

**COMPARING THE RELIABILITY OF BARR BODIES, PALATAL RUGAE  
AND MESIO- DISTAL DIMENSION OF MAXILLARY CANINE &  
CENTRAL INCISORS IN DETERMINATION OF SEX**

**ABSTRACT**

**BACKGROUND:**

One of the main used of forensic odontology is sex determination in cases where traditional methods are not feasible. Although newer advances including genetic studies form a fool proof methodology. Some times odontometric methods are preferred. Amongst these the mesio-distal dimension of certain teeth and rugae characteristics were widely used .Barr body estimation is yet another method commonly used, most effective method of sex determination .

**AIM OF THE STUDY:**

To compare the reliability of sex determination methodologies using Barr bodies, palatal rugae & mesio- distal dimension of maxillary canine & central incisors

**OBJECTIVES OF THE STUDY:**

1. To investigate the mesio distal width of maxillary central incisor and maxillary canine from the master cast obtained from both the sex
2. To investigate the rugae pattern in maxillary master cast in both the sex
3. To investigate the presence of Barr bodies from the buccal smear by exfoliative cytology

## **MATERIALS AND METHODS:**

In this comparative study a sample of 100 individuals (50 males and 50 females) of age group 18-30 yrs were selected from Sree Mookambika Institute of Dental Sciences, Kulasekharam. Maxillary impression and buccal smear were collected from each individual. The rugae were classified using Thomas kotze et al 1983 while the mesio-distal width and rugae length are measured on master cast of the impression obtained using digital vernier calliper. The Barr bodies were analysed using oil immersion light microscope.

## **RESULTS:**

The mesio distal odontometric data showed that maxillary central incisors and maxillary canine showed a significant dimorphism between the sexes. The rugal characteristics proved insignificant in sexual dimorphism. Barr bodies showed a greater significance in both the sexes. On comparing the values with regenerative observational characteristic curve (ROC curve) data Barr bodies have a greater diagnostic accuracy than maxillary central incisor, maxillary canine and the rugae pattern in that order

## **CONCLUSION:**

In our study, we conclude that Barr bodies are more reliable in determination of sex while the rugae are the least reliable. In our study the diagnostic accuracy of the study was done in a small group of individuals. As these values vary in different population and hereditary factors do found to play a role, larger trials in more cosmopolitan population are necessary to confirm these findings

**KEY WORDS:** Sex determination, Central Incisor, Canine, Rugae, Barr Bodies