



## Comparative Study of Facial Index of Rajput Community of Bikaner District of Rajasthan and other communities and races

Rakesh Mani

Department of Anatomy, S.P. Medical College Bikaner (Rajasthan)

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### ABSTRACT

The facial index is length of the face from root of nose to the bottom of the chin, expressed as a percentage of the greatest breadth across the cheek bones. Racial differences are much more marked in relation to face than elsewhere, so it is very useful anthropologically. For this 100 males from Rajput community between the age group of eighteen to thirty-five years were taken and their facial index was calculated.

The result indicated that average facial index in Rajput individuals was 92.91. Mostly they were hyperleptoprosopic and Leptoprosopic. The average facial index of Rajput individuals was not comparable to any other Indian groups studied so far. But it was very close to North European.

**Key Words:** Facial index, Bizygomatic diameter, Hyperleptoprosopic

### 1. INTRODUCTION

Rajasthan has a history which dates back to 2500 BC. The Indus valley civilization had its foundation here in North Rajasthan. The Bhil and the Mina tribes were the earliest dwellers of this area. Around 1400 B.C. The Aryans came to Rajasthan and settled forever in the area. Successful invasion by Afghans, Turks, Persians and Mughals followed. These races also settled here along with the existing original inhabitants, this blending gave martial lineage to the Rajputs. There is no data available regarding Facial index of Rajput community. Their facial index was analysed and was compared with other communities and races. Coon (1939)<sup>1</sup> in his book 'The Races of Europe' described facial index of different races of Europe. According to him facial index in middle Europe was 86 to 90, in north Europe above 90, in Mediterranean Africa 89.2, in India 86 to 90, in Turkey 86.5, in Arabia 85.1 and in Middle East Was 88.9. Bhargava and Sharma (1959)<sup>2</sup> found

mean facial index to be 86.27 in Barelais of Madhya Pradesh. Bhargava and Kher (1969)<sup>3</sup> found mean facial index 88.37 in Bhils of Madhya Pradesh. Basu (1963)<sup>4</sup> carried out Study of facial index in Kayasthas of Bengal and found total facial index 84.29 in Vangara Kayastha, 89.32 in Dakshin Rarhiya Kayastha, 86.53 in Dacca Kayastha and 85.45 in Barisal Kayastha. Joseph (1966)<sup>5</sup> found average facial index 73.4 in Eskimos, 68.5 in Negros, 68.5 in Bretons Gallots, 67.5 in Auvergnats, 66.2 in New Caledonians, 65.9 in Persians, 65.6 in Australians, 62.0 in Tasmanians. Gupta S (1993)<sup>6</sup> found facial index 82.53 in Koch population of Assam. Ghosh and Malik (2007)<sup>7</sup> found facial index of Santhals of West Bengal to be hypereuroprosopic and Europrosopic. Bhasin (2009)<sup>8</sup> found facial index in north India 82.33, in West India 84.52, in East India 86.27, in Central India 87.45 and in South India 86.61.

Ngeow and Staljunid (2009)<sup>9</sup> found facial index 85.5 in Malaysian Indians. Raji et al (2010)<sup>10</sup> found index 99.39 in Nigerian population.

**2. MATERIAL AND METHOD**

One hundred adult males from Rajput Community, between age group of eighteen to thirty five years, were measured to study their facial index. Face Breadth [Bizygomatic Diameter] was taken with the help of Spreading Caliper. Face Height from Nasion to menton was taken with the help of Sliding Caliper.



**Fig 1: Method for measuring face breadth.**



**Fig 2: Method for measuring face height.**

Facial index	Number observed	Facial index	Number observed
82.1 to 83	1	92.1 to 93	14
83.1 to 84	1	93.1 to 94	8
84.1 to 85	2	94.1 to 95	8
85.1 to 86	1	95.1 to 96	7
86.1 to 87	2	96.1 to 97	8
87.1 to 88	4	97.1 to 98	8
88.1 to 89	6	98.1 to 99	4
89.1 to 90	4	99.1 to 100	1
90.1 to 91	8	Above 100	4
91.1 to 92	9		

**Table 1: Incidences of Various facial indices in Rajput individuals**

Total Numbers observed = 100 Minimum facial index= 82.25  
 Maximum facial index = 104.50 Average facial index = 92.91

Facial index classification In Rajput individuals	Facial index	Frequency
Hypereury prosopic	Less than 78.9	Nil
Euryprosopic	79 to 83.9	2%
Mesoprosopic	84 to 87.9	9%
Leptoprosopic	88 to 92.9	41%
Hyperlepto prosopic	93 and above	48%

**Table 2: Facial index classification in Rajput individuals**

S.No	Group	Authorities	Facial Index
1	Bhils of Madhya Pradesh	Bhargava and Kher <sup>3</sup>	88.37
2	Barelas of Madhya Pradesh	Bhargava and Kher <sup>3</sup>	86.27
3	Vangara Kayastha of Bengal	Basu <sup>4</sup>	84.29
4	Koch population of Assam	Gupta SS <sup>6</sup>	82.53
5	Rajput Individuals Bikaner, Rajasthan	Present study	95.86

**Table 3: Comparison of facial index in Different Indian Groups**

S.No	Race /Group	Authors	Facial index
1	Middle European	Coon C.S. <sup>1</sup>	86 to 90
2	North European	Coon C.S. <sup>1</sup>	Above 90
3	Eastern European	Coon C.S. <sup>1</sup>	86 to 90
4	Mediterranean African	Coon C.S. <sup>1</sup>	89.2
5	Turkish	Coon C.S. <sup>1</sup>	86.2
6	Arabians	Coon C.S. <sup>1</sup>	85.1
7	Middle East	Coon C.S. <sup>1</sup>	88.9
8	Eskimos	Joseph Antenor Firmin <sup>5</sup>	73.4
9	Negros	Joseph Antenor Firmin <sup>5</sup>	68.5
10	Bretons Gallots	Joseph Antenor Firmin <sup>5</sup>	68.5
11	Auvergnats	Joseph Antenor Firmin <sup>5</sup>	67.5
12	New Caledonians	Joseph Antenor Firmin <sup>5</sup>	66.2
13	Persians	Joseph Antenor Firmin <sup>5</sup>	65.9
14	Australians	Joseph Antenor Firmin <sup>5</sup>	66.6
15	Tasmanians	Joseph Antenor Firmin <sup>5</sup>	62.0
16	Malaysian Indians	NgeowWC, Staljunid <sup>9</sup>	85.5
17	Nigerian population	RajiJM, GarbaSH, NumanAI, WaziriMA, MainaMB <sup>10</sup>	95.86
18	Rajput Individuals Bikaner, Rajasthan	Present study	92.91

**Table 4: Comparison of facial index in Different Non Indian Groups with Rajput Individuals**

**3. OBSERVATIONS**

In Rajput individuals, facial height varied from 9.9 cm to 12.7, average facial heights as observed was found to be 11.36 cm

The face breadth varied from 10.7 cm to 13.2 cm, average face breadth was found to be 12.17 cm.

The average facial index calculated from height and breadth of face as observed in hundred Rajput individuals, was found to be 92.91. The Minimum facial index was found to be 82.25 and maximum facial index was 104.50

#### 4. RESULTS

Based on the findings of average facial index in Rajput individuals 48% were Hyperleptoprosopic and 41% were leptoprosopic. Although the face length of Rajput individuals is comparable to Dacca Kayastha of Bengal and Barelās of Madhya Pradesh and Average face breadth comparable to Barelās of Madhya Pradesh but when the facial height and breadth are taken for the comparison, The Rajput individuals have relatively longer and broader face. The average facial index of Rajput individuals' is not comparable to any other Indian groups studied so far but it is comparable to north Europeans.

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