

TIPS FROM OUR READERS

A procedure for directly measuring the physiologic rest position and occlusal vertical dimension



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The Glossary of Prosthodontic Terms defines the physiologic rest position (PRP) as “the mandibular position assumed when the head is in an upright position and the involved muscles, particularly the elevator and depressor groups, are in equilibrium in tonic contraction, and the condyles are in a neutral, unstrained position”¹; the rest vertical dimension (RVD) as “the distance between two selected points (one of which is on the middle of the face or nose and the other of which is on the lower face or chin) measured when the mandible is in the physiologic rest position”¹; the occlusal vertical dimension (OVD) as “the distance measured between two points when the occluding members are in contact”¹; and the interocclusal distance as “the distance between the occluding surfaces of the maxillary and mandibular teeth when the mandible is in a specified position.”¹ PRP may be helpful in determining OVD in prosthetic dentistry. The relationship generally used states that RVD minus interocclusal distance equals OVD.² Various methods of measuring PRP have been suggested, including calipers (or a ruler) to measure soft tissue markings,^{3,4} photographs,⁵ cephalometric radiographs,^{6,7} and electronic equipment.⁸ Others have used a special device for this purpose.⁹⁻¹¹ One of the methods used to measure PRP consists of measuring the distance between 2 points, one on the tip of the nose and the other on the tip of the chin while the patient is at rest. These measurements are not considered accurate as they are made on mobile tissues.¹¹ To mitigate this disadvantage, a procedure for directly indicating the PRP and the OVD with a straightforward recording device is described.

The vertical dimension recorder (Fig. 1) consists of a rectangular plate with a central hollow cylinder, a rod, a short hollow cylinder supplied with a hook, a light plastic

20-cm ruler with a hole in its upper end, and a square plate with an adjustable 5-cm round-tipped needle pointer.

The device was fabricated from plastic toy pieces 10 years ago at negligible cost and had not been marketed. It has been used by several clinicians (including the author, in private practice, and at a dental school) on more than 80 patients, all 70 years of age or older, with

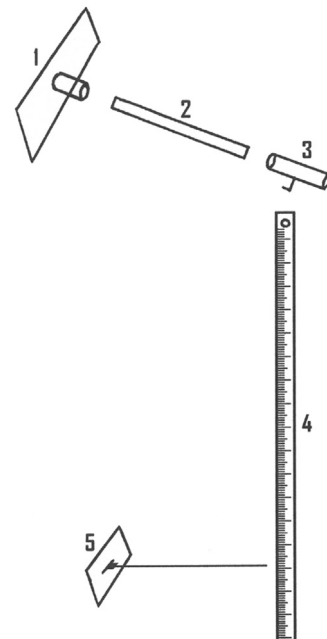


Figure 1. Vertical dimension recorder. Rectangular plate (1) with central hollow cylinder. Rod (2). Short hollow cylinder (3) with hook. Light plastic 20-cm ruler (4) with hole in its upper end. Square plate with adjustable needle pointer (5).

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Figure 2. Measuring rest vertical dimension directly.

partial or complete edentulism. The device weighs approximately 7 g. This device makes measuring PRP and OVD convenient, accurate, and practical and is easily mastered. It cannot however, be used with individuals with beards.

PROCEDURE

1. Insert the rod (Fig. 1, part 2) into the cylinder of the rectangular plate (Fig. 1, part 1).
2. Insert the short hollow cylinder with the hook (Fig. 1, part 3) into the rod (Fig. 1, part 2).
3. Cover whole surface of the rectangular plate (Fig. 1, part 1) with double-sided foam adhesive tape (Mounting tape 24mm×5m; Fantastick).
4. Wipe the patient's forehead gently with alcohol (recommended for oily skin or presence of perspiration).
5. Fix the ruler (Fig. 1, part 4) on the hook (Fig. 1, part 3).
6. Attach the rectangular plate to the forehead with the double-sided foam adhesive tape in such

a way that the ruler hangs in the midline of the face.

7. Cover the whole surface of the square plate with double-sided foam adhesive tape.
8. Wipe the patient's chin gently with alcohol.
9. Attach the square plate to the chin with the double-sided foam adhesive tape.
10. Orient the pointer manually to remain perpendicular to the ruler.
11. Position head of the patient so that the Frankfort horizontal plane is parallel to the floor.
12. Read directly from the ruler when the patient is in RVD or in OVD (Fig. 2).

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