	2	2	2	2	2
142	Rajendra Yadav	IOS133	55	1	1	Business	2	2	2	2	2	2	2	2	2	2	2	2	2	2
143	Smriti Saha	IOS132	52	2	1	Housewife	2	2	2	2	2	2	2	2	2	2	2	2	2	2
144	Ida	IOS135	53	2	1	Teacher	2	2	2	2	2	2	2	2	2	2	2	2	2	2
145	Shashi Bala	IOS136	43	2	1	Housewife	2	2	2	2	2	2	2	2	2	2	2	2	2	2
146	Chandra Dutta	IOS137	39	2	1	Housewife	2	2	2	2	2	2	2	2	2	2	2	2	2	2
147	Vanlabructa	IOS139	33	1	1	Business	2	2	2	2	2	2	2	2	2	2	2	2	2	2
148	Pragyan Paramita	IOS138	39	2	2	Business	2	2	2	2	2	2	2	2	2	2	2	2	2	2
149	Sukhendhar Nath Das	IOS140	75	1	1	Rtd.Railway Employee	2	2	2	2	2	2	2	2	2	2	2	2	2	2
150	Kiran Devi	IOS142	50	2	1	Housewife	2	2	2	2	2	2	2	2	2	2	2	2	2	2
151	Anamika Chowdry	IOS141	40	2	1	Housewife	2	2	2	2	2	2	2	2	2	2	2	2	2	2
152	Suselа	IOS143	50	2	1	Housewife	2	2	2	2	2	2	2	2	2	2	2	2	2	2
153	M.Dhavamani	IOS144	50	1	1	Co-operative	2	2	2	2	2	2	2	2	2	2	2	2	2	2

154	Sudhana Devi	IOS145	50	2	1	Soc. Housewife	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
155	Toon Toon Dutta	IOS125	45	2	1	Housewife	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
156	Madan Gopal	IOS127	45	2	1	Business	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
157	Parthasarathy Biswas	IOS160	56	1	1	Govt. Employee	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
158	Geetha	IOS158	43	2	1	Housewife	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
159	Anjaneyulu	IOS97	50	1	1	Teacher	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
160	Beaty Mandal	IOS88	46	2	1	Business	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
161	Ajit Kumar Ghosh	IOS118	54	1	1	Railway Service	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
162	Manikalal Bhattacharjee	IOS82	51	1	1	Govt. Employee	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
163	Roselin Jeniiph er	454344F	24	2	2	Staff Nurse	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
164	Arthi S	650141D	26	2	2	Staff Nurse	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
165	Vinodh Kumar V.	757348D	25	1	2	RT	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
166	Annie Mary Slessar A.	348915D	27	2	2	Staff Nurse	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
167	Shiv Sharan Dusadh	IOS3	30	1	2	Private Tutor	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
168	Naresh Kumar	515444D	26	1	2	RT	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
169	Karthic S	260635F	23	1	2	RT	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
170	Vinodini	635077F	20	2	2	RT	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
171	Amala S.	328997F	23	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
172	Leelavathy	003246F	24	2	2	Student	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
173	Aruna Raviv arma	117919D	27	2	1	Staff Nurse	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
174	Suganya	003243F	22	2	2	RT Student	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
175	Deepa M.	673522C	31	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
176	Runcie S.	567318A	27	1	2	Social Worker	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
177	Suganya S.	23	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2		

poll	resp	smok	emotexp	asthhera	gothechest	inhal	inhwhen	inhcompl	pspiromet	pobst	pobstpre	psigrever	asthcont	obst	obstpre	pred	preped	pospred	pre	post
2	2	2	2	2	2	2	2	2	2	2	2	2.63	70.1	73.5	1.84	1.93				
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2	2	2	2	2	2	2	2	2	2	2.84	97.6	2.77	2.87							
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2	2	2	2	2	2	2	3.92	67	69.3	2.63	2.72	
2	2	2	2	2	2	2	3.52	80	83.5	2.82	2.94	
2	2	2	2	2	2	2	2.71	86.3	87.5	2.34	2.37	
2	2	2	2	2	2	2	3.13	91.5	87.5	2.87	2.74	
2	2	2	2	2	2	2	3.9	4.04	4.29			
2	2	2	2	2	2	2	2.2	92.5	94.9	2.04	2.09	
2	2	2	2	2	2	2	2.67	86.2	86.5	2.3	2.31	
2	2	2	2	2	2	2	2.5	90	93.5	2.28	2.37	
2	2	2	2	2	2	1	2	4.04	76.9	80.4	3.11	3.25
2	2	2	2	2	2	2	3.23	81.3	88.8	2.62	2.86	
2	2	2	2	2	2	2	2.47	92.3	96.7	2.28	2.39	
2	2	2	2	2	2	2	2.49	99.1	95.1	2.47	2.37	
2	2	2	2	2	2	2	3.07	86.6	84.8	2.66	2.61	
2	2	2	2	2	2	2	2.54	79.9	82	2.03	2.08	
2	2	2	2	2	2	2	2.15	82	88.1	1.76	1.9	
2	2	2	2	2	2	2	2.41	73.2	74.1	1.77	1.79	
2	2	2	2	2	2	2	2.28	80.4	82.1	1.84	1.87	
2	2	2	2	2	2	2	2.76	84.8	87.5	2.34	2.41	
2	2	2	2	2	2	2	2	80.2	87.7	1.6	1.75	
2	2	2	2	2	2	2	2.34	99.2	2.32	2.43		
2	2	2	2	2	2	2	2.81	93.4	93.4	2.62	2.62	
2	2	2	2	2	2	2	2.21	99.2	2.19	2.34		
2	2	2	2	2	2	2	2.23	70.2	71.1	1.57	1.59	
2	2	2	2	2	2	2	2.57	77	75.4	1.98	1.94	
2	2	2	2	2	2	2	1.78	96.9	97.6	1.73	1.74	
2	2	2	2	2	2	2	2.55	81.1	82.6	2.07	2.11	
2	2	2	2	2	2	2	2.54	87.9	94.1	2.23	2.39	
2	2	2	2	2	2	2	2.63	76.7	81.2	2.02	2.13	
2	2	2	2	2	2	2	2.01	80.3	83.7	1.61	1.68	
2	2	2	2	2	2	1	1	2.7	89.2	99.5	2.4	2.68

2	2	2	2	2	2	2	2.38	72.5	75.9	1.72	1.81	
2	2	2	2	2	2	2	2.74	2.85	3.15			
2	2	2	2	2	2	2	2.9	41.2	41.9	1.2	1.22	
2	2	2	2	2	2	2	2.06	73.8	71.9	1.52	1.48	
2	2	2	2	2	2	1	2	1.82	73.7	70.8	1.34	1.29
2	2	2	2	2	2	2	2.55	71.5	73.8	1.82	1.88	
2	2	2	2	2	2	2	1.86	2.14	2.08			
2	2	2	2	2	2	2	2.53	93.4	96.6	2.36	2.44	
2	2	2	2	2	2	2	2.41	76.1	83.8	1.84	2.02	
2	2	2	2	2	2	2	2.29	78.7	84.1	1.8	1.93	
2	2	2	2	2	2	2	2.1	76.5	79.9	1.61	1.68	
2	2	2	2	2	2	2	2.93	3.43	3.48			
2	2	2	2	2	2	2	2.18	80.9	81.8	1.77	1.79	
2	2	2	2	2	2	2	2.24	66.5	67.9	1.49	1.52	
2	2	2	2	2	2	2	2.26	81.6	83.8	1.84	1.89	
2	2	2	2	2	2	2	2.47	95.7	96.9	2.36	2.4	
2	2	2	2	2	2	2	3.1	3.48	3.44			
2	2	2	2	2	2	2	2.42	2.5	2.54			
2	2	2	2	2	2	1	3	2.24	43.5	49.8	0.98	1.12
2	2	2	2	2	2	1	3	1.79	46.6	56.5	0.83	1.01
2	2	2	2	2	2	2	2.53	2.61	2.69			
2	2	2	2	2	2	2	2.05	68.9	76.4	1.41	1.56	
2	2	2	2	2	2	2	3.11	97.5	3.03	3.12		
2	2	2	2	2	2	2	2.15	2.16	2.17			
2	2	2	2	2	2	2	2.34	85.8	84.9	2.01	1.99	
2	2	2	2	2	2	2	2.49	2.98	3.11			
2	2	2	2	2	2	2	2.87	79.2	82.4	2.27	2.36	
2	2	2	2	2	2	2	2.61	75.6	76.9	1.97	2.01	
2	2	2	2	2	2	2	3.04	82.6	80.8	2.51	2.45	
2	2	2	2	2	2	2	1.93	96.5	1.86	2.01		
2	2	2	2	2	2	2	3.11	89.2	88.3	2.78	2.75	
2	2	2	2	2	2	2.98	78.3	83	2.33	2.47		
2	2	2	2	2	2	2	2.6	78.1	80.9	2.03	2.1	
2	2	2	2	2	2	2	2.58	85.9	83.5	2.21	2.15	
2	2	2	2	2	2	2	3.73	77.9	80.1	2.91	2.99	
2	2	2	2	2	2	2	2.79	59.4	64.6	1.65	1.8	
2	2	2	2	2	2	2	3.62	66.5	71.3	2.41	2.58	
2	2	2	2	2	2	2	3.91	79.9	85	3.13	3.32	
2	2	2	2	2	2	2	3.79	91.8	92.1	3.48	3.49	
2	2	2	2	2	2	2	3.09	77.8	83.6	2.41	2.59	
2	2	2	2	2	2	2	2.69	92.4	99.6	2.49	2.68	
2	2	2	2	2	2	2	2.67	94.8	95.2	2.53	2.54	
2	2	2	2	2	2	2	2.71	73	79.2	1.98	2.15	
2	2	2	2	2	2	2	2.9	83.4	91.5	2.42	2.66	
2	2	2	2	2	2	2	2.44	81.3	82.6	1.99	2.02	
2	2	2	2	2	2	2	3.94	83.5	83.8	3.29	3.3	
2	2	2	2	2	2	2	2.9	83.4	91.5	2.42	2.66	

postpre	ml	r5pred	actu	percentr5	r20pred	actu1	percentr20	r5r20	actu2	percer5r20	r5	r5preper	r5posper	pospre	dursymp	durmonths	yrdiag	smok1
4.8	90	0.34	0.75	222.4	0.28	0.62	221.3	0.06	0.13	216.66	0.34	222.4	132.3	-40.5				
0.8	30	0.26	0.27	103.2	0.22	0.26	118.1	0.04	0.01	25	0.26	103.2	83.9	-18.7				
1.1	30	0.28	0.43	153.2	0.24	0.28	118.4	0.04	0.15	375	0.28	153.2	128.8	-15.9				
6.4	190	0.32	0.47	144.7	0.26	0.39	148.7	0.06	0.08	133.33	0.32	144.7	101.2	-30				
1.6	60	0.26	0.58	224.4	0.22	0.42	191.4	0.04	0.16	400	0.26	224.4	158.9	-29.2				
10.5	350	0.27	0.74	272.1	0.23	0.54	234	0.04	0.2	500	0.27	272.1	211.7	-22.2				
3.7	100	0.33	0.46	140	0.27	0.31	114.9	0.06	0.15	250	0.33	140	135.5	-3.2				
-2.9	-80	0.28	0.36	129	0.24	0.3	126.8	0.24	0.06	150	0.28	129	93	-27.9				
0.5	10	0.26	0.33	125	0.22	0.27	119.8	0.04	0.06	150	0.26	125	104.8	-16.1				
5.3	150	0.26	0.32	120.6	0.22	0.21	95.7	0.04	0.11	275	0.26	120.6	87.9	-27.1				
5.5	130	0.28	0.47	165.4	0.24	0.34	140.3	0.04	0.13	325	0.28	165.4	122.8	-25.7				
2.4	70	0.26	0.34	130.8	0.22	0.31	139.2	0.04	0.03	75	0.26	130.8	121.5	-7.1				
-0.6	-20	0.26	0.34	130.3	0.22	0.31	137.5	0.04	0.03	75	0.26	130.3	102.6	-21.3				
6.1	180	0.33	0.56	168.3	0.27	0.46	168.4	0.06	0.1	166.66	0.33	168.3	138.2	-17.9				
2	80	0.26	0.26	102.6	0.22	0.23	103.4	0.04	0.03	75	0.26	102.6	129.5	26.2				
2.6	50	0.38	0.64	168.5	0.32	0.42	132.2	0.06	0.22	366.66	0.38	168.5	147.2	-12.7				
2.7	90	0.37	0.4	106.1	0.31	0.27	87.9	0.06	0.13	216.66	0.37	106.1	78.5	-26				
6.2	200	0.26	0.38	148.3	0.22	0.31	139.6	0.04	0.07	175	0.26	148.3	149.5	0.9				
16.1	240	0.34	0.99	287.5	0.28	0.64	225.1	0.06	0.35	583.33	0.34	287.5	217.4	-24.4				
4.4	90	0.36	0.49	135.7	0.3	0.37	122.6	0.06	0.12	200	0.36	135.7	117.5	-13.4				
2.6	60	0.35	0.46	133	0.29	0.39	135.3	0.06	0.07	116.66	0.35	133	84.8	-36.3				
-0.2	-10	0.33	0.39	117.5	0.27	0.35	128.4	0.06	0.04	66.66	0.33	117.5	101.9	-13.3				
4	100	0.34	0.41	121.9	0.28	0.32	116.5	0.06	0.09	150	0.34	121.9	115.6	-5.2				
6.3	140	0.34	0.43	127.8	0.28	0.33	118.6	0.06	0.1	166.66	0.34	127.8	110.6	-13.5				
7.8	190	0.34	0.54	158.8	0.28	0.4	144.3	0.06	0.14	233.33	0.34	158.8	138.1	-13.1				
-2.7	-50	0.34	0.41	121.9	0.28	0.38	137.4	0.06	0.03	50	0.34	121.9	127.2	4.4				
7.8	250	0.26	0.32	121.9	0.22	0.25	114.1	0.04	0.07	175	0.26	121.9	99.4	-18.4				
5.8	130	0.34	0.37	108.5	0.28	0.31	108.9	0.06	0.06	100	0.34	108.5	107.3	-1.1				
0.4	10	0.33	0.38	115.9	0.27	0.33	121.4	0.06	0.05	83.33	0.33	115.9	102.7	-11.4				
-0.4	-10	0.33	0.36	108.6	0.27	0.38	142.4	0.06	-0.02	-33.33	0.33	108.6	111.3	2.5				
6	140	0.34	0.35	102.7	0.28	0.26	93.2	0.06	0.09	150	0.34	102.7	106	3.2				
3.2	80	0.34	0.42	124.2	0.28	0.36	128.8	0.06	0.06	100	0.34	124.2	111.2	-10.4				
0.5	10	0.27	0.44	165.4	0.23	0.32	140.9	0.04	0.12	300	0.27	165.4	145.8	-11.9				
-1	-50	0.26	0.22	83	0.22	0.22	102	0.04	0	0	0.26	83	75.8	-8.8				
1.6	40	0.36	0.43	117.8	0.3	0.32	106.1	0.06	0.11	183.33	0.36	117.8	113.5	-3.7				
-0.1	-10	0.26	0.36	138.1	0.22	0.3	132.2	0.04	0.06	150	0.26	138.1	146.5	6.1				
1.8	40	0.34	0.33	98.1	0.28	0.24	85.3	0.06	0.09	150	0.34	98.1	90.4	-7.9				
16	3000	0.34	0.69	203.2	0.28	0.47	169.4	0.06	0.22	366.66	0.34	203.2	163.5	-19.6				
5.4	130	0.27	0.41	151	0.23	0.34	149.1	0.04	0.07	175	0.27	151	98.4	-34.8				
-0.1	0	0.26	0.33	127.8	0.22	0.26	116.1	0.04	0.07	175	0.26	127.8	132.3	3.6				
8.8	270	0.27	0.3	111.9	0.23	0.21	94	0.04	0.09	225	0.27	111.9	110.8	-1				
1.9	40	0.4	0.88	220.5	0.34	0.57	169.3	0.06	0.31	516.66	0.4	220.5	158.3	-28.2				
3.8	90	0.29	0.46	160.5	0.25	0.36	146.1	0.04	0.1	250	0.29	160.5	122.7	-23.5				
2.7	80	0.27	0.48	176.4	0.23	0.4	172.4	0.04	0.08	200	0.27	176.4	139.6	-20.8				
-3.6	-50	0.38	0.47	122.4	0.32	0.35	109.3	0.06	0.12	200	0.38	122.4	124.2	1.5				
8.3	210	0.28	0.51	177.5	0.24	0.39	160	0.04	0.12	300	0.28	177.5	107.4	-39.5				
2.5	70	0.26	0.33	123.9	0.22	0.28	124.6	0.04	0.05	125	0.26	123.9	87.9	-29				
2.7	120	0.27	0.23	85.3	0.23	0.2	86.9	0.04	0.03	75	0.27	85.3	79.1	-7.3				
-2.9	-90	0.3	0.28	91.9	0.26	0.24	89.4	0.04	0.04	100	0.3	91.9	86	-6.4				
4.9	100	0.3	0.3	100.2	0.26	0.29	109.6	0.04	0.01	25	0.3	100.2	76.4	-23.7				
3.3	70	0.34	0.65	190.9	0.28	0.46	165.1	0.06	0.19	475	0.34	190.9	136.1	-28.7				
2	50	0.35	0.57	167.5	0.29	0.39	136.9	0.06	0.18	300	0.35	163.5	112.9	-31				
8	160	0.34	1.22	361.2	0.28	0.79	283.6	0.06	0.43	716.66	0.34	361.2	141	-61				
4.7	90	0.37	0.5	135	0.31	0.39	125.9	0.06	0.21	350	0.37	135	109.8	-18.7				
6.6	170	0.27	0.36	136.3	0.23	0.28	124.9	0.04	0.08	200	0.27	136.3	124.7	-8.5				
8.9	220	0.29	0.5	171.4	0.25	0.38	152.2	0.04	0.12	300	0.29	171.4	131.5	-23.3				

4.3	120	0.28	0.42	150.7	0.24	0.29	122.1	0.04	0.13	315	0.28	150.7	128.2	-14.9
8	190	0.28	0.4	141.3	0.24	0.36	146.7	0.04	0.04	100	0.28	141.3	79.2	-44
3.4	60	0.27	0.83	305.9	0.23	0.52	223.7	0.04	0.31	775	0.27	305.9	247.4	-19.1
10.7	220	0.34	1.04	303.3	0.28	1.01	355.3	0.06	0.03	50	0.34	303.3	146.4	-51.7
4.5	110	0.28	0.48	170.7	0.24	0.31	130.7	0.04	0.17	425	0.28	170.7	116.9	-31.5
-0.9	-30	0.32	0.37	118.3	0.28	0.31	112.2	0.04	0.06	150	0.32	118.3	86.3	-27.1
9	220	0.34	0.48	144.3	0.28	0.36	131.5	0.06	0.12	200	0.34	144.3	103.3	-28.4
8	280	0.26	0.31	119.9	0.22	0.28	128.3	0.04	0.03	75	0.26	119.9	91	-24.1
-0.7	-10	0.3	0.34	115.7	0.26	0.24	92.7	0.04	0.1	250	0.3	115.7	97	-16.1
-0.7	-10	0.37	0.79	211.5	0.31	0.51	163.4	0.06	0.28	466.66	0.37	211.5	150.5	-28.8
5	110	0.28	0.5	174.9	0.24	0.36	146.9	0.04	0.14	350	0.28	174.9	81.3	-53.5
-0.6	-10	0.35	0.59	166.8	0.29	0.41	139.9	0.06	0.18	300	0.35	166.8	159.5	-4.3
8.9	140	0.39	0.54	137.2	0.33	0.41	123.5	0.06	0.13	216.66	0.39	137.2	137.3	0.1
0.3	0	0.27	0.31	116.5	0.23	0.26	113.3	0.04	0.05	125	0.27	116.5	99.2	-14.8
2.5	80	0.28	0.45	162.3	0.24	0.39	164.8	0.04	0.06	150	0.28	162.3	127.7	-21.4
-2.1	-60	0.28	0.35	128.4	0.23	0.3	126.1	0.05	0.05	100	0.28	128.4	111	-13.6
3.3	70	0.36	0.61	169.2	0.3	0.49	160.7	0.06	0.12	200	0.36	169.2	122	-27.9
4	90	0.34	0.26	76.8	0.28	0.24	83.7	0.06	0.02	33.33	0.34	76.8	92.5	20.3
2.1	50	0.36	0.59	164.3	0.3	0.43	143.5	0.06	0.16	266.66	0.36	164.3	154	-6.3
-6.5	-130	0.29	0.78	272.2	0.25	0.47	192.2	0.04	0.31	775	0.29	272.2	211.9	-22.1
-2	-60	0.33	0.47	142.8	0.27	0.43	162.5	0.06	0.04	66.66	0.33	142.8	112	-21.6
6.5	250	0.27	0.31	116.4	0.23	0.3	130.4	0.03	0.01	33.33	0.27	116.4	99.3	-14.7
3.4	110	0.28	0.26	90.9	0.24	0.21	84.8	0.04	0.05	125	0.28	90.9	76.7	-15.6
3.2	110	0.26	0.24	92.5	0.22	0.23	102	0.04	0.01	25	0.26	92.5	88.6	-4.2
-8.2	-200	0.27	0.23	83.5	0.23	0.2	87.3	0.04	0.03	75	0.27	83.5	90.6	8.5
-5	-180	0.25	0.5	196.4	0.21	0.38	178.4	0.04	0.12	300	0.25	196.4	156.9	-20.1
0.9	20	0.28	0.34	120.7	0.24	0.32	132	0.04	0.02	50	0.28	120.7	94.8	-21.5
5.8	190	0.26	0.42	157.2	0.22	0.3	135.5	0.04	0.12	300	0.26	157.2	108.8	-30.8
5.6	120	0.29	0.49	168.5	0.25	0.38	152.2	0.04	0.11	275	0.29	168.5	151.8	-9.9
4.6	200	0.26	0.32	122.8	0.22	0.2	92.3	0.04	0.12	300	0.26	122.8	107.6	-12.4
2	80	0.28	0.24	87.5	0.24	0.25	103.1	0.04	-0.01	-25	0.28	87.5	94.5	8
2.9	80	0.34	0.34	101	0.28	0.32	112.6	0.06	0.02	33.33	0.34	101	105.7	4.7
0.6	20	0.28	0.26	94.4	0.24	0.24	99.9	0.04	0.02	50	0.28	94.4	93.6	-0.8
-1.5	-30	0.34	0.62	182.7	0.28	0.43	155	0.06	0.19	316.66	0.34	182.7	145.5	-20.4
3.3	80	0.3	0.38	125.5	0.26	0.33	126.6	0.04	0.05	625	0.3	125.5	87.8	-30
-0.4	-10	0.29	0.4	140.7	0.25	0.37	151.8	0.04	0.03	75	0.29	140.7	155.4	10.5
4.5	150	0.27	0.49	185.4	0.23	0.4	178.6	0.04	0.09	225	0.27	185.4	128.6	-30.6
10.5	290	0.28	0.43	152.7	0.24	0.36	149.7	0.04	0.07	175	0.28	152.7	112.7	-26.3
2	50	0.29	0.56	192.7	0.25	0.41	160.8	0.04	0.15	375	0.29	192.7	172.5	-10.4
-0.7	-30	0.26	0.26	102	0.22	0.22	100.1	0.04	0.04	100	0.26	102	78.7	-22.9
6.3	210	0.26	0.22	83.2	0.22	0.2	90.6	0.04	0.02	50	0.26	83.2	92.8	11.5
3.4	100	0.26	0.35	132.4	0.22	0.33	146.8	0.04	0.02	50	0.26	132.4	101.7	-23.2
6	160	0.27	0.53	200.4	0.23	0.28	122.9	0.04	0.25	625	0.27	200.4	123.5	-38.3
1.1	30	0.34	0.55	162.3	0.28	0.39	141.9	0.06	0.16	266.66	0.34	162.3	103.7	-36.1
3.5	90	0.27	0.25	93.1	0.23	0.22	96.8	0.04	0.03	75	0.27	93.1	87.4	-6.2
4.4	120	0.28	0.33	118.3	0.24	0.26	112.1	0.04	0.07	175	0.28	118.3	95	-19.7
1.4	30	0.34	0.57	168.7	0.28	0.34	120.7	0.06	0.23	383.33	0.34	168.7	131	-22.3
-4.4	-70	0.29	0.23	80.2	0.25	0.21	86.3	0.04	0.02	50	0.29	80.2	91.5	14
6.2	250	0.26	0.2	75.4	0.22	0.19	84	0.04	0.01	25	0.26	75.4	77.8	3.1
2.7	50	0.38	0.8	211.3	0.32	0.5	157.4	0.06	0.3	500	0.38	211.3	119.2	-43.6
0.4	10	0.33	0.47	138.1	0.27	0.4	146.9	0.06	0.07	116.66	0.33	138.1	120.3	-12.9
3.8	90	0.29	1.05	356.4	0.25	0.67	263.4	0.04	0.38	950	0.29	356.4	206.3	-42.1
4.5	140	0.25	0.41	159.4	0.21	0.31	144.4	0.04	0.1	250	0.25	159.4	124.1	-22.2
9.2	240	0.28	0.82	287.1	0.24	0.49	198.7	0.04	0.33	825	0.28	287.1	192	-33.1
4.8	110	0.36	0.5	137.2	0.3	0.39	128.6	0.06	0.11	183.33	0.36	137.2	106.7	-22.2
-4.1	-100	0.36	0.37	104.1	0.3	0.35	116.9	0.06	0.02	33.33	0.36	104.1	86.4	-17
-2	-50	0.27	0.37	138.6	0.27	0.31	136.4	0.04	0.06	150	0.27	138.6	111.6	-19.5
2.6	50	0.36	0.73	205.8	0.3	0.38	128.7	0.06	0.35	583.33	0.36	205.8	251.4	22.1
7.5	160	0.38	0.8	212.8	0.32	0.42	133.2	0.06	0.38	633.33	0.38	212.8	115.4	-45.8
1.2	20	0.37	0.49	134.3	0.31	0.34	111	0.06	0.15	250	0.37	134.3	114	-15.2
2.1	30	0.37	0.5	135.4	0.31	0.45	146.9	0.06	0.05	83.33	0.37	135.4	197.4	45.8
3.1	70	0.29	0.49	166.4	0.25	0.38	151	0.04	0.11	275	0.29	166.4	163.5	-1.8
9.4	150	0.38	1.14	302.5	0.32	0.71	222.8	0.06	0.43	716.66	0.38	302.5	208.5	-31.1
4.9	1	0.3	0.4	133.3	0.26	0.29	109.4	0.04	0.11	275	0.3	133.3	119.8	-10.2
0	0	0.29	0.41	142.6	0.25	0.38	151.7	0.04	0.03	75	0.29	142.6	132.1	-7.3
7	150	0.36	0.69	191.6	0.3	0.51	170.2	0.06	0.18	300	0.36	191.6	174.7	-8.8
1.3	20	0.36	0.96	267.1	0.3	0.53	179.7	0.06	0.43	716.66	0.36	267.1	243.3	-8.9
-2	-40	0.36	0.67	188.4	0.3	0.39	132.6	0.06	0.28	466.66	0.36	188.4	114.4	-39.3
0.7	10	0.4	0.64	160.6	0.34	0.32	94.3	0.06	0.32	533.33	0.04	160.6	143.1	-10.9
1.8	40	0.35	0.5	143.7	0.29	0.4	137.5	0.06	0.1	166.66	0.35	143.7	106.7	-25.7
7.1	160	0.35	0.61	171.7	0.29	0.49	167	0.06	0.12	200	0.35	171.7	129.9	-24.3
5.8	110	0.29	0.44	149.4	0.25	0.27	107.9	0.04	0.17	425	0.29	149.4	109.1	-26.9
4.2	70	0.37	0.88	235.5	0.31	0.49	157.6	0.06	0.39	650	0.37	235.5	187.1	-20.5
11.5	280	0.3	0.49	163.2	0.26	0.31	117.7	0.04	0.18	450	0.3	163.2	91.9	-43.7
4.8	90	0.35	0.57	160.5	0.29	0.45	153.9	0.06	0.12	200	0.35	160.5	131.2	-18.2
10.4	300	0.3	0.37	126.1	0.26	0.32	125.4	0.04	0.05	125	0.3	126.1	97.4	-22.8
1.6	20	0.28	0.69	247.2	0.24	0.39	164.5	0.04	0.3	750	0.28	247.2	231.7	-6.3
-2.6	-40	0.37	0.99	266.5	0.31	0.67	214.1	0.06	0.32	533.33	0.37	266.5	202.5	-24
-3.9	-50	0.39	1.27	323.8	0.33	0.53	158.9	0.06	0.74	1233.33	0.39	323.8	464.9	43.6
3.3	60	0.35	0.91	262.5	0.29	0.67	234.7	0.06	0.24	400	0.35	262.5	145.3	-44.7
-2.9	-60	0.4	0.52	131.4	0.34	0.39	115.6	0.06	0.13	216.66	0.4	131.4	116.4	-11.5
3.3	80	0.3	0.25	81.6	0.26	0.16	61.6	0.04	0.09	225	0.3	81.6	65.3	-20
10.1	180	0.36	0.49	138.1	0.3	0.39	129.6	0.06	0.1	166.66	0.36	138.1	125.8	-8.9
6.9	130	0.36	0.67	186.8	0.3	0.55	183.6	0.06	0.12	200	0.36	186.8	110.1	-41.1
4.4	70	0.36	0.62	172.5	0.3	0.42	140.5	0.06	0.2	333.33	0.36	172.5	155.6	-9.8
1.6	50	0.29	0.49	166.3	0.25	0.35	138.7	0.04	0.14	350	0.29	166.3	120.8	-27.4
1.1	20	0.38	0.67	175.8	0.32	0.35	109.8	0.06	0.32	533.33	0.38	175.8	224.5	27.7
21	30	0.38	0.31	79.8	0.32	0.26	81.8	0.06	0.05	83.33	0.38	79.8	123.4	54.6
2.7	50	0.37	0.83	225.8	0.31	0.61	196.2	0.06	0.22	366.66	0.37	225.8	225.5	-0.1
1.3	40	0.36	0.52	143.8	0.3	0.45	150.7	0.06	0.07	116.66	0.36	143.8	102.1	-29
-0.9	-40	0.27	0.27	101.4	0.23	0.24	102.7	0.04	0.03	75	0.27	101.4	105.5	4
1.7	40	0.36	0.55	152.3	0.3	0.42	139.2	0.06	0.13	216.66	0.36	152.3	137.9	-9.4
14.4	140	0.31	0.76	242	0.27	0.31	113.2	0.04	0.45	1125	0.31	242	199	-17.8
21.1	180	0.38	1.53	405.3	0.32	0.92	291.1	0.06	0.61	1016.66	0.38	405.3	357.5	-11.8
2.9	80	0.36	0.73	201.6	0.3	0.59	195.4	0.06	0.14	233.33	0.36	201.6	140	-30.6
10.7	150	0.38	0.71	188.5	0.32	0.4	125.6	0.06	0.31	516.66	0.38	188.5	193.2	2.5
2.8	90	0.29	0.83	287.4	0.25	0.61	246.8	0.04	0.22	550	0.29	287.4	250.2	-13
0.5	10	0.38	0.43	113.3	0.32	0.31	99.1	0.06	0.12	200	0.38	113.3	132.4	16.8
-1.1	-20	0.37	0.44	120	0.31	0.35	112.7	0.06	0.09	150	0.37	120	127.3	5.8
4.4	130	0.37	0.61	164.9	0.31	0.4	129.2	0.06	0.21	350	0.37	164.9	129.3	-21.6
4.1	90	0.29	0.34	116.9	0.25	0.28	111.1	0.04	0.06	150	0.29	116.9	99	-15.3
1.6	40	0.36	0.58	160.8	0.3	0.41	135.6	0.06	0.17	283.33	0.36	160.8	118.8	-26.1
-2.2	-60	0.29	0.57	197.3	0.25	0.48	193.7	0.04	0.09	225	0.29	197.3	137.5	-30.3
7.8	50	0.37	0.53	143	0.31	0.42	136.6	0.06	0.11	183.33	0.37	143	143.7	0.5
-1	-30	0.3	0.44	146.5	0.26	0.29	110.4	0.04	0.15	375	0.3	146.5	111.7	-23.7
6	140	0.29	0.34	116.1	0.25	0.27	107.5	0.04	0.07	175	0.29	116.1	98.5	-15.1

3.6	70	0.34	0.45	135	0.28	0.31	111.7	0.06	0.14	233.33	0.34	135	104.3	-22.8
-2.7	-60	0.34	0.42	124	0.28	0.3	109	0.06	0.12	200	0.34	124.1	116	-6.6
2.8	80	0.26	0.45	173.5	0.22	0.38	174.4	0.04	0.07	175	0.26	173.5	195.7	12.8
8.8	150	0.34	0.37	109.5	0.28	0.35	123.9	0.06	0.02	33.33	0.34	109.5	157	43.4
7.2	170	0.27	0.53	198.8	0.23	0.3	133	0.04	0.23	575	0.27	198.8	133.2	-33
6.3	90	0.27	0.39	147.1	0.23	0.29	127.6	0.04	0.1	250	0.27	147.1	107.3	-27.1
0.3	10	0.26	0.45	173.5	0.22	0.39	178.9	0.04	0.06	150	0.26	173.5	182.6	5.3
7.5	180	0.33	0.43	132.7	0.27	0.37	138.6	0.06	0.06	100	0.33	132.7	101.1	-23.9
7.8	190	0.33	0.7	209.3	0.27	0.54	197.5	0.06	0.16	266.66	0.33	209.3	215.8	3.1
0.5	10	0.33	0.53	158.5	0.27	0.44	159.8	0.06	0.09	150	0.33	158.5	145.8	-8
8.4	170	0.34	0.38	111.7	0.28	0.29	105.4	0.06	0.09	150	0.34	111.7	112.8	0.9
9.7	240	0.33	0.57	171.9	0.27	0.49	178.4	0.06	0.08	133.33	0.33	171.9	137.2	-20.2
1.6	30	0.35	0.53	153.5	0.29	0.46	159	0.06	0.07	116.66	0.35	153.5	156.2	1.8
0.3	10	0.26	0.34	129.7	0.22	0.34	151.9	0.04	0	0	0.26	129.7	107.5	-17.1
9.7	240	0.33	0.57	171.9	0.27	0.49	178.4	0.06	0.08	133.33	0.33	171.9	137.2	-20.2

sno	name	hno	age	sex	mstatus	prof	wheez	recwhee	recbreath	recchest	worsnt	worsea	eczema	animal	aerosol	chngtemp	domdust	drugs	exer
1	Dipankar Das	430872F	18	1	2	Student	1	1	1	1	1	1	1	2	2	2	1	2	2
2	Doman Prasad Gupta	325039F	65	1	1	Shop Keeper	1	1	1	1	1	1	2	2	2	1	1	2	2
3	B.Kameshwara Rao	477083F	38	1	1	glass business	1	1	1	1	1	1	1	2	2	1	1	2	1
4	Sarala Premakumari	519447B	41	2	1	Staff Nurse	1	1	1	1	1	1	2	2	2	2	1	2	2
5	Santhosh R0shan Kumar	338024C	32	1	1	Therapist	1	1	1	1	1	1	1	1	2	1	2	2	2
6	Arpita Das	458239D	25	2	1	Asst. Engineer,Electricity Dept.	1	1	1	1	1	1	2	2	2	1	1	2	2
7	Anindrya Sundar Dutta	472654F	16	1	2	Student	1	1	1	1	1	1	1	2	2	1	1	2	2
8	D.Rachel	081190C	52	2	1	House wife	1	1	1	1	1	1	1	1	2	1	1	2	1
9	Santhosh Kumar Ray	780519C	72	1	1	Rtd.Engineer	2	1	2	1	1	1	2	2	2	1	1	2	2
10	G.vasudevan	177805F	62	1	1	Unemployer	1	1	1	1	1	1	1	2	2	2	1	2	2	1
11	Laksmi	473230F	23	2	1	House wife	1	1	1	1	1	1	1	2	2	2	1	1	2	1
12	Kasinath Adak	450211F	57	1	1	Farmer	1	1	1	1	1	1	1	1	2	2	1	1	2	1
13	Rubikumari	478387F	24	2	2	Nurse	1	1	1	1	1	1	1	1	2	2	1	1	2	1
14	Manonmani	703886A	57	2	1	Housewife	1	1	1	1	1	1	1	1	2	2	1	1	2	1
15	Soma Paul	431772F	38	2	2	Govt.service	1	1	1	1	1	1	1	2	2	2	1	1	1
16	Mr.Sathya Narayan P.M.	951871D	39	1	1	Working in a grocery shop	1	1	1	1	1	1	1	2	2	2	1	1	2	2
17	A.Ashok Kumar	099499F	28	1	2	Electrician	1	1	1	1	1	1	1	1	2	2	1	1	2	2
18	Renu Patwari	888057D	35	2	1	Cloth business	1	1	1	1	1	1	1	1	2	2	1	1	2	2
19	Sangita Saha	926986D	35	2	1	Housewife	1	1	1	1	1	1	1	2	2	2	1	1	2	2
20	Indu Srivastava	444061F	63	2	1	Housewife	1	1	1	1	1	1	1	1	2	2	1	1	2	1
21	Lipika Bisva	477154F	48	2	1	Staff Nurs	1	1	1	1	1	1	1	2	2	2	1	1	2	2

	s					e															
22	Rama l Inga m S.	346704F	54	1	1	Labo urer	1	1	1	1	1	1	1	2	2	2	1	1	2	2	
23	Uma Mahe shwa ri	333781B	60	2	1	Post Offic e agent	1	1	1	1	1	1	1	2	2	2	1	1	2	1	
24	Sarav anan	981035C	28	1	2	Paint Facto ry super viser	1	1	1	1	1	1	1	2	2	1	1	1	2	2	
25	Ujjwa l Sadh u	482831F	29	1	1	Farm er	1	1	1	1	1	1	1	1	2	2	2	2	2	1	
26	Thivy a Bhar athi	417880F	20	2	2	Lab Tech nicia n	1	1	1	1	1	1	1	2	2	2	1	1	2	2	
27	Glory Selvar ai		63	2	1	Rtd.N urse	1	1	1	1	1	1	1	1	2	2	1	1	2	2	
28	Bani Halde r	483109F	47	2	1	1	1	1	1	1	1	1	1	2	2	2	1	1	2	2	
29	Dipali Mazu mdar	480524F	46	2	1	Hous ewife	1	1	1	1	1	1	1	2	2	2	1	1	1	1	
30	Sivak umar	361626F	50	1	1	Hand loom work er	1	1	1	1	1	1	1	1	2	2	1	1	2	1	
31	Poonk odi S.	803412D	34	2	1	1	1	1	1	2	1	2	2	2	1	1	2	2			
32	Nitai Ghos h	477400F	26	1	2	Scho ol Teac her	1	1	1	1	2	1	1	1	2	2	1	1	2	1	
33	Purb asha	668491D	18	2	2	B.A. Seco nd year	1	1	1	1	1	2	1	1	1	1	1	1	2	1	
34	Nilfar Begu m	466202F	27	2	1	Hous ewife	2	1	2	1	1	1	1	2	2	2	1	1	2	1	
35	Man os Kuma r	045273D	21	1	2	Stude nt	1	1	1	1	1	2	1	2	2	2	1	1	2	1	
36	Dand ana Mistr y	428403F	41	2	1	Hous ewife	1	1	1	1	1	1	1	1	2	2	1	1	2	1	
37	Selva raj	403293F	26	1	1	Const ructo n Work er	1	1	1	1	1	1	1	2	2	2	1	1	2	1	
38	Biswa jit Pram anic	484560F	33	1	1	Liber arian	1	1	1	1	1	1	1	1	2	2	1	1	2	2	
39	Palla b Man dal	487779F	18	1	2	Stude nt	1	1	1	1	1	1	1	1	2	2	1	1	2	1	
40	Mita Kund u	221199F	37	2	2	Scho ol Teac her	1	1	1	1	1	1	1	2	2	2	1	1	2	2	
41	Sumit ra Debd arma	480158F	37	2	1	Hous ewife	1	1	1	1	1	1	1	2	2	2	1	1	2	2	
42	Sampi a Saha	479025F	27	2	1	House wife	1	1	1	1	1	1	1	2	2	1	1	2	2		
43	Sailaj a	787049C	32	2	1	Typis t	1	1	1	1	1	1	1	2	1	2	1	1	2	1	
44	Asha Devi	444224F	39	2	1	Hous ewife	1	1	1	1	1	1	1	1	2	2	1	1	2	1	
45	Chan dra Nath	471371B	50	1	1	Doct or	1	1	1	1	1	1	1	2	2	2	1	1	2	1	
46	Mahi tosh Patra	491848F	65	1	1	Teac her	1	1	1	1	1	1	1	2	2	2	1	1	2	2	
47	Vijay alaks hmi	999448C	48	2	1	Hous ewife	1	1	1	1	1	1	1	2	2	2	1	1	2	1	
48	Aha med Baig	956370C	73	1	1	Rtd.S chool Teac her	2	1	2	1	1	1	1	1	2	2	1	1	2	2	
49	Parvi nder Kaur chavl a	491499F	37	2	1	Hous ewife	1	1	1	1	1	1	1	2	2	2	1	1	2	1	
50	Gopa l Shil	473816D	40	1	1	Busin ess	1	1	1	1	1	1	1	1	2	2	1	1	2	1	
51	Gout ham	484307F	33	1	1	Rice Shop	1	1	1	1	1	1	1	2	2	2	1	1	2	2	

	das					owner															
52	Kartick Sarkar	491185F	26	1	2	Electrical Supervisor	1	1	1	1	1	1	1	1	2	2	1	1	2	1	
53	Sachin sethi	980925C	26	1	2	Bank Employer	1	1	1	1	1	1	1	2	2	2	2	2	2	2	
54	Fahim Anwar	488341F	25	1	2	Student	1	1	1	1	1	1	1	2	2	2	1	1	2	1	
55	Ravikumar	368386F	21	1	2	Steel factory	1	1	1	1	1	1	1	1	2	2	1	1	2	1	
56	Anilkumar Das	436367F	66	1	1	Rtd.Auditor	1	1	1	1	1	1	1	1	2	2	1	1	2	1	
57	Minati Ranikar	544209C	56	2	1	School Teacher	1	1	1	1	1	1	1	1	2	2	1	1	2	2	
58	Shantahar Ali	491949OF	44	1	1	Fish Business	1	1	1	1	1	1	1	1	2	2	1	2	1	1	
59	Sumita Kar	116706D	33	2	1	School Teacher	1	1	1	1	1	1	1	1	2	2	1	1	2	2	
60	Ratan Mandal	489515F	44	1	1	Farmer	1	1	1	1	1	1	1	2	2	2	1	2	2	2	
61	Rampa Basak	305758	28	2	2	Housewife	1	1	1	1	1	1	1	2	2	2	1	1	2	2	
62	Leela Singh	948843D	60	2	1	Housewife	1	1	1	1	1	1	1	2	2	2	1	1	2	1	
63	Uma Muthar S.A.	445699	26	1	1	Business	1	1	1	1	1	1	1	1	2	2	1	1	2	1	
64	Vijayalakshmi	703280A	49	2	1	House wife	1	1	1	1	1	1	1	2	2	2	1	1	2	2	
65	Shaik Nasreen	167897F	22	2	1	Housewife	1	1	1	1	1	1	1	2	2	2	1	1	2	2	
66	Prameela	432452F	31	2	1	School Teacher	1	1	1	1	1	1	1	1	2	2	1	1	2	2	
67	Sovan Mandal	483859F	25	1	Mechanic	1	1	1	1	1	1	1	2	2	2	1	1	2	2		
68	Tarun Kumar	492237F	42	1	1	School Teacher	1	1	1	1	1	1	1	2	2	2	1	1	2	1	
69	Ramen Sain	492723F	49	1	1	Business	1	1	1	1	1	1	1	1	2	2	1	1	2	1	
70	Mithilesh Kumar	953835D	45	1	1	Coal mine Manager	1	1	1	1	1	1	1	2	2	2	1	1	2	2	
71	Krishnendu Mandal	473947F	29	1	1	School Teacher	1	1	1	1	1	1	1	1	2	2	1	1	2	2	
72	Arajit Kumar Sen	494571F	20	1	2	College Student	1	1	1	1	1	1	1	2	2	2	1	1	2	2	
73	Soma Goswamy	451557F	36	2	1	Housewife	1	1	1	1	1	1	1	2	2	2	1	1	2	2	
74	Sarwan Kumar Jha	242907D	35	1	1	School Techer	1	1	1	1	1	1	1	1	2	2	1	1	2	1	
75	Sunil Banerjee	437659F	67	1	1	Rtd. Teacher	1	1	1	1	1	1	1	1	2	2	1	1	2	2	
76	T.Victor	763379C	62	1	1	Construction Worker	2	1	2	1	1	1	1	2	2	1	1	2	1		
77	Hassanbaua Abdul Salim	496660F	53	1	1	Lab Technician	1	1	1	1	1	1	1	1	2	2	1	1	2	1	
78	Sunilkumar Dev	493215F	48	1	1	Cloth business	1	1	1	1	1	1	1	1	2	2	1	1	2		
79	Shirley Carolin	375357F	34	2	2	Housewife	1	1	1	1	1	1	1	2	2	2	1	2	2	1	
80	Prasanna Rao	488415F	39	1	1	Bank Employee	1	1	1	1	1	1	1	1	2	2	1	1	2	1	

81	Gokila	640736C	27	2	1	Housewife	1	1	1	1	1	1	1	2	2	2	1	1	2	2
82	Madanlal Shaw	086460D	68	1	1	Cloth business	1	1	1	1	1	1	1	2	2	2	1	1	2	2
83	Salla Gundala Prathiusha	833886D	21	2	2	School Student	1	1	1	1	1	1	1	2	2	2	1	1	2	1
84	Arunima Kanungu	494230F	22	2	2	College Student	1	1	1	1	1	1	1	2	2	2	1	1	2	1
85	G.Ragul	552401B	15	1	2	School Student	1	1	1	1	1	1	1	1	2	2	1	1	2	1
86	Jharna Jana	494735F	49	2	1	Housewife	1	1	1	1	1	1	1	1	2	2	1	1	2	1
87	Lakshmi Roy	160392F	55	2	1	Housewife	1	1	1	1	1	1	1	1	2	2	1	1	2	1
88	Debjani Sahoo	446651D	30	2	1	Housewife	1	1	1	1	1	1	1	2	2	2	1	1	2	2
89	Santhosh Kumar	293205F	29	1	1	Mechanic	1	1	1	1	1	1	1	1	2	2	1	1	1	
90	Sutapa Das Bairajya	215280F	22	2	2	College Student	1	1	1	1	1	1	1	2	2	2	1	1	2	1
91	Manash Sahana	311229F	35	1	1	Sweet shop owner	1	1	1	1	1	1	1	2	2	2	1	1	2	2
92	Subashini	288070C	38	2	1	peronnal dept. CMC	1	1	1	1	1	1	1	2	2	2	1	1	2	2
93	Srinivasulu	675674D	53	1	1	Moneylender	1	1	1	1	1	1	1	1	2	2	1	1	2	2
94	Yadalapally Nagaraju	312121D	28	1	2	Clerk	1	1	1	1	1	1	1	1	2	2	1	1	2	2
95	Vijayakumar	496441F	17	1	2	Student	1	1	1	1	1	1	1	2	2	2	1	2	2	2
96	Sunitha Prasad	486121F	31	2	1	housewife	1	1	1	1	1	1	1	2	2	2	1	1	2	1
97	Padmapriya	495375F	22	2	2	Software Enginner	1	1	1	1	1	1	1	1	2	2	1	1	2	2
98	Soni Guptaa	301144F	29	2	1	Housewife	1	1	1	1	1	1	1	2	2	2	1	1	2	1
99	Shanti Devi	207333F	29	2	1	Housewife	1	1	1	1	1	1	1	2	2	2	1	1	2	2
100	Nutan Sinha	489914F	55	2	1	School Teacher	1	1	1	1	1	1	1	1	2	2	1	1	2	1
101	Swapan Maji	694784D	29	1	2	Canteen Worker	1	1	1	1	1	1	1	2	2	2	1	1	2	1
102	G0uthamKumar Sarangi	199726F	34	1	2	Teacher	1	1	1	1	1	1	1	1	2	2	1	1	2	2
103	Maheshprashad Barnwal	414142F	40	1	1	Count employee	1	1	1	1	1	1	1	1	2	2	1	2	2	1
104	Khuku Das	462562F	38	2	1	House wife	1	1	1	1	1	1	1	1	2	2	1	1	2	2
105	Ruhina Bibi	344815F	26	2	1	House wife	1	1	1	1	1	1	1	2	2	2	1	1	2	2
106	Suparna Sarkar	600853F	20	2	2	Student	1	1	1	1	1	1	1	1	2	2	1	1	2	2
107	Beulah S.	391099B	43	2	1	Staff Nurse	1	1	1	1	1	1	1	2	2	2	1	2	2	2
108	RaviChandran	463213D	48	1	1	Army driver	1	1	1	1	1	1	1	2	2	2	1	1	2	2
109	Rama	1298	66	1	1	Doct	1	1	1	1	1	1	1	1	2	2	1	1	2	2

	smy C.	29C				or																	
110	Sivali Yadav	600042F	41	1	1	Farmer	1	1	1	1	1	1	1	2	2	2	1	2	2	1			
111	Soundaravalli	419279F	52	2	1	Housewife	1	1	1	1	1	1	1	2	2	2	1	2	2	2			
112	Alleyamma Mathew	153891F	59	2	1	Housewife	1	1	1	1	1	1	1	1	2	2	1	1	2	2			
113	Rukmani,S.	499717F	35	2	1	Poultry medicine storage worker	1	1	1	1	1	1	1	1	2	2	1	1	2	2			
114	TusharModak	479346F	40	1	1	Farmer	1	1	1	1	1	1	1	2	2	2	1	2	2	1			
115	Malti Devi	482232F	44	2	1	Housewife	1	1	1	1	1	1	1	2	2	2	1	1	2	1			
116	Tapan Kumar Dutta	603297F	50	1	1	Business	1	1	1	1	1	1	1	2	2	2	1	1	2	2			
117	Ravi Chandran M.	452925D	43	1	1	Oil & gas agency	1	1	1	1	1	1	1	1	2	2	1	1	2	2			
118	Ramesh Kalati	603034F	56	1	1	PWD draftsman	1	1	1	1	1	1	1	1	2	2	1	1	2	1			
119	Narayanan	605796A	63	1	1	Shop Owner	1	1	1	1	1	1	1	1	2	2	1	1	2	2			
120	Arehana Pramanick	963079D	53	2	1	Housewife	1	1	1	1	1	1	1	1	2	2	1	1	2	2			
121	Sangita Devi	8080934 6D	34	2	1		1	1	1	1	1	1	1	2	2	1	1	2	1				
122	Subramanaian	317849A	44	1	1	School Teacher	1	1	1	1	1	1	1	1	2	2	1	1	2	2			
123	Chinthamani Roy	491813F	46	2	1	Housewife	2	1	1	1	1	1	1	2	2	2	1	1	2	2			
124	Vasantha	907662	56	2		Executive Officer in Govt. Service	1	1	1	1	1	1	1	1	2	2	1	1	2	1			
125	Shiny Angel	606607A	26	2	1	Nurse	1	1	1	1	1	1	1	1	2	2	1	1	2	2			
126	Anand Pradhan	603239F	43	1	1	Shop Owner	1	1	1	1	1	1	1	2	2	2	1	1	2	1			
127	Kanchandevi	457787F	50	2	1	Housewife	1	1	1	1	1	1	1	1	2	2	1	1	2	1			
128	Mridesh Kumar	480882F	39	1	1	Spice Distributor	1	1	1	1	1	1	1	1	2	2	1	1	2	1			
129	Ramawati Devi	736115D	67	2	1	Housewife	1	1	1	1	1	1	1	1	2	2	1	1	2	1			
130	Subham Agarwal	743750D	16	1	2	School Student	1	1	1	1	1	1	1	1	2	2	1	1	2	1			
131	Bawani Biswas	603782F	29	2	1	Housewife	2	2	2	1	1	1	1	1	2	2	1	1	1				
132	Abhijit Pal	605657F	27	1	1	Spice Factory	1	1	1	1	1	1	1	1	2	2	1	1	2	1			
133	Annie Maria Sunny	503479D	21	2	2	Nursing Student	1	1	1	1	1	1	1	2	2	2	1	1	2	1			
134	Dakshinamoorthy	428525F	55	1	1	Security	1	1	1	1	1	1	1	2	2	2	1	1	2	1			
135	Kumkum Roy	5393700D	47	2	1	Housewife	1	1	1	1	1	1	1	1	2	2	1	1	2	1			
136	Sanjoy Karm	603549F	41	1	1	Gold business	1	1	1	1	1	1	1	1	2	2	1	1	2	1			

	alar																			
137	Lalita Devi	6060 18F	45	2	1	Housewife	1	1	1	1	1	1	1	2	2	2	1	1	2	1
138	Kajal Baidya	4991 79F	59	2	1	Primary School Teacher	1	1	1	1	1	1	1	2	2	2	1	1	2	1
139	Gyaindar Kumar Singh	0982 58F	26	1	2	Transport	1	1	1	1	1	1	1	2	2	2	1	1	2	2
140	Kartic Chandra Towray	5750 73D	58	1	1	Clerk	1	1	1	1	1	1	1	2	2	2	1	1	2	1
141	Jomon Joseph	4997 10F	31	1	1	Chriatian Missioary	1	1	1	1	1	1	1	2	2	2	1	2	1	
142	Elizabeth	3457 46F	52	2	1	Housewife	1	1	1	1	1	1	1	2	2	2	1	1	2	1
143	Khokan Pal	3692 96F	37	1	1	Businessman	1	1	1	1	1	1	1	2	2	2	1	1	2	1
144	Bina Sarkar	6050 51F	65	2	1	Housewife	1	1	1	1	1	1	1	2	2	2	1	1	2	1
145	Pradep Das	8330 86D	32	1	1	Gardener	1	1	1	1	1	1	1	1	2	2	1	1	2	2
146	Moorhy P,	8334 29D	31	1	1	Driver	1	1	1	1	1	1	1	2	2	2	1	1	2	1
147	John Christopher	2797 08	58	1	1	Cement Factory	1	1	1	1	1	1	1	2	1	2	1	1	2	1
148	Vijay akumar N.	7043 25A	29	1	1	BHEL Employee	2	1	2	1	2	1	1	2	2	2	1	1	2	2
149	Ashy Alex	3626 10F	22	2	2	Optometry studies	1	1	1	1	1	1	1	1	2	2	1	1	2	1
150	Prabhavati Devi	3420 46F	63	2	1	Housewife	1	1	1	1	1	1	1	2	2	2	1	2	2	1
151	Thukaram H.	0010 84F	73	1	1	Rtd. Govt. Employee	1	1	1	1	1	1	1	1	2	1	1	1	2	1
152	Reshma Khonglah	6068 74F	35	2	1	Housewife	1	1	1	1	1	1	1	1	2	1	1	1	2	1
153	Samsad Begum	4827 04D	52	2	1	Housewife	1	1	1	1	1	1	1	1	2	2	1	1	2	2
154	Sumathi S.	9779 39C	46	2	1	Housеeife	1	1	1	1	1	1	1	2	2	1	1	1	2	1
155	Rubina Rai	3803 36F	25	2	2	Student	1	1	1	2	1	1	1	1	2	2	1	1	2	2
156	Om Prakash Shaw	6107 89F	35	1	1	Rice Merchant	1	1	1	1	1	1	1	1	2	2	1	1	2	2
157	Goutham K.	6068 90F	18	1	2	School Student	1	1	1	1	1	1	1	2	2	1	1	2	1	
158	Deepa Rao S.	4858 00F	23	1	2	Mechanical Engineer	1	1	1	1	1	1	1	1	2	2	1	1	2	2
159	Anvardaas Kumar	4835 18F	32	2	1	Housewife	1	1	1	1	1	1	1	2	2	1	1	1	2	2
160	Soniya L.	9155 59D	27	2	2	Asst. Prof. in Engineering College	1	1	1	1	1	1	1	2	2	2	1	1	2	2
161	Dhasarathan	4760 19F	47	1	1	Farmer	1	1	1	1	1	1	1	2	2	2	1	1	2	2
162	Surendra kumar Sinha	3718 85F	60	1	1	Politician	1	1	1	1	1	1	1	1	2	2	1	1	2	2

163	Ashokkumar	418349F	46	1	1	Bank Manager	1	1	1	1	1	1	1	1	2	2	1	1	2	2
164	Putul Karmakar	941863C	34	2	1	Housewife	1	1	1	1	1	1	1	1	2	2	1	1	2	2
165	Mala Sinha	201972F	55	2	1	Housewife	1	1	1	1	1	1	1	2	2	2	1	1	2	2
166	Bhabahani Giri	954026D	29	2	1	Housewife	1	1	1	1	1	1	1	2	2	2	1	1	2	2
167	Indrajit Sutradar	486798F	30	1	2	Businessman	1	1	1	1	1	1	1	1	2	1	1	1	2	2
168	Lizakumari	878167D	20	2	2	Student	1	1	1	1	1	1	1	1	2	1	1	1	2	1
169	Nurul Islam K.	162573F	48	1	1	Construcon Worker	1	1	1	1	1	1	1	1	2	1	1	1	2	1
170	Chaina Ganguly	489404F	46	2	1	Housewife	1	1	1	1	1	1	1	2	2	1	1	1	2	1
171	Shalini Sihgh	610764F	20	2	2	Student	2	1	2	1	1	1	1	1	2	2	1	1	2	2
172	Sanjay Prasad Kushwala	781132D	32	1	1	Student	1	1	1	1	1	1	1	2	2	1	1	1	2	2
173	Sarala S.	606866F	46	2	1	School Teacher	1	1	1	1	1	1	1	2	2	2	1	1	2	1
174	Rama Roy	472270F	50	2	1	Housewife	1	1	1	1	1	1	1	1	2	2	1	1	2	2
175	Gulab Devi Bokaria	858852C	66	2	1	Housewife	1	1	1	1	1	1	1	1	2	2	1	1	2	1
176	Daymani Devi	311116F	53	2	1	Housewife	1	1	1	1	1	1	1	1	2	2	1	1	2	2
177	Kundan kumar singh	872824D	27	1	2	College Student	1	1	1	1	1	1	1	1	2	1	1	1	2	2
178	Sadip Kumar Singh	610286F	21	1	2	College Student	1	1	1	1	1	1	1	2	2	2	1	1	2	2
179	Angur Rani Rana	206493F	60	2		1	Housewife	1	1	1	1	1	1	1	1	1	1	1		
180	Athimuthu V.	264776C	47	1	1	Sail Steel Industry	1	1	1	1	1	1	1	1	2	2	1	1	2	2
181	Acksha Angel	603868C	24	2	2	M B A Stud nt	1	1	1	1	1	1	1	1	2	2	1	1	2	1
182	Rukmani L.	302909F	65	2	1	Housewife	1	1	1	1	1	1	1	1	2	1	1	1	2	2
183	Abdula Ressok Miya	492854F	38	1	1	Laborurer	1	1	1	1	1	1	1	2	2	2	1	2	2	1
184	Sudheswar Sharma	610169F	32	1	1	Welder	1	1	1	1	1	1	1	2	2	2	1	1	2	2
185	Swapan Atta	229677F	58	1	1	Farmer	1	1	1	1	1	1	1	1	2	2	1	1	2	2
186	Sukumar S.P.	479047B	38	1	1	Flour mill employee	1	1	1	1	1	1	1	2	2	1	1	1	2	2
187	Rahat sultana	610138F	24	2	1	Housewife	1	1	1	1	1	1	1	1	2	1	1	1	2	2
188	Ambika Devi	358767F	48	2	2	Housewife	1	1	1	1	1	1	1	2	2	2	1	1	2	1
189	Al Mamun	606747F	19	1	2	Student	1	1	1	1	1	1	1	2	2	2	1	1	2	2
190	Shubnam Kedia	101901F	17	1	2	School Student	1	1	1	1	1	1	1	2	2	2	1	1	2	2
191	Ashok	496914F	63	1	1	Rtd. Clerk	1	1	1	1	1	1	1	1	2	1	1	1	2	2

	Kumar Srivastav																			
192	Sathish Kumar	610631F	36	1	1	Businessman	2	1	2	1	1	1	1	1	2	2	1	1	2	1
193	Jincy Vaitmara Elias	737598D	22	2	2	Nursing Student	1	1	1	1	1	1	1	1	2	2	1	1	2	2
194	Anju Agarwal	232833D	37	2	1	Housewife	1	1	1	1	1	1	1	1	2	1	1	1	2	2
195	Sandhya Das	126876D	62	2	1	Housewife	1	1	1	1	1	1	1	2	2	2	1	1	2	2
196	Ahmad Hussain	605076F	27	1	2	Studying	1	1	1	1	1	1	1	2	2	1	1	1	2	1
197	Lakshmi S.	192753F	39	2	1	Housewife	1	2	2	2	2	1	1	1	1	1	1	1	2	1
198	Ashis Paik	496668F	25	1	2	Student	1	1	2	2	2	2	1	2	2	2	1	1	2	1
199	Divakarkumar	621042F	31	1	1	Insurance	1	1	1	1	1	2	1	2	1	1	1	1	2	1
200	Samar Kumar Bhadra	722165D	53	1	1	Defence Employee	1	1	1	1	1	1	1	1	2	2	1	1	2	2
201	Bharathi Bhadra	722183D	47	2	2	Housewife	1	1	1	1	1	1	1	1	2	2	1	2	2	
202	Asha G.	555474B	41	2	1	Housewife	2	1	2	1	1	1	1	1	2	2	1	1	2	1
203	Juliet D.	045876 D	27	1	1	Nursing Lecturer	1	1	1	1	1	1	1	2	2	1	1	1	2	1
204	Guntunathan	589732	71	1	1	Rtd.Bank employee	1	1	1	1	1	1	1	2	2	2	1	1	2	2
205	Ibhushker Biswas	375995C	19	2	2	College student	1	1	1	1	1	1	1	1	2	1	1	1	2	2
206	Pandian	410071D	57	1	1	Farmer	1	1	1	1	1	1	1	2	2	2	1	1	2	2
207	Mohamed Mirsor Ali	620869F	31	1	1	Cloth Shop Owner	1	1	1	1	1	1	1	2	2	2	1	1	2	2
208	Yogendra Prasanasingh	870122D	51	1	1	Railway Employee	1	1	1	1	1	1	1	2	2	2	1	1	2	2
209	Jothi	797330B	40	2	1	Laborurer	1	1	1	1	1	1	1	1	2	2	1	1	2	2
210	Leela Devi	212540D	53	2	1	Housewife	1	1	1	1	1	1	1	1	2	2	1	1	2	2
211	Shiuli Deb	581768C	42	2	1	Housewife	1	1	1	1	1	1	1	2	2	2	1	1	2	2
212	Jessy Joy	905241B	43	2	1	Housewife	1	1	1	1	1	1	1	2	2	1	1	1	2	2
213	Vadivambal	488185	52	2	1	Housewife	1	1	1	1	1	1	1	2	2	2	1	1	2	2
214	Uma K.	721153D	46	2	1	Housewife	1	1	1	1	1	1	1	2	2	2	1	1	2	2
215	Bidyut Sarkar	868893C	28	1	2	Computer Engineer	1	1	1	1	1	1	1	2	2	2	1	1	2	2
216	Biresh Kumar Singh	961537D	43	1	1	Computer related work	1	1	1	1	1	1	1	1	2	2	1	1	2	2
217	MD Iqbal Hussain	622919F	42	1	1	Engineer	1	1	1	1	1	1	1	1	2	2	1	1	2	2
218	Sumitra Pramanic	621547F	38	2	1	Housewife	1	1	1	1	1	1	1	2	2	2	1	1	2	2
219	Palash Bag	966389D	23	1	2	Jewlery Shop employee	1	1	1	1	1	1	1	1	2	2	1	1	2	2
220	Geetha Mukerjee	237153F	62	2	1	Housewife	1	1	1	1	1	1	1	1	2	2	1	1	2	2
221	Most	6947	55	1	1	Steel	1	1	1	1	1	1	1	1	2	2	1	1	2	2

	ak Ali	91C				Business															
222	Sewkumar Sahu	499869F	48	1	1	Business	1	1	1	1	1	1	1	1	1	2	1	1	2	1	
223	Vasantha	810580A	65	2	1	1	1	1	1	1	1	1	2	1	1	1	1	2	1		
224	Sampath Kumar	794630C	32	1	1	BSL	1	1	1	1	1	1	1	2	1	1	1	1	2	1	
225	Keshab Chandra Basak	439253F	46	1	1	Police	1	1	1	1	1	1	1	1	1	1	1	1	2	1	
226	Tapann Ray	274931F	54	1	1	Doordarshan	1	1	1	1	1	1	1	2	1	2	1	1	2	1	
227	Suresh H.	470153F	16	1	2	Student	1	2	1	1	1	2	1	2	1	1	1	1	2	1	
228	Uma Maheshwari	977703D	48	2	1	Housewife	1	1	1	1	1	1	1	2	1	2	1	1	2	2	
229	Swatantra Banerjee	896067C	36	1	1	Business	1	1	1	1	1	1	1	2	1	1	1	1	2	1	
230	Anjan Mukerjee	624810F	28	1	2	Sales Person	1	1	1	1	1	1	1	2	2	2	1	1	2	1	
231	Janakiraman L.	672065C	37	1	1	Rice Mill employee	1	1	1	1	1	1	1	2	2	1	1	1	2	2	
232	Rajesh	072497D	28	1	1	Photographer	1	1	1	1	1	1	1	2	1	2	1	1	2	1	
233	Anil Chandradas	625168F	43	1	Teacher	2	1	2	1	1	1	1	2	1	1	1	1	2	1		
234	Arti Sahay	952560D	52	2	1	Housewife	1	1	1	1	1	1	1	1	1	1	1	1	2	1	
235	Sombit Das	257927F	17	1	2	Student	1	1	1	1	1	1	1	1	1	2	1	1	2	1	
236	Koyal Dey	498085D	24	2	1	Housewife	1	1	1	1	1	1	1	2	1	1	1	1	2	1	
237	Md Monirul Islam	633100F	38	1	1	Govt. service	1	1	1	1	1	1	1	2	1	1	1	2	2	2	
238	Deba Brata Sarkar	640400C	30	1	1	Engineer	1	1	1	1	1	1	1	1	1	2	1	2	2	2	
239	Shyamala	636407F	20	2	1	Housewife	1	1	1	1	1	1	1	2	1	1	2	2	1		
240	Shankar Dutta	619717F	48	1	1	Business	1	1	1	1	1	1	1	2	1	1	1	1	2	1	
241	Kalpana Nayak	066039F	43	2	1	Housewife	1	1	1	1	1	1	1	1	1	1	1	1	2	1	
242	Habibar Biswas	137902F	40	1	1	Farmer	1	1	1	1	1	2	1	2	1	1	1	1	2	1	
243	Sarojkumar Nayak	185688D	38	1	1	Service	1	1	1	1	1	1	1	2	1	2	1	2	2	2	
244	Sumitra Devi	617626F	55	2	1	Housewife	1	1	1	1	1	1	1	2	1	1	1	1	2	1	
245	Manickam	641092F	39	1	1	Shopkeeper	1	1	1	1	1	1	1	1	1	1	1	2	2	1	
246	Abishek Choudhry	185566F	25	1	2	Business	1	1	1	1	1	1	1	1	1	1	1	2	2	2	
247	Rani	196340F	44	2	1	Teacher	1	1	1	1	1	1	1	1	1	2	1	2	2	1	
248	Subatra Karak	640367F	40	1	1	Business	1	1	1	1	1	1	1	2	2	1	1	1	2	1	
249	Thanne Ram Babu	638073F	35	1	1	Shopkeeper	1	1	1	1	1	1	1	2	1	1	1	1	2	1	
250	Arun	755457A	28	1	2	Browsing Center	2	1	2	1	1	1	1	2	2	2	1	2	2	2	
251	Jeniffer M	1283369F	25	2	2	Research	2	2	1	1	2	1	1	2	2	1	1	2	2		

						Officer, CMC														
252	Anna l Y Amudha	298054B	37	2	1	Hospital Attender, CMC	1	1	1	1	1	1	1	2	2	1	2	1	2	2
253	Renu Patra	168589C	65	2	1	Housewife	1	1	1	1	1	1	1	2	2	2	1	1	2	2
254	Chaidanya	257336F	35	1	1	Farmer	1	1	1	1	1	1	1	2	2	1	1	1	2	1
255	Gangatharan T	382433D	24	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1
256	Franklin Augustine	391543F	27	1	2	Bank - ME-	1	1	1	1	1	1	1	2	1	1	1	1	2	1
257	Virangana Pal	630432F	17	2	2	Student	1	1	1	1	1	1	1	1	1	1	1	1	2	1
258	Vijayakumar	152123D	28	1	1	Teacher	1	1	1	1	1	1	1	2	2	2	1	2	2	1
259	Ramsingh	628475F	58	1	1	Inspector	1	1	1	1	1	1	1	2	1	1	1	1	2	1
260	Sunitha P.	825749D	53	2	1	Housewife	1	1	1	1	1	1	1	2	1	1	1	1	2	1
261	Devalakshmi	815779A	44	2	1	Housewife	1	1	1	1	1	1	1	1	1	1	1	1	1	1
262	Vijaya Kabak Burang	977714D	38	2	1	Admin. Officer	1	1	1	1	1	1	1	1	1	1	1	1	1	1
263	Amalendu Panda	614308F	65	1	1	Rtd.	1	1	1	1	1	1	1	2	1	1	1	2	2	2
264	Krishna Paul	324202D	39	1	2	Business	1	1	1	1	1	1	1	2	1	1	1	1	2	1
265	Lee Virgil	323893D	26	1	2	Lecturer	1	1	1	1	1	1	1	1	1	1	1	1	2	1
266	Kumar Anand	617405F	21	1	2	Student	1	1	1	1	1	1	1	2	1	1	1	1	2	1
267	Dudh Kumar Bera	230457F	44	1	1	Farmer	1	1	1	1	1	1	1	1	1	1	1	1	2	1
268	Prabhavathy	698165C	41	2	1	Housewife	1	1	1	1	1	1	1	1	1	1	1	1	2	1
269	Ganesan	050134B	49	1	1	Factory	1	1	1	1	1	1	1	2	1	1	1	1	2	1
270	Biswajit Basak	644363F	44	1	1	Handloom	1	1	1	1	1	1	1	2	1	1	1	1	2	2
271	Soma Mukerjee	067359F	34	2	1	1	1	1	1	1	1	1	1	2	2	1	1	2	2	
272	Shusma Dhakal	647422F	38	2	1	Housewife	1	1	1	1	1	1	1	1	1	1	1	2	2	2
273	Tarup Kanti Ghosh	009228F	44	1	1	School Teacher	1	1	1	1	1	1	1	2	1	1	1	1	2	1
274	Lal Mohan Ghorai	647995F	24	1	1	Farmer	1	1	1	1	1	1	1	1	1	1	1	1	2	1
275	Parmala	942249D	39	2	1	Housewife	1	1	1	1	1	1	1	1	1	1	1	1	2	2
276	Amit Das	380840F	37	1	1	Clerk	1	1	1	1	1	1	1	1	1	1	1	1	2	2
277	Somasree Moni	397307F	23	2	1	Housewife	1	1	1	1	1	1	1	2	1	1	1	1	2	2
278	Ranjit Kumar	647630F	28	1	2	Engineer	1	1	1	1	1	1	1	2	1	1	1	1	2	2
279	Rahima Begam	648558F	26	2	1	Housewife	1	1	1	1	1	1	1	1	1	1	1	1	2	1
280	Uma Maheswari	788387D	28	2	1	Housewife	1	1	1	1	1	1	1	2	1	1	1	2	2	1
281	Manju Das	648580F	60	2	1	Housewife	1	1	1	1	1	1	1	2	1	1	1	1	2	1
282	Jaswanth Redd	647598F	19	1	2	Student	1	1	1	1	1	1	1	1	1	1	1	1	2	1

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283	Sudha B.	649513F	26	2	1	Housewife	1	1	1	1	1	1	1	2	1	1	1	1	2	1
284	Hosnara Begam	647912F	55	2	1	Housewife	1	1	1	1	1	1	1	2	2	2	1	1	2	2
285	Bhola Shaw	647523F	27	1	2	Factory	1	1	1	1	1	1	1	1	2	2	1	1	2	2
286	Tamizharasi	650826F	29	2	1	Housewife	1	1	1	1	1	1	1	2	2	2	1	1	1	2
287	Santhosh Bhownic	650925F	57	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1
288	Mallamma R.	301471B	88	2	1	Housewife	1	1	1	1	1	1	1	2	2	2	1	1	2	2
289	Kavitha Sunsndini	085550C	36	2	1	School Teacher	1	1	1	1	1	1	1	2	2	1	1	1	2	2
290	Mojaffar Hussain	399276F	36	2	1	Electrical Business	1	1	1	1	1	1	1	1	2	2	1	1	2	2
291	Narasimma Murthy	6400408F	34	1	1	Teacher	1	1	1	1	1	1	1	1	2	2	1	2	1	1
292	Akilan T.	668937D	53	1	1	Social Worker	1	1	1	1	1	1	1	1	2	2	1	1	2	2
293	Uttam Pati	640542F	39	1	1	Financer	1	1	1	1	1	1	1	2	2	2	1	1	2	2
294	Lilawati Devi	628548D	59	2	1	House Wife	1	1	1	1	1	1	1	1	1	1	1	2	2	1
295	Noor Md Belal	650955F	26	1	2	Shoper	1	1	1	1	1	1	1	2	1	1	1	1	2	1
296	Om Prakash Agarwal	848536D	51	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1
297	Deepak Barni	653748F	31	1	1	Farmer	1	1	1	1	1	1	1	2	1	1	1	1	2	1
299	Pramila Dangi	634204F	29	2	1	Housewife	1	1	1	1	1	1	1	1	1	1	1	1	2	1
300	Dineshkumar	015916F	24	1	2	Env. Eng.	1	1	1	1	1	1	1	2	1	1	1	1	2	1
301	Krishna Chandra	656221F	47	1	1	Laborer	1	1	1	1	1	1	1	1	2	2	1	1	2	2
302	Tapati Dutta	656981F	27	2	1	Housewife	1	1	1	1	1	1	1	1	2	2	1	1	2	2
303	Sahanas Biswas	105195F	41	2	1	Housewife	1	1	1	1	2	1	1	1	2	2	1	1	2	2
304	Sarifa Begam	654946F	48	2	1	Housewife	1	1	1	1	1	1	1	1	2	2	1	1	2	2
305	Bishnupada Mohanthi	635975F	30	1	School teacher	1	1	1	1	1	1	1	1	2	1	1	1	2	2	
306	Sachindra Kumar	363085F	27	1	1	Mobile repairer	1	1	1	1	1	1	1	1	2	2	1	1	2	2
307	Shikha Bhatacharia	339727F	51	2	1	Housewife	1	1	1	1	1	1	1	1	2	2	1	1	2	2
308	Mithun Bhattachariea	339725F	28	1	1	Working in a shop	1	1	1	1	1	1	1	1	2	2	1	1	2	2
309	Rahul Dev Bhatachariea	964465D	34	1	2	Unemployed	2	1	2	1	1	1	1	1	2	2	1	1	2	2
310	Subir Dutta	637467F	46	1	1	Physiotherapist	1	1	1	1	1	1	1	1	2	2	1	1	2	2
311	Sekh Gola	662054F	55	1	1	Clerk	2	1	2	1	1	1	1	1	2	2	1	1	2	2

	m Mostafa																			
312	Kedar Singh	662766F	61	1	1	EB Employee	1	1	1	1	1	1	1	1	2	2	1	1	2	1
313	Mita Chatterjee	507024D	46	2	1	Housewife	1	1	1	1	1	1	1	1	2	2	1	1	2	2
314	Kavitha	152936A	34	2	1	Manager	1	1	1	1	1	1	1	2	1	1	1	1	2	1
315	Datchayani	865114B	46	2	1	Teacher	1	1	1	1	1	1	1	1	1	1	1	1	2	1
316	Sabitha Das	654379F	54	2	1	Housewife	1	1	1	1	1	1	1	2	1	1	1	1	2	1
317	Yaswada Ganju	650349F	54	1	1	Farmer	1	1	1	1	1	1	1	2	1	1	1	1	2	1
318	Manoj Srivastav	150072F	37	1	1	1	1	1	1	1	1	1	1	2	1	2	2	1	2	1
319	Hridy Biswas	846681F	50	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	2	1
320	Binay Shil Goatham	665379F	34	1	1	PF Company Employee	1	1	1	1	1	1	1	1	2	1	1	1	2	2
321	Krishna Kant Yadav	644714F	21	1	2	Student	1	1	1	1	1	1	1	2	1	1	1	1	2	1
322	Biswadip Roy	668353F	43	1	1	Service	1	1	1	1	1	1	1	2	1	2	1	1	2	1
323	Sribash Saha	932551C	36	1	1	Business	1	1	1	1	1	1	1	2	1	1	1	1	2	1
325	Manisha Sinha	668215F	22	2	2	Student	1	1	1	1	1	1	1	2	1	1	1	1	2	1
326	Kalpana	037644D	26	2	1	Housingwife	1	1	1	1	1	1	1	2	1	1	1	1	1	1
327	Swaraj Sardar	666704F	35	1	1	Govt. Service	1	1	1	1	1	1	1	2	1	1	1	1	1	1
328	Raju Shill	668633F	31	1	1	Business	1	1	1	1	1	1	1	2	1	1	1	1	2	2
329	Malati Mukarjee	665219F	67	2	1	H W	1	1	1	1	1	1	1	2	1	1	1	1	2	1
330	Henry Rajendran	873097	60	1	1	Pharmacist	1	1	1	1	1	1	1	2	1	1	1	1	2	1
331	Chandra Sekar	662297F	61	1	1	Service	2	1	2	1	1	1	1	2	1	1	1	1	2	2
332	Rintu Mondal	532542D	26	1	1	Business	1	1	1	1	1	1	1	1	1	1	1	1	2	1
333	Pintu Mondal	665166F	31	1	1	Service	1	1	1	1	1	1	1	2	1	1	1	1	2	1
334	Chandu N	508140F	19	1	2	Engineering Student	1	1	1	1	1	1	1	1	2	2	1	1	2	2
335	Kalai Kumar N	271584D	42	1	1	Business	1	1	1	1	1	1	1	2	2	2	1	1	2	2
336	Bhargavii R	669337F	21	2	2	College Student	1	1	1	1	1	1	1	2	2	2	1	1	2	2
337	Padmavathy	662691F	33	2	1	Housewife	1	1	1	1	1	1	1	1	2	2	1	1	2	2
338	Premkumar	775366A	53	1	1	Canara Bank Employee	2	1	2	2	1	1	1	1	2	2	1	1	2	2
339	Mitali Das Mohanta	669924F	41	2	1	Housewife	1	1	1	1	1	1	2	1	1	1	1	2	1	
340	Rahima Bibi	677437B	45	2	1	Housewife	1	1	1	1	1	1	1	1	1	1	1	2	2	2
341	Joydeep Mukerjee	666038F	25	1	2	Student	1	1	1	1	1	1	1	2	1	1	1	2	2	1

342	Bandita Nanda	224679F	18	2	2	College Student	1	1	1	1	1	1	1	2	2	2	1	1	2	2
343	Ramesh Sena	660848F	32	1	1	Business	1	1	1	1	1	1	1	1	1	1	1	1	2	1
344	Sujit Kumar	298036D	48	1		Govt. Service	1	1	1	1	1	1	1	2	2	2	1	1	2	2
345	Nirmal Kumaar Maji	660295F	45	1	1	Labourer	1	1	1	1	1	1	1	2	2	2	1	1	2	2
346	Kamalesh Das	480351F	46	1	1	Security Agent	1	1	1	1	1	1	1	2	2	2	1	1	2	2
347	Rahul Sinha	669846F	16	1	2	Student	1	1	1	1	1	1	1	2	2	2	1	1	2	2
348	Rumini Bokotal	606728C	53	1	1	Civil Engineer	1	1	1	1	1	1	1	2	2	1	1	2	2	
349	Shilajit Nayak	673531F	17	1	2	Student	1	1	1	1	1	1	1	1	2	2	1	1	2	2
350	Govindasamy M.	669629F	41	1	1	Labourer	1	1	1	1	1	1	1	1	2	2	1	1	2	1
351	Magesh Kumar	655760F	36	1	1	Business	1	1	1	1	1	1	1	2	1	1	1	2	2	2
352	Shikha Halder	672723F	29	2	1	Housewife	1	1	1	1	1	1	1	2	1	1	1	2	2	2
353	Sumantha Nayak	673666F	21	1	2	Student	1	1	1	1	1	1	1	1	1	1	1	1	2	1
354	Nargis Fatma	670897F	31	2	1	Housewife	1	1	1	1	1	1	1	2	1	1	1	1	2	1
355	Manojkumar	666202F	45	1	1	Teacher	1	1	1	1	1	1	1	2	1	1	1	1	2	1
356	Manish Kumar	666223F	25	1	1	Student	1	1	1	1	1	1	1	2	1	1	1	2	2	2
357	Jeyalakshmi	847917D	24	2	1	Housewife	1	1	1	1	1	1	1	2	1	1	1	1	2	1
358	Amsavalli	190195C	31	2	2	Radiographer	1	1	1	1	1	1	1	1	1	1	1	1	2	1
359	Mohan Prasad	270951F	55	1	1	BCLL Employee	1	1	1	1	1	1	1	2	2	2	1	1	2	2
360	DebiK0ley	673535F	26	2	1	Housewife	1	1	1	1	1	1	1	2	2	2	1	1	2	2
361	Chinmoyi Karmakar	405255F	31	2	1	Housewife	1	1	1	1	1	1	1	2	2	2	1	1	2	2
362	Krishna Mandal	672610F	23	2	1	Housewife	1	1	1	1	1	1	1	1	1	1	1	2	2	1
363	Chhanda Banic	190265F	46	2	1	Housewife	1	1	1	1	1	1	1	2	1	1	1	2	2	2
364	Ranjankumar Barnwal	680030F	24	1	2	Business	1	1	1	1	1	1	1	2	1	1	1	1	2	1
365	Rupavathi	422955B	63	2	1	Housewife	1	1	1	1	1	1	1	1	1	1	1	1	2	1
366	Shaik Md Rafiq	090714D	26	1	2	Business	1	1	1	1	1	1	1	2	1	1	1	2	2	2
367	Samir Ali Md	678884F	46	1	1	Farmer	1	1	1	1	1	1	1	1	1	1	1	1	2	1
368	Achu George	224242B	56	2	1	Housewife	1	1	1	1	1	1	1	1	1	1	1	2	2	1
369	Suman Devi	027441F	42	2	1	Housewife	1	1	1	1	1	1	1	1	1	1	1	1	2	1
370	Anil Baran Goswamy	899307D	68	1	1	Rtd.	1	1	1	1	1	1	1	1	1	1	1	1	2	1

371	Bebi Baharan	672341F	28	2	1	Housewife	1	1	1	1	1	1	1	2	1	1	1	1	2	1
372	Mour Uddin Barbhuiya	414225F	37	1	1	Pharmacy	1	1	1	1	1	1	1	2	1	1	1	1	2	1
373	Reuban Anand	678085F	44	1	1	Orthodontist	1	1	1	1	1	1	1	2	1	1	1	1	2	1
374	Mahadev Khan	680678F	53	1	1	Farmer	1	1	1	1	1	1	1	1	1	1	2	2	2	
375	SK.Noim	390365F	41	1	1	BSNL	1	1	1	1	1	1	1	1	1	1	1	1	2	1
376	Nagina Banu	81673 4D	24	2	1	House wife	1	1	1	1	2	1	2	2	1	1	2	1		
377	Sarala V.	915180C	36	2	1	Housewife	1	1	1	1	1	1	1	2	1	1	1	1	2	1
378	Sufyana Parveen	679021F	32	2	1	Housewife	1	1	1	1	1	1	1	2	2	2	1	1	2	2
379	Sashi Prakashsingh	639879D	38	1	1	Clerk	1	1	1	1	1	1	1	2	2	2	1	1	2	2
380	Dimala Devi Agarwal	679047F	62	2	1	Housewife	1	1	1	1	1	1	1	1	2	2	1	1	2	1
381	Dilip Kumar	124544D	51	1	1	Govt. Service	1	1	1	1	1	1	1	2	2	2	1	1	2	2
382	Veerapandian M.	381789D	28	1	2	Teacher	1	1	1	1	1	1	1	2	2	2	1	1	2	2
383	Priya Devi R.	669580F	25	2	1	Housewife	1	1	1	1	1	1	1	1	2	2	1	1	2	2
384	Arif Khan	682948F	32	1	1	Farmer	1	1	1	1	1	1	1	2	2	2	1	1	2	2
385	Arra Jhaan	678644F	45	2	1	Housewife	1	1	1	1	1	1	1	2	2	2	1	1	2	2
386	Shyamal	274825F	25	1	2	OT Tech.	1	1	1	1	1	1	1	2	1	1	1	1	2	1
387	Bitan Sarkar	586091C	38	1	1	1	1	1	1	1	1	1	2	1	1	1	1	2	2	
388	Vijaya K.	028353F	45	2	1	Pharmasist	1	1	1	1	1	1	2	1	1	1	1	2	1	
389	Preetha Ramesh	05494 1C	39	2	1	Teacher	1	1	1	1	1	1	1	2	1	1	1	1		
390	Sailaja K.	787049C	35	2	1	Typist	1	1	1	1	1	1	1	2	1	1	1	2	2	2
391	Toko Api	463330D	42	2	1	Govt. Service	1	1	1	1	1	1	1	2	1	1	1	2	2	2
392	Amit Kumar Das	820289D	29	1	2	Teacher	1	1	1	1	1	1	1	1	1	1	1	1	2	1
393	Swapann Sardar	682308F	43	1	1	Farmer	1	1	1	1	1	1	1	1	1	1	1	2	2	2
394	Nanda Lal Seal	409347F	58	1	1	Govt. Employee	1	1	1	1	1	1	1	2	1	1	1	1	2	1
395	Sujatha	895891D	38	2	1	Housewife	1	1	1	1	1	1	1	2	1	1	1	1	2	1
396	Shajahan Ali	266559F	35	1	1	Business	1	1	1	1	1	1	1	2	1	1	1	1	2	2
397	Effat Mirana	682227F	38	2	1	Housewife	1	1	1	1	1	1	1	2	1	1	1	1	2	1
398	Chaina Das	644725F	47	2	1	Housewife	1	1	1	1	1	1	1	2	1	1	1	1	2	1
399	Rajendra Kr Chowdhry	678457F	52	1	1	Service	1	1	1	1	1	1	1	2	1	1	1	1	2	1
400	Rajesh Prasad Barmwal	653070F	41	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2
401	Kayalvizhi	068530C	20	2	2	Student	1	1	1	1	1	1	1	1	1	1	1	1	2	1
402	Abdula	683849F	45	1	1	Postal	1	1	1	1	1	1	1	1	1	1	1	1	2	1

	Halder																				
403	Lakhi Ram Maiylie	922019D	52	1	1	Electrical	1	1	1	1	1	1	1	2	1	1	1	1	2	1	
404	Pinky	679698F	25	2	1	Housewife	1	1	1	1	1	1	1	1	1	1	1	1	2	1	
405	Santha Kumari	607357F	41	2	1	Professor	1	1	1	1	1	1	1	2	1	1	1	1	2	1	
406	Kapangkhui Shaiza	683967F	50	1	1	Business	1	1	1	1	1	1	1	2	1	1	1	1	2	1	
407	Meena Devi	578195D	46	2	1	Housewife	1	1	1	1	1	1	1	2	1	1	1	1	2	1	
408	Sanjuka Wahangham	680494F	20	2	2	Student	1	1	1	1	1	1	1	1	1	1	1	1	2	1	
409	Jageshwar Barai	684836F	36	1	1	1	1	1	1	1	1	1	2	1	1	1	1	2	1		
410	Akash Agarwal	143631F	17	1	2	Student	1	1	2	1	1	1	1	2	1	1	1	1	2	1	
411	Hepsi R.	173540C	29	2	2	Nurse	1	2	2	2	1	2	2	2	1						
412	Manojit Mondal	137573F	23	1	2	Company	1	1	1	1	1	1	1	1	1	1	1	1	2	2	
413	Shaik Annish Hussain	678158F	26	1	2	Office	1	1	1	1	1	1	1	1	1	1	1	1	2	1	
414	Viswamithiran	004170C	26	1	2	Unemployer	1	1	1	1	1	1	1	2	2	2	1	1	2	2	
415	Thamil Selvi R	460851F	35	2	1	Housewife	1	1	1	1	1	1	1	2	2	2	1	1	2	2	
416	Dusl Bidulata	398167L	49	2	1	Housewife	1	1	1	1	1	1	1	2	2	2	1	1	2	2	
417	Subal Ojha	167257F	56	1	1	Farmer	1	1	1	1	1	1	1	1	1	1	1	2	2	1	
418	Bhaghyavathi Devi	262212D	49	2	1	Housewife	1	1	1	1	1	1	1	1	1	1	1	1	2	1	
419	Pushpa Radhamani	263813B	49	2	1	Housewife	1	1	1	1	1	1	1	1	2	2	1	1	2	2	
420	Lakshmi	454340D	72	2	1	Housewife	1	1	1	1	1	1	1	1	2	2	1	1	2	2	
421	Latha S.	686997F	43	2	1	Housewife	1	1	1	1	1	1	1	2	2	2	1	1	2	2	
422	Pritam Saha	686703G	37	1	1	Medical Shop Owner	1	1	1	1	1	1	1	1	2	2	1	1	2	2	
423	Rupak Kumar Mukopadyay	498674D	48	1	1	Auditor	1	1	1	1	1	1	1	1	2	2	1	1	2	2	
424	Sankaran.	997091C	53	1	1	BSNL	1	1	1	1	1	1	1	2	1	1	1	1	2	1	
425	Sundari d.	675030B	43	2	1	Teacher	1	1	1	1	1	1	1	2	1	1	1	1	2	1	
426	Sivaranjini P.	630668F	17	2	2	Student	1	1	1	1	1	1	1	2	1	1	1	1	2	1	
427	Rampyari Kumari	498365F	51	1	1	Teacher	1	1	1	1	1	1	1	2	1	1	1	1	2	1	
428	Gulab Jan	442162F	50	2	1	Housewife	1	1	1	1	1	1	1	1	1	1	1	1	2	1	
429	Ramanaiah T.	687045F	51	1	1	Army	1	1	1	1	1	1	1	1	1	1	1	1	2	1	
430	Seema Devi	692129F	33	2	1	Housewife	1	1	1	1	1	1	1	1	1	1	1	1	2	1	
431	Hanifa Khan	685101F	34	2	1	Housewife	1	1	1	1	1	1	1	2	1	1	1	1	2	1	
432	Bamapada Tand	693811F	30	1	2	Govt.	1	1	1	1	2	1	1	1	1	1	1	1	2	1	

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433	Awadh Kishore Dubey	681217F	57	1	1	Forest offecer	1	1	1	1	1	1	1	1	1	1	1	1	2	1
434	Sagnic Basak	694337F	27	1	1	Engineer	1	1	1	1	1	1	1	1	1	1	1	1	2	2
435	Supriti Sen Mitra	74450 3C	58	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	
436	Ratna Shanthi	350446D	27	2	2	Nurse	2	1	2	2	1	1	1	2	2	2	1	1	2	2
437	Rabindra Purbay	694397F	67	1	1	Engineer	1	1	1	1	1	1	1	1	1	1	1	2	2	1
438	Alamara Bibi	694573F	26	2	1	Housewife	1	1	1	1	1	1	1	1	2	1	1	1	2	1
439	Mahendra Singh	438625F	48	1	1	Service	1	1	1	1	1	1	1	1	2	1	1	1	2	1
440	Aparna Daniel	330822F	36	2	1	Housewife	1	1	1	1	1	1	1	1	1	2	1	1	2	2
441	Vamsidhar Reddy	354462F	15	1	2	Student	1	1	1	1	1	1	1	2	2	2	1	1	2	1
442	Amudha	2935554F	36	2	1	Houewife	1	1	1	1	1	1	1	1	2	2	1	1	2	2
443	Bhakta Ranjan Patra	491963D	69	1	1	Rtd.Teacher	1	1	1	1	1	1	1	1	2	1	1	2	2	2
444	Shilpi De Sarkar	681657F	53	2	1	Housewife	1	1	1	1	1	1	1	1	2	1	1	1	2	1
445	Vilvanathan	689014F	44	1	1	Teacher	1	1	1	1	1	1	1	2	2	2	1	1	2	2
446	Parimal Maity	011668F	34	1	1	Teacher	2	2	2	1	2	1	1	1	2	1	1	1	2	1
447	Varsha Vaswani	699776F	40	2	1	Housewife	1	1	1	1	1	1	1	1	1	1	1	1	2	1
448	Shanthi	089289B	51	2	1	Teacher	1	1	1	1	1	1	1	1	1	1	1	1	2	1
449	Ruby Sharma	700589F	35	2	1	Housewife	1	1	1	1	1	1	1	1	1	1	1	1	2	1
450	Elumalai	692498F	37	1	1	Fire station	1	1	1	1	1	1	1	1	2	1	1	1	2	1
451	Mrinalini Peters	488849D	22	2	2	MBBS Student	1	1	1	1	1	1	1	1	1	1	1	1	2	1
452	Abhijit Bhunia	706016F	32	1	1	Farmer	1	1	1	1	1	1	1	1	2	2	1	1	2	1
453	Tumpa Santra	699315F	31	2	1	PHD Student	2	1	2	1	1	1	1	1	2	2	1	1	2	2
454	Varathan R.	948958D	46	1	1	Oil mill Employee	1	1	1	1	1	1	1	2	2	2	1	1	2	2
455	Sandhya Ghorai	699349F	60	2	1	Housewife	1	1	1	1	1	1	1	2	2	2	1	1	2	2
456	Dase John SR	949171C	42	2	2	Teacher	1	1	1	1	1	1	1	2	2	2	1	1	2	2
457	Juliet Nesamanorama	543805A	55	2	1	Stafff Nurse	1	1	1	1	1	1	1	2	2	2	1	1	2	2
458	Saiyada Rehama Islam	700496F	31	2	1	Housewife	1	1	1	1	1	1	1	1	2	2	1	1	2	2
459	Indrani parmar	702936F	29	2	1	Housewife	1	1	1	1	1	1	1	1	1	1	1	1	2	1
460	Suriya	630497B	38	2	1	Housewife	1	1	1	1	1	1	1	2	2	1	1	1	2	1

461	Beliwara Begam	996749D	30	2	1	Housewife	1	1	1	1	1	1	1	2	2	1	1	1	2	1
462	Dilip Kumar	168962F	27	1	1	Business	1	1	1	1	1	1	1	1	2	1	1	1	2	1
463	Tapasi Sarkar Basak	702141F	36	2	1	Housewife	1	1	1	1	1	1	1	2	2	1	1	1	2	1
464	Manikandan M.	626177F	16	1	2	School Student	1	1	1	1	1	1	1	2	2	2	1	1	2	2
465	Thangaraj G.	185590B	68	1	1	Rtd. Hospital attender	1	1	1	1	1	1	1	2	2	2	1	1	2	2
466	Lalitha S.	403590F	61	2	1	Housewife	1	1	1	1	1	1	1	1	2	1	1	1	2	1
467	Jayanth Edward	397663A	30	1	1	Doctor	1	1	1	1	1	1	1	2	2	2	1	1	2	1
468	Manoj Kumar Das	964560D	33	1	1	Insurance	1	1	1	1	1	1	1	2	2	2	1	1	2	1
469	Teekaramaan	306363D	35	1	1	Army	1	1	1	1	1	1	1	2	2	1	1	1	2	1
470	Debabrata Kar	913269D	49	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	2	1
471	Arindham Maondal	708759F	19	1	2	Student	1	1	1	1	1	1	1	2	2	1	1	1	2	1
472	Kashiya Devi	936021D	64	2	1	Housewife	1	1	1	1	1	1	1	1	2	1	1	1	2	1
473	Flora	417294B	39	2	1	Blood Bank Emploee	1	1	1	1	1	1	1	2	2	2	1	1	2	2
474	Annamarial Christudas	697445F	76	2	1	Rtd.Staff Nurse	1	1	1	1	1	1	1	1	2	2	1	1	2	2
475	Anima Bownick	822699D	33	2	1	Housewife	1	1	1	1	1	1	1	2	2	2	1	2	2	1
476	Elumalai	705216F	60	1	1	Rtd.	1	1	1	1	1	1	1	2	2	2	1	2	2	1
477	Balasubramanian v.	690100B	45	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	2	2
478	Bonny Pal	682025F	16	2	2	School student	1	1	1	1	1	1	1	1	2	2	1	1	2	2
479	Mahva Pal	682035F	31	2	1	Housewife	1	1	1	1	1	1	1	1	2	2	1	1	2	2
480	Lakshmanan	774133A	58	1	1	CMC Engineering Dept.	1	1	1	1	1	1	1	2	2	2	1	1	2	2
481	Azad Hussain	041946F	28	1	2	Business	2	1	2	1	1	1	1	1	2	2	2	1	2	2
482	Serina Akhtar	051280F	32	2	1	Housewife	1	1	1	1	1	1	1	1	2	2	1	1	2	2
483	sony Kumar	684696F	22	2	2	Unemployee	1	1	1	1	1	1	1	2	2	2	1	1	2	2
484	Roselin Juliet Joice	673518C	29	2	2	Respiratory Therapist, CMC	1	1	1	1	1	1	1	1	2	1	1	1	2	1
485	Banashri Pan	689030F	26	2	2	Student	1	1	1	1	1	1	1	2	2	2	1	1	2	2
486	Santhosh Rajah	711979F	45	1	1	Fruit Vender	1	1	1	1	1	1	1	2	2	2	1	1	2	1
487	Allen Joseph Felix	061226F	41	1	1	Advocate	1	1	1	1	1	1	1	1	2	1	1	1	2	2

488	Ram Prasad	676740F	41	1	1	Tutor	1	1	1	1	1	1	1	1	2	2	1	1	2	1
489	Thanka Retna Praba	710814F	42	2	1	Teacher	1	1	1	1	1	1	1	2	2	2	1	1	2	1
490	Vijayan	187801F	37	1	1	Lecturer	1	1	1	1	1	1	1	1	2	1	1	2	1	1
491	Prayag Ram	363326F	47	1	1	Officer	1	1	1	1	1	1	1	2	1	2	1	2	2	1
492	Prameela	627297D	44	2	1	Housewife	1	1	1	1	1	1	1	1	2	2	1	1	2	2
493	Parthasarathy	602880F	30	1	1	Farmer	1	1	1	1	1	1	1	2	2	2	1	1	2	1
494	Baskar R.	455461D	24	1	2	Electrical Technician	1	1	1	1	1	1	1	2	2	2	1	1	2	1
495	Thulukkanam S.	712048F	36	1	1	Finance	1	1	1	1	1	1	1	1	2	1	1	1	2	1
496	Gopal Guria	710952F	33	1	1	Teacher	1	1	1	1	1	1	1	1	2	1	1	1	2	2
497	Mita Patachariya	781183 D	46	2	1	Housewife	1	1	1	1	1	1	1	2	2	1	1	1	2	1
498	Dipali Masantha	715516F	30	2	1	Housewife	1	1	1	1	1	1	1	2	2	2	1	1	2	2
499	Manohar Delov Sar	715460F	42	1	Business	1	1	1	1	1	1	1	1	2	1	1	1	2	2	
500	Jeeva Jyothi	300993B	40	2	1	Housewife	1	1	1	2	2	2	1	2	2	1	2	1	1	1
501	Pradeep Ghosh	716214F	65	1	1	Rtd. Advocate	1	1	1	1	1	1	1	2	2	1	1	1	2	1
502	Ramen Mondal	070524F	35	2	1	Business	1	1	1	1	1	1	1	2	2	1	1	1	2	1
503	Abdul Mananan	715622F	25	1	2	Student	1	1	1	1	1	1	1	1	2	1	1	1	2	1
504	Blestiful Chyne	159147D	54	2	1	Govt. Servant	1	1	1	1	1	1	1	2	2	1	1	1	2	1
505	Rajan Babu	350655C	16	1	2	Student	1	1	1	1	1	1	1	1	2	1	1	1	2	1
506	Suranjan DE	909173D	39	1	1	Lab	1	1	1	1	1	1	1	2	2	1	1	1	2	1
507	Shankar Das	698687F	23	1	2	1	1	1	1	1	1	1	1	2	1	1	1	2	1	
508	Chandra Dhara	471507F	24	2	1	Housewife	1	1	1	1	1	1	1	2	2	2	1	1	2	1
509	Subramaniya	444690C	57	1	1	Farmer	1	1	1	1	1	1	1	2	2	1	1	1	2	1
510	Vijaya Kumar	718894F	21	1	2	Barbour	1	1	1	1	1	1	1	2	2	1	1	1	2	1
511	Elumalai	063238F	39	1	1	Besant	1	1	1	1	1	1	1	2	2	1	1	1	2	1
512	Jayachitra	719187F	38	2	1	Coolie	1	1	1	1	1	1	1	2	2	1	1	1	2	2
513	Karthic Maity	684889F	47	1	1	Office	1	1	1	1	1	1	1	2	2	2	1	1	2	1
514	Surya Kanta Maity	715189F	16	1	2	Student	1	1	1	1	1	1	1	2	2	2	1	1	2	1
515	Nandanur Nagamani	132961F	34	2	1	Housewife	1	1	2	1	1	1	1	1	2	1	1	1	2	1
516	Thilakavati	626642F	50	2	1	Housewife	1	1	1	1	1	1	1	1	2	1	1	1	2	1
517	Samuel K.	888369D	33	1	1	Biomedical	1	1	1	1	1	1	1	1	2	1	1	1	2	2

						Technician														
518	Anbu Selvi	276330D	37	2	1	Housewife	1	1	1	1	1	1	1	2	2	2	1	1	2	2
519	Abdul Basit Raza	711371F	21	1	2	Student	1	1	2	2	2	1	1	1	2	2	1	1	2	1
520	Md Borudin Middya	718535F	24	1	2	Unemployed	1	1	1	1	1	1	1	1	1	1	1	1	2	1
521	Sidhu Devi	368998D	56	2	1	Housewife	1	1	1	1	1	1	1	2	1	1	1	2	2	1
522	Md Asgar Ali	076908F	42	1	1	Shop Keeper	1	1	1	1	1	1	1	2	2	2	1	1	2	2
523	Samra Fatima	984395B	18	2	2	Student	1	1	1	1	1	1	1	1	2	1	1	1	2	1
524	Bharathi	725583F	36	2	1	Housewife	2	1	2	1	1	1	1	2	2	2	1	1	2	2
525	Tirupati Kumud	643541F	21	1	2	B.E.Student	1	1	1	1	1	1	1	2	2	1	1	1	2	1
526	Mahadeva Reddy	722640F	44	1	1	Engineer (Railway)	2	1	2	1	2	1	1	2	2	1	1	1	2	1
527	Kushboo A.	727633F	20	2	2	Student	1	1	1	1	1	1	1	1	2	1	1	1	2	1
528	Sunil Swarnkar	424451F	30	1	1	Service	1	1	1	1	1	1	1	1	2	1	1	1	2	1
529	Ghazala Shaheen	722831F	30	2	1	Housewife	1	1	1	1	1	1	1	2	2	2	1	2	2	1
530	Anita Singh	670796F	38	2	1	Housewife	1	1	1	1	1	1	1	2	1	1	1	1	2	1
531	Ebenezer	630077	43	1	1	CMC Employee Cash Counter	1	1	1	1	1	1	1	2	2	2	1	1	2	2
532	Lipika Bhar	481378F	37	2	1	Housewife	1	1	1	1	1	1	1	2	2	2	1	1	2	1
533	Parbati mohan Madal	633296C	45	1	1	Farmer	1	1	1	1	1	1	1	2	2	2	1	1	2	2
534	Murugan	300151A	68	1	1	Rtd. Cotton Mill Employee	1	1	1	1	1	1	1	2	2	2	1	1	2	2
535	Debalina Dutta	351502F	24	2	2	Student	1	1	1	1	1	1	1	1	2	2	1	1	2	2
536	Thamizh Pavai	954844B	44	2	1	Houewife	1	1	1	1	1	1	1	1	2	1	1	1	2	1
537	Dhanu Pandy	104184F	48	2	1	Housewife	1	1	1	1	1	1	1	2	2	2	1	1	2	1
538	Sheo Narayan singh	0499973D	58	1	1	Steel Plant Employer	1	1	1	1	1	1	1	2	2	2	1	1	2	2
539	Rabindranath Bisayee	974036D	33	1	1	Rice Godown work	1	1	1	1	1	1	1	2	2	2	1	1	2	1
540	Sahera Sultana Laskar	488219F	41	2	1	Housewife	1	1	1	1	1	1	1	2	2	2	1	1	2	2
541	Annadurai	993582A	59	1	1	Teacher	1	1	1	1	1	1	1	2	2	1	1	1	2	2
542	Dayal Kumar Gupta	608548F	50	1	1	Civil court Employee	1	1	1	1	1	1	1	2	2	2	1	1	1	2
543	Manickam	169209D	65	1	1	Rtd. Military rank	1	1	1	1	1	1	1	2	2	2	1	1	2	2

544	Asha Devi chauaria	455863D	34	2	1	Housewife	1	1	1	1	1	1	1	1	1	1	1	1	2	1
545	Pramila chettri	870376D	47	2	1	Housewife	1	2	2	2	1	2	1	2	1	1	1	1	2	2
546	Amol Das	622316F	35			1	1		1		1		1		2		1		1		2		2
547	Elizabeth	887565B	39	2	1	Clinical Pharmacology	1	1	1	1	1	1	1	1	2	1	1	1	2	2
548	Saraswathi	619472F	23	2	1	Housewife	1	1	1	1	1	1	1	2	1	1	1	1	2	1
549	Mahir Kumar Bhowmick	620680F	55	1	1	Farmer	1	1	1	1	1	1	1	1	1	1	1	1	2	1
550	Iti Choudhri	355962C	56	2	1	teacher	1	1	1	1	1	1	1	2	1	1	1	2	2	1
551	Bipin Kumar	608979F	27	1	1	Defense	1	1	1	1	1	1	1	2	1	1	1	1	1	1
552	Pushpa Lalitha	055641B	59	2	1	Housewife	1	1	1	1	1	1	1	2	2	2	1	1	2	1
553	Monicka	459140F	20	2	2	Student	1	1	2	1	1	1	2	2	1	1	1	2	2	
554	Khadar Basha	439094F	42	1	1	Teacher	1	1	1	1	1	1	1	1	1	1	1	1	2	1
555	Jyothi Upadhyay	267613F	32	2	1	teacher	1	1	1	1	1	1	1	2	1	1	1	1	2	1
556	Golok Nandi	268853F	39	1	1	Fruit shop Employee	1	1	1	1	1	1	1	2	2	2	1	1	2	2
557	Sipra Roy	615530F	57	2	1	Doctor	1	1	1	1	1	1	1	2	1	1	1	1	2	1
558	Somu	189595D	16	1	2	Student	1	1	1	1	1	1	1	2	1	1	1	1	2	1
559	Joy Chukkrabharathy	935192D	29	1	2	Bank Employee	1	1	1	1	1	1	1	2	2	2	1	1	2	2
560	Kajol Das	484986C	52	2	1	Housewife	1	1	1	1	1	1	1	2	2	2	1	1	2	1
561	James	611742F	44	1	1	Pastor	1	1	1	1	1	1	1	1	1	1	1	1	2	1
562	Biswanath Samantha	739991D	61	1	1	Rtd.	1	1	1	1	1	1	1	1	1	1	1	1	2	1
563	Praveen R.	389191F	16	1	2	Student	1	1	1	1	1	1	1	2	1	2	1	1	2	1
564	Indira Jeyaraj	277142D	63	2	1	Housewife	1	1	1	1	1	1	1	1	1	1	1	1	2	1
565	Jeyaraj	360417C	67	1	1	Rtd	1	1	1	1	1	1	1	2	2	2	1	2	2	2
566	Asha M.	621338F	19	2	2	Student	1	1	1	1	1	1	1	2	1	1	1	1	2	1
567	Jai Shree Singh	931634D	50	2	1	Housewife	1	1	1	1	1	1	1	2	1	1	1	1	2	1
568	Santhosh K.Joseph	184981F	33	1	1	Defense	1	1	1	1	1	1	1	2	1	1	1	1	2	1
569	Jaya Prakash	443459F	28	1	1	Electrical Maintanance	1	1	1	1	1	1	1	2	2	2	1	2	2	2
570	Satyakala Giri	447862F	40	2	1	Housewife	1	1	1	1	1	1	1	1	1	1	1	2	2	1
571	Nurjahan Bibi	622795F	26	2	1	Housewife	1	1	1	2	1	1	1	2	2	2	1	2	2	2
572	Asainar N.p.	614883D	39	1	1	Medical Shop	1	1	1	1	1	1	1	2	1	1	1	2	2	1
573	Sadiqua Banu	600530F	43	2	1	Housewife	1	1	1	1	1	1	1	1	1	1	1	1	2	1
574	Chennakesavan	125505F	31	1	1	Electrician 1	1	1	1	1	1	1	1	2	1	2	1	1	2	1
575	Apu	6408	21	1	2	Stud	1	1	1	1	1	1	1	2	1	2	2	2	2	1

	Dev	19C				ent														
576	Subashish Ghosh	986182D	19	1	2	Student	1	1	1	1	1	1	1	2	2	2	1	1	2	1
577	Logeshwari K.	650208D	26	2	2	Staff Nurse	1	1	1	1	1	1	1	2	2	1	1	2	2	1
578	Sheela	695609C	36	2	1	Teacher	1	1	1	1	1	1	1	2	2	1	1	1	2	1
579	Jaibunisha	365170D	48	2	1	Housewife	1	1	1	1	1	1	1	1	1	1	1	2	2	2
580	Sriram Hyma	468505F	40	2	1	Housewife	1	1	2	1	2	1	1	2	2	1	1	2	2	2
581	Supriya Ghosh	283303F	28	1	1	Police	1	1	1	1	1	1	1	1	2	2	1	1	2	2
582	Henry Dhanasekaran D.M.	221281F	66	1	1	Leather Export	1	1	1	1	1	1	1	2	2	2	1	1	2	2
583	Saket Saurabh	647392F	25	1	2	Electrical Engineer	2	1	2	1	1	1	1	2	2	2	1	1	2	2
584	Poornima P.	470670F	41	2	1	Housewife	1	1	1	1	1	1	1	1	2	1	1	1	2	2
585	Shanthiram Garai	655146F	40	1	1	Homeo medicine Pharmacy	1	1	1	2	1	1	1	2	2	2	1	1	2	2
586	Jothi P.	069203F	36	1	1	Fast food owner	1	1	1	1	1	1	1	1	2	2	1	1	2	2
587	Abhijit Dhar	638871F	16	1	2	Student	1	1	1	1	1	1	1	1	2	2	1	1	2	2
588	Selvam	664922C	59	1	1	Beedi Company Manager	1	1	1	1	1	1	1	2	2	2	1	1	2	2
589	Sudha Devi	633452F	41	2	1	Housewife	1	1	1	1	1	1	1	1	2	2	1	1	2	2
590	Chaitali sarkar	652290F	39	2	1	Music teacher	1	1	1	1	1	1	1	1	2	1	1	1	2	2
591	Asiya Begum Y.	955848C	24	2	1	Housewife	1	1	1	1	1	1	1	2	2	2	1	1	2	2
592	Nikkat Fatti ma	643514C	49	2	1	Housewife	1	1	1	1	1	1	1	1	2	2	1	1	2	2
593	Anil Baran Patra	643956F	622	1	1	Rtd.Teacher	1	1	1	1	1	1	1	2	2	2	1	1	2	2
594	Kasturi P.	661264F	40	2	1	Housewife	1	1	1	1	1	1	1	1	2	2	1	1	2	2
595	Palanisamy J.	578607A	54	1	1	Rtd.Teacher	1	1	1	1	1	1	1	2	2	2	1	1	2	2
596	Haji M.D. Qamruzzaman	627193F	65	1	1	Furniture Business	1	1	1	2	1	1	1	2	2	2	1	1	2	2
597	Shambhu Prasad Bhahor	660353F	46	1	1	Cloth Business	1	1	1	1	1	1	1	2	2	2	1	1	2	2
598	Sekar J.	336674F	53	1	1	Driver	1	1	1	1	1	1	1	2	2	2	1	1	2	2
599	Dayanand Jha	412054C	61	1	1	Rtd.Steel Plant Employee	1	1	1	1	1	1	1	2	2	2	1	1	2	2
600	Savitha Jain	662199F	44	2	1	Housewife	1	1	1	1	1	1	1	1	2	2	1	1	2	2
601	Vijaya Lakshmi	193661F	50	2	1	Housewife	1	1	1	1	1	1	1	1	2	2	1	1	2	2
602	Muktipada Ray	663440F	38	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1
603	Gouri R.	359849D	56	2	1	Housewife	1	1	1	1	1	1	1	1	2	2	1	1	2	2

604	Reba Pathak	672736F	57	1	2	Housewife	1	1	1	1	1	1	1	2	2	2	1	1	2	2
605	Suryakala Devi	279297F	67	2	1	Housewife	1	1	1	1	1	1	1	1	2	2	1	1	2	2
606	Shukla Mandal	676984F	32	2	1	Housewife	1	1	1	1	1	1	1	1	2	2	1	1	2	2
607	Ruby V.	519456C	35	2	1	Housewife	1	1	1	1	1	1	1	1	2	1	1	1	2	2
608	Umarani Kotal	670606F	28	2	1	Housewife	1	1	1	1	1	1	1	1	2	2	1	1	2	2
609	Jhuma Ghosh	672262F	23	2	1	Housewife	1	1	1	1	1	1	1	1	1	1	1	1	2	1
610	Solomon Kirubhakaran	913564A	55	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	2	1
611	Nabakumar Das	629166F	56	1	1	Electrical	1	1	1	1	1	1	1	1	1	1	1	1	2	1
612	Nitesh Mondal	673801F	36	1	1	Asst.	1	1	1	1	1	1	1	1	1	1	1	1	2	1
613	Ashuthosh Singh	344662F	16	1	1	student	1	1	1	1	1	1	1	1	2	2	1	1	2	1
614	Subrata Das	839024D	27	1	2	1	1	1	1	1	1	1	1	2	1	1	1	1	2	1
615	Prabhakaran	930180C	64	1	1	Rtd.	1	1	1	1	1	1	1	1	1	1	1	1	2	1
616	Lalitha S.	403590F	61	2	1	Housewife	1	1	1	1	1	1	1	1	1	1	1	1	2	1
617	Sathish Kumar	032156A	36	1	1	Transport	1	1	1	1	1	1	1	2	1	1	1	1	2	1
618	Md. Abdul	684916F	55	1	1	Service	1	1	1	1	1	1	1	1	1	1	1	1	2	1
619	Chandrasekar Reddy	677374F	45	1	1	Office	1	1	1	1	1	1	1	1	1	1	1	1	2	1
620	Usha Mondal	661054F	25	2	1	Housewife	1	1	1	1	1	1	1	2	1	1	1	2	2	2
621	Vimal	541690D	33	2	1	Housewife	1	1	1	1	1	1	1	2	1	1	1	1	2	1
622	Sudha Devi	599650D	49	2	1	Housewife	1	1	1	1	1	1	1	2	1	1	1	2	2	2
623	Chirtrekha Devi	682104F	70	2	1	Housewife	1	1	1	1	1	1	1	2	1	1	1	1	2	1
624	Murti	665429C	66	1	1	Rtd.	1	1	1	1	1	1	1	1	1	1	1	2	2	1
625	Montusi sarkar	682356D	33	2	1	Housewife	1	1	1	1	1	1	1	1	1	1	1	1	2	1
626	Kishorekumar P.	272653C	22	1	2	Engineer	1	1	1	1	1	1	1	2	1	1	1	2	2	1
627	Moly Chandran	620190D	52	1	1	Medical Rep.	1	1	1	1	1	1	1	2	1	1	1	2	2	2
628	Aparna Ghosh	684798F	31	2	1	Housewife	2	1	2	1	1	1	1	2	2	2	1	1	2	1
629	Sanjoy Kumar Dutta	638961F	27	1	2	Student	1	1	1	1	1	1	1	2	1	1	1	1	2	1
630	Vijaya	801547D	58	2	1	Housewife	1	1	1	1	1	1	1	2	1	2	1	2	2	2
631	Guna G	697400D	30	2	1	Housewife	1	1	1	1	1	1	1	2	2	2	1	1	2	2
632	Pushpa Sanghvi	141596B	69	2	1	Housewife	1	1	1	1	1	1	1	2	1	1	1	1	2	1
633	Gopal Chandra Gope	694525F	33	1	1	Business	1	1	1	1	1	1	1	1	1	1	1	1	2	1
634	Biraj Gos	714033F	41	1	1	Teacher	1	1	1	1	1	1	1	2	2	1	1	1	2	1

	wami																					
635	Uttam Kumar Dhakta	659051F	29	1	1	Electrician 1	1	1	1	1	1	1	1	2	2	2	1	1	2	2		
636	Ashalatha Debnath	121586F	49	2	1	Housewife	1	1	1	1	1	1	1	2	1	1	1	2	2	2		
637	Sapna Devi	362545F	55	2	1	Housewife	1	1	1	1	1	1	1	1	2	2	1	1	2	1		
638	Gayatri Keot	487961D	66	2	1	Housewife	1	2	1	1	1	2	1	2	1	1	1	1	2	2		
poll	resp	smok	emotexp	asththera	gothechest	inhal	inhwhen	inhcompl	pspiromet	pobst	pobstpre	psigrever	asthcont	obst	obstpre	pred	preped	pospred	pre	post		
2	1	1	2	1	1	3	12	1	1	1	3	1	1	3	2.63	34.8	45.4	0.91	1.19			
2	1	1	2	1	1	3	12	1	1	1	3	1	1	3	2.63	34.8	45.4	0.91	1.19			
2	1	1	2	1	2	1	2	2	3	1	3	3.26	17.9	20.9	0.58	0.68						
1	1	1	1	1	1	3	2	2	2	2	2.27	69.7	76.6	1.58	1.74							
2	1	2	2	1	1	24	2	2	1	2	3.46	60.7	66.9	2.1	2.32							
2	1	2	1	1	1	3	120	1	1	2	1	2	2.94	102.6	106.8	3.02	3.14					
2	1	1	1	1	1	3	36	1	2	2	2	3.89	68.9	87.7	2.68	3.41						
1	1	1	2	1	1	3	6	1	1	1	3	2	1	3	2.06	26.5	32.7	0.55	0.67			
2	1	1	2	1	1	3	48	1	1	2	1	2	2.8	57	59.8	1.6	1.67					
2	2	2	2	1	1	3	3	1	1	3	1	1	3	2.29	54.6	71.1	1.25	1.63				
2	1	1	1	1	1	2	2	2.98	96.7	98.3	2.88	2.93										
2	1	1	1	1	1	3	12	2	2	2	1	1	2.54	87.9	92.1	2.23	2.34					
1	1	2	2	1	1	3	24	2	2	2	2	2.04	81	84.6	2.04	2.13						
1	1	1	2	1	1	3	240	2	1	1	3	2	1	3	1.74	39.3	51.1	0.68	0.89			
1	1	1	1	1	1	120	2	2	3	2	2.23	102.4	109.2	2.29	2.44							
2	1	1	2	1	1	3	24	1	1	2	1	2	3.19	72.7	69.9	2.32	2.23					
2	1	1	2	1	1	2	1	2	3.45	80.6	82	2.78	2.83									
2	2	2	2	1	1	3	24	1	1	2	1	2	2.25	75.9	82.2	1.7	1.85					
2	1	1	2	1	2	3	36	1	1	2	1	1	2	2.35	75.6	91.8	1.78	2.15				
2	1	1	1	1	1	3	3	1	2	2	1	3	1.63	40.6	72	0.66	1.17					
2	2	2	2	2	2	2	2	2.25	102.5	107.8	2.3	2.42										
2	1	1	2	1	1	3	6	1	1	2	1	1	1	2.74	85.3	93.9	2.33	2.57				
2	1	1	2	1	1	3	120	1	1	2	2	1	2	1.9	61.7	61.8	1.17	1.18				
2	2	1	2	1	1	2	12	1	1	1	2	1	2	3.68	81.3	82.4	2.99	3.03				
2	1	1	1	2	1	2	2	3.62	76.3	79.7	2.76	2.88										
2	1	1	2	1	1	3	5	2	2	2	2	2.97	86.6	101.4	2.57	3.01						
1	1	1	2	1	1	3	60	1	1	1	3	1	1	3	1.94	36.1	40.3	0.7	0.78			
1	1	2	2	1	1	3	24	1	2	1	2	2.09	68.3	67.4	1.42	1.41						
1	1	1	2	1	1	3	60	2	2	2	2	2.06	72.2	84.4	1.49	1.74						
2	1	1	2	1	2	1	2	1	3	2.78	54.8	55.1	1.52	1.53								
1	1	1	2	1	1	2	6	1	1	2	3	2	2.44	90.2	92	2.2	2.24					
2	1	2	1	1	2	3	3	2	2	2	2	3.8	68.8	73.3	2.61	2.79						
1	1	2	2	1	1	3	60	1	1	2	1	2	2.8	89.4	91.9	2.51	2.58					
2	2	1	2	1	2	2	2	2	2.81	80.4	84.7	2.26	2.38									
2	2	1	2	1	1	3	72	1	1	2	2	2	3.72	53	55.1	1.97	2.05					
1	2	1	2	1	2	1	2	3	1	2.56	48.8	53.7	1.25	1.37								
1	1	1	2	1	2	1	2	1	3	3.34	43.7	54.6	1.46	1.82								
1	1	1	2	1	1	3	156	2	2	3	2	3.43	72.5	77.8	2.49	2.67						
1	1	1	2	1	1	3	36	2	2	2	2	3.87	88.7	93.4	3.43	3.61						
2	1	1	2	1	1	2	24	2	2	2	2	2.46	90.2	95.4	2.22	2.35						
2	1	1	1	2	1	2	2	2	2.29	93.7	106.5	2.14	2.43									
1	1	1	2	1	1	3	36	2	2	3	2	2.72	82.6	100.9	2.24	2.74						
1	1	1	2	1	1	3	228	1	1	1	3	2	1	3	2.61	44.7	47.1	1.16	1.23			
1	1	1	2	1	2	1	2	2	2.68	89.9	93	2.41	2.49									
1	1	1	2	1	2	3	12	1	2	1	1	3	2.97	39.4	48.1	1.17	1.43					
2	1	1	2	1	1	3	72	2	2	2	2	2.9	69.7	80	2.02	2.32						
2	1	1	2	1	1	3	24	2	2	2	1	1	2.07	85	95.6	1.75	1.98					
1	2	2	1	1	3	36	2	1	1	3	2	1	3	2.01	58.9	74.4	1.18	1.5				
2	1	1	2	1	1	3	76	1	1	2	1	2	2.62	71.7	76.1	1.88	2					
1	1	1	2	1	4	96	1	1	2	1	1	2	3.36	74.4	84.4	2.5	2.84					
2	1	1	2	1	1	3	60	1	2	2	2	3.09	83.6	89.6	3	3.22						
2	1	1	2	1	1	3	12	2	2	3	2	3.57	70.4	73.6	2.51	2.63						
2	1	2	2	1	1	3	3	1	1	1	2	1	1	1	3.8	91	100.8	3.46	3.83			
1	1	1	2	1	1	3	120	2	2	2	2	3.7	86.3	85.5	3.19	3.16						
2	1	1	2	1	1	3	6	1	1	1	3	2	1	3	3.91	55	68.6	2.15	2.69			
2	1	1	2	1	1	3	36	1	2	2	1	3	2.08	46.9	49.1	0.98	1.02					
2	1	1	2	1	1	3	8	1	1	2	1	2	2.02	88.9	97.8	1.79	1.98					
2	1	1	2	1	2	1	2	2	2.72	98.7	95.8	2.68	2.6									
2	1	1	2	1	1	3	8	1	1	1	3	1	1	2	2.56	60.2	67.7	1.54	1.73			
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2	1	1	2	1	1	3	120	1	1	1	3	1	1	3	2.19	48.5	56.2	1.06	1.23			
2	1	1	2	1	1	3	6	2	2	3	1	3	3.53	52.8	83.5	1.86	2.95					
1	1	1	2	1	1	2	48	1	1	2	1	2	2.15	69.2	70.4	1.48	1.51					
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postpre ml r5pred actu percentr5 r20pred actu1 percentr20 r5r20 actu2 percer5r20 r5 r5preper r5posper pospre dursymp durmonths yrdiag smok1
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-1 30 0.26 0.54 205.2 0.22 0.43 194.2 0.04 0.11 275 0.26 205.2 205.7 0.2 10 2003
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18.2	480	0.33	0.4	125.5	0.29	0.39	135.9	0.04	0.01	25	0.33	125.5	117.3	-6.5	9	2004	
30.2	370	0.38	0.72	191.4	0.32	0.51	161.7	0.06	0.21	350	0.38	191.4	147.2	-23.1	12	2002	
-2.8	-10	0.39	0.9	232	0.33	0.4	121.5	0.06	0.5	833.33	0.39	232	202.2	-12.8	18	2003	3
-0.9	-20	0.34	0.46	134.5	0.28	0.39	137.7	0.06	0.07	166.66	0.34	134.5	116.1	-13.7	3	2012	2
8.1	220	0.27	0.51	189.7	0.23	0.5	220.7	0.04	0.01	25	0.27	189.7	137.8	-27.4	3	2012	
2.8	70	0.33	0.44	132.5	0.27	0.38	139.7	0.06	0.06	100	0.33	132.5	113.9	-14.1	8	2009	2
10.2	200	0.27	0.52	189.7	0.23	0.36	155.2	0.04	0.16	400	0.27	189.7	122.7	-35.3	5	2012	1
1.7	50	0.36	0.35	97.8	0.3	0.29	95.9	0.06	0.06	100	0.36	97.8	92.4	-5.6	10	2003	
5.9	110	0.29	0.68	232.1	0.25	0.65	256.8	0.04	0.03	75	0.29	232.1	194.1	-16.4	10	2003	
6.3	80	0.27	0.8	301.9	0.23	0.44	194.1	0.04	0.36	900	0.27	301.9	199.7	-33.9	10	2009	
7.6	200	0.25	0.47	184.7	0.21	0.38	177.4	0.04	0.09	225	0.25	184.7	233.1	26.3	10	2013	
22.5	400	0.35	0.47	135.6	0.29	0.37	129.6	0.06	0.1	166.66	0.35	135.6	110.8	-18.2	19	2001	3
30.3	660	0.33	0.43	131	0.27	0.37	134.9	0.06	0.06	100	0.33	131	102.1	-22.1	4	2012	
0.9	20	0.34	0.58	168.4	0.28	0.55	195.5	0.06	0.03	50	0.34	168.4	144.3	-14.3	2	2012	
31.8	450	0.34	0.69	199.9	0.28	0.3	105.1	0.06	0.39	650	0.34	199.9	130	-35	5	2012	
15.4	220	0.39	0.74	190.5	0.33	0.47	144.1	0.06	0.27	450	0.39	190.5	192.3	0.9	15	2002	3
44.5	740	0.27	0.64	242.1	0.23	0.38	170.1	0.04	0.26	650	0.27	242.11	150.1	-38	3	2011	3
1.5	40	0.27	0.42	154.9	0.23	0.33	144.4	0.04	0.09	225	0.27	154.9	148.9	-3.9	22	2000	
28.2	410	0.28	1.16	417	0.24	0.95	400.6	0.04	0.22	525	0.28	417	239.1	-42.7	5	2013	
3.4	40	0.36	1.02	284.5	0.3	0.77	258.1	0.04	0.25	625	0.36	284.5	227.8	-19.9	8	2013	
11.2	350	0.34	0.55	161.1	0.28	0.51	182.6	0.06	0.04	66.66	0.34	161.1	129.6	-19.6	3	2012	
54.9	440	0.33	0.69	210.1	0.27	0.32	121.3	0.06	0.37	616.66	0.33	210.1	143.1	-31.9	15	2007	
13.8	260	0.37	0.47	127.7	0.31	0.29	93.3	0.06	0.18	300	0.37	127.7	114.4	-10.4	6	2007	4
20.7	280	0.29	0.91	318.9	0.25	0.48	195.5	0.04	0.33	825	0.29	318.9	204.4	-35.9	8	2004	
22.3	330	0.31	0.7	230.1	0.27	0.4	152	0.04	0.3	750	0.31	230.1	168.2	-26.9	15	2003	
16.6	390	0.28	0.83	297.4	0.24	0.54	227.8	0.04	0.29	725	0.28	297.4	219.8	-26.1	8	2009	
23.4	330	0.38	0.58	152.8	0.32	0.44	136.9	0.06	0.14	233.33	0.38	152.8	130.1	-14.8	20	2005	3
46.6	270	0.39	0.93	237.5	0.33	0.38	113.4	0.06	0.55	916.66	0.39	237.5	131.5	-44.6	10	2003	
25.9	450	0.35	1.09	309.1	0.29	0.66	225.7	0.06	0.43	716.66	0.35	309.1	134.8	-56.4	10	2010	
2.3	60	0.28	0.29	104.1	0.24	0.25	106	0.04	0.04	100	0.28	104.1	93.3	-10.4	15	2013	
-0.4	-10	0.36	0.47	131.2	0.3	0.4	132.8	0.06	0.07	116.66	0.36	131.2	105.3	-19.7	4	2013	
33.7	690	0.29	0.63	220.2	0.25	0.32	129.7	0.04	0.31	775	0.29	220.2	68.9	-68.7	25	2008	1
3.7	90	0.28	0.48	169.8	0.24	0.46	189.8	0.04	0.02	50	0.28	169.8	144.6	-14.8	5	2008	
5	120	0.29	0.45	151.2	0.25	0.29	112.7	0.04	0.16	400	0.29	151.2	150.4	-0.5	10	2012	1
42.5	460	0.3	0.56	185.5	0.26	0.25	95.2	0.04	0.31	775	0.3	185.5	125.8	-32.2	27	27	
19	230	0.38	0.9	326.3	0.32	0.62	191.4	0.06	0.28	466.66	0.38	236.8	137.6	-41.8	10	2011	3
9.1	180	0.35	0.46	130.8	0.29	0.34	118.1	0.06	0.12	200	0.35	130.8	126.4	-3.4	5	2009	
13.5	210	0.29	0.66	225.7	0.25	0.39	156.4	0.04	0.27	675	0.29	225.7	188.9	-16.3	20	1998	
2.3	60	0.37	0.26	69.9	0.31	0.23	72.9	0.06	0.03	50	0.37	69.9	89.1	27.5	8	2013	3
34.8	280	0.39	0.76	194.8	0.33	0.38	116.9	0.06	0.48	800	0.39	194.8	179.3	-8	30	25	
15.8	270	0.34	0.85	250.6	0.28	0.65	232.7	0.06	0.2	333.33	0.34	250.6	121.4	-51.6	8	2005	
15.1	230	0.28	0.77	274.6	0.24	0.41	169.9	0.04	0.36	900	0.28	274.6	129.8	-52.7	10	2011	
1.8	30	0.38	0.96	252.9	0.32	0.54	170.6	0.06	0.42	700	0.38	252.9	133.1	-47.4	25	2008	
77.4	710	0.28	0.71	258.4	0.24	0.32	134.6	0.04	0.39	975	0.28	258.4	213.7	-17.3	22	1993	
21.9	240	0.41	1.5	369.6	0.35	0.92	266	0.06	0.58	966.66	0.41	369.6	213.3	-42.3	40	1983	
14.9	390	0.35	0.37	108	0.3	0.26	85.5	0.05	0.11	220	0.35	108	124	14.8	3	2011	
-1.2	-30	0.34	0.55	158.5	0.28	0.44	156.7	0.06	0.11	183.33	0.34	158.5	127.3	-19.7	10	2013	2
26.2	580	0.26	0.51	193.3	0.22	0.3	135.4	0.04	0.21	525	0.26	193.3	135.4	-30	13	2010	
-2.1	-50	0.33	0.33	98.7	0.27	0.32	117.7	0.06	0.01	16.66	0.33	98.7	73.7	-25.3	4	2009	
4	50	0.29	0.88	299.9	0.25	0.5	195.9	0.04	0.38	950	0.29	299.9	146.1	-51.3	5	2013	
15.8	250	0.37	0.62	166.2	0.31	0.41	130.2	0.06	0.21	350	0.37	166.2	135	-18.8	27	1986	
1.4	40	0.28	0.62	223.5	0.24	0.45	188	0.04	0.17	425	0.28	223.5	129.3	-42.1	8	2006	
15.4	200	0.37	1.06	285.7	0.31	0.51	164.9	0.06	0.55	916.66	0.37	285.7	288.1	0.8	15	2012	3
14.3	230	0.39	0.44	112.8	0.33	0.23	67.7	0.06	0.21	350	0.39	112.8	71.5	-36.6	20	1998	
7.8	290	0.26	0.45	171.5	0.22	0.4	180	0.4	0.05	125	0.26	171.5	113.6	-33.7	4	2011	1
0.1	10	0.3	0.37	126.1	0.26	0.32	123	0.04	0.05	125	0.3	126.1	67.3	-46.6	6	2009	
26.4	480	0.27	0.43	161.8	0.23	0.28	120.7	0.04	0.15	375	0.27	161.8	113.5	-29.8	4	2012	
6.5	90	0.38	0.68	178.7	0.32	0.49	152.7	0.06	0.19	316.66	0.38	178.7	144.6	-19.1	30	1988	
52.1	410	0.28	0.56	205	0.23	0.3	127	0.05	0.26	520	0.28	205	150	-26.8	20	1998	
22.3	230	0.4	0.8	199.8	0.34	0.35	103.6	0.06	0.45	750	0.4	199.8	128.4	-35.7	35	1993	
3.3	90	0.27	0.32	119.8	0.23	0.27	117.2	0.04	0.05	125	0.27	119.8	114.7	-4.2	20	2010	
36	590	0.28	0.69	247.1	0.24	0.33	139.9	0.04	0.36	900	0.28	247.1	125.7	-49.2	2	2011	1
30.4	380	0.3	0.89	299.2	0.26	0.48	186.5	0.04	0.41	1025	0.3	299.2	242.8	-18.9	33	1980	
1.1	30	0.27	0.58	218	0.23	0.41	183	0.04	0.17	425	0.27	218	130.7	-40.1	9	2012	
13.4	210	0.33	0.5	151.3	0.27	0.39	143.9	0.05	0.11	220	0.33	151.3	124.5	-17.7	10	2003	
27.3	280	0.4	1.01	253.1	0.34	0.65	192.3	0.06	0.36	600	0.4	253.1	188.2	-25.6	30	1998	
-1.6	-20	0.31	0.68	215.9	0.27	0.4	148.2	0.04	0.28	700	0.31	215.9	205.4	-4.8	10	2013	
2.7	50	0.35	0.41	117.3	0.29	0.24	80.6	0.06	0.17	283.33	0.35	117.3	156	33	4	2012	
19.3	50	0.38	1.13	297.4	0.32	0.6	186.7	0.06	0.53	883.33	0.38	297.4	218.4	-26.6	25	2000	3
56.4	390	0.39	1.07	277.5	0.33	0.58	178.3	0.06	0.49	816.66	0.39	277.5	200.5	-27.7	20	2003	
-0.4	-10	0.34	0.32	96.2	0.28	0.28	102.3	0.06	0.04	66.66	0.34	96.2	90.6	-5.8	5	2012	
-0.4	-10	0.27	0.29	106	0.23	0.25	108.6	0.04	0.04	100	0.27	106	101.6	-4.2	2	2011	
13.3	320	0.25	0.42	164.4	0.21	0.29	136.8	0.04	0.13	325	0.25	164.4	128.4	-21.9	8	2005	
18.5	500	0.26	0.62	236.8	0.22	0.47	214.9	0.04	0.15	375	0.26	236.8	136.2	-425	10	2013	1
14.4	300	0.35	0.63	180.7	0.29	0.53	183.5	0.06	0.1	166.66	0.35	180.7	143.1	-20.8	20	2003	
20	340	0.34	0.61	178.5	0.28	0.38	135.5	0.06	0.23	383.33	0.34	178.5	107	-39.7	8	2005	
3.2	50	0.28	0.82	288.8	0.24	0.47	192.3	0.04	0.35	875	0.28	288.8	289.6	0.3	10	2012	
18.4	70	0.3	0.77	259	0.26	0.49	187.6	0.04	0.28	700	0.3	259	174.6	-32.6	20	2003	
3.6	90	0.28	0.61	215.8	0.24	0.45	183.9	0.04	0.16	400	0.28	215.8	182.1	-15.6	36	2010	
18	310	0.35	1.03	292.2	0.29	0.47	161	0.06	0.56	933.33	0.35	292.2	210.9	-27.8	8	2006	3
8.8	120	0.39	0.69	179.6	0.33	0.38	118.1	0.06	0.31	516.66	0.39	179.6	160.1	-10.9	15	2003	
2	50	0.34	0.31	91	0.28	0.28	97.5	0.06	0.03	50	0.34	91	95.7	5.1	3	2010	3
2.8	90	0.27	0.45	167.8	0.23	0.29	126.2	0.04	0.16	400	0.27	167.8	167.2	-0.4	6	2013	
19.7	350	0.33	0.98	298.7	0.27	0.5	187.8	0.06	0.48	800	0.33	298.7	209.1	-30	8	2006	
23.5	230	0.29	0.59	203.6	0.25	0.39	157.1	0.04	0.2	500	0.29	203.6	337.1	65.6	2000		
19.6	340	0.37	0.99	265.9	0.31	0.67	215.2	0.06	0.32	533.33	0.37	265.9	152	-42.8	7	2011	
8.1	210	0.33	0.42	128.7	0.27	0.3	113.2	0.06	0.12	200	0.33	128.7	96.3	-25.1	5	2013	
5.2	120	0.27	0.43	161.8	0.23	0.34	146.8	0.04	0.09	225	0.27	161.8	118.5	-26.8	6	2009	

25.2	300	0.37	0.88	236.2	0.31	0.57	182.2	0.06	0.31	516.66	0.37	236.2	121.9	-48.4	10	2003
2.3	50	0.38	0.78	207.2	0.32	0.6	188.7	0.06	0.18	300	0.38	207.2	174.9	-15.6	15	2011
8.1	50	0.4	0.51	127	0.34	0.37	107.6	0.06	0.14	233.33	0.4	127	120.6	-5	15	2001
46.8	400	0.38	0.89	233.7	0.32	0.41	128.2	0.06	0.48	800	0.38	233.7	119.5	-48.9	25	2012	3
61.1	980	0.27	0.69	257.4	0.23	0.5	220.8	0.04	0.19	475	0.27	257.4	126.9	-50.7	4	2010
-0.3	-10	0.26	0.3	115.7	0.22	0.19	88.2	0.04	0.11	275	0.26	115.7	109	-5.9	2	2013
38	440	0.39	1.11	281.9	0.33	0.63	187.9	0.06	0.48	800	0.39	281.9	133.5	-52.6	30	2000
4	100	0.28	0.4	140.1	0.24	0.34	140.2	0.04	0.06	150	0.28	140.1	118.2	-15.6	23	1989
9.3	210	0.33	0.4	120.2	0.27	0.37	134.8	0.06	0.03	50	0.33	120.2	84.3	-29.9	19	2011
26.1	170	0.4	0.64	158.9	0.34	0.46	134.8	0.06	0.18	300	0.4	158.9	133.4	-16.1	16	1980
0.28	0.24	86.5	0.23	0.17	72.2	0.05	0.07	140	0.28	86.5	75.8	-12.4	2	2013		
8.7	240	0.27	0.35	128.7	0.23	0.34	148.7	0.04	0.01	25	0.27	128.7	115.3	-10.4	2	2012
17.5	150	0.3	0.68	230.2	0.26	0.41	158.6	0.04	0.27	675	0.3	230.2	180.3	-21.7	25	2011	1
2.1	70	0.28	0.36	131	0.24	0.35	148.1	0.04	0.01	25	0.28	131	88.6	-32.4	1	2012
4.4	140	0.33	0.79	236.2	0.27	0.64	223.7	0.06	0.15	250	0.33	236.2	143.1	-39.4	12	2004
31.7	190	0.34	1.06	307.9	0.28	0.34	118	0.06	0.72	1200	0.34	307.9	182.9	-40.9	10	2012	3
5.4	170	0.34	0.52	149.7	0.28	0.51	179.6	0.06	0.01	16.66	0.34	149.7	109.4	-26.9	6	2012
6	190	0.34	0.5	145	0.28	0.41	143.8	0.06	0.09	150	0.34	145	96.9	-33.2	2	2011
7.3	80	0.34	0.7	203.9	0.28	0.36	126.1	0.06	0.34	566.66	0.34	203.9	149.1	-26.9	30	1993
7.5	190	0.34	0.54	155.6	0.28	0.53	187.5	0.06	0.01	16.66	0.34	155.6	153.4	-1.4	5	2012	1
11.6	270	0.34	0.36	103.8	0.28	0.27	93.9	0.06	0.07	116.66	0.34	103.8	103.3	-0.5	12	2003
24.3	330	0.36	1.11	285.1	0.3	1.01	192.4	0.06	0.1	166.66	0.36	285.1	243.3	-14.7	20	1993	2
30.2	260	0.4	1.54	385.8	0.34	0.87	257.6	0.06	0.67	1116.66	0.4	388.8	105.3	-72.7	32	2007
2.4	70	0.26	0.31	119.3	0.22	0.25	112.3	0.04	0.06	150	0.26	119.3	91	-23.7	3	2011	4
11.4	190	0.36	0.62	173	0.3	0.35	118.6	0.06	0.27	450	0.36	173	176.6	2.1	4	2012
-1.6	-50	0.26	0.33	128.1	0.22	0.29	133	0.04	0.04	100	0.26	128.11	102	-20.3	2	2012	4
23.4	360	0.27	0.72	270.3	0.23	0.43	189.4	0.04	0.29	725	0.27	270.3	241.9	-10.5	23	1990	1
6.1	110	0.29	0.68	232.7	0.25	0.38	152.1	0.04	0.3	750	0.29	232.7	189.7	-18.5	7	2008	4
10.8	200	0.37	0.76	206.2	0.31	0.44	143.7	0.06	0.32	533.33	0.37	206.2	125.8	-39	15	2000	3
3.5	50	0.36	0.64	176.7	0.3	0.42	140.4	0.06	0.22	366.66	0.36	176.4	125.6	-28.9	2	2013
3	60	0.34	0.63	184.3	0.28	0.53	190.8	0.06	0.1	166.66	0.34	184.3	166.2	-9.8	15	2008
19.2	210	0.31	0.7	226.9	0.27	0.46	172.9	0.04	0.24	600	0.31	226.9	182.9	-19.4	45	1976
5.5	120	0.32	0.47	145	0.26	0.41	153.5	0.06	0.06	100	0.32	145	125.8	-13.2	10	2004
12.5	80	0.3	0.5	167.9	0.26	0.26	102.4	0.04	0.24	600	0.3	167.9	211.6	26.1	20	2008
7.4	200	0.27	0.64	239.3	0.23	0.46	202.4	0.04	0.18	450	0.27	239.3	137.3	-42.6	10	2003
28.5	430	0.29	0.73	251.7	0.25	0.49	195	0.04	0.24	600	0.29	251.7	190	-24	7	2011	4
7.6	140	0.36	0.69	190.1	0.3	0.44	146.3	0.06	0.25	416.66	0.36	190.1	115.1	-39.4	6	2013	3
4.4	60	0.38	0.59	154.5	0.32	0.45	138.1	0.06	0.14	233.33	0.38	154.5	173.8	12.5	25	2012	3
12.3	220	0.36	0.37	100.7	0.3	0.26	84.6	0.06	0.11	183.33	0.36	100.7	78.6	-22	3	2010
25.1	270	0.37	0.62	168.1	0.31	0.43	139.5	0.06	0.19	316.66	0.37	168.1	134.4	-20	18	2003
5.1	80	0.4	0.6	150.9	0.34	0.47	138.1	0.06	0.13	216.66	0.4	150.9	111.7	-26	10	2012	3
9.6	130	0.37	0.55	148.9	0.31	0.49	158.2	0.06	0.06	100	0.37	148.9	134.4	-9.7	8	2008
14.3	360	0.34	0.51	149.3	0.28	0.37	131.5	0.06	0.14	233.33	0.34	149.3	101.7	-31.9	18	1998
0.5	20	0.28	0.33	118.6	0.24	0.31	128.9	0.04	0.02	50	0.28	118.6	119.9	1.1	3	2011
8.7	260	0.28	0.61	219.7	0.24	0.41	171	0.04	0.2	500	0.28	219.9	129	-41.3	10	2008
0.3	10	0.36	0.43	119.1	0.3	0.4	132.8	0.06	0.03	50	0.36	119.1	107.9	-9.4	2	2013
5.4	180	0.26	0.38	146	0.22	0.34	156.5	0.04	0.04	100	0.26	146	109.3	-25.1	3	2011
18.6	260	0.38	0.46	119.6	0.32	0.33	103.1	0.06	0.13	216.66	0.38	119.6	89.1	-25.5	40	2000
27.1	360	0.29	0.72	244.4	0.25	0.4	156.1	0.04	0.32	800	0.29	244.4	244.8	0.2	25	2000
31.2	160	0.29	0.96	334	0.25	0.36	146.6	0.04	0.6	1500	0.29	334	361	8.1	15	2005
48.2	220	0.4	1.22	300.7	0.34	0.58	167.6	0.06	0.64	1066.66	0.4	300.7	205.9	-31.5	10	
7.8	280	0.27	0.43	159.6	0.23	0.38	164.3	0.04	0.05	125	0.27	159.6	156.3	-2.1	2	2012	1
0.4	0	0.28	0.77	270.2	0.24	0.44	182.3	0.04	0.33	825	0.28	270.2	236	-12.7	20	2009
-0.6	-20	0.29	0.26	89.8	0.25	0.2	79.9	0.04	0.06	150	0.29	89.8	74.4	-17.1	5	2009	4
1	40	0.18	0.35	193.3	0.22	0.23	107.8	0.04	0.12	300	0.18	193.31	189.1	-2.2	1	2013
20.2	110	0.37	0.59	157.2	0.31	0.32	103.3	0.06	0.27	450	0.37	157.2	126.5	-19.6	3	2010
1.7	40	0.27	0.31	114.4	0.23	0.28	121	0.04	0.04	100	0.27	114.4	100.6	-12	10	2006
5.4	140	0.26	0.46	173.6	0.22	0.29	128.2	0.04	0.17	425	0.26	173.6	127	-26.8	5	2013	1
36.9	640	0.27	0.82	301	0.23	0.59	251.7	0.04	0.23	575	0.27	301	203.7	-32.3	5	2008
4.4	150	0.26	0.36	137.2	0.22	0.3	133.5	0.04	0.06	150	0.26	137.2	86.8	-36.7	6	2007
5.5	130	0.28	0.65	231.1	0.24	0.42	172.9	0.04	0.23	575	0.28	231.1	143.9	-37.7	20	
56	660	0.38	0.92	239.7	0.32	0.46	143.3	0.06	0.46	766.66	0.38	239.7	127	-47	33	1987
3.5	120	0.37	0.45	121.1	0.31	0.36	116.4	0.06	0.09	150	0.37	121.1	78	-35.5	12	2002
4.6	160	0.33	0.62	185.4	0.27	0.51	185.6	0.06	0.11	183.33	0.33	185.4	142	-23.4	16	2008
-2.5	70	0.28	0.53	193.5	0.23	0.38	162	0.05	0.15	300	0.28	193.5	142.4	-26.4	12	
9.7	240	0.27	0.42	156.5	0.23	0.35	154.2	0.04	0.07	175	0.27	156.5	145.4	-7.1	10	2004
2.3	50	0.33	0.43	132.4	0.27	0.41	153.5	0.06	0.02	33.33	0.33	132.4	161.6	22	4	2012
12	230	0.29	0.55	191.3	0.25	0.43	175.7	0.04	0.12	300	0.29	191.3	132.9	-30.6	12	2013
14.3	140	0.37	0.8	217.6	0.31	0.53	173.9	0.06	0.27	450	0.37	217.6	243.1	11.7	22	2003	3
4.9	150	0.28	0.4	142.7	0.24	0.34	143.7	0.04	0.06	150	0.28	142.7	99.1	-30.5	8	2013	3
2.5	70	0.28	0.34	123	0.23	0.26	111	0.05	0.08	160	0.28	123	97.4	-20.8	8	2009
26.6	170	0.39	1.69	438.7	0.33	0.46	141	0.06	1.23	2050	0.39	438.7	249.9	-43	40	1983
18.3	330	0.28	0.68	244.3	0.24	0.39	166.2	0.04	0.29	725	0.28	244.3	152.2	-37.7	7	
60.9	760	0.26	0.75	288.4	0.22	0.47	213	0.04	0.28	700	0.26	288.4	243.2	-15.7	7	2012
12.1	140	0.37	0.93	250.6	0.31	0.43	139.3	0.06	0.5	833.33	0.37	25.6	220.4	-12.1	20	2003
8	190	0.28	0.3	107.2	0.24	0.2	83.7	0.04	0.1	250	0.28	107.2	86.2	-19.6	20	2006
6.5	170	0.27	0.91	335.9	0.23	0.46	197.2	0.04	0.45	1125	0.27	335.9	295	-12.2	10	
0.1	10	0.26	0.35	133.9	0.22	0.23	101.4	0.04	0.12	300	0.26	133.9	131.5	-1.8	6	1
7.7	230	0.34	0.4	119.9	0.28	0.3	109.9	0.6	0.1	166.66	0.34	119.9	140.4	17.1	2	2013
33.4	250	0.36	1.07	301.4	0.3	0.52	176.9	0.06	0.55	916.66	0.36	301.4	213	-29.3	10	2003	2
8.3	63	0.4	1.65	411.4	0.34	0.47	137.4	0.06	1.18	1966.66	0.4	411.4	225.9	-45.1	40	1974

1.2	40	0.27	0.27	99.5	0.23	0.21	90.6	0.04	0.06	150	0.27	99.5	88.8	-10.8	10	2012	4	
8.8	220	0.26	0.52	200.4	0.22	0.43	197.3	0.04	0.09	225	0.26	200.4	250.5	25	4	2010		
4.5	110	0.26	0.41	155.6	0.22	0.37	164.9	0.04	0.04	100	0.26	155.6	179.4	15.3	5	2012		
1.5	50	0.26	0.47	181.4	0.27	0.41	151.1	0.01	0.06	600	0.26	181.4	189.7	4.5	1	6		
2	60	0.27	0.65	244.3	0.23	0.46	204.7	0.04	0.19	475	0.27	244.3	138.2	-43.4	6	2012		
21.1	310	0.3	0.83	281	0.26	0.37	144.4	0.04	0.46	1150	0.3	281	222	-21	30	1993		
4.6	30	0.38	0.61	159.7	0.32	0.25	79	0.06	0.36	600	0.38	159.7	135.8	-14.9	16	2008		
13.2	240	0.37	0.52	140.2	0.31	0.43	140	0.06	0.09	150	0.37	140.2	80.3	-42.7	10	2011		
5	110	0.36	0.38	107	0.3	0.35	118.4	0.06	0.03	50	0.36	107	98	-8.3	4	2011		
21.4	320	0.3	0.6	197.5	0.26	0.35	131	0.04	0.25	625	0.3	197.5	142.1	-28	42	2011	4	
19.6	380	0.28	0.32	114.5	0.24	0.22	91.6	0.04	0.1	250	0.28	114.5	91.6	-20	8	2010		
-0.3	0	0.26	0.54	204	0.22	0.37	167.2	0.04	0.17	425	0.26	204	222	8.8	7	2000	4	
92.5	880	0.26	0.81	318.6	0.22	0.48	224.9	0.04	0.33	825	0.26	318.6	226	-29.1	20	1995		
3.5	100	0.28	0.27	94.5	0.24	0.23	95.6	0.04	0.04	100	0.28	94.5	98.5	4.2	14	2012		
24.6	440	0.36	0.68	186.5	0.3	0.46	150.7	0.06	0.22	366.66	0.36	186.5	112.8	-39.5	8	2008		
6.2	150	0.29	0.4	140.9	0.25	0.37	147.9	0.04	0.03	75	0.29	140.9	133.6	-5.2	46	2000		
8.6	210	0.28	0.61	218.5	0.24	0.46	191	0.04	0.15	375	0.28	218.5	99.3	-54.6	15	2009		
35	490	0.35	1.63	461.7	0.29	0.86	294.1	0.06	0.77	1283.33	0.35	461.7	184.3	-60.1	10	2008		
1.7	40	0.36	0.66	183.3	0.3	0.57	192.8	0.06	0.09	150	0.36	183.3	156	-14.9	5			
9.1	200	0.28	0.49	173.9	0.24	0.4	169.1	0.04	0.09	225	0.28	173.9	130.6	-24.9	16	2003		
6	140	0.26	0.41	156.7	0.22	0.31	140.3	0.04	0.1	250	0.26	156.7	129.1	-17.6	2	2012		
6.7	110	0.36	0.56	155.1	0.3	0.44	146.2	0.06	0.12	200	0.36	155.1	184.1	18.7	8	2012		
5	140	0.27	0.6	219.4	0.23	0.41	174	0.04	0.19	475	0.27	219.4	143.1	-34.8	6	2012		
5	120	0.33	0.48	145.4	0.27	0.42	154.8	0.06	0.06	100	0.33	145.4	105.6	-27.4	2	2013		
2.3	110	0.26	0.36	135.6	0.22	0.27	119.3	0.04	0.09	225	0.26	135.6	121.9	-10.1	1	6	4	
3.4	90	0.34	0.32	95.5	0.28	0.28	99.3	0.06	0.04	66.66	0.34	95.5	104.9	9.7	3			
-3.8	80	0.34	0.51	151.6	0.28	0.32	113.1	0.06	0.19	316.66	0.34	151.6	101.4	-33.1	4	2013		
3.3	30	0.39	0.89	226.7	0.33	0.49	146.2	0.06	0.4	666.66	0.39	226.7	168	-25.9	45	2008		
29.1	790	0.25	0.33	130	0.21	0.26	121.9	0.04	0.07	175	0.25	130	112.2	-13.7	13	2004		
33.8	590	0.34	1.85	547.7	0.28	0.62	222.1	0.06	1.23	2050	0.34	547.7	194.3	-64.5	8			
-1.6	20	0.39	0.89	226	0.33	0.47	139.7	0.06	0.42	700	0.39	226	20	2003				
40	650	0.26	0.62	236.6	0.22	0.41	185.5	0.04	0.21	525	0.26	236.6	179.9	-24	10	2003		
-0.4	-10	0.35	0.38	109.7	0.29	0.31	109.4	0.06	0.07	116.66	0.35	109.7	118.9	8.4	7	2013	3	
19.9	140	0.3	1.51	509.8	0.26	0.45	177.9	0.04	1.06	2650	0.3	509.8	400.3	-21.5	10	2008	1	
0.4	0	0.44	2.1	475.2	0.38	1.39	365.8	0.06	0.71	1183.33	0.44	475.2	278.2	-41.5	40	1973		
2.5	50	0.35	0.62	173.9	0.29	0.46	157.7	0.06	0.16	266.66	0.35	173.9	159.5	-8.3	2	2013		
11.6	310	0.27	0.35	127.1	0.23	0.27	118.5	0.04	0.08	200	0.27	127.1	92.2	-27.5	8	2005		
-0.9	20	0.27	0.35	129.3	0.23	0.26	114.7	0.04	0.09	225	0.27	127.3	114.8	-11.2	3	2013		
21.2	300	0.29	0.66	226.6	0.25	0.45	178.8	0.04	0.21	525	0.29	226.6	143.5	-36.7	10	2010		
5.4	120	0.28	0.66	237	0.24	0.42	175.9	0.04	0.24	600	0.28	237	160.9	-32.1	10	2003	1	
15	230	0.39	0.44	112.1	0.33	0.31	94.2	0.06	0.13	216.66	0.39	112.1	85	-24.2	35	2005		
1.9	70	0.26	0.3	113.9	0.22	0.21	93	0.04	0.09	225	0.26	113.9	64.5	-43.3	4	2011		
29.6	440	0.29	0.66	207.9	0.25	0.3	119.6	0.04	0.3	750	0.29	207.9	234.6	12.8	35	2010		
10.9	270	0.27	0.56	208.6	0.23	0.32	140.4	0.04	0.24	600	0.27	208.6	188.2	-9.8	10			
28.8	320	0.34	0.9	263	0.28	0.48	169.2	0.06	0.42	700	0.34	263	156.4	-40.5	3	2012		
8.3	210	0.26	0.6	232.4	0.22	0.34	153.5	0.04	0.26	650	0.26	232.4	253.4	9.1	2	2012		
10.3	220	0.28	0.97	340.2	0.24	0.63	256.4	0.04	0.34	850	0.28	340.2	276.3	-18.8	10	2013	4	
4.2	110	0.34	0.52	152.1	0.28	0.46	166.7	0.06	0.06	100	0.34	152.1	101.7	-33.1	5	2009	3	
4.2	80	0.36	0.54	148.7	0.3	0.45	149	0.06	0.09	150	0.36	148.7	137.2	-7.7	5	2013		
10.9	100	0.38	1.13	295.2	0.32	0.67	207.3	0.06	0.46	766.66	0.38	295.2	205.9	-30.2	15	2008		
8.8	260	0.27	0.55	206.4	0.23	0.37	162.1	0.04	0.18	450	0.27	206.4	134.2	-35	11	2002		
2.7	90	0.26	0.38	142.9	0.22	0.32	142.9	0.04	0.06	150	0.26	142.9	109.4	-23.5	6	2012		
10.4	180	0.38	0.64	169.6	0.32	0.43	136.1	0.06	0.21	350	0.38	169.6	135.6	-20.1	20	2013		
2.5	80	0.27	0.58	217.8	0.23	0.45	201.3	0.04	0.13	325	0.27	217.8	127.1	-41.6	2	2013		
4.8	160	0.27	0.35	129.3	0.23	0.27	118.8	0.04	0.08	200	0.27	129.3	130	0.6	9	2011		
33.6	420	0.28	1.77	622.1	0.24	0.52	210.9	0.04	1.25	3125	0.28	622.1	248.5	-60.1	10	2007		
2.6	60	0.29	0.32	108.2	0.25	0.27	109.1	0.04	0.05	125	0.29	108.2	68.2	-36.9	15	2013	4	
3.5	10	0.3	1.97	657.1	0.26	0.81	312.3	0.04	1.16	2900	0.3	657.1	380.4	-42.1	32	1987		
11.5	180	0.37	0.99	269.2	0.31	0.69	224.1	0.06	0.3	500	0.37	269.2	228.4	-15.1	20	2013		
7.2	160	0.35	0.41	116.9	0.29	0.3	105.2	0.06	0.11	183.33	0.35	116.9	121.9	4.3	3	2011		
2	30	0.37	0.52	141.4	0.31	0.37	118.1	0.06	0.15	250	0.37	141.4	132.1	-6.6	5			
0.5	10	0.38	0.83	215.2	0.32	0.47	145.2	0.06	0.36	600	0.38	215.2	141.7	-34.1	30			
22.1	160	0.29	0.99	338.3	0.25	0.41	164.1	0.04	0.58	1450	0.29	338.3	237.1	-29.9	4			
7.4	200	0.28	0.53	191.9	0.24	0.44	184.7	0.04	0.09	225	0.28	191.9	177.1	-7.7	2	2012		
18.5	310	0.29	0.37	127.3	0.25	0.28	114.1	0.04	0.09	225	0.29	127.3	116.6	-8.4	10	2005		
26.5	380	0.27	1.15	423.1	0.23	0.39	167.2	0.04	0.76	1900	0.27	423.1	273.9	-35.3	3	2010		
7.1	250	0.26	0.51	119.8	0.22	0.3	139.9	0.04	0.21	525	0.26	199.8	123.2	-38.3	10	2010		
2.6	70	0.28	0.34	122	0.24	0.29	121	0.04	0.05	125	0.28	122	86.6	-29	32			
-0.7	20	0.27	0.61	224	0.23	0.46	200.5	0.04	0.15	375	0.27	224	141.3	-36.9	9	2006		
1.9	60	0.33	0.61	183.5	0.27	0.46	170.6	0.06	0.15	250	0.33	183.5	151.2	-17.6	1			
18.9	470	0.34	0.2	58.7	0.28	0.18	64.9	0.06	0.02	33.33	0.34	58.7	42.6	-27.3	8			
3.1	100	0.27	0.31	114.9	0.23	0.25	105.9	0.04	0.06	150	0.27	114.9	70.5	-38.7	3			
3.5	100	0.27	0.36	133	0.23	0.29	128.8	0.04	0.07	175	0.27	133	115.2	-13.4	8			
29.9	230	0.4	1.52	384.3	0.34	0.79	234	0.06	0.73	1216.66	0.4	384.3	223.9	-41.7	40	1983		
12.7	240	0.3	0.54	180.9	0.26	0.38	147.1	0.04	0.16	400	0.3	180.9	125.3	-30.7	40	2003		
8.3	170	0.3	0.64	211.9	0.26	0.46	177.2	0.04	0.15	450	0.3	211.9	179.2	-15.4	30			
7.3	240	0.26	0.82	311.1	0.22	0.71	321	0.04	0.11	275	0.26	311.1	180.5	-42	8	2009		
9.6	290	0.27	0.41	151.6	0.23	0.33	146.1	0.04	0.08	200	0.27	151.6	115.9	-23.6	2			
6	200	0.25	0.5	194.8	0.21	0.4	185.3	0.04	0.1	250	0.25	194.8	149.5	-23.2	3	2013		
4	110	0.28	0.45	162.2	0.24	0.33	140.6	0.04	0.12	300	0.28	162.2	141	-13.1	2	2013	1	
6.5	170	0.33	0.54	162.5	0.27	0.36	135.4	0.06	0.18	300	0.33	162.5	120.4	-25.9	10	2013		
8.5	70	0.35	2.24	640.9	0.29	0.86	299	0.06	1.38	0.35	640.9	13	2007					
10.2	190	0.29	0.75	259.1	0.25	0.4	161	0.04	0.35	875	0.29	259.1	184.3	-28.3	6	2013	4	
4.4	80	0.36	1.14	313.5	0.3	0.62	206.3	0.06	0.52	866.66	0.36	313.5	149.9	-52.2	10	2011		
9	150	0.37	0.45	119.7	0.31	0.32	103.6	0.06	0.13	216.66	0.37	119.7	107.8	-9.9	20	2003		
1.9	50	0.26	0.23	86.6	0.22	0.14	64	0.04	0.09	225	0.26	86.6	76.4	-11.8	2	6	2011	
7.3	160	0.32	0.66	203.8	0.26	0.3	112.2	0.06	0.36	600	0.32	203.8	132.4	-35	3	2010		
2	70	0.27	0.47	176.7	0.23	0.35	154.7	0.04	0.07	175	0.27	176.7	129.3	-26.8	6			
1.6	30	0.29	0.42	147.5	0.25	0.32	132.1	0.04	0.1	250	0.29	147.5	182.9	24	2	2013		
26.3	390	0.28	1.02	359.1	0.24	0.53	220.5	0.04	0.49	1225	0.28	359.1	183.7	-48.9	2	2011		
0.5	10	0.28	0.93	330.2	0.24	0.58	240	0.04	0.35	875	0.28	330.2	188.1	-43	20	2005		
-1.3	30	0.32	0.54	169.2	0.29	0.4	139.6	0.03	0.14	466.66	0.32	169.2	163.4	-3.4	1	2013		
20.9	260	0.29	0.67	228.5	0.25	0.42	167.5	0.04	0.25	625	0.29	228.5	206.1	-9.8	10	2005		
-0.2	0	0.25	0.35	138.3	0.21	0.24	113.3	0.04	0.11	275	0.25	138.3	117.9	-14.7	12	2012		
42.7	560	0.28	1.09	390	0.24	0.42	176.5	0.04	0.67	1675	0.28	390	270.7	-30.6	5	2013		

21.9	420	0.27	0.59	217.4	0.23	0.4	173.4	0.04	0.19	475	0.27	217.4	213.5	-1.8	8	2009
-4.2	80	0.34	1.03	301.9	0.28	0.68	242.4	0.06	0.35	583.33	0.34	301.9	193.7	-35.9	5	
0.9	30	0.26	0.34	131.8	0.22	0.27	122.6	0.04	0.07	175	0.26	131.8	120.2	-8.8	3	1
5.6	90	0.35	0.76	217.7	0.29	0.51	178.2	0.06	0.25	416.66	0.35	217.7	157.6	-27.6	6	2010
9.9	90	0.28	0.55	195.4	0.24	0.34	140.9	0.04	0.21	525	0.28	195.4	93	-52.4	14	
10.7	240	0.26	0.89	341.2	0.22	0.58	260.5	0.04	0.31	775	0.26	341.2	212.3	-37.8	4	
2.3	60	0.33	0.48	142.6	0.27	0.4	145.8	0.05	0.08	160	0.33	142.6	128.4	-10	1	
14.1	260	0.35	0.64	183.1	0.29	0.43	150.1	0.06	0.21	350	0.35	183.1	134.2	-26.7	2	2011
-4.6	-100	0.29	0.43	145.1	0.25	0.34	134.2	0.04	0.09	225	0.29	145.1	119.7	-17.5	15	2010
17.1	340	0.34	0.51	151.8	0.28	0.42	151.3	0.06	0.09	150	0.34	151.8	103.8	-31.6	1	2012
1.2	30	0.35	0.37	108.2	0.29	0.28	96.4	0.06	0.09	150	0.35	108.2	97	-10.3	5	2013
23.8	340	0.33	1.03	308.6	0.27	0.69	252.3	0.06	0.34	566.66	0.33	308.6	153.4	-50.3	3	2011
-1.9	-30	0.37	0.54	146.7	0.31	0.39	126.1	0.06	0.15	250	0.37	146.7	158.6	8.1	12	
19.8	620	0.26	0.34	129	0.22	0.28	129.5	0.04	0.06	150	0.26	129	93.7	-27.4	3	2011
3.6	70	0.4	0.56	141.3	0.34	0.4	119.3	0.06	0.16	266.66	0.4	141.3	81.1	-42.6	25	2009
5.9	150	0.26	0.36	137.7	0.22	0.27	122.8	0.04	0.09	225	0.26	137.7	116.3	-15.6	7	2007
56.4	320	0.28	0.46	162.8	0.24	0.28	115.5	0.04	0.18	450	0.28	162.8	145.8	-10.4	12	
6.7	90	0.39	0.79	203.7	0.33	0.46	141.5	0.06	0.33	550	0.39	203.7	207.2	1.7	25	2012
-1.2	-30	0.36	0.61	166.8	0.3	0.41	134.9	0.06	0.2	333.33	0.36	166.8	132	-20.9	2000	
1.8	30	0.31	0.61	197.3	0.27	0.41	154.7	0.04	0.2	500	0.31	197.3	193.7	-1.8	56	2002
3.3	80	0.34	0.56	162.8	0.28	0.39	138.7	0.06	0.17	283.33	0.34	162.8	131.1	-19.4	6	2009
21.8	510	0.27	0.36	130	0.23	0.38	160.6	0.4	-0.02	50	0.27	130	77.3	-40.6	9	
22.3	330	0.28	1.14	404.5	0.24	0.47	194.2	0.04	0.67	1675	0.28	404.5	342.8	-15.3	10	
3.9	90	0.29	0.35	121.5	0.25	0.27	107.2	0.04	0.08	200	0.29	121.5	121.9	0.3	25	
21.2	430	0.28	0.55	197.3	0.24	0.36	151.6	0.04	0.19	475	0.28	197.3	151	-23.5	20	2012
0.7	20	0.34	0.6	178.9	0.28	0.53	192.2	0.06	0.07	116.66	0.34	178.9	150.6	-15.8		
7.3	130	0.35	0.7	198.4	0.29	0.57	193.8	0.06	0.13	216.66	0.35	198.4	182.8	-7.9	10	
24.3	400	0.35	0.78	224.4	0.29	0.53	182.9	0.06	0.25	416.66	0.35	224.4	185.8	-17.2	10	2003
29	230	0.28	0.89	324.6	0.23	0.33	141.6	0.05	0.56	1120	0.28	324.6	225	-30.7	10	2010
0	0	0.4	1.82	458.1	0.34	0.68	200.4	0.06	1.14	1900	0.4	458.1	384.3	-16.1	30	2000
16.1	240	0.29	0.56	191.4	0.25	0.43	171.7	0.04	0.13	325	0.29	191.4	127.8	-33.2	20	2007
4	130	0.26	0.32	120.9	0.22	0.29	130.1	0.04	0.03	75	0.26	120.9	133.9	10.8	5	2009
8.3	160	0.33	0.51	151.8	0.27	0.41	148.9	0.06	0.1	166.66	0.33	151.8	116.9	-23	2	2012
6.5	90	0.27	0.34	126.2	0.23	0.3	131.4	0.04	0.04	100	0.27	126.2	100.3	-20.5	15	1998
6.9	110	0.37	0.59	161.1	0.31	0.41	134.1	0.06	0.18	300	0.37	161.1	143.1	-11.1	5	2008
15.1	330	0.26	1.05	403.1	0.22	0.58	260.5	0.04	0.47	1175	0.26	403.1	248.6	-38.3	4	2012
2.1	60	0.28	0.38	139.5	0.23	0.34	143.9	0.05	0.04	80	0.28	139.5	110.8	-20.6	3	
6.5	90	0.37	0.7	188.8	0.31	0.45	144.4	0.06	0.25	416.66	0.37	188.8	195.3	3.4	33	2012
5.1	40	0.36	1.11	309.9	0.3	0.45	151.1	0.06	0.66	1100	0.36	309.9	157.8	-49.1	6	2012
5.4	70	0.35	0.55	155.5	0.29	0.35	122.1	0.06	0.2	333.33	0.35	155.5	126.4	-18.7	15	2012
3.5	90	0.36	0.77	210.9	0.3	0.64	209.5	0.06	0.13	216.66	0.36	210.9	130.8	-38	5	
6.5	200	0.27	0.31	115.8	0.23	0.29	130.6	0.04	0.02	50	0.27	115.8	103.5	-10.6	3	
15.8	450	0.28	0.34	120	0.24	0.25	105.1	0.04	0.09	225	0.28	120	101.9	-15.1	10	2008
18.8	270	0.3	0.45	153	0.26	0.28	108.9	0.04	0.17	425	0.3	153	103.7	-32.2	20	2003
4.1	70	0.36	0.43	119.3	0.3	0.3	100.6	0.06	0.13	216.66	0.36	119.3	121.5	1.8	10	2011
9.7	230	0.27	0.39	143.3	0.23	0.3	131.5	0.04	0.09	225	0.27	143.3	108.5	-24.3	5	2000
7.7	160	0.36	0.47	130.5	0.3	0.32	108.6	0.06	0.15	250	0.36	130.5	127.9	-2	10	2009
10.5	180	0.37	0.68	182.5	0.31	0.5	158.7	0.06	0.18	300	0.37	182.5	149.8	-17.9	20	2008
17.6	450	0.29	0.79	274.2	0.25	0.52	209.1	0.04	0.27	675	0.29	276.2	260.8	-4.9	10	2007
14.8	310	0.28	1.21	436.3	0.24	0.37	155.3	0.04	0.84	2100	0.28	436.3	139.5	-68	10	
40.3	470	0.33	1.87	570.2	0.27	0.72	271.3	0.06	1.15	1916.66	0.33	570.2	268.5	-52.9	8	
15.9	300	0.28	0.88	310.4	0.24	0.63	260	0.04	0.25	625	0.28	310.4	184.5	-40.6	10	
20.3	350	0.29	0.96	331.6	0.25	0.52	207.3	0.04	0.44	1100	0.29	331.6	188.8	-43.1	10	2012	1
22	230	0.34	0.78	232.5	0.28	0.55	200.7	0.06	0.23	383.33	0.34	232.5	183.1	-21.2	2	
6.4	140	0.36	0.68	187.9	0.3	0.53	174.5	0.06	0.15	250	0.36	187.9	150.4	-20	3	
3.9	100	0.29	0.36	124.8	0.25	0.28	112.2	0.04	0.08	200	0.29	124.8	94.6	-24.2	20	2003
7.6	120	0.37	2.21	598.2	0.31	0.7	228	0.06	2.14	0.37	598.2	379.8	-36.5	10	2009	
8.5	190	0.33	0.57	174.4	0.27	0.42	156.9	0.06	0.15	250	0.33	174.4	132.6	-24	10	2011
40.6	530	0.27	0.73	268.3	0.23	0.56	239.4	0.04	0.17	425	0.27	268.3	225	-16.1	10	2005
11.2	290	0.25	0.48	188.4	0.21	0.41	192.1	0.04	0.07	175	0.25	188.4	155.3	-17.5	4	2011
5.8	80	0.34	0.84	249.6	0.28	0.33	115.9	0.06	0.52	866.66	0.34	249.6	156.5	-37.3	10	2002
10.9	280	0.26	0.35	135.1	0.22	0.33	151.9	0.04	0.02	50	0.26	135.1	98.3	-27.3	24	
24.3	580	0.26	0.41	157.5	0.22	0.22	99.3	0.04	0.19	475	0.26	157.5	147.1	-6.6	4	2011
7.7	230	0.26	0.36	136.2	0.22	0.24	108.2	0.04	0.12	300	0.26	136.2	111.2	-18.4	1	6	2013
-2.3	-50	0.35	0.68	193.1	0.29	0.42	145	0.06	0.26	433.33	0.35	193.1	150.5	-22	2	2013
32.8	410	0.38	0.77	204.3	0.32	0.49	156.4	0.06	0.28	466.66	0.38	204.3	126.9	-37.9	1	2013
34.1	270	0.29	1.61	547.7	0.25	0.45	175.2	0.04	1.16	2900	0.29	547.7	273.8	-50	30	1983
-4.2	-20	0.38	0.89	236.9	0.32	0.42	134.5	0.06	0.47	783.33	0.38	236.9	296.2	25	25	1988
-4	-90	0.38	0.45	117.9	0.32	0.39	124.2	0.06	0.06	100	0.38	117.9	106	-10	20	2000
19.6	190	0.41	1.85	445.2	0.35	1.6	452.4	0.06	1.79	2983.33	0.41	445.2	599.3	34.6	45	2009
4.8	90	0.37	0.61	166.1	0.31	0.44	145	0.06	0.17	283.33	0.37	166.1	188.4	13.5	6	2013
3.9	100	0.27	0.5	182.5	0.23	0.44	187.4	0.06	0.06	100	0.27	182.5	132.8	-27.2	2	2012
13.3	230	0.29	0.71	249.9	0.25	0.4	164.5	0.04	0.67	1675	0.29	249.9	208	-16.8	20	1998
-6.1	-140	0.29	0.26	88.4	0.25	0.18	71.7	0.04	0.08	200	0.29	88.4	90	1.7	8	2005
7.7	120	0.37	0.6	163.2	0.31	0.35	114.9	0.06	0.25	416.66	0.37	163.2	135	-17.3	2	2013
3.5	100	0.36	0.4	110.6	0.32	0.31	97.9	0.04	0.09	225	0.36	110.6	99	-10.4	1	2013
0.7	10	0.38	0.49	128.7	0.32	0.33	103.3	0.06	0.16	266.66	0.38	128.7	112.5	-12.6	10	
4.8	60	0.37	0.73	198.4	0.31	0.26	83.3	0.06	0.47	783.33	0.37	198.4	169.2	-14.7	8	2013
4.1	40	0.29	0.68	236.4	0.25	0.4	159.4	0.04	0.28	700	0.29	236.4	357.7	51.3	20	1993
0.4	10	0.35	0.61	174.7	0.29	0.35	122.8	0.06	0.26	433.33	0.35	174.7	94.5	-45.9	5	2000
3.9	90	0.35	0.79	224.9	0.29	0.61	209.9	0.06	0.18	300	0.35	224.9	206.5	-8.2	1		
6	170	0.27	0.42	157.1	0.23	0.23	99.7	0.04	0.19	475	0.27	157.1	96.9	-38.3	4		
11	190	0.3	0.75	251.9	0.26	0.39	151.6	0.04	0.36	900	0.3	251.9	158.7	-37	10	2005	
7.9	170	0.26	0.46	176.6	0.22	0.24	106.2	0.04	0.22	550	0.26	176.6	121	-31.5	17	1997	
18.5	200	0.39	1.37	350	0.33	0.52	156.1	0.06	0.85	1416.66	0.39	350	292.1	-16.5	10	2005	
										6							
3.3	50	0.34	0.48	142.1	0.28	0.37	132.5	0.06	0.11	183.3	0.34	142.1	131	-7.8	1	6	2012
										3		1					
84.8	790	0.31	0.96	312	0.27	0.38	140.7	0.04	0.58	1450	0.31	312	160.8	-48.5	25	1998	
12.8	110	0.34	2.28	674.4	0.28	0.73	261.8	0.06	1.55	2583.3	0.34	674.4	560.9	-16.8	16	2003	
										3							
1.2	20	0.29	0.75	261.7	0.25	0.34	137.6	0.04	0.41	1025	0.29	261.7	169	-35.4	20	2011	
12.9	240	0.35	0.61	172.3	0.29	0.33	113.4	0.06	0.28	466.66	0.35	172.3	168.3	-2.3	15	2003	
3	110	0.44	217	0.27	120.6	0.17	0.2	217	203.7	-6.1	1	6	2012				
2.9	60	0.35	0.5	142.3	0.29	0.35	118.9	0.06	0.15	250	0.35	142.3	110.7	-22.3	2		
15.3	310	0.31	0.33	107.2	0.27	0.31	117.2	0.04	0.02	50	0.31	107.2	71.2	-33.6	40	1993	
2.4	40	0.38	0.58	151.2	0.32	0.43	134.9	0.06	0.15	250	0.38	151.2	153.6	1.6	25		
3.5	110	0.28	0.29	103.7	0.24	0.24	98.1	0.04	0.05	125	0.28	103.7	93.4	-10	6	2013	
3.3	110	0.27	0.49	180.9	0.23	0.33	142.4	0.04	0.16	400	0.27	180.9	111.2	-38.6	5	2013	
71.1	390	0.36	1.44	398.9	0.3	0.29	97.7	0.06	1.15	1916.6	0.36	398.9	248.9	-37.6	10	2003	
										6							
5.5	80	0.38	0.68	179.3	0.32	0.43	135	0.06	0.25	416.66	0.38	179.3	150.3	-16.2	4	2011	
34	260	0.35	1.47	415.9	0.29	0.57	194.5	0.06	0.9	1500	0.35	415.9	297.9	-28.4	25		
2.6	90	0.27	0.35	126.7	0.23	0.3	129.5	0.04	0.05	125	0.27	126.7	102.2	-19.3	5		
12.5	290	0.33	0.37	112.5	0.27	0.31	115.7	0.06	0.06	100	0.33	112.5	102.7	-8.7	10	2002	
16.7	410	0.27	0.46	169.8	0.23	0.37	161	0.04	0.09	225	0.27	169.8	107.6	-36.7	3	2013	

3.6	90	0.35	0.35	101.4	0.29	0.27	95.4	0.06	0.08	133.33	0.35	101.4	135.6	33.8	4	2012
45.6	320	0.28	1.05	371.1	0.24	0.39	160.5	0.04	0.66	1650	0.28	371.1	305	-17.8	10	2010
18.6	160	0.39	0.75	191.2	0.33	0.23	69.1	0.06	0.52	866.66	0.39	191.2	158.1	-17.3	48	2010	3
15	210	0.37	0.61	167.2	0.31	0.28	92.4	0.06	0.33	550	0.37	167.2	105.6	-36.8	10	2003
-3	-50	0.39	0.74	191.5	0.33	0.51	157.7	0.06	0.23	383.33	0.39	191.5	107.7	-43.7	25	1993
-1.6	-40	0.35	0.63	182.1	0.29	0.48	167.7	0.06	0.15	250	0.35	182.1	137.1	-24.7	3	2011	3
-0.1	-10	0.34	0.56	162.5	0.28	0.45	158.8	0.06	0.11	183.33	0.34	162.5	159.1	-2.1	4	2000
3.4	70	0.36	0.56	156.7	0.3	0.41	140.1	0.06	0.15	250	0.36	156.7	133	-15.1	6
4.9	130	0.34	0.62	178.7	0.28	0.47	166.9	0.06	0.15	250	0.34	178.7	158.1	-11.5	10	2000
3.1	120	0.26	0.33	124.9	0.22	0.27	122.6	0.04	0.06	150	0.26	124.9	124.3	-0.5	3	2000
18.1	220	0.35	0.63	176.8	0.29	0.34	115.7	0.06	0.29	483.33	0.35	176.8	165	-6.7	25	1998
15.5	340	0.31	0.54	171.6	0.28	0.38	133	0.03	0.16	533.33	0.31	171.6	134.1	-21.8	2	2013
4.2	60	0.31	0.82	269.5	0.27	0.45	171	0.04	0.37	925	0.31	269.5	263.4	-2.3	30	2000
22.5	180	0.4	1.52	380.2	0.34	0.64	188.8	0.06	0.88	1466.66	0.4	380.2	265.4	-30.2	20	2007
3.7	100	0.27	0.39	145.7	0.23	0.32	137.7	0.04	0.07	175	0.27	145.7	146.6	0.6	10	2008
8.4	230	0.27	0.43	159.4	0.23	0.32	140.6	0.04	0.11	275	0.27	159.4	142.5	-10.6	3
0.3	20	0.27	0.4	148.1	0.23	0.34	145.7	0.04	0.06	150	0.27	148.1	134.2	-9.4	10	2007
-1.5	-20	0.29	0.5	172.9	0.25	0.34	138.1	0.04	0.16	400	0.29	172.9	106.2	-38.6	15	2003
0.3	10	0.25	0.25	97.3	0.21	0.21	98	0.04	0.04	100	0.25	97.3	96	-1.2	1
0	0	0.4	1.78	444	0.34	1.47	432.3	0.06	0.31	516.66	0.4	444	756.1	70.3	20	2003
4.9	100	0.36	0.55	152.5	0.3	0.38	128	0.06	0.17	283.33	0.36	152.5	188.8	23.8	3	2010
36.7	240	0.42	0.84	200.6	0.36	0.48	134.2	0.06	0.36	600	0.42	200.6	210.4	4.9	25	1988
0.3	10	0.35	0.59	168.6	0.29	0.49	169.3	0.06	0.1	166.66	0.35	168.6	207.7	23.2	10	2005
20.6	290	0.3	0.66	219.6	0.26	0.49	189.9	0.04	0.17	425	0.3	219.6	143.3	-34.7	15	2001
4.6	120	0.28	0.51	179.3	0.24	0.34	142.2	0.04	0.17	425	0.28	179.3	109.5	-39	20	2010
-4.8	-110	0.44	0.82	185.9	0.36	0.61	169.6	0.08	0.21	262.5	0.44	185.9	116.4	-37.4	4	2009
3.9	90	0.35	0.26	74.5	0.29	0.2	66.7	0.06	0.06	100	0.35	74.5	124.3	66.8	13	2000
3.4	80	0.3	0.25	85.5	0.26	0.18	71.5	0.04	0.07	175	0.3	85.5	94.6	10.7	15	2008
2.6	70	0.27	0.41	155	0.23	0.37	164.1	0.04	0.04	100	0.27	155	126.3	-18.5	10	2013
3.7	60	0.35	0.94	269	0.29	0.58	201	0.06	0.36	600	0.35	269	194.3	-27.8	9	2013
17.7	110	0.33	0.69	209.6	0.27	0.48	176.6	0.06	0.21	350	0.33	209.6	139.9	-33.3	10	2012
12.3	240	0.34	0.52	150.5	0.28	0.38	135.1	0.06	0.14	233.33	0.34	150.5	104.9	-30.3	13	2000
2.2	40	0.34	0.54	158.5	0.28	0.36	128	0.06	0.18	300	0.34	158.5	138.2	-12.8	3	2013
15.7	70	0.28	1.14	402	0.24	0.42	172.8	0.04	0.72	1800	0.28	402	371.8	-7.5	20	1998
27.1	450	0.28	0.49	174.5	0.24	0.33	138.2	0.04	0.16	400	0.28	174.5	160.6	-7.9	10	2011	4
3.3	100	0.28	0.24	85.8	0.24	0.21	87.1	0.04	0.03	75	0.28	85.8	81.4	-5.1
25.1	330	0.36	1.26	346.9	0.3	0.44	143.6	0.06	0.82	1366.66	0.36	346.9	203.5	-41.3	6	2011
34.7	750	0.27	0.49	177.1	0.23	0.35	149.4	0.04	0.14	350	0.27	177.1	131.8	-25.6	10
18.4	250	0.28	1.06	372.5	0.24	0.55	226.6	0.04	0.51	1275	0.28	372.5	161.1	-56.7	16	2003	1
17	180	0.37	0.69	187.4	0.31	0.41	134.4	0.06	0.28	466.66	0.37	187.4	120	-36	10	2008
26.5	530	0.27	0.47	175.2	0.23	0.32	141.5	0.04	0.15	375	0.27	175.2	124.1	-29.2	18	1995
14.3	460	0.26	0.38	147.9	0.22	0.31	139.4	0.04	0.07	175	0.26	147.9	92.7	-37.4	5	2009
20.3	550	0.27	0.43	158.7	0.23	0.25	109.3	0.04	0.18	450	0.27	158.7	127.1	-19.9	3
5.6	210	0.27	0.32	119	0.23	0.22	95.8	0.04	0.1	250	0.27	119	128.2	7.8	3
5.1	80	0.37	0.4	107.1	0.31	0.32	104	0.06	0.08	133.33	0.37	107.1	99.4	-7.2	1
15.7	230	0.34	0.8	231.1	0.28	0.44	154.4	0.06	0.36	600	0.34	231.1	140.2	-39.3	9
3.2	100	0.28	0.34	121.1	0.24	0.24	98.7	0.04	0.1	250	0.28	121.1	109.6	-9.5	12
14.5	250	0.36	0.68	186.3	0.3	0.33	109.6	0.06	0.35	583.33	0.36	186.3	111.7	-40.1	20	1998
64.2	410	0.3	0.65	212	0.26	0.31	119.1	0.04	0.34	850	0.3	212	217	2.4	10
5.9	170	0.27	0.47	172.1	0.23	0.29	126.2	0.04	0.18	450	0.27	172.1	111.2	-35.3	20
15.4	370	0.26	0.32	120.9	0.22	0.23	102.7	0.04	0.09	225	0.26	120.9	110.6	-8.5	3	2011
-0.7	-10	0.38	0.76	196.4	0.32	0.48	148.9	0.06	0.28	466.66	0.38	196.4	138.9	-29.3	3
2.9	90	0.29	0.45	154.6	0.27	0.39	142.6	0.02	0.06	300	0.29	154.6	124.3	-19.6	1
5.4	80	0.28	0.41	146.8	0.24	0.3	127.4	0.04	0.11	275	0.28	146.8	114.2	-22.2	15	2011
44	240	0.26	1.11	430	0.22	0.42	193.8	0.04	0.69	1725	0.26	430	242	-43.7	13	2003
7.5	130	0.33	0.7	208.8	0.27	0.33	121.5	0.06	0.37	616.66	0.33	208.8	201.4	-3.6	5	2013
1.6	30	0.3	0.53	179.3	0.26	0.3	119.2	0.04	0.23	575	0.3	179.3	160.9	-10.3	2005
14.9	280	0.26	0.64	251.1	0.22	0.51	236.4	0.04	0.13	325	0.26	251.1	132.6	-47.2	3	2012
5.6	150	0.28	0.43	157.3	0.24	0.35	148.4	0.04	0.08	200	0.28	157.3	128.4	-18.3	5	2000
8.6	170	0.36	0.53	146.9	0.3	0.41	136.4	0.06	0.12	200	0.36	146.9	133.5	-9.1	5
-4.9	-170	0.28	0.31	109.6	0.24	0.27	109.9	0.04	0.04	100	0.28	109.6	99.5	-9.3	3
0.8	30	0.33	0.49	149.1	0.29	0.42	145.6	0.04	0.07	175	0.33	149.1	131.3	-12	3
0.4	0	0.35	1.35	382.1	0.29	0.29	97.9	0.06	1.06	1766.66	0.35	382.1	320.1	-16.2	26	1987
5.7	100	0.38	0.5	132.6	0.32	0.24	74.6	0.06	0.26	433.33	0.38	132.6	95.7	-27.8	1
3.2	80	0.27	0.48	178.6	0.23	0.31	133.5	0.04	0.17	425	0.27	178.6	188.4	5.5	23	2008
2.4	40	0.35	0.8	227.7	0.29	0.33	113.2	0.06	0.47	783.33	0.35	227.7	173.2	-23.9	6	2011
-4.4	-150	0.26	0.45	174.7	0.22	0.24	109.8	0.04	0.21	525	0.26	174.7	177	1.4	2
19.1	580	0.26	0.41	156	0.22	0.24	108.3	0.04	0.17	425	0.26	156	132.4	-15.1	8
30.4	250	0.39	1.58	407.4	0.33	0.64	196.4	0.06	0.94	1566.66	0.39	407.4	266.4	-34.6	25	1993
1.3	40	0.28	0.45	161	0.24	0.35	146.2	0.04	0.1	250	0.28	161	138.3	-14.1	15	2011
1.2	40	0.32	0.41	126.1	0.26	0.33	126.2	0.26	0.08	133.33	0.32	126.1	99.4	-21.2	10	2012
-1	-20	0.35	0.41	115.1	0.29	0.27	92.2	0.06	0.14	233.33	0.35	115.1	117.7	2.2	1
1.4	20	0.26	0.92	357	0.22	0.65	301.8	0.04	0.27	675	0.26	357	249.5	-30.1	20	2000
4	100	0.28	0.46	164.4	0.24	0.38	158.1	0.04	0.08	200	0.28	164.4	152.3	-7.4	27
3.1	70	0.33	0.49	150.5	0.27	0.36	133.2	0.06	0.13	216.66	0.33	150.5	129.3	-14.1	2
17.8	320	0.27	0.65	244.5	0.23	0.42	185.2	0.04	0.23	575	0.27	244.5	161.8	-33.8	5	2013
5.5	100	0.35	0.66	189.7	0.29	0.39	138.2	0.06	0.27	450	0.35	189.7	174.1	-8.2	1
31	450	0.36	0.4	110.9	0.3	0.36	120	0.06	0.04	66.66	0.36	110.9	92.7	-16.4	18
12.1	310	0.28	0.46	164.7	0.24	0.41	172.5	0.04	0.05	125	0.28	164.7	101.5	-38.4	13	2000
31.3	510	0.36	0.82	231.7	0.3	0.48	163.2	0.06	0.34	566.66	0.36	231.7	158.3	-31.7	6	2008
27.7	540	0.28	0.79	279.6	0.24	0.43	178.7	0.04	0.36	900	0.28	279.6	150.7	-46.1	10	2005	4
-13.4	-70	0.31	0.58	188.6	0.27	0.22	84	0.04	0.36	900	0.31	188.6	209.5	11.1	30	1995	4
7.7	120	0.33	0.73	217.6	0.27	0.53	192.3	0.06	0.2	333.33	0.33	217.6	183.3	-15.8	14	2008
10.3	140	0.37	1.16	313.3	0.31	0.77	248.3	0.06	0.39	650	0.37	333.3	206.3	-34.2	13	2000
-1	-10	0.37	0.65	172.8	0.31	0.45	144.2	0.06	0.2	333.33	0.37	172.8	114	-34	12	2010
32.9	300	0.3	1.06	356.3	0.26	0.66	256.6	0.04	0.4	1000	0.3	356.3	332.5	6.7	30	2007
7.4	160	0.27	0.47	174.2	0.23	0.39	168.2	0.04	0.08	200	0.27	174.2	141.6	-18.7	4	2012
7.3	140	0.36	0.61	169	0.3	0.48	157.8	0.06	0.13	216.66	0.36	169	134.6	-20.3	22	2006
19	390	0.3	0.3	101.4	0.26	0.21	82	0.04	0.09	225	0.3	101.4	72.2	-28.8	25	2003
35	680	0.29	0.81	279.7	0.25	0.41	164.5	0.04	0.4	1000	0.29	279.7	117.2	-58.1	20	1998
4.4	110	0.31	0.46	149.2	0.27	0.39	144	0.04	0.07	175	0.31	149.2	97.1	-34.9	20	2006
3.6	70	0.36	0.37	104.9	0.3	0.23	79.5	0.06	0.14	233.33	0.36	104.9	90	-14.2	10	2009	3
5.7	120	0.37	0.48	128.6	0.31	0.38	122.2	0.06	0.1	166.66	0.37	128.6	107.7	-16.2	3	2011
7.2	230	0.28	0.2	73.7	0.23	0.18	78.4	0.05	0.02	40	0.28	73.7	101	37.1	4	1
8.6	130	0.36	0.67	187.4	0.3	0.58	194.8	0.06	0.09	150	0.36	187.4	145.6	-22.3	3	2010
14.2	190	0.33	0.46	139	0.27	0.29	106.7	0.06	0.17	283.33	0.33	139	122.1	-12.2	1	2012	3
62.1	670	0.29	0.37	125.7	0.25	0.25	99.7	0.04	0.12	300	0.29	125.7	103.4	-17.7	30	1991	4
7.4	120	0.39	1.09	280.7	0.33	0.52	158.7	0.06	0.57	950	0.39	280.7	189.1	-32.6	1	2013
5.7	170	0.26	0.32	121.7	0.22	0.29	128.7	0.04	0.03	75	0.26	121.7	104.8	-13.9	7	2013

1.4	20	0.39	0.46	117	0.33	0.41	122.2	0.06	0.05	83.33	0.39	117	133.8	14.3	10	2003				
21.1	420	0.32	0.61	189.3	0.26	0.5	189	0.06	0.11	183.33	0.32	189.3	149.9	-20.8	2					
16.2	270	0.28	0.52	185.5	0.24	0.38	160.3	0.04	0.14	350	0.28	185.5	133.5	-28	8	2013				
34.4	610	0.35	0.77	221.3	0.29	0.45	155.6	0.06	0.32	533.33	0.35	221.3	118.2	-46.6	2	2012				
8.4	180	0.28	0.49	177.3	0.24	0.39	164.4	0.04	0.1	250	0.28	177.3	131.6	-25.8	15	2001				
9.6	140	0.39	0.47	120.3	0.33	0.32	98.7	0.06	0.15	250	0.39	120.3	106.6	-11.4	12	2003				
3.3	90	0.25	0.6	241.3	0.25	0.45	179.2	0	0.15	0	0.25	241.3	191.4	-20.7	6	2009				
7.5	280	0.26	0.72	273.4	0.22	0.37	163.4	0.04	0.35	875	0.26	273.4	142.1	-48	2	2011				
11.5	150	0.38	1.05	275.5	0.32	0.52	160.8	0.06	0.53	883.33	0.38	275.5	197.1	-28.5	30	1988				
19.5	150	0.28	0.93	330.5	0.24	0.5	204.7	0.04	0.43	1075	0.28	330.5	219	-33.7	20	1993				
13.1	210	0.3	0.67	223.6	0.26	0.36	137.7	0.04	0.31	775	0.3	223.6	169.3	-24.3	35	1993				
30.7	660	0.2	0.48	242.6	0.23	0.32	141.3	-0.03	0.16	-533.33	0.2	242.6	197.7	-18.5	2					
4.7	80	0.4	0.54	137.5	0.34	0.48	143.3	0.06	0.06	100	0.04	137.5	115.2	-16.2	25	1993				
-4.1	-80	0.31	0.33	108.3	0.27	0.3	113.9	0.04	0.03	75	0.31	108.3	105	-3	30	2000				
-1.8	-60	0.33	0.36	110.1	0.27	0.33	125.6	0.06	0.03	50	0.33	110.1	92.7	-15.7	5					
12.5	170	0.38	1.22	322.7	0.32	0.77	242.2	0.06	0.45	750	0.38	322.7	171.8	-46.8	10					
18.5	410	0.27	0.57	213.2	0.23	0.33	142.2	0.04	0.24	600	0.27	213.2	185.9	-12.8	10	2009	4			
7.9	290	0.26	0.44	166	0.22	0.35	154.1	0.04	0.09	225	0.26	166	143.7	-13.4	3	1				
0.7	10	0.36	0.45	121.9	0.3	0.4	133.7	0.06	0.05	83.33	0.36	124.9	183.1	46.6	22	1995				
4.5	120	0.34	0.4	118.9	0.28	0.3	108.7	0.06	0.1	166.66	0.34	118.9	85.3	-28.3	2					
4	120	0.28	0.35	127.8	0.24	0.28	120.2	0.04	0.07	175	0.28	127.8	143.8	12.5	15	2000				
50.3	550	0.37	1.14	310.8	0.31	0.74	243.1	0.06	0.4	666.66	0.37	310.8	209.5	-32.6	20	2006				
6.9	210	0.27	0.26	98.5	0.23	0.19	84.5	0.04	0.07	175	0.27	98.5	88.7	-9.9	2	6	2012			
1.8	60	0.26	0.29	113.2	0.22	0.22	99.8	0.04	0.07	175	0.26	113.29	91.8	-18.9	1	6				
15.5	440	0.25	0.63	246.8	0.21	0.42	193.9	0.04	0.21	525	0.25	246.8	138.3	-44	10	2009				
7.8	180	0.34	0.41	120.6	0.28	0.28	100.3	0.06	0.13	216.66	0.34	120.6	118.5	-1.7	4	2009				
1.9	30	0.35	0.9	254.7	0.29	0.42	144.3	0.06	0.48	800	0.35	254.7	176.7	-30.6	22					
17	210	0.37	1.24	337.9	0.31	0.67	219.3	0.06	0.57	950	0.37	337.9	254.8	-24.6	15	2012				
2.2	30	0.36	0.81	221.9	0.3	0.57	187.1	0.06	0.24	400	0.36	221.9	160	-27.9	4					
4.2	140	0.26	0.3	114.9	0.22	0.29	132	0.04	0.01	25	0.26	114.9	89.7	-21.9	7	2011	4			
-6.6	-110	0.31	0.4	131.3	0.27	0.3	112.7	0.04	0.1	250	0.31	131.3	180.7	37.6	20	2013				
10.5	330	0.26	0.46	176.8	0.22	0.32	144.4	0.04	0.14	350	0.26	176.8	100.1	-43.4	2	2013	4			
18.7	260	0.36	0.47	130.1	0.3	0.4	133.4	0.06	0.07	116.66	0.36	130.1	123.4	-5.1	15	2000				
0.6	20	0.28	0.24	87.8	0.24	0.23	95.7	0.04	0.01	25	0.28	87.8	84.9	-3.3	20	2013				
16.5	500	0.27	0.43	157.1	0.23	0.35	151.7	0.04	0.08	200	0.27	157.1	119.7	-23.8	1	6	2012			
1.4	40	0.24	0.3	124.4	0.25	0.27	108	0.24	124.4	105.6	0.24	124.4	105.6	-15.2	5	2008				
13.3	290	0.3	0.36	119.3	0.26	0.29	112.6	0.04	0.07	175	0.3	119.3	103.8	-13	20	1996				
11.2	210	0.36	0.64	174.9	0.3	0.43	142.7	0.06	0.21	350	0.36	174.9	145.7	-16.7	15	2013	3			
-0.1	-10	0.36	0.73	205.1	0.3	0.54	180.8	0.06	0.19	316.66	0.36	205.1	159.5	-22.3	28	1995				
19.2	290	0.34	0.73	216.3	0.28	0.51	183.6	0.06	0.22	366.66	0.34	216.3	174.6	-19.3	1	2013				
-1.3	-30	0.38	0.79	211.4	0.32	0.49	156.6	0.06	0.3	500	0.38	211.4	193	-8.7	4	2013				
30.5	390	0.3	0.6	197.9	0.26	0.34	128.8	0.04	0.26	650	0.3	197.9	88.5	-55.3	25	2010	4			
20.5	160	0.36	1.39	385.5	0.3	0.4	132	0.06	0.99	1650	0.36	385.52	275.8	-28.5	6	2013	3			
3.8	60	0.3	0.34	112.8	0.26	0.23	89	0.04	0.11	275	0.3	112.8	102.1	-9.5	8	2005				
3.4	70	0.3	0.4	132.1	0.26	0.25	93.5	0.04	0.15	375	0.3	132.1	124.3	-5.9	35	2013				
50.4	660	0.31	0.65	211.5	0.27	0.34	126.7	0.04	0.31	775	0.31	211.5	132.5	-37.3	20	2012				
4.1	70	0.3	0.62	207.6	0.26	0.4	153	0.04	0.22	550	0.3	207.6	163.8	-21.1	2	2012	4			
2.6	60	0.3	0.39	128.4	0.26	0.27	104	0.04	0.12	300	0.3	128.4	116.1	-9.6	3	2011				
46.3	540	0.37	1.38	375	0.31	0.53	171.2	0.06	0.85	1416.66	0.37	375	120.1	-68	4	2013				
1	10	0.38	1.02	269.4	0.32	0.67	211	0.06	0.35	583.33	0.38	269.4	201.1	-25.4	10	2012				
-0.7	-20	0.28	0.26	95.2	0.23	0.19	81.8	0.05	0.07	140	0.28	95.2	77.9	-18.1	6	2012				
0.8	10	0.39	1.17	303.6	0.33	0.59	180.9	0.06	0.58	966.66	0.39	303.6	261.8	-13.8	25	2007				
8.9	110	0.39	1.05	270.2	0.33	0.64	194.8	0.06	0.41	683.33	0.39	270.2	237.3	-12.1	10	2010				
8.9	110	0.04	1.45	359.7	0.34	0.76	220.7	0.06	0.69	1150	0.4	359.7	229.9	-36.1	20	2012				
-2.7	-60	0.35	0.58	165.6	0.29	0.4	139.1	0.06	0.18	300	0.35	165.6	139.2	-15.9	7	2007				
-1.5	-30	0.35	0.63	178.9	0.29	0.4	137.7	0.06	0.23	383.33	0.35	178.9	111.5	-37.7	12	2013				
4.8	80	0.34	0.76	222.4	0.28	0.55	195.6	0.06	0.21	350	0.34	222.4	109.2	-50.9	5	2010				
6.2	150	0.33	0.58	173.8	0.27	0.38	138.4	0.06	0.2	333.33	0.33	173.8	102.3	-41.2	2					
20	210	0.29	0.73	248.9	0.25	0.44	172.6	0.04	0.29	725	0.29	248.9	249	0	10	2005				
29.3	350	0.29	0.59	201.1	0.25	0.38	147.7	0.06	0.21	525	0.29	201.1	143.4	-28.7	20					
19.3	430	0.27	0.61	222.2	0.23	0.46	197	0.04	0.15	375	0.27	222.2	185.4	-16.6	15	2009				
1.8	80	0.26	0.36	139.2	0.26	0.33	128.1	0	0.03	0	0.26	139.2	140.4	0.9	10	2012				
19.3	540	0.26	0.19	72.7	0.22	0.19	85.8	0.04	0	0	0.26	72.7	37.5	-48.4	6	2008				
18.8	180	0.3	0.7	229.5	0.26	0.39	149.3	0.04	0.31	775	0.3	229.5	167.5	-27	52	1980				
22.5	180	0.4	1.52	380.2	0.34	0.64	188.6	0.06	0.88	1466.66	0.4	380.2	265.4	-30.2	30	2002				
4.9	140	0.27	0.49	179.4	0.23	0.38	163.9	0.04	0.11	275	0.27	179.4	138.5	-22.8	3	2012				
0.6	10	0.29	0.38	127.9	0.25	0.33	129.3	0.04	0.05	125	0.29	127.9	139.8	9.3	20	2001				
51.1	380	0.28	0.86	303.5	0.24	0.35	144	0.04	0.51	1275	0.28	303.5	164.5	-45.8						
3.6	80	0.34	0.37	109.1	0.28	0.3	109.2	0.06	0.07	116.66	0.34	109.1	106.8	-2.1	4					
6.7	150	0.35	0.34	97.8	0.29	0.21	73.9	0.06	0.13	216.66	0.35	97.8	83.9	-14.2	5	2000				
15.8	210	0.38	0.93	246.3	0.32	0.56	178.5	0.06	0.37	616.66	0.38	246.3	168	-31.8	20	2003				
28	140	0.41	1.56	379.6	0.35	0.7	198.2	0.06	0.86	1433.33	0.41	379.6	390.5	2.9	30	1998				
101.4	680	0.31	0.77	250.9	0.27	0.4	150.4	0.04	0.37	925	0.31	250.9	137.1	-45.4	40	2003				
1.8	40	0.35	0.52	149.1	0.29	0.43	149	0.06	0.09	150	0.35	149.1	99.8	-33.1	7	2010				
3.5	100	0.26	0.61	235.4	0.22	0.42	194.2	0.04	0.19	475	0.26	235.4	130.8	-44.4	10	2009				
2.1	40	0.29	0.8	275.9	0.25	0.47	188.2	0.04	0.33	825	0.29	275.9	201.4	-27	30	1993				
9.4	230	0.34	0.59	172	0.28	0.37	132	0.06	0.22	366.66	0.34	172	106	-38.2	6					
12	250	0.26	0.87	329	0.22	0.41	185	0.04	0.46	1150	0.26	329	210	-36.2	15					
71.6	320	0.39	1.26	323	0.33	0.29	89	0.06	0.97	1616.66	0.39	323	301	-6.7	36	1978				
-1.8	-30	0.34	0.51	150	0.28	0.44	157	0.06	0.07	116.66	0.34	150	157	4.1	1	2012				
17.2	80	0.41	0.74	181.9	0.31	0.3	85.9	0.1	0.44	440	0.41	182	274	50.8	25	2007				
11.1	240	0.27	0.39	145	0.23	0.27	115.8	0.04	0.12	300	0.27	145.4	115.4	-20.7	10	2007				
0.8	20	0.28	0.29	105	0.24	0.25	104	0.04	0.04	100	0.28	105	100	-4.5	10	2012				
17.8	380	0.27	1.38	520	0.23	0.6	266	0.04	0.78	1950	0.27	520	168	-66	8	2005				
8.8	140	0.38	0.48	128	0.32	0.25	78.9	0.06	0.23	383.33	0.38	128	105	-17.9	15	2001				
47.6	390	0.39	0.74	188.9	0.33	0.35	106.9	0.06	0.39	650	0.39	188	135	-28	12	2001				
27.9	280	0.37	1.19	319	0.31	0.91	293	0.06	0.28	466.66	0.37	319	218	-31.7	10	2009				
340	Rahima Bibi	677437B	45	2	1	Housewife	1	1	1	1	1	1	1	1	1	1	2	2	2	
341	Joydeep Mukerjee	666038F	25	1	2	Student	1	1	1	1	1	1	1	2	1	1	1	2	2	1
342	Bandita Nanda	224679F	18	2	2	College Student	1	1	1	1	1	1	1	2	2	2	1	1	2	2
343	Ramesh Sena	660848F	32	1	1	Business	1	1	1	1	1	1	1	1	1	1	1	1	2	1

344	Sujit Kumar	298036D	48	1		Govt. Service	1	1	1	1	1	1	1	2	2	2	1	1	2	2
345	Nirmal Kumaar Maji	660295F	45	1	1		Laborer	1	1	1	1	1	1	1	2	2	2	1	1	2	2
346	Kamalesh Das	480351F	46	1	1		Security Agent	1	1	1	1	1	1	1	2	2	2	1	1	2	2
347	Rahul Sinha	669846F	16	1	2		Student	1	1	1	1	1	1	1	2	2	2	1	1	2	2
348	Rumini Bokotal	606728C	53	1	1		Civil Engineer	1	1	1	1	1	1	1	2	2	1	1	2	2	
349	Shilajit Nayak	673531F	17	1	2		Student	1	1	1	1	1	1	1	1	2	2	1	1	2	2
350	Govindasamy M.	669629F	41	1	1		Laborer	1	1	1	1	1	1	1	1	2	2	1	1	2	1
351	Magesh Kumar	655760F	36	1	1		Business	1	1	1	1	1	1	1	2	1	1	1	2	2	2
352	Shikha Halder	672723F	29	2	1		Housewife	1	1	1	1	1	1	1	2	1	1	1	2	2	2
353	Sumantha Nayak	673666F	21	1	2		Student	1	1	1	1	1	1	1	1	1	1	1	1	2	1
354	Nargis Fatma	670897F	31	2	1		Housewife	1	1	1	1	1	1	1	2	1	1	1	1	2	1
355	Manojkumar	666202F	45	1	1		Teacher	1	1	1	1	1	1	1	2	1	1	1	1	2	1
356	Manish Kumar	666223F	25	1	1		Student	1	1	1	1	1	1	1	2	1	1	1	2	2	2
357	Jeyalakshmi	847917D	24	2	1		Housewife	1	1	1	1	1	1	1	2	1	1	1	1	2	1
358	Amsavalli	190195C	31	2	2		Radiographer	1	1	1	1	1	1	1	1	1	1	1	1	2	1
359	Mohan Prasad	270951F	55	1	1		BCLL Employee	1	1	1	1	1	1	1	2	2	2	1	1	2	2
360	Debi K0ley	673535F	26	2	1		Housewife	1	1	1	1	1	1	1	2	2	2	1	1	2	2
361	Chinmoyi Karmakar	405255F	31	2	1		Housewife	1	1	1	1	1	1	1	2	2	2	1	1	2	2
362	Krishna Mandal	672610F	23	2	1		Housewife	1	1	1	1	1	1	1	1	1	1	1	2	2	1
363	Chhanda Banic	190265F	46	2	1		Housewife	1	1	1	1	1	1	1	2	1	1	1	2	2	2
364	Ranjankumar Barnwal	680030F	24	1	2		Business	1	1	1	1	1	1	1	2	1	1	1	1	2	1
365	Rupavathi	422955B	63	2	1		Housewife	1	1	1	1	1	1	1	1	1	1	1	1	2	1
366	Shaik Md Rafiq	090714D	26	1	2		Business	1	1	1	1	1	1	1	2	1	1	1	2	2	2
367	Samir Ali Md	678884F	46	1	1		Farmer	1	1	1	1	1	1	1	1	1	1	1	1	2	1
368	Achu George	224242B	56	2	1		Housewife	1	1	1	1	1	1	1	1	1	1	1	2	2	1
369	Suman Devi	027441F	42	2	1		Housewife	1	1	1	1	1	1	1	1	1	1	1	1	2	1
370	Anil Baran Goswamy	899307D	68	1	1		Rtd.	1	1	1	1	1	1	1	1	1	1	1	1	2	1
371	Bebi Baharan	672341F	28	2	1		Housewife	1	1	1	1	1	1	1	2	1	1	1	1	2	1
372	Mour Uddin	414225F	37	1	1		Pharmacy	1	1	1	1	1	1	1	2	1	1	1	1	2	1

	Barbhuiya																						
373	Reuban Anand	678085F	44	1	1	Orthodontist	1	1	1	1	1	1	1	2	1	1	1	1	2	1			
374	Mahadev Khan	680678F	53	1	1	Farmer	1	1	1	1	1	1	1	1	1	1	2	2	2				
375	SK.Noim	390365F	41	1	1	BSNL	1	1	1	1	1	1	1	1	1	1	1	2	1				
376	Nagina Banu	81673 4D	24	2	1	House wife	1	1	1	1	2	1	2	2	1	1	2	1					
377	Sarala V.	915180C	36	2	1	Housewife	1	1	1	1	1	1	1	2	1	1	1	1	2	1			
378	Sufyana Parveen	679021F	32	2	1	Housewife	1	1	1	1	1	1	1	2	2	2	1	1	2	2			
379	Sashi Prakashsingh	639879D	38	1	1	Clerk	1	1	1	1	1	1	1	2	2	2	1	1	2	2			
380	Dimala Devi Agarwal	679047F	62	2	1	Housewife	1	1	1	1	1	1	1	1	2	2	1	1	2	1			
381	Dilip Kumar	124544D	51	1	1	Govt. Service	1	1	1	1	1	1	1	2	2	2	1	1	2	2			
382	Veerapandian M.	381789D	28	1	2	Teacher	1	1	1	1	1	1	1	2	2	2	1	1	2	2			
383	Priya Devi R.	669580F	25	2	1	Housewife	1	1	1	1	1	1	1	1	2	2	1	1	2	2			
384	Arif Khan	682948F	32	1	1	Farmer	1	1	1	1	1	1	1	2	2	2	1	1	2	2			
385	Arra Jhaan	678644F	45	2	1	Housewife	1	1	1	1	1	1	1	2	2	2	1	1	2	2			
386	Shyamal	274825F	25	1	2	OT Tech.	1	1	1	1	1	1	1	2	1	1	1	1	2	1			
387	Bitan Sarkar	586091C	38	1	1	1	1	1	1	1	1	1	2	1	1	1	1	2	2				
388	Vijaya K.	028353F	45	2	1	Pharmasist	1	1	1	1	1	1	2	1	1	1	1	2	1				
389	Preetha Ramesh	054941C	39	2	1	Teacher	1	1	1	1	1	1	1	2	1	1	1	1					
390	Sailaja K.	787049C	35	2	1	Typist	1	1	1	1	1	1	1	2	1	1	1	2	2	2			
391	Toko Api	463330D	42	2	1	Govt. Service	1	1	1	1	1	1	1	2	1	1	1	2	2	2			
392	Amit Kumar Das	820289D	29	1	2	Teacher	1	1	1	1	1	1	1	1	1	1	1	1	2	1			
393	Swapann Sardar	682308F	43	1	1	Farmer	1	1	1	1	1	1	1	1	1	1	1	2	2	2			
394	Nanda Lal Seal	409347F	58	1	1	Govt. Employee	1	1	1	1	1	1	1	2	1	1	1	1	2	1			
395	Sujatha	895891D	38	2	1	Housewife	1	1	1	1	1	1	1	2	1	1	1	1	2	1			
396	Shajahan Ali	266559F	35	1	1	Business	1	1	1	1	1	1	1	2	1	1	1	1	2	2			
397	Effat Mirana	682227F	38	2	1	Housewife	1	1	1	1	1	1	1	2	1	1	1	1	2	1			
398	Chaina Das	644725F	47	2	1	Housewife	1	1	1	1	1	1	1	2	1	1	1	1	2	1			
399	Rajendra Kr Chowdhry	678457F	52	1	1	Service	1	1	1	1	1	1	1	2	1	1	1	1	2	1			
400	Rajesh Prasad Barmwal	653070F	41	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2			
401	Kayalvizhi	068530C	20	2	2	Student	1	1	1	1	1	1	1	1	1	1	1	1	2	1			
402	Abdula Halder	683849F	45	1	1	Postal	1	1	1	1	1	1	1	1	1	1	1	1	2	1			
403	Lakhi Ram Maiylie	922019D	52	1	1	Electrical	1	1	1	1	1	1	1	2	1	1	1	1	2	1			
404	Pinky	6796	25	2	1	Hous	1	1	1	1	1	1	1	1	1	1	1	1	2	1			

		98F				ewife														
405	Santha Kumari	607357F	41	2	1	Professor	1	1	1	1	1	1	1	2	1	1	1	1	2	1
406	Kapangkhui Shaiza	683967F	50	1	1	Business	1	1	1	1	1	1	1	2	1	1	1	1	2	1
407	Meena Devi	578195D	46	2	1	Housewife	1	1	1	1	1	1	1	2	1	1	1	1	2	1
408	Sanjuka Wahangham	680494F	20	2	2	Student	1	1	1	1	1	1	1	1	1	1	1	1	2	1
409	Jageshwar Barai	684836F	36	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	2	1
410	Akash Agarwal	143631F	17	1	2	Student	1	1	2	1	1	1	1	2	1	1	1	1	2	1
411	Hepsi R.	173540C	29	2	2	Nurse	1	2	2	2	1	2	2	2	1					
412	Manojit Mondal	137573F	23	1	2	Company	1	1	1	1	1	1	1	1	1	1	1	1	2	2
413	Shaik Annish Hussain	678158F	26	1	2	Office	1	1	1	1	1	1	1	1	1	1	1	1	2	1
414	Viswamit hiran	004170C	26	1	2	Unemployer	1	1	1	1	1	1	1	2	2	2	1	1	2	2
415	Thamil Selvi R	460851F	35	2	1	Housewife	1	1	1	1	1	1	1	2	2	2	1	1	2	2
416	Dusl Bidulata	398167L	49	2	1	Housewife	1	1	1	1	1	1	1	2	2	2	1	1	2	2
417	Subal Ojha	167257F	56	1	1	Farmer	1	1	1	1	1	1	1	1	1	1	1	2	2	1
418	Bhaghyavathi Devi	262212D	49	2	1	Housewife	1	1	1	1	1	1	1	1	1	1	1	1	2	1
419	Pushpa Radhamani	263813B	49	2	1	Housewife	1	1	1	1	1	1	1	1	2	2	1	1	2	2
420	Lakshmi	454340D	72	2	1	Housewife	1	1	1	1	1	1	1	1	2	2	1	1	2	2
421	Latha S.	686997F	43	2	1	Housewife	1	1	1	1	1	1	1	2	2	2	1	1	2	2
422	Pritam Saha	686703G	37	1	1	Medical Shop Owner	1	1	1	1	1	1	1	1	2	2	1	1	2	2
423	Rupak Kumar Mukopadyay	498674D	48	1	1	Auditor	1	1	1	1	1	1	1	1	2	2	1	1	2	2
424	Sankaran n.	997091C	53	1	1	BSNL	1	1	1	1	1	1	1	2	1	1	1	1	2	1
425	Sundari d.	675030B	43	2	1	Teacher	1	1	1	1	1	1	1	2	1	1	1	1	2	1
426	Sivaranjini P.	630668F	17	2	2	Student	1	1	1	1	1	1	1	2	1	1	1	1	2	1
427	Rampyari Kumari	498365F	51	1	1	Teacher	1	1	1	1	1	1	1	2	1	1	1	1	2	1
428	Gulab Jan	442162F	50	2	1	Housewife	1	1	1	1	1	1	1	1	1	1	1	1	2	1
429	Ramanaiah T.	687045F	51	1	1	Army	1	1	1	1	1	1	1	1	1	1	1	1	2	1
430	Seema Devi	692129F	33	2	1	Housewife	1	1	1	1	1	1	1	1	1	1	1	1	2	1
431	Hanifa Khan	685101F	34	2	1	Housewife	1	1	1	1	1	1	1	2	1	1	1	1	2	1
432	Bamapada Tandu	693811F	30	1	2	Govt.	1	1	1	1	2	1	1	1	1	1	1	1	2	1
433	Awadh Kishore Dubey	681217F	57	1	1	Forest offecer	1	1	1	1	1	1	1	1	1	1	1	1	2	1

434	Sagnic Basak	694337F	27	1	1	Engineer	1	1	1	1	1	1	1	1	1	1	1	1	2	2
435	Supriti Sen Mitra	744503C	58	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	
436	Rathna Shanthi	350446D	27	2	2	Nurse	2	1	2	2	1	1	1	2	2	2	1	1	2	2
437	Rabindra Purbay	694397F	67	1	1	Engineer	1	1	1	1	1	1	1	1	1	1	1	2	2	1
438	Alamara Bibi	694573F	26	2	1	Housewife	1	1	1	1	1	1	1	1	2	1	1	1	2	1
439	Mahendra Singh	438625F	48	1	1	Service	1	1	1	1	1	1	1	1	2	1	1	1	2	1
440	Aparna Daniel	330822F	36	2	1	Housewife	1	1	1	1	1	1	1	1	1	2	1	1	2	2
441	Vamsidhar Reddy	354462F	15	1	2	Student	1	1	1	1	1	1	1	2	2	2	1	1	2	1
442	Amudha	2935554F	36	2	1	Houewife	1	1	1	1	1	1	1	1	2	2	1	1	2	2
443	Bhakta Ranjan Patra	491963D	69	1	1	Rtd.Teacher	1	1	1	1	1	1	1	1	2	1	1	2	2	2
444	Shilpi De Sarkar	681657F	53	2	1	Housewife	1	1	1	1	1	1	1	1	2	1	1	1	2	1
445	Vilvanathan	689014F	44	1	1	Teacher	1	1	1	1	1	1	1	2	2	2	1	1	2	2
446	Parimal Maity	011668F	34	1	1	Teacher	2	2	2	1	2	1	1	1	2	1	1	1	2	1
447	Varsha Vaswani	699776F	40	2	1	Housewife	1	1	1	1	1	1	1	1	1	1	1	1	2	1
448	Shanthi	089289B	51	2	1	Teacher	1	1	1	1	1	1	1	1	1	1	1	1	2	1
449	Ruby Sharma	700589F	35	2	1	Housewife	1	1	1	1	1	1	1	1	1	1	1	1	2	1
450	Elumalai	692498F	37	1	1	Fire station	1	1	1	1	1	1	1	1	2	1	1	1	2	1
451	Mrinalini Peters	488849D	22	2	2	MBBS Student	1	1	1	1	1	1	1	1	1	1	1	1	2	1
452	Abhijit Bhunia	706016F	32	1	1	Farmer	1	1	1	1	1	1	1	1	2	2	1	1	2	1
453	Tumpa Santra	699315F	31	2	1	PHD Student	2	1	2	1	1	1	1	1	2	2	1	1	2	2
454	Varathan R.	948958D	46	1	1	Oil mill Employee	1	1	1	1	1	1	1	2	2	2	1	1	2	2
455	Sandhya Ghorai	699349F	60	2	1	Housewife	1	1	1	1	1	1	1	2	2	2	1	1	2	2
456	Dase John SR	949171C	42	2	2	Teacher	1	1	1	1	1	1	1	2	2	2	1	1	2	2
457	Juliet Nesamanorama	543805A	55	2	1	Stafff Nurse	1	1	1	1	1	1	1	2	2	2	1	1	2	2
458	Saiyada Rehama Islam	700496F	31	2	1	Housewife	1	1	1	1	1	1	1	1	2	2	1	1	2	2
459	Indranipparmar	702936F	29	2	1	Housewife	1	1	1	1	1	1	1	1	1	1	1	1	2	1
460	Suriya	630497B	38	2	1	Housewife	1	1	1	1	1	1	1	2	2	1	1	1	2	1
461	Beliwara Begam	996749D	30	2	1	Housewife	1	1	1	1	1	1	1	2	2	1	1	1	2	1
462	Dilip Kumar	168962F	27	1	1	Business	1	1	1	1	1	1	1	1	2	1	1	1	2	1

463	Tapasi Sarkar Basak	702141F	36	2	1	Housewife	1	1	1	1	1	1	1	2	2	1	1	1	2	1
464	Manikandan M.	626177F	16	1	2	School Student	1	1	1	1	1	1	1	2	2	2	1	1	2	2
465	Thangaraj G.	185590B	68	1	1	Rtd. Hospital attender	1	1	1	1	1	1	1	2	2	2	1	1	2	2
466	Lalitha S.	403590F	61	2	1	Housewife	1	1	1	1	1	1	1	1	2	1	1	1	2	1
467	Jayanth Edward	397663A	30	1	1	Doctor	1	1	1	1	1	1	1	2	2	2	1	1	2	1
468	Manoj Kumar Das	964560D	33	1	1	Insurance	1	1	1	1	1	1	1	2	2	2	1	1	2	1
469	Teekaramaan	306363D	35	1	1	Army	1	1	1	1	1	1	1	2	2	1	1	1	2	1
470	Debabrata Kar	913269D	49	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	2	1
471	Arindham Maondal	708759F	19	1	2	Student	1	1	1	1	1	1	1	2	2	1	1	1	2	1
472	Kashiya Devi	936021D	64	2	1	Housewife	1	1	1	1	1	1	1	1	2	1	1	1	2	1
473	Flora	417294B	39	2	1	Blood Bank Employee	1	1	1	1	1	1	1	2	2	2	1	1	2	2
474	Annamarial Christudas	697445F	76	2	1	Rtd.Staff Nurse	1	1	1	1	1	1	1	1	2	2	1	1	2	2
475	Anima Bownick	822699D	33	2	1	Housewife	1	1	1	1	1	1	1	2	2	2	1	2	2	1
476	Elumalai	705216F	60	1	1	Rtd.	1	1	1	1	1	1	1	2	2	2	1	2	2	1
477	Balasubramanian v.	690100B	45	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	2	2
478	Bonny Pal	682025F	16	2	2	School student	1	1	1	1	1	1	1	1	2	2	1	1	2	2
479	Mahva Pal	682035F	31	2	1	Housewife	1	1	1	1	1	1	1	1	2	2	1	1	2	2
480	Lakshmanan	774133A	58	1	1	CMC Engineering Dept.	1	1	1	1	1	1	1	2	2	2	1	1	2	2
481	Azad Hussain	041946F	28	1	2	Business	2	1	2	1	1	1	1	1	2	2	2	1	2	2
482	Serina Akhtar	051280F	32	2	1	Housewife	1	1	1	1	1	1	1	1	2	2	1	1	2	2
483	sony Kumar	684696F	22	2	2	Unemployee	1	1	1	1	1	1	1	2	2	2	1	1	2	2
484	Roselin Juliet Joice	673518C	29	2	2	Respiratory Therapist, CMC	1	1	1	1	1	1	1	1	2	1	1	1	2	1
485	Banashri Pan	689030F	26	2	2	Student	1	1	1	1	1	1	1	2	2	2	1	1	2	2
486	Santhosh Rajah	711979F	45	1	1	Fruit Vender	1	1	1	1	1	1	1	2	2	2	1	1	2	1
487	Allen Joseph Felix	061226F	41	1	1	Advocate	1	1	1	1	1	1	1	1	2	1	1	1	2	2
488	Ram Prasad	676740F	41	1	1	Tutor	1	1	1	1	1	1	1	1	2	2	1	1	2	1
489	Thanka Retna	710814F	42	2	1	Teacher	1	1	1	1	1	1	1	2	2	2	1	1	2	1

490	Prabha Vijayan	187801F	37	1	1	Lecturer	1	1	1	1	1	1	1	1	2	1	1	2	1	1
491	Prayag Ram	363326F	47	1	1	Officer	1	1	1	1	1	1	1	2	1	2	1	2	2	1
492	Prameela	627297D	44	2	1	Housewife	1	1	1	1	1	1	1	1	2	2	1	1	2	2
493	Parthasarathy	602880F	30	1	1	Farmer	1	1	1	1	1	1	1	2	2	2	1	1	2	1
494	Baskar R.	455461D	24	1	2	Electrical Technician	1	1	1	1	1	1	1	2	2	2	1	1	2	1
495	Thulukkanam S.	712048F	36	1	1	Finance	1	1	1	1	1	1	1	1	2	1	1	1	2	1
496	Gopal Guria	710952F	33	1	1	Teacher	1	1	1	1	1	1	1	1	2	1	1	1	2	2
497	Mita Patachariya	781183 D	46	2	1	Housewife	1	1	1	1	1	1	1	2	2	1	1	1	2	1
498	Dipali Masantha	715516F	30	2	1	Housewife	1	1	1	1	1	1	1	2	2	2	1	1	2	2
499	Manohar Delov Sar	715460F	42	1	Business	1	1	1	1	1	1	1	1	2	1	1	1	2	2	
500	Jeeva Jyothi	300993B	40	2	1	Housewife	1	1	1	2	2	2	1	2	2	1	2	1	1	1
501	Pradeep Ghosh	716214F	65	1	1	Rtd. Advocate	1	1	1	1	1	1	1	2	2	1	1	1	2	1
502	Ramen Mondal	070524F	35	2	1	Business	1	1	1	1	1	1	1	2	2	1	1	1	2	1
503	Abdul Mananan	715622F	25	1	2	Student	1	1	1	1	1	1	1	1	2	1	1	1	2	1
504	Blestiful Chyne	159147D	54	2	1	Govt. Servant	1	1	1	1	1	1	1	2	2	1	1	1	2	1
505	Rajan Babu	350655C	16	1	2	Student	1	1	1	1	1	1	1	1	2	1	1	1	2	1
506	Suranjan DE	909173D	39	1	1	Lab	1	1	1	1	1	1	1	2	2	1	1	1	2	1
507	Shankar Das	698687F	23	1	2	1	1	1	1	1	1	1	1	2	1	1	1	2	1	
508	Chandra Dhara	471507F	24	2	1	Housewife	1	1	1	1	1	1	1	2	2	2	1	1	2	1
509	Subramaniya	444690C	57	1	1	Farmer	1	1	1	1	1	1	1	2	2	1	1	1	2	1
510	Vijaya Kumar	718894F	21	1	2	Barbour	1	1	1	1	1	1	1	2	2	1	1	1	2	1
511	Elumalai	063238F	39	1	1	Besant	1	1	1	1	1	1	1	2	2	1	1	1	2	1
512	Jayachitra	719187F	38	2	1	Coolie	1	1	1	1	1	1	1	2	2	1	1	1	2	2
513	Karthic Maity	684889F	47	1	1	Office	1	1	1	1	1	1	1	2	2	2	1	1	2	1
514	Surya Kanta Maity	715189F	16	1	2	Student	1	1	1	1	1	1	1	2	2	2	1	1	2	1
515	Nandanur Nagamani	132961F	34	2	1	Housewife	1	1	2	1	1	1	1	1	2	1	1	1	2	1
516	Thilakavati	626642F	50	2	1	Housewife	1	1	1	1	1	1	1	1	2	1	1	1	2	1
517	Samuel K.	888369D	33	1	1	Biomedical Technician	1	1	1	1	1	1	1	1	2	1	1	1	2	2
518	Anbu Selvi	276330D	37	2	1	Housewife	1	1	1	1	1	1	1	2	2	2	1	1	2	2
519	Abdul	711371F	21	1	2	Student	1	1	2	2	2	1	1	1	2	2	1	1	2	1

520	Basit Raza Md Borudin Middya	718535F	24	1	2	Unemployed	1	1	1	1	1	1	1	1	1	1	1	1	2	1
521	Sidhu Devi	368998D	56	2	1	Housewife	1	1	1	1	1	1	1	2	1	1	1	2	2	1
522	Md Asgar Ali	076908F	42	1	1	Shop Keeper	1	1	1	1	1	1	1	2	2	2	1	1	2	2
523	Samra Fatima	984395B	18	2	2	Student	1	1	1	1	1	1	1	1	2	1	1	1	2	1
524	Bharathi	725583F	36	2	1	Housewife	2	1	2	1	1	1	1	2	2	2	1	1	2	2
525	Tirupati Kumud	643541F	21	1	2	B.E.Student	1	1	1	1	1	1	1	2	2	1	1	1	2	1
526	Mahadeva Reddy	722640F	44	1	1	Engineer (Railway)	2	1	2	1	2	1	1	2	2	1	1	1	2	1
527	Kushboo A.	727633F	20	2	2	Student	1	1	1	1	1	1	1	1	2	1	1	1	2	1
528	Sunil Swarnkar	424451F	30	1	1	Service	1	1	1	1	1	1	1	1	2	1	1	1	2	1
529	Ghazala Shaheen	722831F	30	2	1	Housewife	1	1	1	1	1	1	1	2	2	2	1	2	2	1
530	Anita Singh	670796F	38	2	1	Housewife	1	1	1	1	1	1	1	2	1	1	1	1	2	1
531	Ebenezer	630077	43	1	1	CMC Employee Cash Counter	1	1	1	1	1	1	1	2	2	2	1	1	2	2
532	Lipika Bhar	481378F	37	2	1	Housewife	1	1	1	1	1	1	1	2	2	2	1	1	2	1
533	Parbatimohan Madal	633296C	45	1	1	Farmer	1	1	1	1	1	1	1	2	2	2	1	1	2	2
534	Murugan	300151A	68	1	1	Rtd. Cotton Mill Employee	1	1	1	1	1	1	1	2	2	2	1	1	2	2
535	Debalina Dutta	351502F	24	2	2	Student	1	1	1	1	1	1	1	1	2	2	1	1	2	2
536	Thamizh Pavai	954844B	44	2	1	Houewife	1	1	1	1	1	1	1	1	2	1	1	1	2	1
537	Dhanu Pandy	104184F	48	2	1	Housewife	1	1	1	1	1	1	1	2	2	2	1	1	2	1
538	Sheo Narayan singh	0499973D	58	1	1	Steel Plant Employer	1	1	1	1	1	1	1	2	2	2	1	1	2	2
539	Rabindranath Bisayee	974036D	33	1	1	Rice Godown work	1	1	1	1	1	1	1	2	2	2	1	1	2	1
540	Sahera Sultana Laskar	488219F	41	2	1	Housewife	1	1	1	1	1	1	1	2	2	2	1	1	2	2
541	Annadurai	993582A	59	1	1	Teacher	1	1	1	1	1	1	1	2	2	1	1	1	2	2
542	Dayal Kumar Gupta	608548F	50	1	1	Civil court Employee	1	1	1	1	1	1	1	2	2	2	1	1	1	2
543	Manickam	169209D	65	1	1	Rtd. Military rank	1	1	1	1	1	1	1	2	2	2	1	1	2	2
544	Asha Devi chauaria	455863D	34	2	1	Housewife	1	1	1	1	1	1	1	1	1	1	1	1	2	1
545	Pramila chett	870376D	47	2	1	Housewife	1	2	2	2	1	2	1	2	1	1	1	1	2	2

	ri																						
546		Amol Das	622316F		35		1		1		1		1		1		2		1		1		2		2
547	Eliza beth	8875 65B	39	2	1	Clinical Pharmacology	1	1	1	1	1	1	1	1	2	1	1	1	2	2			
548	Saras wathi	6194 72F	23	2	1	Housewife	1	1	1	1	1	1	1	2	1	1	1	1	2	1			
549	Mahir Kumar Bhowmic	6206 80F	55	1	1	Farmer	1	1	1	1	1	1	1	1	1	1	1	1	2	1			
550	Iti Choudhri	3559 62C	56	2	1	teacher	1	1	1	1	1	1	1	2	1	1	1	2	2	1			
551	Bipin Kumar	6089 79F	27	1	1	Defense	1	1	1	1	1	1	1	2	1	1	1	1	1				
552	Pushpa Lalitha	0556 41B	59	2	1	Housewife	1	1	1	1	1	1	1	2	2	2	1	1	2	1			
553	Monicka	4591 40F	20	2	2	Student	1	1	2	1	1	1	2	2	1	1	1	2	2				
554	Khadar Basha	4390 94F	42	1	1	Teacher	1	1	1	1	1	1	1	1	1	1	1	1	2	1			
555	Jyothi Upadhyay	2676 13F	32	2	1	teacher	1	1	1	1	1	1	1	2	1	1	1	1	2	1			
556	Golok Nandi	2688 53F	39	1	1	Fruit shop Employee	1	1	1	1	1	1	1	2	2	2	1	1	2	2			
557	Sipra Roy	6155 30F	57	2	1	Doctor	1	1	1	1	1	1	1	2	1	1	1	1	2	1			
558	Somu	1895 95D	16	1	2	Student	1	1	1	1	1	1	1	2	1	1	1	1	2	1			
559	Joy Chukkrabharathy	9351 92D	29	1	2	Bank Employee	1	1	1	1	1	1	1	2	2	2	1	1	2	2			
560	Kajol Das	4849 86C	52	2	1	Housewife	1	1	1	1	1	1	1	2	2	2	1	1	2	1			
561	James	6117 42F	44	1	1	Pastor	1	1	1	1	1	1	1	1	1	1	1	1	2	1			
562	Biswanath Samantha	7399 91D	61	1	1	Rtd.	1	1	1	1	1	1	1	1	1	1	1	1	2	1			
563	Praveen R.	3891 91F	16	1	2	Student	1	1	1	1	1	1	1	2	1	2	1	1	2	1			
564	Indira Jeyaraj	2771 42D	63	2	1	Housewife	1	1	1	1	1	1	1	1	1	1	1	1	2	1			
565	Jeyaraj	3604 17C	67	1	1	Rtd	1	1	1	1	1	1	1	2	2	2	1	2	2	2			
566	Asha M.	6213 38F	19	2	2	Student	1	1	1	1	1	1	1	2	1	1	1	1	2	1			
567	Jai Shree Singh	9316 34D	50	2	1	Housewife	1	1	1	1	1	1	1	2	1	1	1	1	2	1			
568	Santhosh K.Joseph	1849 81F	33	1	1	Defense	1	1	1	1	1	1	1	2	1	1	1	1	2	1			
569	Jaya Prakash	4434 59F	28	1	1	Electrical Maintanance	1	1	1	1	1	1	1	2	2	2	1	2	2	2			
570	Satyakala Giri	4478 62F	40	2	1	Housewife	1	1	1	1	1	1	1	1	1	1	1	2	2	1			
571	Nurjahan Bibi	6227 95F	26	2	1	Housewife	1	1	1	2	1	1	1	2	2	2	1	2	2	2			
572	Asainar N.p.	6148 83D	39	1	1	Medical Shop	1	1	1	1	1	1	1	2	1	1	1	2	2	1			
573	Sadiqua Banu	6005 30F	43	2	1	Housewife	1	1	1	1	1	1	1	1	1	1	1	1	2	1			
574	Chennakesavan	1255 05F	31	1	1	Electrician 1	1	1	1	1	1	1	1	2	1	2	1	1	2	1			
575	Apu Dev	6408 19C	21	1	2	Student	1	1	1	1	1	1	1	2	1	2	2	2	2	1			
576	Subashish Ghosh	9861 82D	19	1	2	Student	1	1	1	1	1	1	1	2	2	2	1	1	2	1			
577	Logeshwa	6502 08D	26	2	2	Staff Nurs	1	1	1	1	1	1	1	2	2	1	1	2	2	1			

	ri K.					e														
578	Sheela	695609C	36	2	1	Teacher	1	1	1	1	1	1	1	2	2	1	1	1	2	1
579	Jaibunisha	365170D	48	2	1	Housewife	1	1	1	1	1	1	1	1	1	1	1	2	2	2
580	Sriram Hyma	468505F	40	2	1	Housewife	1	1	2	1	2	1	1	2	2	1	1	2	2	2
581	Supriya Ghosh	283303F	28	1	1	Police	1	1	1	1	1	1	1	1	2	2	1	1	2	2
582	Henry Dhanasekaran D.M.	221281F	66	1	1	Leather Export	1	1	1	1	1	1	1	2	2	2	1	1	2	2
583	Saket Saurabh	647392F	25	1	2	Electrical Engineer	2	1	2	1	1	1	1	2	2	2	1	1	2	2
584	Poornima P.	470670F	41	2	1	Housewife	1	1	1	1	1	1	1	1	2	1	1	1	2	2
585	Shanthiram Garai	655146F	40	1	1	Homeo medicine Pharmacy	1	1	1	2	1	1	1	2	2	2	1	1	2	2
586	Jothi P.	069203F	36	1	1	Fast food owner	1	1	1	1	1	1	1	1	2	2	1	1	2	2
587	Abhijit Dhar	638871F	16	1	2	Student	1	1	1	1	1	1	1	1	2	2	1	1	2	2
588	Selvam	664922C	59	1	1	Beedi Company Manager	1	1	1	1	1	1	1	2	2	2	1	1	2	2
589	Sudha Devi	633452F	41	2	1	Housewife	1	1	1	1	1	1	1	1	2	2	1	1	2	2
590	Chaitali sarkar	652290F	39	2	1	Music teacher	1	1	1	1	1	1	1	1	2	1	1	1	2	2
591	Asiya Begum Y.	955848C	24	2	1	Housewife	1	1	1	1	1	1	1	2	2	2	1	1	2	2
592	Nikkat Fattima	643514C	49	2	1	Housewife	1	1	1	1	1	1	1	1	2	2	1	1	2	2
593	Anil Baran Patra	643956F	622	1	1	Rtd.Teacher	1	1	1	1	1	1	1	2	2	2	1	1	2	2
594	Kasturi P.	661264F	40	2	1	Housewife	1	1	1	1	1	1	1	1	2	2	1	1	2	2
595	Palanisamy J.	578607A	54	1	1	Rtd.Teacher	1	1	1	1	1	1	1	2	2	2	1	1	2	2
596	Haji M.D. Qamruzzaman	627193F	65	1	1	Furniture Business	1	1	1	2	1	1	1	2	2	2	1	1	2	2
597	Shambhu Prasad Bhahor	660353F	46	1	1	Cloth Business	1	1	1	1	1	1	1	2	2	2	1	1	2	2
598	Sekar J.	336674F	53	1	1	Driver	1	1	1	1	1	1	1	2	2	2	1	1	2	2
599	Dayanand Jha	412054C	61	1	1	Rtd.Steel Plant Employee	1	1	1	1	1	1	1	2	2	2	1	1	2	2
600	Savitha Jain	662199F	44	2	1	Housewife	1	1	1	1	1	1	1	1	2	2	1	1	2	2
601	Vijaya Lakshmi	193661F	50	2	1	Housewife	1	1	1	1	1	1	1	1	2	2	1	1	2	2
602	Muktipada Ray	663440F	38	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1
603	Gouri R.	359849D	56	2	1	Housewife	1	1	1	1	1	1	1	1	2	2	1	1	2	2
604	Reba Pathak	672736F	57	1	2	Housewife	1	1	1	1	1	1	1	2	2	2	1	1	2	2
605	Suryakala Devi	279297F	67	2	1	Housewife	1	1	1	1	1	1	1	1	2	2	1	1	2	2
606	Shukl	6769	32	2	1	Hous	1	1	1	1	1	1	1	1	2	2	1	1	2	2

	a Mandal	84F				ewife														
607	Ruby V.	519456C	35	2	1	Housewife	1	1	1	1	1	1	1	1	2	1	1	1	2	2
608	Umarani Kotal	670606F	28	2	1	Housewife	1	1	1	1	1	1	1	1	2	2	1	1	2	2
609	Jhuma Ghosh	672262F	23	2	1	Housewife	1	1	1	1	1	1	1	1	1	1	1	1	2	1
610	Solomon Kirubhakaran	913564A	55	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	2	1
611	Nabakumar Das	629166F	56	1	1	Electrical	1	1	1	1	1	1	1	1	1	1	1	1	2	1
612	Nitesh Mondal	673801F	36	1	1	Asst.	1	1	1	1	1	1	1	1	1	1	1	1	2	1
613	Ashuthosh Singh	344662F	16	1	1	student	1	1	1	1	1	1	1	1	2	2	1	1	2	1
614	Subrata Das	839024D	27	1	2	1	1	1	1	1	1	1	2	1	1	1	1	2	1	
615	Prabhakaran	930180C	64	1	1	Rtd.	1	1	1	1	1	1	1	1	1	1	1	1	2	1
616	Lalitha S.	403590F	61	2	1	Housewife	1	1	1	1	1	1	1	1	1	1	1	1	2	1
617	Sathish Kumar	032156A	36	1	1	Transport	1	1	1	1	1	1	1	2	1	1	1	1	2	1
618	Md. Abdul	684916F	55	1	1	Service	1	1	1	1	1	1	1	1	1	1	1	1	2	1
619	Chandrasekar Reddy	677374F	45	1	1	Office	1	1	1	1	1	1	1	1	1	1	1	1	2	1
620	Usha Mondal	661054F	25	2	1	Housewife	1	1	1	1	1	1	1	2	1	1	1	2	2	2
621	Vimal	541690D	33	2	1	Housewife	1	1	1	1	1	1	1	2	1	1	1	1	2	1
622	Sudha Devi	599650D	49	2	1	Housewife	1	1	1	1	1	1	1	2	1	1	1	2	2	2
623	Chirtrekha Devi	682104F	70	2	1	Housewife	1	1	1	1	1	1	1	2	1	1	1	1	2	1
624	Murti	665429C	66	1	1	Rtd.	1	1	1	1	1	1	1	1	1	1	1	2	2	1
625	Montusi sarkar	682356D	33	2	1	Housewife	1	1	1	1	1	1	1	1	1	1	1	1	2	1
626	Kishorekumar P.	272653C	22	1	2	Engineer	1	1	1	1	1	1	1	2	1	1	1	2	2	1
627	Moly Chandran	620190D	52	1	1	Medical Rep.	1	1	1	1	1	1	1	2	1	1	1	2	2	2
628	Aparna Ghosh	684798F	31	2	1	Housewife	2	1	2	1	1	1	1	2	2	2	1	1	2	1
629	Sanjoy Kumar Dutta	638961F	27	1	2	Student	1	1	1	1	1	1	1	2	1	1	1	1	2	1
630	Vijaya	801547D	58	2	1	Housewife	1	1	1	1	1	1	1	2	1	2	1	2	2	2
631	Guna G	697400D	30	2	1	Housewife	1	1	1	1	1	1	1	2	2	2	1	1	2	2
632	Pushpa Sanghvi	141596B	69	2	1	Housewife	1	1	1	1	1	1	1	2	1	1	1	1	2	1
633	Gopal Chandra Gope	694525F	33	1	1	Business	1	1	1	1	1	1	1	1	1	1	1	1	2	1
634	Biraj Goswami	714033F	41	1	1	Teacher	1	1	1	1	1	1	1	2	2	1	1	1	2	1
635	Uttam Kumar Dhakta	659051F	29	1	1	Electrician 1	1	1	1	1	1	1	1	2	2	2	1	1	2	2

636	Ashalatha Debnath	1215 86F	49	2	1	Housewife	1	1	1	1	1	1	1	2	1	1	1	2	2	2		
637	Sapna Devi	3625 45F	55	2	1	Housewife	1	1	1	1	1	1	1	1	2	2	1	1	2	1		
638	Gayatri Keot	4879 61D	66	2	1	Housewife	1	2	1	1	1	2	1	2	1	1	1	1	2	2		
poll	resp	smok	emotexp	asthhera	gothechest	inhal	inhwhen	inhcompl	pspiromet	pobst	pobstpre	psigrever	asthcont	obst	obstpre	pred	preped	pospred	pre	post		
2	1	1	2	1	2	1	1	2	1	2	1	2	3.8	68.8	78.5	2.62	2.99					
2	1	1	2	1	1	3	12	1	1	1	3	1	1	3	2.63	34.8	45.4	0.91	1.19			
2	1	1	2	1	2	2	3	1	3	3.26	17.9	20.9	0.58	0.68								
1	1	1	1	1	1	3	2	2	2	2	2.27	69.7	76.6	1.58	1.74							
2	1	2	2	1	1	1	24	2	2	1	2	3.46	60.7	66.9	2.1	2.32						
2	1	2	1	1	1	3	120	1	1	2	1	2	2.94	102.6	106.8	3.02	3.14					
2	1	1	1	1	1	3	36	1	2	2	2	3.89	68.9	87.7	2.68	3.41						
1	1	1	2	1	1	3	6	1	1	1	3	2	1	3	2.06	26.5	32.7	0.55	0.67			
2	1	1	2	1	1	3	48	1	1	2	1	2	2.8	57	59.8	1.6	1.67					
2	2	2	2	1	1	3	3	1	1	3	1	1	3	2.29	54.6	71.1	1.25	1.63				
2	1	1	1	1	1	2	2	2.98	96.7	98.3	2.88	2.93										
2	1	1	1	1	1	3	12	2	2	2	1	1	2.54	87.9	92.1	2.23	2.34					
1	1	2	2	1	1	3	24	2	2	2	2	2	2.04	81	84.6	2.04	2.13					
1	1	1	2	1	1	3	240	2	1	1	3	2	1	3	1.74	39.3	51.1	0.68	0.89			
1	1	1	1	1	1	1	120	2	2	3	2	2.23	102.4	109.2	2.29	2.44						
2	1	1	2	1	1	3	24	1	1	2	1	2	3.19	72.7	69.9	2.32	2.23					
2	1	1	2	1	1	1	2	2	3.45	80.6	82	2.78	2.83									
2	2	2	2	1	1	3	24	1	1	2	1	2	2.25	75.9	82.2	1.7	1.85					
2	1	1	2	1	2	3	36	1	1	1	2	1	1	2	2.35	75.6	91.8	1.78	2.15			
2	1	1	1	1	1	3	3	1	2	2	1	3	1.63	40.6	72	0.66	1.17					
2	2	2	2	2	2	2	2	2.25	102.5	107.8	2.3	2.42										
2	1	1	2	1	1	3	6	1	1	2	1	1	1	2.74	85.3	93.9	2.33	2.57				
2	1	1	2	1	1	3	120	1	1	2	2	1	2	1.9	61.7	61.8	1.17	1.18				
2	2	1	2	1	1	2	12	1	1	1	2	1	2	3.68	81.3	82.4	2.99	3.03				
2	1	1	1	2	1	2	2	3.62	76.3	79.7	2.76	2.88										
2	1	1	2	1	1	3	5	2	2	2	2	2.97	86.6	101.4	2.57	3.01						
1	1	1	2	1	1	3	60	1	1	1	3	1	1	3	1.94	36.1	40.3	0.7	0.78			
1	1	2	2	1	1	3	24	1	2	1	2	2.09	68.3	67.4	1.42	1.41						
1	1	1	2	1	1	3	60	2	2	2	2	2.06	72.2	84.4	1.49	1.74						
2	1	1	2	1	1	2	1	3	2.78	54.8	55.1	1.52	1.53									
1	1	1	2	1	1	2	6	1	1	2	3	2	2.44	90.2	92	2.2	2.24					
2	1	2	1	1	2	3	3	2	2	2	2	3.8	68.8	73.3	2.61	2.79						
1	1	2	2	1	1	3	60	1	1	2	1	2	2.8	89.4	91.9	2.51	2.58					
2	2	1	2	2	2	2	2	2	2.81	80.4	84.7	2.26	2.38									
2	2	1	2	1	1	3	72	1	1	2	2	2	3.72	53	55.1	1.97	2.05					
1	2	1	2	1	2	3	1	2.56	48.8	53.7	1.25	1.37										
1	1	1	2	1	2	3	3.34	43.7	54.6	1.46	1.82											
1	1	1	2	1	1	3	156	2	2	3	2	3.43	72.5	77.8	2.49	2.67						
1	1	1	2	1	1	3	36	2	2	2	2	3.87	88.7	93.4	3.43	3.61						
2	1	1	2	1	1	2	24	2	2	2	2	2.46	90.2	95.4	2.22	2.35						
2	1	1	1	2	1	2	2	2.29	93.7	106.5	2.14	2.43										
1	1	1	2	1	1	3	36	2	2	3	2	2.72	82.6	100.9	2.24	2.74						
1	1	1	2	1	1	3	228	1	1	1	3	2	1	3	2.61	44.7	47.1	1.16	1.23			
1	1	1	1	2	1	2	2	2.68	89.9	93	2.41	2.49										
1	1	1	2	1	2	3	12	1	2	1	1	3	2.97	39.4	48.1	1.17	1.43					
2	1	1	2	1	1	3	72	2	2	2	2	2.9	69.7	80	2.02	2.32						
2	1	1	2	1	1	3	24	2	2	2	1	1	2.07	85	95.6	1.75	1.98					
2	1	2	2	1	1	3	36	2	1	1	3	2	1	3	2.01	58.9	74.4	1.18	1.5			
2	1	1	2	1	1	3	76	1	1	2	1	2	2.62	71.7	76.1	1.88	2					
1	1	1	2	1	4	96	1	1	2	1	1	2	3.36	74.4	84.4	2.5	2.84					
2	1	1	2	1	1	3	60	1	2	2	2	3.09	83.6	89.6	3	3.22						
2	1	1	2	1	1	3	12	2	2	3	2	3.57	70.4	73.6	2.51	2.63						
2	1	2	2	1	1	3	3	1	1	1	2	1	1	1	1	3.8	91	100.8	3.46	3.83		
1	1	1	2	1	1	3	120	2	2	2	2	3.7	86.3	85.5	3.19	3.16						
2	1	1	2	1	1	3	6	1	1	1	3	2	1	3	3.91	55	68.6	2.15	2.69			
2	1	1	2	1	1	3	36	1	2	2	1	3	2.08	46.9	49.1	0.98	1.02					
2	1	1	2	1	1	3	8	1	1	2	1	2	2.02	88.9	97.8	1.79	1.98					
2	1	1	1	2	1	2	2	2.72	98.7	95.8	2.68	2.6										
2	1	1	2	1	1	3	8	1	1	1	3	1	1	2	2.56	60.2	67.7	1.54	1.73			
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2	1	1	2	1	1	3	6	2	2	3	1	3	3.53	52.8	83.5	1.86	2.95					
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1	1	1	2	1	1	3	72	2	2	2	1	3	3	40.3	62.5	1.21	1.88					
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2	1	1	2	1	1	3	24	2	2	2	2	3.81	74	81.5	2.82	3.11						
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1	1	1	2	1	1	3	60	1	1	3	2	3.38	19.9	33.3	0.67	1.12						
2	1	1	2	1	1	3	144	1	2	3	1	3	2.54	20.6	31.4	0.52	0.8					
2	1	1	1	1	1	3	120	1	1	1	3	2	1	2.6	35.6	66.8	0.92	1.74				
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2	1	1	2	1	2	1	2	3.22	75.1	76.1	2.42	2.45										
2	1	1	2	1	1	3	6	1	1	1	3	1	1	2	2.68	77.2	84.9	2.07	2.28			
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2 1 2 1 1 1 3 6 2 1 2 2 2 2 3.53 87.9 94 3.1 3.31
2 1 2 2 1 2 2 3.66 85.7 87.2 3.13 3.19
1 1 1 1 1 1 3 48 1 1 1 3 1 1 1 2 4.3 66.3 76.6 2.85 3.29
1 1 1 1 1 1 3 42 1 1 2 2 1 2 2.73 87 93.8 2.38 2.56
1 1 1 1 1 1 2 2 2.43 72.3 73.7 1.76 1.79
2 2 1 1 1 1 3 6 1 1 1 3 2 1 1 3 2.31 53.2 62.3 1.23 1.44
2 1 1 2 2 1 3 3 1 1 1 2 2 3 1 2 2.4 66.8 68.3 1.61 1.64
2 1 1 2 1 2 3 6 2 1 2 2 3 2 4.07 84.2 87.8 3.43 3.57
2 2 1 2 1 2 1 2 2.48 69.9 65.3 1.73 1.62
2 1 2 2 1 2 2 4.16 75.1 82.9 3.12 3.45
2 1 1 2 1 1 3 3 1 1 1 3 1 1 2 2.4 56.8 67.4 1.42 1.68
2 1 1 2 1 2 2 3.3 75.1 75.5 2.47 2.49
2 2 1 2 1 1 3 12 1 1 1 1 2 1 1 2 3.94 76.7 89.4 3.03 3.53
2 1 2 2 1 2 2 3.92 85.4 86.6 3.35 3.39
2 1 1 2 1 1 4 96 2 2 1 2 2.78 79.2 89.7 2.2 2.49
2 1 1 2 1 2 2 2.4 75.9 84.4 1.82 2.03
1 1 1 2 1 1 3 12 2 2 2 2 2.37 83.1 83 1.99 1.98
2 1 1 2 1 2 1 3 2.78 55.2 65.8 1.54 1.83
2 1 1 2 1 2 2 2.2 80.9 79.8 1.78 1.75
2 1 1 2 1 1 3 36 2 2 2 1 2 2.46 52 67.9 1.28 1.67
2 1 1 2 1 2 1 3 2.32 35.2 42.4 0.82 0.98
2 1 1 2 1 1 3 48 1 1 2 2 1 2 2.78 58.3 60.5 1.62 1.68
2 1 1 2 1 2 1 1 2.47 86.9 89.9 2.15 2.22
2 1 1 2 1 1 3 2 2 2 3 1 3 2.38 55.3 83.2 1.32 1.98
2 1 1 2 1 1 3 9 2 1 2 2 1 2 2.39 72.8 75.8 1.74 1.81
2 1 1 2 1 1 3 12 1 1 2 2 2 1 1 2.56 83.5 85.6 2.13 2.19
2 1 1 2 1 2 1 3 2.15 53.9 78.8 1.16 1.7
2 1 1 2 1 1 3 12 1 1 1 3 2 2 1 3 2 59.7 60.3 1.19 1.2
1 1 1 1 1 1 2 2 3.19 56.6 56.2 1.81 1.79
2 1 1 2 1 1 3 36 2 1 1 2 2 3 1 2 1.73 62.5 63 1.08 1.09
2 1 1 2 1 1 3 36 1 2 1 2 1.87 67.4 73.4 1.26 1.37
2 1 1 2 1 1 3 12 1 1 2 2 1 1 2 1.74 73.3 79.9 1.28 1.39
2 1 1 2 1 1 3 48 2 2 2 2 2.52 87.5 85.1 2.21 2.15
2 1 2 2 1 1 2 2 2 2.41 80.6 79.3 1.94 1.91
2 1 1 2 1 1 3 36 2 2 2 2 2.38 73.2 76.7 1.74 1.82
1 1 1 1 1 1 4 24 2 2 2 2.64 88.8 94.3 2.34 2.49
1 1 1 1 1 1 3 96 1 1 1 3 2 1 1 3 2.86 36.7 44 1.05 1.26
1 1 1 1 1 1 3 180 2 1 1 3 2.8 42.9 55.5 1.2 1.55
1 1 2 1 2 1 2 2 3.31 66.8 79.7 2.21 2.64
2 1 1 2 1 1 3 6 1 1 2 2 1 2 4.11 113.9 115.9 4.68 4.76
1 1 1 1 1 1 3 60 1 1 1 1 2 1 1 2 4.07 69.4 82.8 2.83 3.37
1 1 1 1 1 1 3 120 1 1 1 3 1 1 1 3 2.47 38.7 46 0.96 1.14
1 1 1 1 1 1 3 60 1 1 3 2 1 1 3 1.92 42.2 51.7 0.81 0.99
1 1 1 1 1 1 3 12 1 1 1 2 1 1 2 3.21 92.4 96.9 2.97 3.11
1 1 1 1 1 1 3 144 1 2 2 2 2.6 79.3 79.7 2.06 2.07
1 2 1 1 1 1 3 24 2 2 2 1 3 2.92 25.1 37.9 0.73 1.11
2 2 2 2 1 2 1 2 2.91 72.5 75.1 2.11 2.19
1 1 1 1 1 1 3 36 1 1 2 2 1 2 2.5 87.4 93.2 2.18 2.33
2 1 1 1 1 1 3 120 2 2 1 1 3 2.33 56.6 65.6 1.32 1.53
1 1 1 1 1 1 3 120 1 2 1 1 3 1.5 32.1 41.1 0.48 0.62
1 1 1 2 1 1 3 120 1 1 1 3 1 1 1 3 2.77 24.2 48.8 0.67 1.35
1 1 1 1 1 1 3 36 1 1 2 2 1 2 2.5 78.5 79.9 1.96 2

1	1	1	2	1	1	3	48	1	1	2	2	1	2	3.79	70.6	73.1	2.67	2.77					
2	1	1	2	1	1	3	36	1	1	1	3	2	1	1	3	3.54	45.5	46.5	1.61	1.65			
2	1	2	2	2	1	2	2.59	92	100.6	2.38	2.61												
1	1	1	1	1	2	1	2	3.51	60	67.2	2.11	2.36											
2	1	1	1	1	1	3	432	2	1	1	3	2	1	1	3	1.9	23.2	39.8	0.44	0.76			
2	1	1	2	1	2	3	12	1	1	2	2	1	2	2.69	79.7	78.3	2.14	2.11					
1	1	1	1	1	1	3	72	1	2	1	1	3	1.44	31.6	37	0.45	0.53						
1	1	1	2	1	1	3	72	1	2	1	2	3.7	58.7	65.2	2.17	2.41							
1	1	1	1	1	1	3	3	2	2	2	2	3	95.8	96.6	2.88	2.9							
2	1	1	2	1	1	3	48	2	2	2	2	3.35	64.3	75.7	2.16	2.54							
2	2	2	2	1	1	3	120	1	1	1	3	1	1	1	2	2.15	70.5	76.7	1.51	1.65			
2	1	1	2	1	1	3	144	2	1	1	3	1	3	1	3	2	41.4	61.1	0.83	1.22			
2	1	1	2	1	1	3	48	1	1	1	2	2	1	1	3	2.09	48.9	62.5	1.02	1.3			

postpr e	ml	r5pred	actu tr5	percen d	r20pre	actu1 tr20	percen	r5r20	actu2	percer 5r20	r5	r5prep er	r5posp er	pospre	dursy mp	durmo nths	yrdiag	smok1
14.2	370	0.25	0.37	145.6	0.21	0.26	123.7	0.04	0.11	275	0.25	145.6	117.6	-19.2	2	2013		
30.6	280	0.3	0.44	147.3	0.26	0.25	94.4	0.04	0.19	475	0.3	147.3	110	-25.3	1	2012	4	
16.6	100	0.28	0.79	288.3	0.23	0.34	142.7	0.05	0.45	900	0.28	288.3	252.1	-12.6	2	2011		
9.9	160	0.36	0.68	187.6	0.3	0.31	101.9	0.06	0.37	616.66	0.36	187.6	148.8	-20.7				
10.2	220	0.27	0.6	223.9	0.23	0.42	183.4	0.04	0.18	450	0.27	223.9	149.4	-33.3	2	2013		
4	120	0.34	0.45	133.4	0.28	0.35	127.1	0.06	0.1	166.66	0.34	133.4	109.6	-17.8	19	19		
27.3	730	0.25	0.5	201.4	0.21	0.34	163.2	0.4	0.16	400	0.25	201.4	128.4	-36.2	4	2009		
23.3	120	0.38	0.96	252	0.32	0.47	145.8	0.06	0.49	816.66	0.38	252	167.5	-33.5	22	1997		
4.8	70	0.31	0.3	94.4	0.27	0.19	70.9	0.04	0.11	275	0.31	94.4	165.6	75.5	5	2008	4	
30.5	380	0.3	0.86	285.8	0.26	0.38	145.4	0.4	0.48	1200	0.3	285.8	171.7	-39.9	2	2012		
1.6	50	0.33	0.49	147.2	0.27	0.28	101.5	0.06	0.21	350	0.33	147.2	111.8	-24.1	3	2013		
4.7	110	0.3	0.27	91.9	0.26	0.25	96.3	0.04	0.02	50	0.3	91.9	86.3	-6.1	4	2012		
4.4	90	0.33	0.43	128.9	0.27	0.29	106.4	0.06	0.14	233.33	0.33	128.9	87.2	-32.3	4	2010		
29.9	210	0.39	0.92	235.9	0.33	0.41	125.5	0.06	0.51	850	0.39	235.9	227.8	-3.4	20	1993		
6.6	150	0.36	0.49	136.2	0.3	0.27	91.5	0.06	0.22	366.66	0.36	136.2	112.5	-17.4	20	2004		
-4	90	0.28	0.52	189.6	0.24	0.43	183.9	0.04	0.09	225	0.28	189.6	159.7	-15.8	4	2011		
1.8	50	0.26	0.43	163.1	0.22	0.38	170.9	0.04	0.05	125	0.26	163.1	137.6	-15.6	1	2013		
8.4	150	0.35	0.83	236.2	0.29	0.58	197	0.06	0.25	416.66	0.35	236.2	246.9	4.5	3	2010		
21.3	370	0.35	0.94	267	0.29	0.63	217.7	0.06	0.31	516.66	0.35	267	118.8	-55.5	5	2010		
77.6	510	0.4	0.76	190.4	0.34	0.4	117.3	0.06	0.36	600	0.4	190.4	164.7	-13.5	30	1984		
5.2	120	0.37	0.4	106.3	0.31	0.39	124.2	0.06	0.01	16.66	0.37	106.3	85.4	-19.7	3	2013		
10.1	240	0.3	0.35	119.5	0.26	0.25	97.5	0.04	0.1	250	0.3	119.5	74.9	-37.3	1	2012		
0.3	10	0.39	0.8	203.8	0.33	0.62	187.8	0.06	0.18	300	0.39	203.8	200.4	-1.6	40	1993		
1.3	40	0.27	0.39	148.9	0.23	0.38	167.9	0.04	0.01	250	0.27	148.9	130.2	-12.6	5	2009		
4.4	120	0.27	0.3	114.6	0.23	0.24	108.6	0.04	0.06	150	0.27	114.6	95.3	-16.8	2	2013		
17.1	440	0.33	0.63	192	0.27	0.43	161	0.06	0.2	333.33	0.33	192	104.5	-45.6	1	2012		
11.6	80	0.4	0.46	116.4	0.34	0.33	97	0.06	0.13	216.66	0.4	116.4	191.4	64.4	45	1969		
-1.2	10	0.37	0.75	201.7	0.31	0.41	130.4	0.06	0.34	566.66	0.37	201.7	184.4	-8.6	3	2011		
16.9	250	0.37	0.64	172.1	0.31	0.44	142.4	0.06	0.2	333.33	0.37	172.1	110	-36.1	5	2008		
0.5	10	0.29	0.75	259.9	0.25	0.54	219.6	0.04	0.21	525	0.29	259.9	221.2	-14.9	20	2013		
2	40	0.36	0.54	153	0.3	0.44	149	0.06	0.1	166.66	0.36	153	137.5	-10.2	10	2012		
6.6	180	0.26	0.32	122.1	0.22	0.26	117.4	0.04	0.06	150	0.26	122.1	121.2	-0.8	2	2013	4	
2.8	70	0.32	0.39	120.6	0.26	0.33	126.2	0.06	0.06	100	0.32	120.6	112	-7.1	5	2008		
5.4	120	0.34	0.87	256.2	0.28	0.61	219	0.06	0.26	433.33	0.34	256.2	140.6	-45.1	5	2013		
4	80	0.26	0.59	228.5	0.22	0.39	180.8	0.04	0.2	500	0.26	228.5	201.6	-11.8	6	2008		
10.2	120	0.36	0.81	222.9	0.3	0.39	128.9	0.06	0.42	700	0.36	222.9	218.8	-1.8	28	1986	4	
24.9	360	0.26	0.45	172.6	0.22	0.23	102	0.04	0.22	550	0.26	172.6	140.4	-18.6	11	2013	4	
7.3	180	0.27	0.3	112.4	0.23	0.25	110.7	0.04	0.05	125	0.27	112.4	88.7	-21.1	19	2002		
5.3	180	0.25	0.3	120.3	0.21	0.27	127.2	0.04	0.03	75	0.25	120.3	96.1	-20.1	6	2010	4	
5.9	130	0.36	0.68	191.9	0.3	0.49	166.2	0.06	0.19	316.66	0.36	191.9	125.5	-34.6	4	2012		
13.7	290	0.36	0.35	97.8	0.3	0.3	102	0.06	0.06	100	0.36	97.8	91.4	-6.6	6	2013	4	
22.1	500	0.34	0.71	207.4	0.28	0.56	197.4	0.06	0.15	250	0.34	207.4	171.1	-17.5	3	2011		
5.4	70	0.35	0.55	155.5	0.29	0.35	122.1	0.06	0.2	333.33	0.35	155.5	126.4	-18.7	22	1994	2	
3.4	10	0.36	0.87	241.8	0.3	0.52	173.8	0.06	0.35	583.33	0.36	241.8	137.6	-43.1	10	2011		
21.8	260	0.29	0.77	266.1	0.25	0.38	153.8	0.04	0.39	975	0.29	266.1	154	-42.1	2	2011		
14.8	300	0.28	0.36	131.2	0.24	0.26	109	0.04	0.1	250	0.28	131.2	168	28	10	2007		
12.5	230	0.37	0.39	104.7	0.31	0.31	98.5	0.06	0.08	133.33	0.37	104.7	109.6	4.6	15	2011		
26.3	320	0.31	0.94	300.5	0.27	0.46	167.9	0.04	0.48	1200	0.31	300.5	141.3	-53	10	2010		
6.2	120	0.36	0.59	165.9	0.3	0.33	112	0.06	0.26	433.33	0.36	160.9	123	-25.8	10	2005		
13.5	340	0.28	0.44	157.8	0.24	0.36	153	0.04	0.08	200	0.28	157.8	121.9	-22.8	10	2009		
7.2	220	0.27	0.4	150.7	0.23	0.31	138.4	0.04	0.09	225	0.27	150.7	90.3	-36.7	5	2008		
4.5	120	0.26	0.36	137.6	0.22	0.29	132.6	0.04	0.07	175	0.26	137.6	140.2	1.9	16	2011		
10.8	370	0.26	0.3	113	0.22	0.24	109.9	0.04	0.06	150	0.26	113	122.9	8.8	6	2007		
-1	30	0.26	0.54	205.2	0.22	0.43	194.2	0.04	0.11	275	0.26	205.2	205.7	0.2	10	2003		
24.8	540	0.26	1.07	416.4	0.22	0.37	170	0.04	0.7	1750	0.26	416.4	210.9	-49.3	4	2010		
4.7	40	0.31	0.39	129.2	0.27	0.22	84.1	0.04	0.17	425	0.31	129.2	160.3	24.1	30	1983		
10.1	190	0.39	0.57	145.9	0.33	0.36	111.2	0.06	0.21	350	0.39	145.9	131.5	-9.9	30	2012		
-3	80	0.31	0.24	77.5	0.27	0.18	66.7	0.04	0.06	150	0.31	77.5	96.7	24.8	6	2013	4	
12.5	190	0.35	0.82	234.3	0.29	0.58	200.9	0.06	0.24	400	0.35	234.3	126.4	-46.1	23	2012		
2.6	50	0.28	0.34	121	0.24	0.25	103	0.04	0.09	225	0.28	121.8	2	2013				
6.4	150	0.34	0.48	139.1	0.28	0.4	141.8	0.06	0.08	133.33	0.34	139.1	109.6	-21.2	8	2012		
15.7	170	0.39	1.4	355.6	0.33	0.65	194.4	0.06	0.75	1250	0.39	355.6	328.1	-7.7	20	2013	3	
58.3	1090	0.26	0.5	191	0.22	0.32	145.6	0.04	0.18	450	0.26	191	139.7	-26.9	1	2013		
1.8	30	0.38	0.6	158.4	0.32	0.51	160.5	0.06	0.09	150	0.38	158.4	186.7	17.8	4	2009		
7.6	170	0.33	0.56	169.3	0.27	0.5	184.7	0.06	0.06	100	0.33	169.3	141.4	-16.5	1	6	2012	2
22.1	300	0.35	0.61	176.9	0.29	0.43	149.1	0.06	0.18	300	0.35	176.9	131.6	-25.6	15	1999	3	
5	160	0.26	0.39	149.7	0.22	0.36	160.8	0.04	0.03	75	0.26	149.7	125.3	-16.3	4	2009	1	
1.6	40	0.28	0.44	157.9	0.24	0.24	99.4	0.04	0.2	500	0.28	157.9	105	-33.5	15	2003		
55.2	670	0.29	0.82	284.2	0.25	0.45	182.6	0.04	0.37	725	0.29	284.2	190.5	-33	20	2007	1	
14	240	0.28	0.49	174.3	0.24	0.24	96.9	0.04	0.25	625	0.28	174.3	117	-32.9	5	2011		
21.2	620	0.27	0.29	110.8	0.23	0.24	107.9	0.04	0.05	125	0.27	110.8	88.7	-20	3	2013	1	
10.1	290	0.26	0.39	151.6	0.22	0.3	140.3	0.04	0.09	225	0.26	151.6	116.6	-23	2	2011		
33	360	0.35	0.94	265.5	0.29	0.39	134.5	0.06	0.55	916.66	0.35	265.5	188	-29.2	18	2012	2	
67	450	0.27	1.05	387.5	0.23	0.54	231.1	0.04	0.51	1275	0.27	387.5	314.4	-18.9	23	2008		
52.4	280	0.31	0.6	196.2	0.27	0.3	114	0.04	0.3	750	0.31	196.2	200.7	2.3	50	12	4	
87.7	820	0.3	0.67	220.5	0.26	0.39	147.9	0.04	0.28	700	0.3	220.5	132.6	-39.9	13	2002		
57.9	490	0.29	0.61	207.2	0.25	0.36	142.4	0.04	0.25	625	0.29	207.2	229.6	10.8	23	20		
35.9	410	0.29	1.28	447.7	0.25	0.48	194.2	0.04	0.8	2000	0.29	447.7	313.6	-29.9	12	2008		
9.9	200	0.35	0.27	76.1	0.29	0.23	80.7	0.06	0.04	66.6	0.35	76.1	102	33.9	19	2008		
1.4	30	0.27	0.45	163.3	0.23	0.29	125.2	0.04	0.16	400	0.27	163.3	133	-18.5	14	2013		
9.9	210	0.34	0.45	131.9	0.28	0.38	135.7	0.06	0.07	116.66	0.34	131.9	113.8	-13.7	10	2003		
25.2	250	0.3	0.83	271.8	0.26	0.36	137.4	0.04	0.47	1175	0.3	271.8	164.2	-39.6	10	2007		
5.6	150	0.33	0.46	139.5	0.27	0.31	114.3	0.06	0.15	250	0.33	139.5	112.3	-19.5	10	2003		
6.3	140	0.33	0.33	99.1	0.27	0.23	83.3	0.06	0.09	150	0.33	99.1	94	-5.2	20	2011		
18.2	480	0.33	0.4	125.5	0.29	0.39	135.9	0.04	0.01	25	0.33	125.5	117.3	-6.5	9	2004		
30.2	370	0.38	0.72	191.4	0.32	0.51	161.7	0.06	0.21	350	0.38	191.4	147.2	-23.1	12	2002		
-2.8	-10	0.39	0.9	232	0.33	0.4	121.5	0.06	0.5	833.33	0.39	232	202.2	-12.8	18	2003	3	
-0.9	-20	0.34	0.46	134.5	0.28	0.39	137.7	0.06	0.07	166.66	0.34	134.5	116.1	-13.7	3	2012	2	
8.1	220	0.27	0.51	189.7	0.23	0.5	220.7	0.04	0.01	25	0.27	189.7	137.8	-27.4	3	2012		
2.8	70	0.33	0.44	132.5	0.27	0.38	139.7	0.06	0.06	100	0.33	132.5	113.9	-14.1	8	2009	2	
10.2	200	0.27	0.52	189.7	0.23	0.36	155.2	0.04	0.16	400	0.27	189.7	122.7	-35.3	5	2012	1	

1.7	50	0.36	0.35	97.8	0.3	0.29	95.9	0.06	0.06	100	0.36	97.8	92.4	-5.6	10	2003	
5.9	110	0.29	0.68	232.1	0.25	0.65	256.8	0.04	0.03	75	0.29	232.1	194.1	-16.4	10	2003	
6.3	80	0.27	0.8	301.9	0.23	0.44	194.1	0.04	0.36	900	0.27	301.9	199.7	-33.9	10	2009	
7.6	200	0.25	0.47	184.7	0.21	0.38	177.4	0.04	0.09	225	0.25	184.7	233.1	26.3	10	2013	
22.5	400	0.35	0.47	135.6	0.29	0.37	129.6	0.06	0.1	166.66	0.35	135.6	110.8	-18.2	19	2001	3
30.3	660	0.33	0.43	131	0.27	0.37	134.9	0.06	0.06	100	0.33	131	102.1	-22.1	4	2012	
0.9	20	0.34	0.58	168.4	0.28	0.55	195.5	0.06	0.03	50	0.34	168.4	144.3	-14.3	2	2012	
31.8	450	0.34	0.69	199.9	0.28	0.3	105.1	0.06	0.39	650	0.34	199.9	130	-35	5	2012	
15.4	220	0.39	0.74	190.5	0.33	0.47	144.1	0.06	0.27	450	0.39	190.5	192.3	0.9	15	2002	3
44.5	740	0.27	0.64	242.1	0.23	0.38	170.1	0.04	0.26	650	0.27	242.11	150.1	-38	3	2011	3
1.5	40	0.27	0.42	154.9	0.23	0.33	144.4	0.04	0.09	225	0.27	154.9	148.9	-3.9	22	2000	
28.2	410	0.28	1.16	417	0.24	0.95	400.6	0.04	0.22	525	0.28	417	239.1	-42.7	5	2013	
3.4	40	0.36	1.02	284.5	0.3	0.77	258.1	0.04	0.25	625	0.36	284.5	227.8	-19.9	8	2013	
11.2	350	0.34	0.55	161.1	0.28	0.51	182.6	0.06	0.04	66.66	0.34	161.1	129.6	-19.6	3	2012	
54.9	440	0.33	0.69	210.1	0.27	0.32	121.3	0.06	0.37	616.66	0.33	210.1	143.1	-31.9	15	2007	
13.8	260	0.37	0.47	127.7	0.31	0.29	93.3	0.06	0.18	300	0.37	127.7	114.4	-10.4	6	2007	4
20.7	280	0.29	0.91	318.9	0.25	0.48	195.5	0.04	0.33	825	0.29	318.9	204.4	-35.9	8	2004	
22.3	330	0.31	0.7	230.1	0.27	0.4	152	0.04	0.3	750	0.31	230.1	168.2	-26.9	15	2003	
16.6	390	0.28	0.83	297.4	0.24	0.54	227.8	0.04	0.29	725	0.28	297.4	219.8	-26.1	8	2009	
23.4	330	0.38	0.58	152.8	0.32	0.44	136.9	0.06	0.14	233.33	0.38	152.8	130.1	-14.8	20	2005	3
46.6	270	0.39	0.93	237.5	0.33	0.38	113.4	0.06	0.55	916.66	0.39	237.5	131.5	-44.6	10	2003	
25.9	450	0.35	1.09	309.1	0.29	0.66	225.7	0.06	0.43	716.66	0.35	309.1	134.8	-56.4	10	2010	
2.3	60	0.28	0.29	104.1	0.24	0.25	106	0.04	0.04	100	0.28	104.1	93.3	-10.4	15	2013	
-0.4	-10	0.36	0.47	131.2	0.3	0.4	132.8	0.06	0.07	116.66	0.36	131.2	105.3	-19.7	4	2013	
33.7	690	0.29	0.63	220.2	0.25	0.32	129.7	0.04	0.31	775	0.29	220.2	68.9	-68.7	25	2008	1
3.7	90	0.28	0.48	169.8	0.24	0.46	189.8	0.04	0.02	50	0.28	169.8	144.6	-14.8	5	2008	
5	120	0.29	0.45	151.2	0.25	0.29	112.7	0.04	0.16	400	0.29	151.2	150.4	-0.5	10	2012	1
42.5	460	0.3	0.56	185.5	0.26	0.25	95.2	0.04	0.31	775	0.3	185.5	125.8	-32.2	27	27	
19	230	0.38	0.9	326.3	0.32	0.62	191.4	0.06	0.28	466.66	0.38	236.8	137.6	-41.8	10	2011	3
9.1	180	0.35	0.46	130.8	0.29	0.34	118.1	0.06	0.12	200	0.35	130.8	126.4	-3.4	5	2009	
13.5	210	0.29	0.66	225.7	0.25	0.39	156.4	0.04	0.27	675	0.29	225.7	188.9	-16.3	20	1998	
2.3	60	0.37	0.26	69.9	0.31	0.23	72.9	0.06	0.03	50	0.37	69.9	89.1	27.5	8	2013	3
34.8	280	0.39	0.76	194.8	0.33	0.38	116.9	0.06	0.48	800	0.39	194.8	179.3	-8	30	25	
15.8	270	0.34	0.85	250.6	0.28	0.65	232.7	0.06	0.2	333.33	0.34	250.6	121.4	-51.6	8	2005	
15.1	230	0.28	0.77	274.6	0.24	0.41	169.9	0.04	0.36	900	0.28	274.6	129.8	-52.7	10	2011	
1.8	30	0.38	0.96	252.9	0.32	0.54	170.6	0.06	0.42	700	0.38	252.9	133.1	-47.4	25	2008	
77.4	710	0.28	0.71	258.4	0.24	0.32	134.6	0.04	0.39	975	0.28	258.4	213.7	-17.3	22	1993	
21.9	240	0.41	1.5	369.6	0.35	0.92	266	0.06	0.58	966.66	0.41	369.6	213.3	-42.3	40	1983	
14.9	390	0.35	0.37	108	0.3	0.26	85.5	0.05	0.11	220	0.35	108	124	14.8	3	2011	
-1.2	-30	0.34	0.55	158.5	0.28	0.44	156.7	0.06	0.11	183.33	0.34	158.5	127.3	-19.7	10	2013	2
26.2	580	0.26	0.51	193.3	0.22	0.3	135.4	0.04	0.21	525	0.26	193.3	135.4	-30	13	2010	
-2.1	-50	0.33	0.33	98.7	0.27	0.32	117.7	0.06	0.01	16.66	0.33	98.7	73.7	-25.3	4	2009	
4	50	0.29	0.88	299.9	0.25	0.5	195.9	0.04	0.38	950	0.29	299.9	146.1	-51.3	5	2013	
15.8	250	0.37	0.62	166.2	0.31	0.41	130.2	0.06	0.21	350	0.37	166.2	135	-18.8	27	1986	
1.4	40	0.28	0.62	223.5	0.24	0.45	188	0.04	0.17	425	0.28	223.5	129.3	-42.1	8	2006	
15.4	200	0.37	1.06	285.7	0.31	0.51	164.9	0.06	0.55	916.66	0.37	285.7	288.1	0.8	15	2012	3
14.3	230	0.39	0.44	112.8	0.33	0.23	67.7	0.06	0.21	350	0.39	112.8	71.5	-36.6	20	1998	
7.8	290	0.26	0.45	171.5	0.22	0.4	180	0.4	0.05	125	0.26	171.5	113.6	-33.7	4	2011	1
0.1	10	0.3	0.37	126.1	0.26	0.32	123	0.04	0.05	125	0.3	126.1	67.3	-46.6	6	2009	
26.4	480	0.27	0.43	161.8	0.23	0.28	120.7	0.04	0.15	375	0.27	161.8	113.5	-29.8	4	2012	
6.5	90	0.38	0.68	178.7	0.32	0.49	152.7	0.06	0.19	316.66	0.38	178.7	144.6	-19.1	30	1988	
52.1	410	0.28	0.56	205	0.23	0.3	127	0.05	0.26	520	0.28	205	150	-26.8	20	1998	
22.3	230	0.4	0.8	199.8	0.34	0.35	103.6	0.06	0.45	750	0.4	199.8	128.4	-35.7	35	1993	
3.3	90	0.27	0.32	119.8	0.23	0.27	117.2	0.04	0.05	125	0.27	119.8	114.7	-4.2	20	2010	
36	590	0.28	0.69	247.1	0.24	0.33	139.9	0.04	0.36	900	0.28	247.1	125.7	-49.2	2	2011	1
30.4	380	0.3	0.89	299.2	0.26	0.48	186.5	0.04	0.41	1025	0.3	299.2	242.8	-18.9	33	1980	
1.1	30	0.27	0.58	218	0.23	0.41	183	0.04	0.17	425	0.27	218	130.7	-40.1	9	2012	
13.4	210	0.33	0.5	151.3	0.27	0.39	143.9	0.05	0.11	220	0.33	151.3	124.5	-17.7	10	2003	
27.3	280	0.4	1.01	253.1	0.34	0.65	192.3	0.06	0.36	600	0.4	253.1	188.2	-25.6	30	1998	
-1.6	-20	0.31	0.68	215.9	0.27	0.4	148.2	0.04	0.28	700	0.31	215.9	205.4	-4.8	10	2013	
2.7	50	0.35	0.41	117.3	0.29	0.24	80.6	0.06	0.17	283.33	0.35	117.3	156	33	4	2012	
19.3	50	0.38	1.13	297.4	0.32	0.6	186.7	0.06	0.53	883.33	0.38	297.4	218.4	-26.6	25	2000	3
56.4	390	0.39	1.07	277.5	0.33	0.58	178.3	0.06	0.49	816.66	0.39	277.5	200.5	-27.7	20	2003	
-0.4	-10	0.34	0.32	96.2	0.28	0.28	102.3	0.06	0.04	66.66	0.34	96.2	90.6	-5.8	5	2012	
-0.4	-10	0.27	0.29	106	0.23	0.25	108.6	0.04	0.04	100	0.27	106	101.6	-4.2	2	2011	
13.3	320	0.25	0.42	164.4	0.21	0.29	136.8	0.04	0.13	325	0.25	164.4	128.4	-21.9	8	2005	
18.5	500	0.26	0.62	236.8	0.22	0.47	214.9	0.04	0.15	375	0.26	236.8	136.2	-425	10	2013	1
14.4	300	0.35	0.63	180.7	0.29	0.53	183.5	0.06	0.1	166.66	0.35	180.7	143.1	-20.8	20	2003	
20	340	0.34	0.61	178.5	0.28	0.38	135.5	0.06	0.23	383.33	0.34	178.5	107	-39.7	8	2005	
3.2	50	0.28	0.82	288.8	0.24	0.47	192.3	0.04	0.35	875	0.28	288.8	289.6	0.3	10	2012	
18.4	70	0.3	0.77	259	0.26	0.49	187.6	0.04	0.28	700	0.3	259	174.6	-32.6	20	2003	
3.6	90	0.28	0.61	215.8	0.24	0.45	183.9	0.04	0.16	400	0.28	215.8	182.1	-15.6	36	2010	
18	310	0.35	1.03	292.2	0.29	0.47	161	0.06	0.56	933.33	0.35	292.2	210.9	-27.8	8	2006	3
8.8	120	0.39	0.69	179.6	0.33	0.38	118.1	0.06	0.31	516.66	0.39	179.6	160.1	-10.9	15	2003	
2	50	0.34	0.31	91	0.28	0.28	97.5	0.06	0.03	50	0.34	91	95.7	5.1	3	2010	3
2.8	90	0.27	0.45	167.8	0.23	0.29	126.2	0.04	0.16	400	0.27	167.8	167.2	-0.4	6	2013	
19.7	350	0.33	0.98	298.7	0.27	0.5	187.8	0.06	0.48	800	0.33	298.7	209.1	-30	8	2006	
23.5	230	0.29	0.59	203.6	0.25	0.39	157.1	0.04	0.2	500	0.29	203.6	337.1	65.6	2000		
19.6	340	0.37	0.99	265.9	0.31	0.67	215.2	0.06	0.32	533.33	0.37	265.9	152	-42.8	7	2011	
8.1	210	0.33	0.42	128.7	0.27	0.3	113.2	0.06	0.12	200	0.33	128.7	96.3	-25.1	5	2013	
5.2	120	0.27	0.43	161.8	0.23	0.34	146.8	0.04	0.09	225	0.27	161.8	118.5	-26.8	6	2009	
25.2	300	0.37	0.88	236.2	0.31	0.57	182.2	0.06	0.31	516.66	0.37	236.2	121.9	-48.4	10	2003	
2.3	50	0.38	0.78	207.2	0.32	0.6	188.7	0.06	0.18	300	0.38	207.2	174.9	-15.6	15	2011	
8.1	50	0.4	0.51	127	0.34	0.37	107.6	0.06	0.14	233.33	0.4	127	120.6	-5	15	2001	
46.8	400	0.38	0.89	233.7	0.32	0.41	128.2	0.06	0.48	800	0.38	233.7	119.5	-48.9	25	2012	3
61.1	980	0.27	0.69	257.4	0.23	0.5	220.8	0.04	0.19	475	0.27	257.4	126.9	-50.7	4	2010	

-0.3	-10	0.26	0.3	115.7	0.22	0.19	88.2	0.04	0.11	275	0.26	115.7	109	-5.9	2	2013
38	440	0.39	1.11	281.9	0.33	0.63	187.9	0.06	0.48	800	0.39	281.9	133.5	-52.6	30	2000
4	100	0.28	0.4	140.1	0.24	0.34	140.2	0.04	0.06	150	0.28	140.1	118.2	-15.6	23	1989
9.3	210	0.33	0.4	120.2	0.27	0.37	134.8	0.06	0.03	50	0.33	120.2	84.3	-29.9	19	2011
26.1	170	0.4	0.64	158.9	0.34	0.46	134.8	0.06	0.18	300	0.4	158.9	133.4	-16.1	16	1980
0.28	0.24	86.5	0.23	0.17	72.2	0.05	0.07	140	0.28	86.5	75.8	-12.4	2	2013		
8.7	240	0.27	0.35	128.7	0.23	0.34	148.7	0.04	0.01	25	0.27	128.7	115.3	-10.4	2	2012
17.5	150	0.3	0.68	230.2	0.26	0.41	158.6	0.04	0.27	675	0.3	230.2	180.3	-21.7	25	2011	1
2.1	70	0.28	0.36	131	0.24	0.35	148.1	0.04	0.01	25	0.28	131	88.6	-32.4	1	2012	
4.4	140	0.33	0.79	236.2	0.27	0.64	223.7	0.06	0.15	250	0.33	236.2	143.1	-39.4	12	2004	
31.7	190	0.34	1.06	307.9	0.28	0.34	118	0.06	0.72	1200	0.34	307.9	182.9	-40.9	10	2012	3
5.4	170	0.34	0.52	149.7	0.28	0.51	179.6	0.06	0.01	16.66	0.34	149.7	109.4	-26.9	6	2012	
6	190	0.34	0.5	145	0.28	0.41	143.8	0.06	0.09	150	0.34	145	96.9	-33.2	2	2011	
7.3	80	0.34	0.7	203.9	0.28	0.36	126.1	0.06	0.34	566.66	0.34	203.9	149.1	-26.9	30	1993	
7.5	190	0.34	0.54	155.6	0.28	0.53	187.5	0.06	0.01	16.66	0.34	155.6	153.4	-1.4	5	2012	1
11.6	270	0.34	0.36	103.8	0.28	0.27	93.9	0.06	0.07	116.66	0.34	103.8	103.3	-0.5	12	2003	
24.3	330	0.36	1.11	285.1	0.3	1.01	192.4	0.06	0.1	166.66	0.36	285.1	243.3	-14.7	20	1993	2
30.2	260	0.4	1.54	385.8	0.34	0.87	257.6	0.06	0.67	1116.66	0.4	388.8	105.3	-72.7	32	2007	
2.4	70	0.26	0.31	119.3	0.22	0.25	112.3	0.04	0.06	150	0.26	119.3	91	-23.7	3	2011	4
11.4	190	0.36	0.62	173	0.3	0.35	118.6	0.06	0.27	450	0.36	173	176.6	2.1	4	2012	
-1.6	-50	0.26	0.33	128.1	0.22	0.29	133	0.04	0.04	100	0.26	128.11	102	-20.3	2	2012	4
23.4	360	0.27	0.72	270.3	0.23	0.43	189.4	0.04	0.29	725	0.27	270.3	241.9	-10.5	23	1990	1
6.1	110	0.29	0.68	232.7	0.25	0.38	152.1	0.04	0.3	750	0.29	232.7	189.7	-18.5	7	2008	4
10.8	200	0.37	0.76	206.2	0.31	0.44	143.7	0.06	0.32	533.33	0.37	206.2	125.8	-39	15	2000	3
3.5	50	0.36	0.64	176.7	0.3	0.42	140.4	0.06	0.22	366.66	0.36	176.4	125.6	-28.9	2	2013	
3	60	0.34	0.63	184.3	0.28	0.53	190.8	0.06	0.1	166.66	0.34	184.3	166.2	-9.8	15	2008	
19.2	210	0.31	0.7	226.9	0.27	0.46	172.9	0.04	0.24	600	0.31	226.9	182.9	-19.4	45	1976	
5.5	120	0.32	0.47	145	0.26	0.41	153.5	0.06	0.06	100	0.32	145	125.8	-13.2	10	2004	
12.5	80	0.3	0.5	167.9	0.26	0.26	102.4	0.04	0.24	600	0.3	167.9	211.6	26.1	20	2008	
7.4	200	0.27	0.64	239.3	0.23	0.46	202.4	0.04	0.18	450	0.27	239.3	137.3	-42.6	10	2003	
28.5	430	0.29	0.73	251.7	0.25	0.49	195	0.04	0.24	600	0.29	251.7	190	-24	7	2011	4
7.6	140	0.36	0.69	190.1	0.3	0.44	146.3	0.06	0.25	416.66	0.36	190.1	115.1	-39.4	6	2013	3
4.4	60	0.38	0.59	154.5	0.32	0.45	138.1	0.06	0.14	233.33	0.38	154.5	173.8	12.5	25	2012	3
12.3	220	0.36	0.37	100.7	0.3	0.26	84.6	0.06	0.11	183.33	0.36	100.7	78.6	-22	3	2010	
25.1	270	0.37	0.62	168.1	0.31	0.43	139.5	0.06	0.19	316.66	0.37	168.1	134.4	-20	18	2003	
5.1	80	0.4	0.6	150.9	0.34	0.47	138.1	0.06	0.13	216.66	0.4	150.9	111.7	-26	10	2012	3
9.6	130	0.37	0.55	148.9	0.31	0.49	158.2	0.06	0.06	100	0.37	148.9	134.4	-9.7	8	2008	
14.3	360	0.34	0.51	149.3	0.28	0.37	131.5	0.06	0.14	233.33	0.34	149.3	101.7	-31.9	18	1998	
0.5	20	0.28	0.33	118.6	0.24	0.31	128.9	0.04	0.02	50	0.28	118.6	119.9	1.1	3	2011	
8.7	260	0.28	0.61	219.7	0.24	0.41	171	0.04	0.2	500	0.28	219.9	129	-41.3	10	2008	
0.3	10	0.36	0.43	119.1	0.3	0.4	132.8	0.06	0.03	50	0.36	119.1	107.9	-9.4	2	2013	
5.4	180	0.26	0.38	146	0.22	0.34	156.5	0.04	0.04	100	0.26	146	109.3	-25.1	3	2011	
18.6	260	0.38	0.46	119.6	0.32	0.33	103.1	0.06	0.13	216.66	0.38	119.6	89.1	-25.5	40	2000	
27.1	360	0.29	0.72	244.4	0.25	0.4	156.1	0.04	0.32	800	0.29	244.4	244.8	0.2	25	2000	
31.2	160	0.29	0.96	334	0.25	0.36	146.6	0.04	0.6	1500	0.29	334	361	8.1	15	2005	
48.2	220	0.4	1.22	300.7	0.34	0.58	167.6	0.06	0.64	1066.66	0.4	300.7	205.9	-31.5	10		
7.8	280	0.27	0.43	159.6	0.23	0.38	164.3	0.04	0.05	125	0.27	159.6	156.3	-2.1	2	2012	1
0.4	0	0.28	0.77	270.2	0.24	0.44	182.3	0.04	0.33	825	0.28	270.2	236	-12.7	20	2009	
-0.6	-20	0.29	0.26	89.8	0.25	0.2	79.9	0.04	0.06	150	0.29	89.8	74.4	-17.1	5	2009	4
1	40	0.18	0.35	193.3	0.22	0.23	107.8	0.04	0.12	300	0.18	193.31	189.1	-2.2	1	2013	
20.2	110	0.37	0.59	157.2	0.31	0.32	103.3	0.06	0.27	450	0.37	157.2	126.5	-19.6	3	2010	
1.7	40	0.27	0.31	114.4	0.23	0.28	121	0.04	0.04	100	0.27	114.4	100.6	-12	10	2006	
5.4	140	0.26	0.46	173.6	0.22	0.29	128.2	0.04	0.17	425	0.26	173.6	127	-26.8	5	2013	1
36.9	640	0.27	0.82	301	0.23	0.59	251.7	0.04	0.23	575	0.27	301	203.7	-32.3	5	2008	
4.4	150	0.26	0.36	137.2	0.22	0.3	133.5	0.04	0.06	150	0.26	137.2	86.8	-36.7	6	2007	
5.5	130	0.28	0.65	231.1	0.24	0.42	172.9	0.04	0.23	575	0.28	231.1	143.9	-37.7	20		
56	660	0.38	0.92	239.7	0.32	0.46	143.3	0.06	0.46	766.66	0.38	239.7	127	-47	33	1987	
3.5	120	0.37	0.45	121.1	0.31	0.36	116.4	0.06	0.09	150	0.37	121.1	78	-35.5	12	2002	
4.6	160	0.33	0.62	185.4	0.27	0.51	185.6	0.06	0.11	183.33	0.33	185.4	142	-23.4	16	2008	
-2.5	70	0.28	0.53	193.5	0.23	0.38	162	0.05	0.15	300	0.28	193.5	142.4	-26.4	12		
9.7	240	0.27	0.42	156.5	0.23	0.35	154.2	0.04	0.07	175	0.27	156.5	145.4	-7.1	10	2004	
2.3	50	0.33	0.43	132.4	0.27	0.41	153.5	0.06	0.02	33.33	0.33	132.4	161.6	22	4	2012	
12	230	0.29	0.55	191.3	0.25	0.43	175.7	0.04	0.12	300	0.29	191.3	132.9	-30.6	12	2013	
14.3	140	0.37	0.8	217.6	0.31	0.53	173.9	0.06	0.27	450	0.37	217.6	243.1	11.7	22	2003	3
4.9	150	0.28	0.4	142.7	0.24	0.34	143.7	0.04	0.06	150	0.28	142.7	99.1	-30.5	8	2013	3
2.5	70	0.28	0.34	123	0.23	0.26	111	0.05	0.08	160	0.28	123	97.4	-20.8	8	2009	
26.6	170	0.39	1.69	438.7	0.33	0.46	141	0.06	1.23	2050	0.39	438.7	249.9	-43	40	1983	
18.3	330	0.28	0.68	244.3	0.24	0.39	166.2	0.04	0.29	725	0.28	244.3	152.2	-37.7	7		
60.9	760	0.26	0.75	288.4	0.22	0.47	213	0.04	0.28	700	0.26	288.4	243.2	-15.7	7	2012	
12.1	140	0.37	0.93	250.6	0.31	0.43	139.3	0.06	0.5	833.33	0.37	25.6	220.4	-12.1	20	2003	
8	190	0.28	0.3	107.2	0.24	0.2	83.7	0.04	0.1	250	0.28	107.2	86.2	-19.6	20	2006	
6.5	170	0.27	0.91	335.9	0.23	0.46	197.2	0.04	0.45	1125	0.27	335.9	295	-12.2	10		
0.1	10	0.26	0.35	133.9	0.22	0.23	101.4	0.04	0.12	300	0.26	133.9	131.5	-1.8	6	1	
7.7	230	0.34	0.4	119.9	0.28	0.3	109.9	0.6	0.1	166.66	0.34	119.9	140.4	17.1	2	2013	
33.4	250	0.36	1.07	301.4	0.3	0.52	176.9	0.06	0.55	916.66	0.36	301.4	213	-29.3	10	2003	2
8.3	63	0.4	1.65	411.4	0.34	0.47	137.4	0.06	1.18	1966.66	0.4	411.4	225.9	-45.1	40	1974	
1.2	40	0.27	0.27	99.5	0.23	0.21	90.6	0.04	0.06	150	0.27	99.5	88.8	-10.8	10	2012	4
8.8	220	0.26	0.52	200.4	0.22	0.43	197.3	0.04	0.09	225	0.26	200.4	250.5	25	4	2010	
4.5	110	0.26	0.41	155.6	0.22	0.37	164.9	0.04	0.04	100	0.26	155.6	179.4	15.3	5	2012	
1.5	50	0.26	0.47	181.4	0.27	0.41	151.1	0.01	0.06	600	0.26	181.4	189.7	4.5	1	6	
2	60	0.27	0.65	244.3	0.23	0.46	204.7	0.04	0.19	475	0.27	244.3	138.2	-43.4	6	2012	
21.1	310	0.3	0.83	281	0.26	0.37	144.4	0.04	0.46	1150	0.3	281	222	-21	30	1993	
4.6	30	0.38	0.61	159.7	0.32	0.25	79	0.06	0.36	600	0.38	159.7	135.8	-14.9	16	2008	

13.2	240	0.37	0.52	140.2	0.31	0.43	140	0.06	0.09	150	0.37	140.2	80.3	-42.7	10	2011	
5	110	0.36	0.38	107	0.3	0.35	118.4	0.06	0.03	50	0.36	107	98	-8.3	4	2011	
21.4	320	0.3	0.6	197.5	0.26	0.35	131	0.04	0.25	625	0.3	197.5	142.1	-28	42	2011	4
19.6	380	0.28	0.32	114.5	0.24	0.22	91.6	0.04	0.1	250	0.28	114.5	91.6	-20	8	2010	
-0.3	0	0.26	0.54	204	0.22	0.37	167.2	0.04	0.17	425	0.26	204	222	8.8	7	2000	4
92.5	880	0.26	0.81	318.6	0.22	0.48	224.9	0.04	0.33	825	0.26	318.6	226	-29.1	20	1995	
3.5	100	0.28	0.27	94.5	0.24	0.23	95.6	0.04	0.04	100	0.28	94.5	98.5	4.2	14	2012	
24.6	440	0.36	0.68	186.5	0.3	0.46	150.7	0.06	0.22	366.66	0.36	186.5	112.8	-39.5	8	2008	
6.2	150	0.29	0.4	140.9	0.25	0.37	147.9	0.04	0.03	75	0.29	140.9	133.6	-5.2	46	2000	
8.6	210	0.28	0.61	218.5	0.24	0.46	191	0.04	0.15	375	0.28	218.5	99.3	-54.6	15	2009	
35	490	0.35	1.63	461.7	0.29	0.86	294.1	0.06	0.77	1283.33	0.35	461.7	184.3	-60.1	10	2008	
1.7	40	0.36	0.66	183.3	0.3	0.57	192.8	0.06	0.09	150	0.36	183.3	156	-14.9	5		
9.1	200	0.28	0.49	173.9	0.24	0.4	169.1	0.04	0.09	225	0.28	173.9	130.6	-24.9	16	2003	
6	140	0.26	0.41	156.7	0.22	0.31	140.3	0.04	0.1	250	0.26	156.7	129.1	-17.6	2	2012	
6.7	110	0.36	0.56	155.1	0.3	0.44	146.2	0.06	0.12	200	0.36	155.1	184.1	18.7	8	2012	
5	140	0.27	0.6	219.4	0.23	0.41	174	0.04	0.19	475	0.27	219.4	143.1	-34.8	6	2012	
5	120	0.33	0.48	145.4	0.27	0.42	154.8	0.06	0.06	100	0.33	145.4	105.6	-27.4	2	2013	
2.3	110	0.26	0.36	135.6	0.22	0.27	119.3	0.04	0.09	225	0.26	135.6	121.9	-10.1	1	6	4
3.4	90	0.34	0.32	95.5	0.28	0.28	99.3	0.06	0.04	66.66	0.34	95.5	104.9	9.7	3		
-3.8	80	0.34	0.51	151.6	0.28	0.32	113.1	0.06	0.19	316.66	0.34	151.6	101.4	-33.1	4	2013	
3.3	30	0.39	0.89	226.7	0.33	0.49	146.2	0.06	0.4	666.66	0.39	226.7	168	-25.9	45	2008	
29.1	790	0.25	0.33	130	0.21	0.26	121.9	0.04	0.07	175	0.25	130	112.2	-13.7	13	2004	
33.8	590	0.34	1.85	547.7	0.28	0.62	222.1	0.06	1.23	2050	0.34	547.7	194.3	-64.5	8		
-1.6	20	0.39	0.89	226	0.33	0.47	139.7	0.06	0.42	700	0.39	226	20	2003			
40	650	0.26	0.62	236.6	0.22	0.41	185.5	0.04	0.21	525	0.26	236.6	179.9	-24	10	2003	
-0.4	-10	0.35	0.38	109.7	0.29	0.31	109.4	0.06	0.07	116.66	0.35	109.7	118.9	8.4	7	2013	3
19.9	140	0.3	1.51	509.8	0.26	0.45	177.9	0.04	1.06	2650	0.3	509.8	400.3	-21.5	10	2008	1
0.4	0	0.44	2.1	475.2	0.38	1.39	365.8	0.06	0.71	1183.33	0.44	475.2	278.2	-41.5	40	1973	
2.5	50	0.35	0.62	173.9	0.29	0.46	157.7	0.06	0.16	266.66	0.35	173.9	159.5	-8.3	2	2013	
11.6	310	0.27	0.35	127.1	0.23	0.27	118.5	0.04	0.08	200	0.27	127.1	92.2	-27.5	8	2005	
-0.9	20	0.27	0.35	129.3	0.23	0.26	114.7	0.04	0.09	225	0.27	127.3	114.8	-11.2	3	2013	
21.2	300	0.29	0.66	226.6	0.25	0.45	178.8	0.04	0.21	525	0.29	226.6	143.5	-36.7	10	2010	
5.4	120	0.28	0.66	237	0.24	0.42	175.9	0.04	0.24	600	0.28	237	160.9	-32.1	10	2003	1
15	230	0.39	0.44	112.1	0.33	0.31	94.2	0.06	0.13	216.66	0.39	112.1	85	-24.2	35	2005	
1.9	70	0.26	0.3	113.9	0.22	0.21	93	0.04	0.09	225	0.26	113.9	64.5	-43.3	4	2011	
29.6	440	0.29	0.66	207.9	0.25	0.3	119.6	0.04	0.3	750	0.29	207.9	234.6	12.8	35	2010	
10.9	270	0.27	0.56	208.6	0.23	0.32	140.4	0.04	0.24	600	0.27	208.6	188.2	-9.8	10		
28.8	320	0.34	0.9	263	0.28	0.48	169.2	0.06	0.42	700	0.34	263	156.4	-40.5	3	2012	
8.3	210	0.26	0.6	232.4	0.22	0.34	153.5	0.04	0.26	650	0.26	232.4	253.4	9.1	2	2012	
10.3	220	0.28	0.97	340.2	0.24	0.63	256.4	0.04	0.34	850	0.28	340.2	276.3	-18.8	10	2013	4
4.2	110	0.34	0.52	152.1	0.28	0.46	166.7	0.06	0.06	100	0.34	152.1	101.7	-33.1	5	2009	3
4.2	80	0.36	0.54	148.7	0.3	0.45	149	0.06	0.09	150	0.36	148.7	137.2	-7.7	5	2013	
10.9	100	0.38	1.13	295.2	0.32	0.67	207.3	0.06	0.46	766.66	0.38	295.2	205.9	-30.2	15	2008	
8.8	260	0.27	0.55	206.4	0.23	0.37	162.1	0.04	0.18	450	0.27	206.4	134.2	-35	11	2002	
2.7	90	0.26	0.38	142.9	0.22	0.32	142.9	0.04	0.06	150	0.26	142.9	109.4	-23.5	6	2012	
10.4	180	0.38	0.64	169.6	0.32	0.43	136.1	0.06	0.21	350	0.38	169.6	135.6	-20.1	20	2013	
2.5	80	0.27	0.58	217.8	0.23	0.45	201.3	0.04	0.13	325	0.27	217.8	127.1	-41.6	2	2013	
4.8	160	0.27	0.35	129.3	0.23	0.27	118.8	0.04	0.08	200	0.27	129.3	130	0.6	9	2011	
33.6	420	0.28	1.77	622.1	0.24	0.52	210.9	0.04	1.25	3125	0.28	622.1	248.5	-60.1	10	2007	
2.6	60	0.29	0.32	108.2	0.25	0.27	109.1	0.04	0.05	125	0.29	108.2	68.2	-36.9	15	2013	4
3.5	10	0.3	1.97	657.1	0.26	0.81	312.3	0.04	1.16	2900	0.3	657.1	380.4	-42.1	32	1987	
11.5	180	0.37	0.99	269.2	0.31	0.69	224.1	0.06	0.3	500	0.37	269.2	228.4	-15.1	20	2013	
7.2	160	0.35	0.41	116.9	0.29	0.3	105.2	0.06	0.11	183.33	0.35	116.9	121.9	4.3	3	2011	
2	30	0.37	0.52	141.4	0.31	0.37	118.1	0.06	0.15	250	0.37	141.4	132.1	-6.6	5		
0.5	10	0.38	0.83	215.2	0.32	0.47	145.2	0.06	0.36	600	0.38	215.2	141.7	-34.1	30		
22.1	160	0.29	0.99	338.3	0.25	0.41	164.1	0.04	0.58	1450	0.29	338.3	237.1	-29.9	4		
7.4	200	0.28	0.53	191.9	0.24	0.44	184.7	0.04	0.09	225	0.28	191.9	177.1	-7.7	2	2012	
18.5	310	0.29	0.37	127.3	0.25	0.28	114.1	0.04	0.09	225	0.29	127.3	116.6	-8.4	10	2005	
26.5	380	0.27	1.15	423.1	0.23	0.39	167.2	0.04	0.76	1900	0.27	423.1	273.9	-35.3	3	2010	
7.1	250	0.26	0.51	119.8	0.22	0.3	139.9	0.04	0.21	525	0.26	199.8	123.2	-38.3	10	2010	
2.6	70	0.28	0.34	122	0.24	0.29	121	0.04	0.05	125	0.28	122	86.6	-29	32		
-0.7	20	0.27	0.61	224	0.23	0.46	200.5	0.04	0.15	375	0.27	224	141.3	-36.9	9	2006	
1.9	60	0.33	0.61	183.5	0.27	0.46	170.6	0.06	0.15	250	0.33	183.5	151.2	-17.6	1		
18.9	470	0.34	0.2	58.7	0.28	0.18	64.9	0.06	0.02	33.33	0.34	58.7	42.6	-27.3	8		
3.1	100	0.27	0.31	114.9	0.23	0.25	105.9	0.04	0.06	150	0.27	114.9	70.5	-38.7	3		
3.5	100	0.27	0.36	133	0.23	0.29	128.8	0.04	0.07	175	0.27	133	115.2	-13.4	8		
29.9	230	0.4	1.52	384.3	0.34	0.79	234	0.06	0.73	1216.66	0.4	384.3	223.9	-41.7	40	1983	
12.7	240	0.3	0.54	180.9	0.26	0.38	147.1	0.04	0.16	400	0.3	180.9	125.3	-30.7	40	2003	
8.3	170	0.3	0.64	211.9	0.26	0.46	177.2	0.04	0.15	450	0.3	211.9	179.2	-15.4	30		
7.3	240	0.26	0.82	311.1	0.22	0.71	321	0.04	0.11	275	0.26	311.1	180.5	-42	8	2009	
9.6	290	0.27	0.41	151.6	0.23	0.33	146.1	0.04	0.08	200	0.27	151.6	115.9	-23.6	2		
6	200	0.25	0.5	194.8	0.21	0.4	185.3	0.04	0.1	250	0.25	194.8	149.5	-23.2	3	2013	
4	110	0.28	0.45	162.2	0.24	0.33	140.6	0.04	0.12	300	0.28	162.2	141	-13.1	2	2013	1
6.5	170	0.33	0.54	162.5	0.27	0.36	135.4	0.06	0.18	300	0.33	162.5	120.4	-25.9	10	2013	
8.5	70	0.35	2.24	640.9	0.29	0.86	299	0.06	1.38	0.35	640.9	13	2007				
10.2	190	0.29	0.75	259.1	0.25	0.4	161	0.04	0.35	875	0.29	259.1	184.3	-28.3	6	2013	4
4.4	80	0.36	1.14	313.5	0.3	0.62	206.3	0.06	0.52	866.66	0.36	313.5	149.9	-52.2	10	2011	
9	150	0.37	0.45	119.7	0.31	0.32	103.6	0.06	0.13	216.66	0.37	119.7	107.8	-9.9	20	2003	
1.9	50	0.26	0.23	86.6	0.22	0.14	64	0.04	0.09	225	0.26	86.6	76.4	-11.8	2	6	2011
7.3	160	0.32	0.66	203.8	0.26	0.3	112.2	0.06	0.36	600	0.32	203.8	132.4	-35	3	2010	
2	70	0.27	0.47	176.7	0.23	0.35	154.7	0.04	0.07	175	0.27	176.7	129.3	-26.8	6		
1.6	30	0.29	0.42	147.5	0.25	0.32	132.1	0.04	0.1	250	0.29	147.5	182.9	24	2	2013	
26.3	390	0.28	1.02	359.1	0.24	0.53	220.5	0.04	0.49	1225	0.28	359.1	183.7	-48.9	2	2011	
0.5	10	0.28	0.93	330.2	0.24	0.58	240	0.04	0.35	875	0.28	330.2	188.1	-43	20	2005	
-1.3	30	0.32	0.54	169.2	0.29	0.4	139.6	0.03	0.14	466.66	0.32	169.2	163.4	-3.4	1	2013	
20.9	260	0.29	0.67	228.5	0.25	0.42	167.5	0.04	0.25	625	0.29	228.5	206.1	-9.8	10	2005	
-0.2	0	0.25	0.35	138.3	0.21	0.24	113.3	0.04	0.11	275	0.25	138.3	117.9	-14.7	12	2012	
42.7	560	0.28	1.09	390	0.24	0.42	176.5	0.04	0.67	1675	0.28	390	270.7	-30.6	5	2013	
21.9	420	0.27	0.59	217.4	0.23	0.4	173.4	0.04	0.19	475	0.27	217.4	213.5	-1.8	8	2009	
-4.2	80	0.34	1.03	301.9	0.28	0.68	242.4	0.06	0.35	583.33	0.34	301.9	193.7	-35.9	5		
0.9	30	0.26	0.34	131.8	0.22	0.27	122.6	0.04	0.07	175	0.26	131.8	120.2	-8.8	3	1	
5.6	90	0.35	0.76	217.7	0.29	0.51	178.2	0.06	0.25	416.66	0.35	217.7	157.6	-27.6	6	2010	
9.9	90	0.28	0.55	195.4	0.24	0.34	140.9	0.04	0.21	525	0.28	195.4	93	-52.4	14		
10.7	240	0.26	0.89	341.2	0.22	0.58	260.5	0.04	0.31	775	0.26	341.2	212.3	-37.8	4		
2.3	60	0.33	0.48	142.6	0.27	0.4	145.8	0.05	0.08	160	0.33	142.6	128.4	-10	1		

14.1	260	0.35	0.64	183.1	0.29	0.43	150.1	0.06	0.21	350	0.35	183.1	134.2	-26.7	2	2011
-4.6	-100	0.29	0.43	145.1	0.25	0.34	134.2	0.04	0.09	225	0.29	145.1	119.7	-17.5	15	2010
17.1	340	0.34	0.51	151.8	0.28	0.42	151.3	0.06	0.09	150	0.34	151.8	103.8	-31.6	1	2012
1.2	30	0.35	0.37	108.2	0.29	0.28	96.4	0.06	0.09	150	0.35	108.2	97	-10.3	5	2013
23.8	340	0.33	1.03	308.6	0.27	0.69	252.3	0.06	0.34	566.66	0.33	308.6	153.4	-50.3	3	2011
-1.9	-30	0.37	0.54	146.7	0.31	0.39	126.1	0.06	0.15	250	0.37	146.7	158.6	8.1	12	
19.8	620	0.26	0.34	129	0.22	0.28	129.5	0.04	0.06	150	0.26	129	93.7	-27.4	3	2011
3.6	70	0.4	0.56	141.3	0.34	0.4	119.3	0.06	0.16	266.66	0.4	141.3	81.1	-42.6	25	2009
5.9	150	0.26	0.36	137.7	0.22	0.27	122.8	0.04	0.09	225	0.26	137.7	116.3	-15.6	7	2007
56.4	320	0.28	0.46	162.8	0.24	0.28	115.5	0.04	0.18	450	0.28	162.8	145.8	-10.4	12	
6.7	90	0.39	0.79	203.7	0.33	0.46	141.5	0.06	0.33	550	0.39	203.7	207.2	1.7	25	2012
-1.2	-30	0.36	0.61	166.8	0.3	0.41	134.9	0.06	0.2	333.33	0.36	166.8	132	-20.9	2000	
1.8	30	0.31	0.61	197.3	0.27	0.41	154.7	0.04	0.2	500	0.31	197.3	193.7	-1.8	56	2002
3.3	80	0.34	0.56	162.8	0.28	0.39	138.7	0.06	0.17	283.33	0.34	162.8	131.1	-19.4	6	2009
21.8	510	0.27	0.36	130	0.23	0.38	160.6	0.4	-0.02	50	0.27	130	77.3	-40.6	9	
22.3	330	0.28	1.14	404.5	0.24	0.47	194.2	0.04	0.67	1675	0.28	404.5	342.8	-15.3	10	
3.9	90	0.29	0.35	121.5	0.25	0.27	107.2	0.04	0.08	200	0.29	121.5	121.9	0.3	25	
21.2	430	0.28	0.55	197.3	0.24	0.36	151.6	0.04	0.19	475	0.28	197.3	151	-23.5	20	2012
0.7	20	0.34	0.6	178.9	0.28	0.53	192.2	0.06	0.07	116.66	0.34	178.9	150.6	-15.8		
7.3	130	0.35	0.7	198.4	0.29	0.57	193.8	0.06	0.13	216.66	0.35	198.4	182.8	-7.9	10	
24.3	400	0.35	0.78	224.4	0.29	0.53	182.9	0.06	0.25	416.66	0.35	224.4	185.8	-17.2	10	2003
29	230	0.28	0.89	324.6	0.23	0.33	141.6	0.05	0.56	1120	0.28	324.6	225	-30.7	10	2010
0	0	0.4	1.82	458.1	0.34	0.68	200.4	0.06	1.14	1900	0.4	458.1	384.3	-16.1	30	2000
16.1	240	0.29	0.56	191.4	0.25	0.43	171.7	0.04	0.13	325	0.29	191.4	127.8	-33.2	20	2007
4	130	0.26	0.32	120.9	0.22	0.29	130.1	0.04	0.03	75	0.26	120.9	133.9	10.8	5	2009
8.3	160	0.33	0.51	151.8	0.27	0.41	148.9	0.06	0.1	166.66	0.33	151.8	116.9	-23	2	2012
6.5	90	0.27	0.34	126.2	0.23	0.3	131.4	0.04	0.04	100	0.27	126.2	100.3	-20.5	15	1998
6.9	110	0.37	0.59	161.1	0.31	0.41	134.1	0.06	0.18	300	0.37	161.1	143.1	-11.1	5	2008
15.1	330	0.26	1.05	403.1	0.22	0.58	260.5	0.04	0.47	1175	0.26	403.1	248.6	-38.3	4	2012
2.1	60	0.28	0.38	139.5	0.23	0.34	143.9	0.05	0.04	80	0.28	139.5	110.8	-20.6	3	
6.5	90	0.37	0.7	188.8	0.31	0.45	144.4	0.06	0.25	416.66	0.37	188.8	195.3	3.4	33	2012
5.1	40	0.36	1.11	309.9	0.3	0.45	151.1	0.06	0.66	1100	0.36	309.9	157.8	-49.1	6	2012
5.4	70	0.35	0.55	155.5	0.29	0.35	122.1	0.06	0.2	333.33	0.35	155.5	126.4	-18.7	15	2012
3.5	90	0.36	0.77	210.9	0.3	0.64	209.5	0.06	0.13	216.66	0.36	210.9	130.8	-38	5	
6.5	200	0.27	0.31	115.8	0.23	0.29	130.6	0.04	0.02	50	0.27	115.8	103.5	-10.6	3	
15.8	450	0.28	0.34	120	0.24	0.25	105.1	0.04	0.09	225	0.28	120	101.9	-15.1	10	2008
18.8	270	0.3	0.45	153	0.26	0.28	108.9	0.04	0.17	425	0.3	153	103.7	-32.2	20	2003
4.1	70	0.36	0.43	119.3	0.3	0.3	100.6	0.06	0.13	216.66	0.36	119.3	121.5	1.8	10	2011
9.7	230	0.27	0.39	143.3	0.23	0.3	131.5	0.04	0.09	225	0.27	143.3	108.5	-24.3	5	2000
7.7	160	0.36	0.47	130.5	0.3	0.32	108.6	0.06	0.15	250	0.36	130.5	127.9	-2	10	2009
10.5	180	0.37	0.68	182.5	0.31	0.5	158.7	0.06	0.18	300	0.37	182.5	149.8	-17.9	20	2008
17.6	450	0.29	0.79	274.2	0.25	0.52	209.1	0.04	0.27	675	0.29	276.2	260.8	-4.9	10	2007
14.8	310	0.28	1.21	436.3	0.24	0.37	155.3	0.04	0.84	2100	0.28	436.3	139.5	-68	10	
40.3	470	0.33	1.87	570.2	0.27	0.72	271.3	0.06	1.15	1916.66	0.33	570.2	268.5	-52.9	8	
15.9	300	0.28	0.88	310.4	0.24	0.63	260	0.04	0.25	625	0.28	310.4	184.5	-40.6	10	
20.3	350	0.29	0.96	331.6	0.25	0.52	207.3	0.04	0.44	1100	0.29	331.6	188.8	-43.1	10	2012	1
22	230	0.34	0.78	232.5	0.28	0.55	200.7	0.06	0.23	383.33	0.34	232.5	183.1	-21.2	2	
6.4	140	0.36	0.68	187.9	0.3	0.53	174.5	0.06	0.15	250	0.36	187.9	150.4	-20	3	
3.9	100	0.29	0.36	124.8	0.25	0.28	112.2	0.04	0.08	200	0.29	124.8	94.6	-24.2	20	2003
7.6	120	0.37	2.21	598.2	0.31	0.7	228	0.06	2.14	0.37	598.2	379.8	-36.5	10	2009	
8.5	190	0.33	0.57	174.4	0.27	0.42	156.9	0.06	0.15	250	0.33	174.4	132.6	-24	10	2011
40.6	530	0.27	0.73	268.3	0.23	0.56	239.4	0.04	0.17	425	0.27	268.3	225	-16.1	10	2005
11.2	290	0.25	0.48	188.4	0.21	0.41	192.1	0.04	0.07	175	0.25	188.4	155.3	-17.5	4	2011
5.8	80	0.34	0.84	249.6	0.28	0.33	115.9	0.06	0.52	866.66	0.34	249.6	156.5	-37.3	10	2002
10.9	280	0.26	0.35	135.1	0.22	0.33	151.9	0.04	0.02	50	0.26	135.1	98.3	-27.3	24	
24.3	580	0.26	0.41	157.5	0.22	0.22	99.3	0.04	0.19	475	0.26	157.5	147.1	-6.6	4	2011
7.7	230	0.26	0.36	136.2	0.22	0.24	108.2	0.04	0.12	300	0.26	136.2	111.2	-18.4	1	6	2013
-2.3	-50	0.35	0.68	193.1	0.29	0.42	145	0.06	0.26	433.33	0.35	193.1	150.5	-22	2	2013
32.8	410	0.38	0.77	204.3	0.32	0.49	156.4	0.06	0.28	466.66	0.38	204.3	126.9	-37.9	1	2013
34.1	270	0.29	1.61	547.7	0.25	0.45	175.2	0.04	1.16	2900	0.29	547.7	273.8	-50	30	1983
-4.2	-20	0.38	0.89	236.9	0.32	0.42	134.5	0.06	0.47	783.33	0.38	236.9	296.2	25	25	1988
-4	-90	0.38	0.45	117.9	0.32	0.39	124.2	0.06	0.06	100	0.38	117.9	106	-10	20	2000
19.6	190	0.41	1.85	445.2	0.35	1.6	452.4	0.06	1.79	2983.33	0.41	445.2	599.3	34.6	45	2009
4.8	90	0.37	0.61	166.1	0.31	0.44	145	0.06	0.17	283.33	0.37	166.1	188.4	13.5	6	2013
3.9	100	0.27	0.5	182.5	0.23	0.44	187.4	0.06	0.06	100	0.27	182.5	132.8	-27.2	2	2012
13.3	230	0.29	0.71	249.9	0.25	0.4	164.5	0.04	0.67	1675	0.29	249.9	208	-16.8	20	1998
-6.1	-140	0.29	0.26	88.4	0.25	0.18	71.7	0.04	0.08	200	0.29	88.4	90	1.7	8	2005
7.7	120	0.37	0.6	163.2	0.31	0.35	114.9	0.06	0.25	416.66	0.37	163.2	135	-17.3	2	2013
3.5	100	0.36	0.4	110.6	0.32	0.31	97.9	0.04	0.09	225	0.36	110.6	99	-10.4	1	2013
0.7	10	0.38	0.49	128.7	0.32	0.33	103.3	0.06	0.16	266.66	0.38	128.7	112.5	-12.6	10	
4.8	60	0.37	0.73	198.4	0.31	0.26	83.3	0.06	0.47	783.33	0.37	198.4	169.2	-14.7	8	2013
4.1	40	0.29	0.68	236.4	0.25	0.4	159.4	0.04	0.28	700	0.29	236.4	357.7	51.3	20	1993
0.4	10	0.35	0.61	174.7	0.29	0.35	122.8	0.06	0.26	433.33	0.35	174.7	94.5	-45.9	5	2000
3.9	90	0.35	0.79	224.9	0.29	0.61	209.9	0.06	0.18	300	0.35	224.9	206.5	-8.2	1	
6	170	0.27	0.42	157.1	0.23	0.23	99.7	0.04	0.19	475	0.27	157.1	96.9	-38.3	4	
11	190	0.3	0.75	251.9	0.26	0.39	151.6	0.04	0.36	900	0.3	251.9	158.7	-37	10	2005
7.9	170	0.26	0.46	176.6	0.22	0.24	106.2	0.04	0.22	550	0.26	176.6	121	-31.5	17	1997
18.5	200	0.39	1.37	350	0.33	0.52	156.1	0.06	0.85	1416.66	0.39	350	292.1	-16.5	10	2005
										6						
3.3	50	0.34	0.48	142.1	0.28	0.37	132.5	0.06	0.11	183.3	0.34	142.1	131	-7.8	1	6	2012
										3		1				
84.8	790	0.31	0.96	312	0.27	0.38	140.7	0.04	0.58	1450	0.31	312	160.8	-48.5	25	1998
12.8	110	0.34	2.28	674.4	0.28	0.73	261.8	0.06	1.55	2583.3	0.34	674.4	560.9	-16.8	16	2003
										3						
1.2	20	0.29	0.75	261.7	0.25	0.34	137.6	0.04	0.41	1025	0.29	261.7	169	-35.4	20	2011
12.9	240	0.35	0.61	172.3	0.29	0.33	113.4	0.06	0.28	466.66	0.35	172.3	168.3	-2.3	15	2003
3	110	0.44	217	0.27	120.6	0.17	0.2	217	203.7	-6.1	1	6	2012			
2.9	60	0.35	0.5	142.3	0.29	0.35	118.9	0.06	0.15	250	0.35	142.3	110.7	-22.3	2	
15.3	310	0.31	0.33	107.2	0.27	0.31	117.2	0.04	0.02	50	0.31	107.2	71.2	-33.6	40	1993
2.4	40	0.38	0.58	151.2	0.32	0.43	134.9	0.06	0.15	250	0.38	151.2	153.6	1.6	25	
3.5	110	0.28	0.29	103.7	0.24	0.24	98.1	0.04	0.05	125	0.28	103.7	93.4	-10	6	2013
3.3	110	0.27	0.49	180.9	0.23	0.33	142.4	0.04	0.16	400	0.27	180.9	111.2	-38.6	5	2013
71.1	390	0.36	1.44	398.9	0.3	0.29	97.7	0.06	1.15	1916.6	0.36	398.9	248.9	-37.6	10	2003
										6						
5.5	80	0.38	0.68	179.3	0.32	0.43	135	0.06	0.25	416.66	0.38	179.3	150.3	-16.2	4	2011
34	260	0.35	1.47	415.9	0.29	0.57	194.5	0.06	0.9	1500	0.35	415.9	297.9	-28.4	25	
2.6	90	0.27	0.35	126.7	0.23	0.3	129.5	0.04	0.05	125	0.27	126.7	102.2	-19.3	5	
12.5	290	0.33	0.37	112.5	0.27	0.31	115.7	0.06	0.06	100	0.33	112.5	102.7	-8.7	10	2002
16.7	410	0.27	0.46	169.8	0.23	0.37	161	0.04	0.09	225	0.27	169.8	107.6	-36.7	3	2013
3.6	90	0.35	0.35	101.4	0.29	0.27	95.4	0.06	0.08	133.33	0.35	101.4	135.6	33.8	4	2012
45.6	320	0.28	1.05	371.1	0.24	0.39	160.5	0.04	0.66	1650	0.28	371.1	305	-17.8	10	2010
18.6	160	0.39	0.75	191.2	0.33	0.23	69.1	0.06	0.52	866.6	0.39	191.2	158.1	-17.3	48	2010	3
										6						
15	210	0.37	0.61	167.2	0.31	0.28	92.4	0.06	0.33	550	0.37	167.2	105.6	-36.8	10	2003
-3	-50	0.39	0.74	191.5	0.33	0.51	157.7	0.06	0.23	383.33	0.39	191.5	107.7	-43.7	25	1993
-1.6	-40	0.35	0.63	182.1	0.29	0.48	167.7	0.06	0.15	250	0.35	182.1	137.1	-24.7	3	2011	3

-0.1	-10	0.34	0.56	162.5	0.28	0.45	158.8	0.06	0.11	183.33	0.34	162.5	159.1	-2.1	4	2000
3.4	70	0.36	0.56	156.7	0.3	0.41	140.1	0.06	0.15	250	0.36	156.7	133	-15.1	6	
4.9	130	0.34	0.62	178.7	0.28	0.47	166.9	0.06	0.15	250	0.34	178.7	158.1	-11.5	10	2000
3.1	120	0.26	0.33	124.9	0.22	0.27	122.6	0.04	0.06	150	0.26	124.9	124.3	-0.5	3	2000
18.1	220	0.35	0.63	176.8	0.29	0.34	115.7	0.06	0.29	483.33	0.35	176.8	165	-6.7	25	1998
15.5	340	0.31	0.54	171.6	0.28	0.38	133	0.03	0.16	533.33	0.31	171.6	134.1	-21.8	2	2013
4.2	60	0.31	0.82	269.5	0.27	0.45	171	0.04	0.37	925	0.31	269.5	263.4	-2.3	30	2000
22.5	180	0.4	1.52	380.2	0.34	0.64	188.8	0.06	0.88	1466.66	0.4	380.2	265.4	-30.2	20	2007
3.7	100	0.27	0.39	145.7	0.23	0.32	137.7	0.04	0.07	175	0.27	145.7	146.6	0.6	10	2008
8.4	230	0.27	0.43	159.4	0.23	0.32	140.6	0.04	0.11	275	0.27	159.4	142.5	-10.6	3	
0.3	20	0.27	0.4	148.1	0.23	0.34	145.7	0.04	0.06	150	0.27	148.1	134.2	-9.4	10	2007
-1.5	-20	0.29	0.5	172.9	0.25	0.34	138.1	0.04	0.16	400	0.29	172.9	106.2	-38.6	15	2003
0.3	10	0.25	0.25	97.3	0.21	0.21	98	0.04	0.04	100	0.25	97.3	96	-1.2	1	
0	0	0.4	1.78	444	0.34	1.47	432.3	0.06	0.31	516.66	0.4	444	756.1	70.3	20	2003
4.9	100	0.36	0.55	152.5	0.3	0.38	128	0.06	0.17	283.33	0.36	152.5	188.8	23.8	3	2010
36.7	240	0.42	0.84	200.6	0.36	0.48	134.2	0.06	0.36	600	0.42	200.6	210.4	4.9	25	1988
0.3	10	0.35	0.59	168.6	0.29	0.49	169.3	0.06	0.1	166.66	0.35	168.6	207.7	23.2	10	2005
20.6	290	0.3	0.66	219.6	0.26	0.49	189.9	0.04	0.17	425	0.3	219.6	143.3	-34.7	15	2001
4.6	120	0.28	0.51	179.3	0.24	0.34	142.2	0.04	0.17	425	0.28	179.3	109.5	-39	20	2010
-4.8	-110	0.44	0.82	185.9	0.36	0.61	169.6	0.08	0.21	262.5	0.44	185.9	116.4	-37.4	4	2009
3.9	90	0.35	0.26	74.5	0.29	0.2	66.7	0.06	0.06	100	0.35	74.5	124.3	66.8	13	2000
3.4	80	0.3	0.25	85.5	0.26	0.18	71.5	0.04	0.07	175	0.3	85.5	94.6	10.7	15	2008
2.6	70	0.27	0.41	155	0.23	0.37	164.1	0.04	0.04	100	0.27	155	126.3	-18.5	10	2013
3.7	60	0.35	0.94	269	0.29	0.58	201	0.06	0.36	600	0.35	269	194.3	-27.8	9	2013
17.7	110	0.33	0.69	209.6	0.27	0.48	176.6	0.06	0.21	350	0.33	209.6	139.9	-33.3	10	2012
12.3	240	0.34	0.52	150.5	0.28	0.38	135.1	0.06	0.14	233.33	0.34	150.5	104.9	-30.3	13	2000
2.2	40	0.34	0.54	158.5	0.28	0.36	128	0.06	0.18	300	0.34	158.5	138.2	-12.8	3	2013
15.7	70	0.28	1.14	402	0.24	0.42	172.8	0.04	0.72	1800	0.28	402	371.8	-7.5	20	1998
27.1	450	0.28	0.49	174.5	0.24	0.33	138.2	0.04	0.16	400	0.28	174.5	160.6	-7.9	10	2011
3.3	100	0.28	0.24	85.8	0.24	0.21	87.1	0.04	0.03	75	0.28	85.8	81.4	-5.1	4	
25.1	330	0.36	1.26	346.9	0.3	0.44	143.6	0.06	0.82	1366.66	0.36	346.9	203.5	-41.3	6	2011
34.7	750	0.27	0.49	177.1	0.23	0.35	149.4	0.04	0.14	350	0.27	177.1	131.8	-25.6	10	
18.4	250	0.28	1.06	372.5	0.24	0.55	226.6	0.04	0.51	1275	0.28	372.5	161.1	-56.7	16	2003
17	180	0.37	0.69	187.4	0.31	0.41	134.4	0.06	0.28	466.66	0.37	187.4	120	-36	10	2008
26.5	530	0.27	0.47	175.2	0.23	0.32	141.5	0.04	0.15	375	0.27	175.2	124.1	-29.2	18	1995
14.3	460	0.26	0.38	147.9	0.22	0.31	139.4	0.04	0.07	175	0.26	147.9	92.7	-37.4	5	2009
20.3	550	0.27	0.43	158.7	0.23	0.25	109.3	0.04	0.18	450	0.27	158.7	127.1	-19.9	3	
5.6	210	0.27	0.32	119	0.23	0.22	95.8	0.04	0.1	250	0.27	119	128.2	7.8	3	
5.1	80	0.37	0.4	107.1	0.31	0.32	104	0.06	0.08	133.33	0.37	107.1	99.4	-7.2	1	
15.7	230	0.34	0.8	231.1	0.28	0.44	154.4	0.06	0.36	600	0.34	231.1	140.2	-39.3	9	
3.2	100	0.28	0.34	121.1	0.24	0.24	98.7	0.04	0.1	250	0.28	121.1	109.6	-9.5	12	
14.5	250	0.36	0.68	186.3	0.3	0.33	109.6	0.06	0.35	583.33	0.36	186.3	111.7	-40.1	20	1998
64.2	410	0.3	0.65	212	0.26	0.31	119.1	0.04	0.34	850	0.3	212	217	2.4	10	
5.9	170	0.27	0.47	172.1	0.23	0.29	126.2	0.04	0.18	450	0.27	172.1	111.2	-35.3	20	
15.4	370	0.26	0.32	120.9	0.22	0.23	102.7	0.04	0.09	225	0.26	120.9	110.6	-8.5	3	2011
-0.7	-10	0.38	0.76	196.4	0.32	0.48	148.9	0.06	0.28	466.66	0.38	196.4	138.9	-29.3	3	
2.9	90	0.29	0.45	154.6	0.27	0.39	142.6	0.02	0.06	300	0.29	154.6	124.3	-19.6	1	
5.4	80	0.28	0.41	146.8	0.24	0.3	127.4	0.04	0.11	275	0.28	146.8	114.2	-22.2	15	2011
44	240	0.26	1.11	430	0.22	0.42	193.8	0.04	0.69	1725	0.26	430	242	-43.7	13	2003
7.5	130	0.33	0.7	208.8	0.27	0.33	121.5	0.06	0.37	616.66	0.33	208.8	201.4	-3.6	5	2013
1.6	30	0.3	0.53	179.3	0.26	0.3	119.2	0.04	0.23	575	0.3	179.3	160.9	-10.3	2005	
14.9	280	0.26	0.64	251.1	0.22	0.51	236.4	0.04	0.13	325	0.26	251.1	132.6	-47.2	3	2012
5.6	150	0.28	0.43	157.3	0.24	0.35	148.4	0.04	0.08	200	0.28	157.3	128.4	-18.3	5	2000
8.6	170	0.36	0.53	146.9	0.3	0.41	136.4	0.06	0.12	200	0.36	146.9	133.5	-9.1	5	
-4.9	-170	0.28	0.31	109.6	0.24	0.27	109.9	0.04	0.04	100	0.28	109.6	99.5	-9.3	3	
0.8	30	0.33	0.49	149.1	0.29	0.42	145.6	0.04	0.07	175	0.33	149.1	131.3	-12	3	
0.4	0	0.35	1.35	382.1	0.29	0.29	97.9	0.06	1.06	1766.66	0.35	382.1	320.1	-16.2	26	1987
5.7	100	0.38	0.5	132.6	0.32	0.24	74.6	0.06	0.26	433.33	0.38	132.6	95.7	-27.8	1	
3.2	80	0.27	0.48	178.6	0.23	0.31	133.5	0.04	0.17	425	0.27	178.6	188.4	5.5	23	2008
2.4	40	0.35	0.8	227.7	0.29	0.33	113.2	0.06	0.47	783.33	0.35	227.7	173.2	-23.9	6	2011
-4.4	-150	0.26	0.45	174.7	0.22	0.24	109.8	0.04	0.21	525	0.26	174.7	177	1.4	2	
19.1	580	0.26	0.41	156	0.22	0.24	108.3	0.04	0.17	425	0.26	156	132.4	-15.1	8	
30.4	250	0.39	1.58	407.4	0.33	0.64	196.4	0.06	0.94	1566.66	0.39	407.4	266.4	-34.6	25	1993
1.3	40	0.28	0.45	161	0.24	0.35	146.2	0.04	0.1	250	0.28	161	138.3	-14.1	15	2011
1.2	40	0.32	0.41	126.1	0.26	0.33	126.2	0.26	0.08	133.33	0.32	126.1	99.4	-21.2	10	2012
-1	-20	0.35	0.41	115.1	0.29	0.27	92.2	0.06	0.14	233.33	0.35	115.1	117.7	2.2	1	
1.4	20	0.26	0.92	357	0.22	0.65	301.8	0.04	0.27	675	0.26	357	249.5	-30.1	20	2000
4	100	0.28	0.46	164.4	0.24	0.38	158.1	0.04	0.08	200	0.28	164.4	152.3	-7.4	27	
3.1	70	0.33	0.49	150.5	0.27	0.36	133.2	0.06	0.13	216.66	0.33	150.5	129.3	-14.1	2	
17.8	320	0.27	0.65	244.5	0.23	0.42	185.2	0.04	0.23	575	0.27	244.5	161.8	-33.8	5	2013
5.5	100	0.35	0.66	189.7	0.29	0.39	138.2	0.06	0.27	450	0.35	189.7	174.1	-8.2	1	
31	450	0.36	0.4	110.9	0.3	0.36	120	0.06	0.04	66.66	0.36	110.9	92.7	-16.4	18	
12.1	310	0.28	0.46	164.7	0.24	0.41	172.5	0.04	0.05	125	0.28	164.7	101.5	-38.4	13	2000
31.3	510	0.36	0.82	231.7	0.3	0.48	163.2	0.06	0.34	566.66	0.36	231.7	158.3	-31.7	6	2008
27.7	540	0.28	0.79	279.6	0.24	0.43	178.7	0.04	0.36	900	0.28	279.6	150.7	-46.1	10	2005
-13.4	-70	0.31	0.58	188.6	0.27	0.22	84	0.04	0.36	900	0.31	188.6	209.5	11.1	30	1995
7.7	120	0.33	0.73	217.6	0.27	0.53	192.3	0.06	0.2	333.33	0.33	217.6	183.3	-15.8	14	2008
10.3	140	0.37	1.16	313.3	0.31	0.77	248.3	0.06	0.39	650	0.37	333.3	206.3	-34.2	13	2000
-1	-10	0.37	0.65	172.8	0.31	0.45	144.2	0.06	0.2	333.33	0.37	172.8	114	-34	12	2010
32.9	300	0.3	1.06	356.3	0.26	0.66	256.6	0.04	0.4	1000	0.3	356.3	332.5	6.7	30	2007
7.4	160	0.27	0.47	174.2	0.23	0.39	168.2	0.04	0.08	200	0.27	174.2	141.6	-18.7	4	2012
7.3	140	0.36	0.61	169	0.3	0.48	157.8	0.06	0.13	216.66	0.36	169	134.6	-20.3	22	2006
19	390	0.3	0.3	101.4	0.26	0.21	82	0.04	0.09	225	0.3	101.4	72.2	-28.8	25	2003
35	680	0.29	0.81	279.7	0.25	0.41	164.5	0.04	0.4	1000	0.29	279.7	117.2	-58.1	20	1998
4.4	110	0.31	0.46	149.2	0.27	0.39	144	0.04	0.07	175	0.31	149.2	97.1	-34.9	20	2006
3.6	70	0.36	0.37	104.9	0.3	0.23	79.5	0.06	0.14	233.33	0.36	104.9	90	-14.2	10	2009
5.7	120	0.37	0.48	128.6	0.31	0.38	122.2	0.06	0.1	166.66	0.37	128.6	107.7	-16.2	3	2011
7.2	230	0.28	0.2	73.7	0.23	0.18	78.4	0.05	0.02	40	0.28	73.7	101	37.1	4	1
8.6	130	0.36	0.67	187.4	0.3	0.58	194.8	0.06	0.09	150	0.36	187.4	145.6	-22.3	3	2010
14.2	190	0.33	0.46	139	0.27	0.29	106.7	0.06	0.17	283.33	0.33	139	122.1	-12.2	1	2012
62.1	670	0.29	0.37	125.7	0.25	0.25	99.7	0.04	0.12	300	0.29	125.7	103.4	-17.7	30	1991
7.4	120	0.39	1.09	280.7	0.33	0.52	158.7	0.06	0.57	950	0.39	280.7	189.1	-32.6	1	2013
5.7	170	0.26	0.32	121.7	0.22	0.29	128.7	0.04	0.03	75	0.26	121.7	104.8	-13.9	7	2013
1.4	20	0.39	0.46	117	0.33	0.41	122.2	0.06	0.05	83.33	0.39	117	133.8	14.3	10	2003
21.1	420	0.32	0.61	189.3	0.26	0.5	189	0.06	0.11	183.33	0.32	189.3	149.9	-20.8	2	
16.2	270	0.28	0.52	185.5	0.24	0.38	160.3	0.04	0.14	350	0.28	185.5	133.5	-28	8	2013
34.4	610	0.35	0.77	221.3	0.29	0.45	155.6	0.06	0.32	533.33	0.35	221.3	118.2	-46.6	2	2012
8.4	180	0.28	0.49	177.3	0.24	0.39	164.4	0.04	0.1	250	0.28	177.3	131.6	-25.8	15	2001
9.6	140	0.39	0.47	120.3	0.33	0.32	98.7	0.06	0.15	250	0.39	120.3	106.6	-11.4	12	2003
3.3	90	0.25	0.6	241.3	0.25	0.45	179.2	0	0.15	0	0.25	241.3	191.4	-20.7	6	2009

7.5	280	0.26	0.72	273.4	0.22	0.37	163.4	0.04	0.35	875	0.26	273.4	142.1	-48	2	2011
11.5	150	0.38	1.05	275.5	0.32	0.52	160.8	0.06	0.53	883.33	0.38	275.5	197.1	-28.5	30	1988
19.5	150	0.28	0.93	330.5	0.24	0.5	204.7	0.04	0.43	1075	0.28	330.5	219	-33.7	20	1993
13.1	210	0.3	0.67	223.6	0.26	0.36	137.7	0.04	0.31	775	0.3	223.6	169.3	-24.3	35	1993
30.7	660	0.2	0.48	242.6	0.23	0.32	141.3	-0.03	0.16	-533.33	0.2	242.6	197.7	-18.5	2	
4.7	80	0.4	0.54	137.5	0.34	0.48	143.3	0.06	0.06	100	0.04	137.5	115.2	-16.2	25	1993
-4.1	-80	0.31	0.33	108.3	0.27	0.3	113.9	0.04	0.03	75	0.31	108.3	105	-3	30	2000
-1.8	-60	0.33	0.36	110.1	0.27	0.33	125.6	0.06	0.03	50	0.33	110.1	92.7	-15.7	5	
12.5	170	0.38	1.22	322.7	0.32	0.77	242.2	0.06	0.45	750	0.38	322.7	171.8	-46.8	10	
18.5	410	0.27	0.57	213.2	0.23	0.33	142.2	0.04	0.24	600	0.27	213.2	185.9	-12.8	10	2009	4
7.9	290	0.26	0.44	166	0.22	0.35	154.1	0.04	0.09	225	0.26	166	143.7	-13.4	3	1
0.7	10	0.36	0.45	121.9	0.3	0.4	133.7	0.06	0.05	83.33	0.36	124.9	183.1	46.6	22	1995
4.5	120	0.34	0.4	118.9	0.28	0.3	108.7	0.06	0.1	166.66	0.34	118.9	85.3	-28.3	2	
4	120	0.28	0.35	127.8	0.24	0.28	120.2	0.04	0.07	175	0.28	127.8	143.8	12.5	15	2000
50.3	550	0.37	1.14	310.8	0.31	0.74	243.1	0.06	0.4	666.66	0.37	310.8	209.5	-32.6	20	2006
6.9	210	0.27	0.26	98.5	0.23	0.19	84.5	0.04	0.07	175	0.27	98.5	88.7	-9.9	2	6	2012
1.8	60	0.26	0.29	113.2	0.22	0.22	99.8	0.04	0.07	175	0.26	113.29	91.8	-18.9	1	6	
15.5	440	0.25	0.63	246.8	0.21	0.42	193.9	0.04	0.21	525	0.25	246.8	138.3	-44	10	2009
7.8	180	0.34	0.41	120.6	0.28	0.28	100.3	0.06	0.13	216.66	0.34	120.6	118.5	-1.7	4	2009
1.9	30	0.35	0.9	254.7	0.29	0.42	144.3	0.06	0.48	800	0.35	254.7	176.7	-30.6	22	
17	210	0.37	1.24	337.9	0.31	0.67	219.3	0.06	0.57	950	0.37	337.9	254.8	-24.6	15	2012
2.2	30	0.36	0.81	221.9	0.3	0.57	187.1	0.06	0.24	400	0.36	221.9	160	-27.9	4	
4.2	140	0.26	0.3	114.9	0.22	0.29	132	0.04	0.01	25	0.26	114.9	89.7	-21.9	7	2011	4
-6.6	-110	0.31	0.4	131.3	0.27	0.3	112.7	0.04	0.1	250	0.31	131.3	180.7	37.6	20	2013
10.5	330	0.26	0.46	176.8	0.22	0.32	144.4	0.04	0.14	350	0.26	176.8	100.1	-43.4	2	2013	4
18.7	260	0.36	0.47	130.1	0.3	0.4	133.4	0.06	0.07	116.66	0.36	130.1	123.4	-5.1	15	2000
0.6	20	0.28	0.24	87.8	0.24	0.23	95.7	0.04	0.01	25	0.28	87.8	84.9	-3.3	20	2013
16.5	500	0.27	0.43	157.1	0.23	0.35	151.7	0.04	0.08	200	0.27	157.1	119.7	-23.8	1	6	2012
1.4	40	0.24	0.3	124.4	0.25	0.27	108	0.24	124.4	105.6	0.24	124.4	105.6	-15.2	5	2008
13.3	290	0.3	0.36	119.3	0.26	0.29	112.6	0.04	0.07	175	0.3	119.3	103.8	-13	20	1996
11.2	210	0.36	0.64	174.9	0.3	0.43	142.7	0.06	0.21	350	0.36	174.9	145.7	-16.7	15	2013	3
-0.1	-10	0.36	0.73	205.1	0.3	0.54	180.8	0.06	0.19	316.66	0.36	205.1	159.5	-22.3	28	1995
19.2	290	0.34	0.73	216.3	0.28	0.51	183.6	0.06	0.22	366.66	0.34	216.3	174.6	-19.3	1	2013
-1.3	-30	0.38	0.79	211.4	0.32	0.49	156.6	0.06	0.3	500	0.38	211.4	193	-8.7	4	2013
30.5	390	0.3	0.6	197.9	0.26	0.34	128.8	0.04	0.26	650	0.3	197.9	88.5	-55.3	25	2010	4
20.5	160	0.36	1.39	385.5	0.3	0.4	132	0.06	0.99	1650	0.36	385.5	275.8	-28.5	6	2013	3
												2					
3.8	60	0.3	0.34	112.8	0.26	0.23	89	0.04	0.11	275	0.3	112.8	102.1	-9.5	8	2005
3.4	70	0.3	0.4	132.1	0.26	0.25	93.5	0.04	0.15	375	0.3	132.1	124.3	-5.9	35	2013
50.4	660	0.31	0.65	211.5	0.27	0.34	126.7	0.04	0.31	775	0.31	211.5	132.5	-37.3	20	2012
4.1	70	0.3	0.62	207.6	0.26	0.4	153	0.04	0.22	550	0.3	207.6	163.8	-21.1	2	2012	4
2.6	60	0.3	0.39	128.4	0.26	0.27	104	0.04	0.12	300	0.3	128.4	116.1	-9.6	3	2011
46.3	540	0.37	1.38	375	0.31	0.53	171.2	0.06	0.85	1416.6	0.37	375	120.1	-68	4	2013
										6						
1	10	0.38	1.02	269.4	0.32	0.67	211	0.06	0.35	583.33	0.38	269.4	201.1	-25.4	10	2012
-0.7	-20	0.28	0.26	95.2	0.23	0.19	81.8	0.05	0.07	140	0.28	95.2	77.9	-18.1	6	2012
0.8	10	0.39	1.17	303.6	0.33	0.59	180.9	0.06	0.58	966.66	0.39	303.6	261.8	-13.8	25	2007
8.9	110	0.39	1.05	270.2	0.33	0.64	194.8	0.06	0.41	683.33	0.39	270.2	237.3	-12.1	10	2010
8.9	110	0.04	1.45	359.7	0.34	0.76	220.7	0.06	0.69	1150	0.4	359.7	229.9	-36.1	20	2012
-2.7	-60	0.35	0.58	165.6	0.29	0.4	139.1	0.06	0.18	300	0.35	165.6	139.2	-15.9	7	2007
-1.5	-30	0.35	0.63	178.9	0.29	0.4	137.7	0.06	0.23	383.33	0.35	178.9	111.5	-37.7	12	2013
4.8	80	0.34	0.76	222.4	0.28	0.55	195.6	0.06	0.21	350	0.34	222.4	109.2	-50.9	5	2010
6.2	150	0.33	0.58	173.8	0.27	0.38	138.4	0.06	0.2	333.33	0.33	173.8	102.3	-41.2	2	
20	210	0.29	0.73	248.9	0.25	0.44	172.6	0.04	0.29	725	0.29	248.9	249	0	10	2005
29.3	350	0.29	0.59	201.1	0.25	0.38	147.7	0.06	0.21	525	0.29	201.1	143.4	-28.7	20	
19.3	430	0.27	0.61	222.2	0.23	0.46	197	0.04	0.15	375	0.27	222.2	185.4	-16.6	15	2009
1.8	80	0.26	0.36	139.2	0.26	0.33	128.1	0	0.03	0	0.26	139.2	140.4	0.9	10	2012
19.3	540	0.26	0.19	72.7	0.22	0.19	85.8	0.04	0	0	0.26	72.7	37.5	-48.4	6	2008
18.8	180	0.3	0.7	229.5	0.26	0.39	149.3	0.04	0.31	775	0.3	229.5	167.5	-27	52	1980
22.5	180	0.4	1.52	380.2	0.34	0.64	188.6	0.06	0.88	1466.6	0.4	380.2	265.4	-30.2	30	2002
										6						
4.9	140	0.27	0.49	179.4	0.23	0.38	163.9	0.04	0.11	275	0.27	179.4	138.5	-22.8	3	2012
0.6	10	0.29	0.38	127.9	0.25	0.33	129.3	0.04	0.05	125	0.29	127.9	139.8	9.3	20	2001
51.1	380	0.28	0.86	303.5	0.24	0.35	144	0.04	0.51	1275	0.28	303.5	164.5	-45.8		
3.6	80	0.34	0.37	109.1	0.28	0.3	109.2	0.06	0.07	116.66	0.34	109.1	106.8	-2.1	4	
6.7	150	0.35	0.34	97.8	0.29	0.21	73.9	0.06	0.13	216.66	0.35	97.8	83.9	-14.2	5	2000
15.8	210	0.38	0.93	246.3	0.32	0.56	178.5	0.06	0.37	616.66	0.38	246.3	168	-31.8	20	2003
28	140	0.41	1.56	379.6	0.35	0.7	198.2	0.06	0.86	1433.3	0.41	379.6	390.5	2.9	30	1998
										3						
101.4	680	0.31	0.77	250.9	0.27	0.4	150.4	0.04	0.37	925	0.31	250.9	137.1	-45.4	40	2003
1.8	40	0.35	0.52	149.1	0.29	0.43	149	0.06	0.09	150	0.35	149.1	99.8	-33.1	7	2010
3.5	100	0.26	0.61	235.4	0.22	0.42	194.2	0.04	0.19	475	0.26	235.4	130.8	-44.4	10	2009
2.1	40	0.29	0.8	275.9	0.25	0.47	188.2	0.04	0.33	825	0.29	275.9	201.4	-27	30	1993
9.4	230	0.34	0.59	172	0.28	0.37	132	0.06	0.22	366.66	0.34	172	106	-38.2	6	
12	250	0.26	0.87	329	0.22	0.41	185	0.04	0.46	1150	0.26	329	210	-36.2	15	
71.6	320	0.39	1.26	323	0.33	0.29	89	0.06	0.97	1616.6	0.39	323	301	-6.7	36	1978
										6						
-1.8	-30	0.34	0.51	150	0.28	0.44	157	0.06	0.07	116.66	0.34	150	157	4.1	1	2012
17.2	80	0.41	0.74	181.9	0.31	0.3	85.9	0.1	0.44	440	0.41	182	274	50.8	25	2007
11.1	240	0.27	0.39	145	0.23	0.27	115.8	0.04	0.12	300	0.27	145.4	115.4	-20.7	10	2007
0.8	20	0.28	0.29	105	0.24	0.25	104	0.04	0.04	100	0.28	105	100	-4.5	10	2012
17.8	380	0.27	1.38	520	0.23	0.6	266	0.04	0.78	1950	0.27	520	168	-66	8	2005
8.8	140	0.38	0.48	128	0.32	0.25	78.9	0.06	0.23	383.33	0.38	128	105	-17.9	15	2001
47.6	390	0.39	0.74	188.9	0.33	0.35	106.9	0.06	0.39	650	0.39	188	135	-28	12	2001
27.9	280	0.37	1.19	319	0.31	0.91	293	0.06	0.28	466.66	0.37	319	218	-31.7	10	2009