



ISSN Print: 2394-7500  
ISSN Online: 2394-5869  
Impact Factor: 5.2  
IJAR 2019; 5(1): 137-138  
[www.allresearchjournal.com](http://www.allresearchjournal.com)  
Received: 22-11-2018  
Accepted: 25-12-2018

**Dr. Mohd Altaf Tantray**  
BDS, MDS, Senior Resident,  
Department of Prosthodontics,  
Government Dental College  
and Hospital, Srinagar,  
Jammu & Kashmir, India

**Dr. Udefer Hameed**  
PG Scholar, Department of  
Prosthodontics, Government  
Dental College and Hospital,  
Srinagar, Jammu & Kashmir,  
India

## A study comparing the phonetic and swallowing methods to determine vertical dimension at rest: A research study

**Dr. Mohd Altaf Tantray and Dr. Udefer Hameed**

### Abstract

The clinicians face problems while recording the vertical dimension at rest. This study was conducted to compare the phonetic and swallowing methods to determine VDR. 10 were dentulous and 10 were edentulous. The mean value of VDR in dentate subjects by phonetic method is 71.7mm with standard deviation of 3.40 while as by swallowing method is 69.3mm with standard deviation of 1.49. The two tailed p-value equals 0.054.

The mean value of VDR in edentulous subjects by phonetic method is 66.6mm with standard deviation of 2.07 while as by swallowing method is 63mm with standard deviation of 1.70. The two tailed p-value equals 0.0005.

The VDR as determined by both methods was similar in dentulous subjects.

In edentulous subjects the difference in the VDR as determined with two methods was statistically significant.

**Keywords:** Phonetics, swallowing, vertical dimension

### Introduction

Dentists and prosthodontists are continually confronted with problems related to the determination of vertical dimension of rest (VDR). The postural position of the mandible when an individual is resting comfortably in an upright position and the associated muscles are in a state of minimal contractual activity (GPT8). The length of face when mandible is in rest position determines the vertical dimension at rest. Several studies have been done to understand and develop a precise method of establishing the VDR. This study was conducted to compare the phonetic and swallowing methods to determine VDR.

### Material

#### Sample size

Twenty subjects were included in the present study; 10 were dentulous and 10 were edentulous.

The dentulous subjects were selected from a random sample of patients attending the department prosthodontics, who were in a group in an age range of 30 to 50 years, with a mean age 45 years. All of the subjects had a normal class I skeletal jaw relation with bilateral posterior tooth support, although in some patients a few teeth were missing.

Edentulous subjects were also selected from a random sample of patients being treated in the Department of Prosthodontics, who were rehabilitated with complete dentures. The edentulous subjects were in an age range of 35 to 70 years of age, with a mean age of 52 years.

### Methodology

Prior to starting the study all of the subjects were informed about the purpose and the procedure of recording the VDR by phonetic and swallowing methods. Each subject sat in a chair in a relaxed, comfortable and upright position with arms resting on their laps to record the VDR.

The vertical dimension at rest is calculated by making facial measurements. The posture of the patient should be as described previously.

### Correspondence

**Dr. Mohd Altaf Tantray**  
BDS, MDS, Senior Resident,  
Department of Prosthodontics,  
Government Dental College  
and Hospital, Srinagar,  
Jammu & Kashmir, India

Two marks are commonly placed, one on the tip of the nose and other on the chin directly below the nose marking. The markings can be made with an indelible marker or pieces of adhesive tape. As the patient assumes rest position, the vertical distance between the two points is measured using a divider or scale.

**Determination of VDR by phonetic method:** The patient is instructed to repeatedly say words that contain the letter 'm'. The lips meet when this is pronounced and the patient is instructed to stop all jaw movements when this happens. Measurement is made between the two points of reference.

**Determination of VDR by swallowing:** The patient is instructed to drop the shoulders, wipe his/her lips with

tongue, swallow and close the mouth. This makes the mandible assume the rest position, which is immediately measured.

### Results

The mean value of VDR in dentate subjects by phonetic method is 71.7mm with standard deviation of 3.40 while as by swallowing method is 69.3mm with standard deviation of 1.49. The two tailed p- value equals 0.054. Table no. 1.

The mean value of VDR in edentulous subjects by phonetic method is 66.6mm with standard deviation of 2.07 while as by swallowing method is 63mm with standard deviation of 1.70. The two tailed p- value equals 0.0005. Table no. 2.

**Table 1:** Dentulous subjects

Subject	VDR by phonetic method (mm)	VDR by swallowing method(mm)
1.	70	69
2.	72	70
3.	74	69
4.	67	70
5.	69	71
6.	75	66
7.	77	68
8.	70	71
9.	68	69
10.	75	70
Mean	71.7	69.3
SD	3.40	1.49

**Table 2:** Edentulous Subjects

Subject	VDR by phonetic method (mm)	VDR by swallowing method(mm)
1.	62	63
2.	66	61
3.	67	60
4.	69	62
5.	65	64
6.	68	62
7.	67	65
8.	69	64
9.	67	64
10.	66	65
MEAN	66.6	63.0
SD	2.07	1.70

### Discussion

The present study was conducted to compare the VDR determined by phonetic and swallowing methods among dentulous and edentulous subjects. The results were subjected to students paired t test to check any statistically significant difference. In the dentate patients, the p- value was found to be 0.054 in dentate subjects while p-value was seen as 0.0005 in edentate subjects.

**Summary and conclusion:** Ten dentulous and 10 edentulous subjects were included in the study. The VDR was determined by conventional methods using phonetic and swallowing methods.

The VDR as determined by both methods was similar in dentulous subjects.

In edentulous subjects the difference in the VDR as determined with two methods was statistically significant.

### References

1. Shpuntoff H, Shpuntoff W. A study of physiologic rest position and centric position on electromyography. J Prosthet Dent. 1956;6:621-8.

- Manns A, Miralles R, Guerrero F. The changes in electrical activity of the postural muscles of the mandible upon varying the vertical dimension. J Prosthet Dent. 1981;45:438-45.
- Garnick J, Ramfjord SP. Rest position-An electromyography and clinical investigation. J Prosthet Dent. 1962;12:895-911.
- Turrell AJW. Clinical assessment of vertical dimension. J Prosthet Dent. 1972;28:238-46.
- Kleinman AM, Sheppard IM. Mandibular rest levels with and without dentures in place in edentulous and complete denture wearing subjects. J Prosthet Dent. 1972;28:478-84.
- Weisberg GA, Epker BN, Elliott AC. Comparison of mandibular rest positions induced by phonetics, transcutaneous electrical stimulation, and masticatory electromyography. J Prosthet Dent. 1983;49:100-S.