

## ASSESSMENT OF NORMAL MOUTH OPENING IN ADULTS

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### ABSTRACT

*The maximum mouth openings of 680 healthy adults from NWFP—Pakistan of 18 to 70 years old, were measured. For men the mean value and range of maximal mouth opening was 51.97mm (36.38 to 61.23mm) and for women mean value was 47.86mm (35.84 to 59.76mm). The results were similar to those reported by international investigators (Carlson, Land Twing, Lysell, Coxse) in other countries.*

### INTRODUCTION

Dental professionals dealing with oral cavity face various difficulties when mouth opening of the patient is restricted. Oral and maxillofacial surgeons often deals with situations that may lead to compromised opening such as tempromandibular joint injuries and ankylosis, mandubular 3rd molar infection (pericoronits) mandibular and midface fracture (fracture of zygoma which impinge the coronoid etc.) arthropathies, myopathies including intra maxillary fixation and various types of tumors.

Although the improtance of the topic is well known to the profession but no research had been done in our country. Very little work has been done on the subject by international investigators. Carlsson and svardstrom<sup>1</sup> examined 299 men and women and found  $44.8 \pm 9.4$  mm maximal maxillomandibular opening for men and  $39.2 \pm 10.8$  mm for women. However, the patient sample included in the study is of the department of stomatognathic physiology University of Gothenburg. Agerberg<sup>2</sup> in 1974 found that the mean maximal vertical opening of mandible in 20 years old healthy men to be 58.6 mm, with range of 44 to 77 mm, and for women of the same age it was 53.3 mm, with a range of 42 to 75 mm. Agerberb<sup>3</sup> in 1974 in another report and Landtwing<sup>4</sup> in 1978 came up with similar results. Lysell<sup>5</sup> in 1984 found the maximal maxillomandibular opening to be 47 mm for men and 45.5 mm for women in 67 year old group. He examined 120 persons in which only 15 have maximal opening

< 40 mm. In 1989 Mezitis and Zachariades<sup>6</sup> examined 1160 healthy Greek adults 18 to 70 years of age and found maximal mouth opening was  $52.85 \pm 4.41$  mm for men and  $48.34 \pm 5.64$  mm for women. Cox and Walker<sup>7</sup> in 1997 first time provided data about the Asian population. They examined 700 healthy napales adults 18 to 68 years of age and found that mean value of intraincisor distance was 47.1 mm.

Maximal mouth opening has been decribed either as the intraincisor distance at maximal mouth opening or as the intraincisor distance plus the overbite<sup>8</sup>. The minimum mouth opening limit for adults accepted by maxillofacial clinic in Zurich 36 to 38 mm<sup>4</sup>.

### MATERIALS AND METHODS

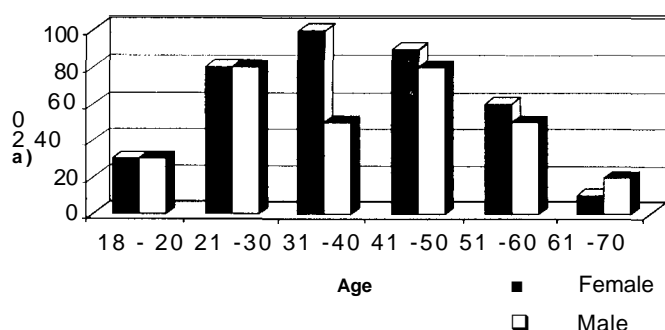
This study was conducted at Khyber College of Dentistry, Peshawar. It is the first study which provides data about normal range of mouth opening of Pakistani adults. We studied the maximal mouth opening in 18 — 70 years old adults of males and females from different parts of NWFP. With no history of trauma and infection of maxillofacial region, all patients had normal functional teeth. 680 persons included in this study, 310 were men and 370 women. The intraincisor distance between the upper and lower left central incisor was measured with the mouth opened completely using pachymeter. The overlapping of lower central incisor was not included (overbite).

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TABLE 1. THE RANGE OF MOUTH OPENING AND THE MEAN VALUE OF MAXIMAL MOUTH OPENING IN RELATION TO AGE AND SEX.

Age (Year)	Men (mm)		Women (mm)	
	Range	Mean	Range	Mean
18-20	50.37-60.35	55.60	39.33-55.26	49.28
21-30	38.70-61.23	53.88	40.26-59.76	50.37
31-40	49.58-52.33	51.64	44.63-52.38	48.67
41-50	46.97-57.48	55.62	35.84-53.24	48.28
51-60	37.62-56.44	46.28	42.62-54.56	48.88
61-70	36.38-57.43	48.82	38.53-51.85	43.70



Fig

1. Number of Cases measured in relation to age and sex

## RESULTS

Fig 1 shows the graphic presentation of number of cases measured in relation to age and sex. The mean value in range of maximal mouth opening is shown table I. For men the mean value and range of maximal mouth opening was 51.97 mm (36.38 to 61.23 mm) and 47.86 mm (35.84 to 59.76 mm) for women.

## DISCUSSION

The maximal mouth opening was measured as a distance between the edge of upper central incisor and edge of the lower central incisor when mouth is completely open. We believe that functional opening is of paramount importance that's why we did not add the overlap (overbite) to the reading. The finding of our study was similar to those reported by the investigator of other counties.

It is said that mouth opening is related to factors such as body height, although no significant relation have been found. In our study we have found that mean maximal opening decreased with age. Further research is needed in other parts of country to have a national data about the subject.

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