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## Relationship of arch form with facial form in Kashmiri population

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### Abstract

The aim of this study is to determine the relationship between the facial form and arch form in Kashmiri population, which could be used as a guide in teeth selection. The study was conducted in the Department of Prosthodontics, Government Dental College and Hospital, Srinagar. Eighty subjects in the age group of 20–30 years were involved in the study. Facial form was obtained by using the formulae Facial index =  $(N-Gn / Bi \text{ Zygomatic width}) \times 100$  and is divided into three categories as Euryprosopic, mesoprosopic and leptoprosopic. To determine the arch form, the distance between the intercanine lines to incisal surface of maxillary central incisor was measured. The arch form was divided into three groups as square, ovoid and tapering. It was seen that squarish arch form and ovoid is predominant proportionally in leptoprosopic 69.4% & 30.1% respectively, and tapering in mesoprosopic.

**Keywords:** Kashmiri population, arch form, facial form

### Introduction

Arch form refers to the overall configuration of the dental arch, and this takes into account the symmetry, roundness, elongation and convexity [1]. The size and shape of the dental arches have a considerable effect on diagnosis and treatment planning, space availability, stability of prosthesis and esthetics [1].

Facial form can be classified as leptoprosopic, Euryprosopic and mesoprosopic depending on the facial indices [2].

The aim of this study is to determine the relationship between the facial form and arch form in Kashmiri population, which could be used as a guide in teeth selection.

### Materials and methods

The study was conducted in the Department of Prosthodontics, Government Dental College and Hospital, Srinagar. Eighty subjects in the age group of 20–30 years were involved in the study, and their informed consent was obtained. Inclusion criteria<sup>1</sup> included presence of the full complement of teeth and subjects in the age group of 20–30 years. Exclusion criteria<sup>2</sup> were the presence of craniofacial syndromes, previous dent alveolar surgery, orthodontic treatment and dental anomalies.

To determine the facial form, the bizygomatic width was measured using a digital caliper. The facial length was measured using digital caliper from Nasion to Gnathion (N-Gn). Facial form was then obtained from the formulae [3].

Facial index =  $(N-Gn / Bi \text{ Zygomatic width}) \times 100$

Depending on the value, the facial form is divided into three categories (Banister's classification) as Euryprosopic, mesoprosopic and leptoprosopic [1].

To determine the arch form, the distance between the intercanine line to incisal surface of maxillary central incisor was measured. The arch form was divided into three groups as square, ovoid and tapering [1].

### Results

In the present study, each arch form showed a significant co-relation with facial form with p value less than 0.001 using Pearson Chi Square Test.

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**Table 1:** Table showing percentage of arch forms in different facial forms.

Arch form	Euryproscopic	Mesoproscopic	Leptoproscopic	Total
Squarish	6 (16.6%)	5 (13.8%)	25 (69.4%)	36
Ovoid	5 (19.2%)	13 (50%)	8 (30.1%)	26
Tapering	1 (5.5%)	6 (33.3%)	11 (61%)	18
Total	12	24	44	80

### Discussion

The arch form may be square, ovoid or tapered. The form of the ridge will influence the support of the denture and perhaps tooth selection<sup>[4]</sup>.

In the present study, squarish arch form and ovoid is predominant proportionally in leptoproscopic 69.4% & 30.1% respectively, and tapering in mesoproscopic.

Facial form may be related to masticatory performance and conventional and implant assisted prosthesis. Masticatory performance is comparatively less in leptoproscopic forms or compared to mesoproscopic and Euryproscopic forms.

Facial forms gives an idea about residual ridge height, implant size position and prosthetic teeth selection and arrangement.

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