

# *Evaluation of Divine Proportion Ratio as a Method for Registration of Rest Vertical Dimension Using Statistical Analysis in Completely Edentulous Patients*

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## **ABSTRACT**

**Aim:** This study aimed to present a reliable way to determine the arbitrary relation using the **divine proportion method**. The study relied on statistical analysis between different conventional ways to put the patient at rest versus the use of divine proportion method.

**Methods:** One hundred completely edentulous patients were selected to determine the correct rest vertical dimension using the divine proportion method versus three other conventional methods which are the lip moisten and the relax, swallowing and phonetics through the letter (M).

**Results:** There was marked statistical significant difference between the recorded rest vertical dimension between the divine proportion method and the other three conventional methods while on comparing the conventional methods to each other the results showed no statistical significant difference.

**Conclusion:** The results of this study suggested the use of more than one method for determination of rest vertical dimension to assure proper measurement.

Since the divine proportion method depends on fixed and unchanged anatomical landmarks occupying the middle third of the face, it should be the method of choice for measuring the rest vertical dimension.

## **KEYWORDS**

Mandibular rest position, Vertical and horizontal jaw relation, Edentulous patient, Divine proportion, Vertical dimension of speech.

## **INTRODUCTION**

The recording of jaw relations in the treatment of edentulous patients aims at facilitating the adaptation of the complete dentures to the masticatory system to give an optimal and comfortable function. To achieve this goal, the recording must include an appropriate vertical dimension of occlusion and stable occlusal contacts in harmony with the TMJ, masticatory muscle functions and finally with the relationship between the prosthesis and the oral and the facial musculature.<sup>1,2</sup>

Innumerable patients can not wear complete dentures then have continual difficulty in using them, principally because accurate vertical dimension of the natural dentition was not reproduced in complete dentures. Vertical dimension is in reality the most fundamental consideration in treatment planning. It is related, to the masticatory, respiratory and deglutitive function.<sup>3,4</sup>

Occasionally a patient with complete dentures will display an obviously reduced vertical dimension of occlusion. When faced with the challenge of making new

dentures in this situation, it is desirable for the dentist to reestablish the patient's optimum vertical dimension of occlusion.<sup>5</sup> As if the vertical dimension was too great the patient will complain of soreness of the residual ridges, tightness of the facial muscles and clicking of the dentures during speech, also it induces an increased rate of resorption of the remaining alveolar bone.<sup>4,6,7</sup>

The necessity of a correct vertical dimension for the health of the temporomandibular joint is considered as basic knowledge. The profession still remembers "Costen's syndrome" and ear and facial pains caused by closed vertical dimensions.<sup>8</sup>

Facial height, or vertical dimension, consists of two components: **(1)** the more objective VDO, which is the shortest measure of facial height involving centric occlusion contacts; and **(2)** a more subjective measure of facial height termed rest position without tooth contact.<sup>9</sup> Neuromuscular posturing of the mandible establishes this slightly greater measure of facial proportion.