

Comparison of mesiodistal tooth crown diameters and arch dimensions between modern Mongolians and Japanese

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Abstrak

The purposes of this study were to establish normative data for mesiodistal tooth crown diameters and arch dimensions in Mongolian adults and to compare them with those of Japanese adults. The study materials comprised dental casts of 100 modern Mongolian and 100 Japanese subjects (50 males, 50 females for each) with Angle Class I normal occlusion. The mean ages were 20 years 8 months for the Mongolian subjects and 20 years 0 months for the Japanese subjects. On the dental casts, the mesiodistal tooth crown diameters (excluding wisdom teeth) and dental arch dimensions were measured. The following arch dimensions were measured: inter-canine lingual, inter-premolar lingual, inter-molar lingual, inter-molar central, coronal arch length, basal arch length, and basal arch width. In the Mongolian samples, significant sex differences were noted, and most of the items were significantly larger in males than in females. Significant differences between the Mongolian and Japanese samples were mainly noted in the premolar and molar regions, rather than in the anterior region, and were significantly smaller in the Mongolian samples. In the Mongolian samples, the molar section widths and basal arch width and length were significantly larger in males and females compared with the Japanese samples. These results suggest that the tooth crown size and arch dimensions in the Mongolian samples differed from those in the Japanese samples, and that establishment of the clinical norm for Mongolian adults might be helpful in formulating treatment plans for Mongolian patients, given that these parameters are the basic tools for diagnosis.