

NORMAL MOUTH OPENING IN THE SAUDI POPULATION

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تم قياس أقصى فتحة ممكنة للفم لدى ١١٥٨ مريض سعودي ممن قاموا بزيارة كلية طب الأسنان بجامعة الملك سعود، وتتراوح أعمارهم بين ٥ إلى ٧٠ عاماً. جميع الذين تم فحصهم كان لديهم أسنان طبيعية بالفم. وجد أن فتحة الفم تزداد بزيادة العمر، من الطفولة إلى عمر البلوغ مع نقصان مقدار فتحة الفم تدريجياً إلى سن الشيخوخة. ووجد أن فتحة الفم لدى الرجال أكبر منها عند النساء، وقد كانت هذه النتائج مختلفة عن معظم نتائج الباحثين من دول أخرى.

The maximal mouth openings of 1158 Saudi patients who attended the clinics in the Dental College of King Sand University were measured. The patients, aged between five and seventy years had their natural teeth. There was an increase in mouth opening from childhood to adulthood with reduction in mouth opening capacity in older patients. Men have larger maximal opening generally than women. The results were different from those reported by investigators from other countries.

Introduction

Measurement of the range of mouth opening is a valuable objective method for assessing the function of the masticatory system. A reduced or limited mouth opening may be a sign of disease or disorder of this system. It is also an indication of the difficulty that a clinician may face during treatment procedure. Lastly, the opening is a useful method of assessing the effect of various treatment modalities prescribed for diseases in and around the oral cavity, e.g. congenital disorder, trauma, inflammatory conditions involving the soft tissues, and temporomandibular joint (TMJ) injuries and ankylosis.

The maximal opening of the mouth has been described as the interincisal distance at maximum mouth opening or as the interincisal distance plus the overbite. Landtwin¹ of Zurich stated that

36-38 mm incisal edge distance is regarded as the minimal limit for adults.

Evaluation of the range of mobility of the mandible requires knowledge of the normal range of mouth opening. According to Posselt,² the maximal opening capacity of the normal mouth, between the maxillary and mandibular incisors is between 50–60 mm.

In this study, normal mouth opening was measured in an effort to establish a normal range of mobility. Such a range is an indicator of the function of the masticatory system and the temporomandibular joint in a Saudi population.

Materials and Methods

A total of 1158 Saudi subjects, who were visiting the dental clinic at the College of Dentistry King Saud University, were examined for maximum mouth openings. All subjects had thorough examinations, both extra- and intra-orally. Those with clinical history of TMJ involvement, trauma, infection, or congenital anomalies in the maxillofacial region, were discarded and not included in the study. Subjects were 594 males and 564 females. Their ages varied from 5 to 70 years. They were

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divided into six groups according to age and sex [Fig. 1].

A Boley gauge was used to measure the distance between the incisal edges of upper and lower right central incisors with the mouth fully opened. Such a distance was measured twice for each subject. The mean of the two values was recorded.

Result

Table 1 shows the range of mouth opening and the mean value of maximal opening in relation to sex and age. The mean value and the range of mouth opening for males was 48.19 mm (40.34 - 55.80 mm) and for females, it was 44.05 mm (33.45 - 49.38 mm). The greatest mean mouth opening was recorded in age-group 20 to 30 years for both males and females. It was 55.80 mm in males and 49.05 in females. The lowest mean

mouth opening was recorded in male children 5 to 10 years and measured 40.34 mm. The lowest in females was in age-group 30 to 40 years where 33.45 mm was recorded [Fig. 1].

Discussion

The direct method for measuring the maximal opening of the mouth proved to be more accurate than dividers or Willis Gauge Technique.^{3,4} Ingervall⁴ recorded a value of 52 mm (range 33 - 65 mm), while Agerberg,⁵ using the same technique for measuring the maximal opening, found the mean in men to be 58.6 mm (range 44 - 77 mm) and 53.3 mm (range 42 - 75 mm) in women. A mean value of 48.19 mm (range 40.34 - 55.80 mm) for men and 44.05 mm (range 33.45 - 49.38 mm) for women, was recorded in this study. In other studies, a mouth opening of 40 mm or less

Table 1. The range of mouth opening and the mean value in relation to sex and age.

Age	No. of patients	Males		No. of Patients	Females	
		Range (mm)	Mean (mm)		Range (mm)	Mean (mm)
5-10	111	33.50-53.51	40.34	141	32.4-53.21	43.55
10-20	327	39.40-68.43	48.84	150	35.9 -55.45	49.38
20-30	78	47.23-70.52	55.80	120	39.55-57.5	49.05
30-40	42	40.50-61.24	49.72	84	33.63-57.42	33.45
40-50	27	33.52-48.60	41.15	48	39.80-60.53	46.65
50-70	9	48.22-56.50	53.3	21	37.60-46.65	42.26

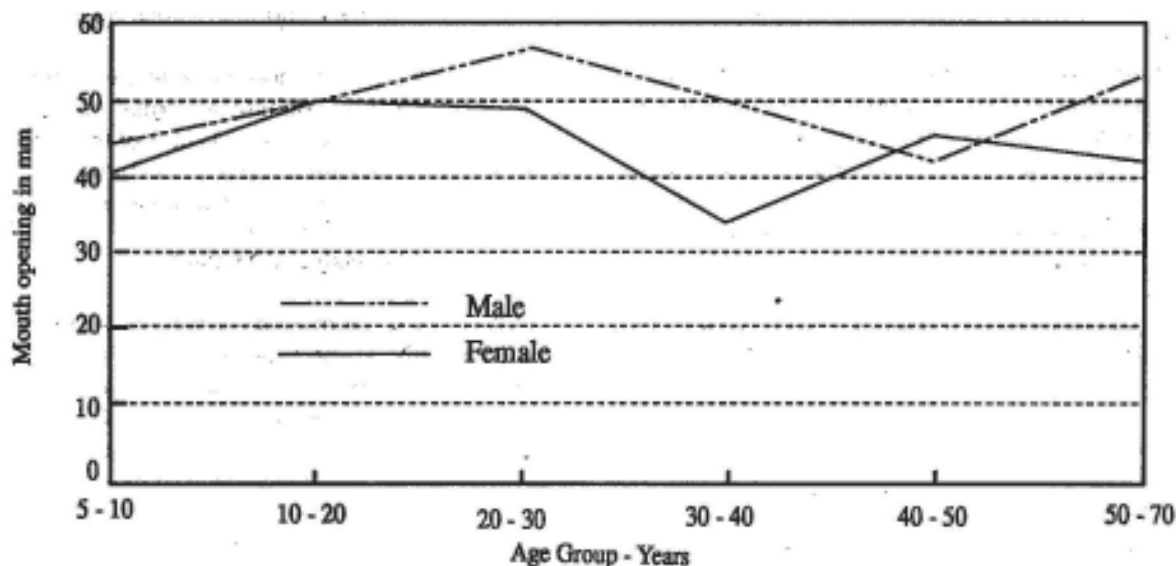


Figure 1. Pattern of maximum opening in relation to age and sex of the patient

was a relatively infrequent finding in the general population.⁶ Race, body weight, and height may be the other factors which influence maximal mouth opening.⁴

Conclusion

1158 Saudi subjects were measured for maximal mouth opening. The mean opening for **men** was 48.19 mm with a peak at the age of 20 to 30 years consistent with other findings, and 44.05 mm for women with a peak at the age of 10 to 30 years. The lowest mean for males was between the ages of 40 and 50 years (41.15 mm), and for females at the age of 30 to 40 years (33.45 mm). It was noted that Saudi subjects in the latter age-groups were obese. This observation has been made by others who reported

a relationship between maximal mouth openings and body weight, height, and other factors.⁴

References

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