

Dental plaster casts of 93 Maasai and 79 Kikuyu children age 12-15 years were analysed. Four biometric measurements were taken of the maxillary and mandibular casts: intercanine distance (C-C), inter-molar distance (M-M), canine arch circumference (C-C ACirc.), and molar arch circumference (M-M ACirc.). Incisor space (IS) was also measured in the mandibular casts. The mean values of all measurements except (M-M) in the mandibular casts were significantly reduced in the Maasai who had permanent central incisors extracted compared to the non-extracted Maasai and the Kikuyu. The mean incisor space in the Maasai with extractions was 6.3 mm compared to 11.7 mm in the non-extracted Maasai group. The extent of reduction of IS, C-C, C-C ACirc. and M-M ACirc. Following extractions of the incisors may depend on the mesial drift of lateral incisors, jaw growth and soft tissue influence. The position of the tongue and occlusal relationship of the molars may prevent bucco-lingual movements maintaining a constant M-M. There was no significant difference in the mandibular cast dimensions of the non-extracted Maasai and the Kikuyu. Analysis of the maxillary cast dimensions of the Maasai with extraction, non-extracted Maasai and Kikuyu showed no significant differences suggesting that the extraction of mandibular incisors has no effect on maxillary arch dimensions. The variability in growth of the dento-alveolar complex itself may explain why the dental arch dimensions are similar in the Maasai and Kikuyu despite ethnic differences. There was no significant difference between the male and female dental arch dimensions.