Abstracts

Digital dental tape- magical tape

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Introduction: Vertical dimension of occlusion (VDO) has been defined by glossary of prosthodontic terms as the distance between two selected anatomic or marked points (usually one on the tip of the nose and the other on the chin) when in maximal intercuspal position. Inaccurate vertical dimension recording can result in an array of problems. It can cause a multitude of adverse effects in aesthetics, temporomandibular joints, functional efficiency, and masticatory muscles disorders and affect the facial expression of the individual. The various methods to determine the vertical dimension can be broadly classified as Pre and Post extraction methods. However, none of them have been able to give an accurate real time measurement of vertical dimension without any error. Hence there was a requirement to fabricate an instrument that can provide a real time value of the distance between two points on the face without any error. This presentation describes a simple tool that has been made for recording a patient’s accurate vertical dimension in a digital fashion.

Methodology: Field of invention: The present invention is related to the fabrication of a dental instrument, and more particularly a tool for recording a patient’s accurate vertical dimension in a digital fashion. Description of the Sensor: A small sensor is to be fabricated which can be placed in two immovable parts of the face. The patient is asked to relax by saying m syllables. The values are automatically recorded through the Bluetooth on any android phone. This value can be re recorded and saved for further reference. Principle of working: UV source & detector- Transmits the signal and the signal is reflected back by the obstruction. The reflected echo signal is picked up by the detecting circuit. The electronic circuit amplifies the signal and sends it to the microcontroller. The electronic circuit is a part of the sensor/detector circuit. The microcontroller is programmed to convert the time to distance and displays the distance measured in cms. Arduino board is used for developing the proposed device. The distance is displayed only when the dentist activates the switch, once he is sure the patient is in right position. The minimum distance measured with the device is 3 cms. The normal distance is around 6-7 cms.

Result: This instrument has been used on patients a pilot study was conducted. The study reveals 100 percent accurate due to absence of human error. We are making a sensor, which can automatically record the vertical dimension in real time without any distortion or any doctors assistance, making it an accurate and flawless reading. This device is sent for patent Under Indian patent office.

Conclusion: The digital dental tape will definitely come up as a magical tape for getting real time distance and values. The plethora of uses will be 100 percent accuracy with little technique sensitiveness and increased patient comfort and acceptance.

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