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Practice Forum

A dowel exercise tool to improve finger range of motion

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ABSTRACT

A new clinical and home dowel exercise tool to reduce joint stiffness of the fingers is introduced, along with the fabrication and the exercises that are used with it. Patients may utilize it to improve their finger joint range of motion, and facilitate tendon glide by isolating the targeted stiff joints of the fingers.

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Utilizing various fisting postures assists patients with regaining finger joint range of motion and tendon gliding. This therapist shares a device he created to assist patients with these common exercises.

– Victoria Priganc, PhD, OTR, CHT, CLT, Practice Forum Editor

Introduction

Stiffness of the hand and fingers often results from traumatized tissue. Periods of immobilization can lead to swelling and decreased tissue elasticity contributing to limited range of motion.¹

Pegboards and blocking-exercise orthoses have been commonly used to reduce finger stiffness. Although pegboards may be a good clinical tool, they are often difficult for patients to replicate at home. Blocking exercise orthoses are challenging to use when multiple joints of the fingers are involved, are not formed to fit various hand sizes, and are not interchangeable for the right and left hand.

This dowel exercise tool can be created for home use to offer greater opportunity to properly isolate joints and regain motion of the fingers. This device can be used globally for patients with hands of all sizes and utilized for either hand to provide blocking and reverse blocking of the distal interphalangeal (DIP), proximal interphalangeal (PIP) and metacarpophalangeal (MP) joints.

Materials

1. Size 16 rubber band (×1)
2. Pencil (×1)

3. 3/4" adhesive vinyl pads (×4) (Fig. 1)
4. 1/8" rigid thermoplastic material 17 (H) × 22 (W) cm
5. Measured pattern (Fig. 2).

Fabrication

1. Score the pre-measured pattern onto the thermoplastic material.
2. Cut out pattern from heated material.
3. Fabricate the three dowel portions from the heated material using a pencil. Rounded portion of the dowel should be on the

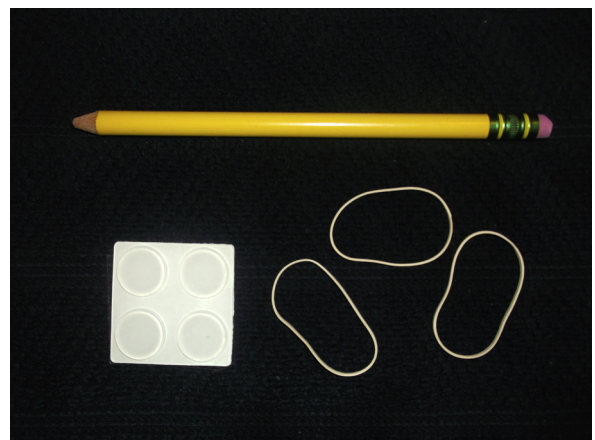


Fig. 1. Materials required.

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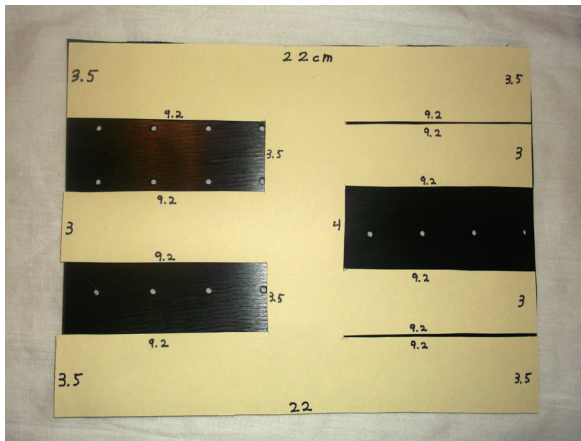


Fig. 2. Pattern on thermoplastic.

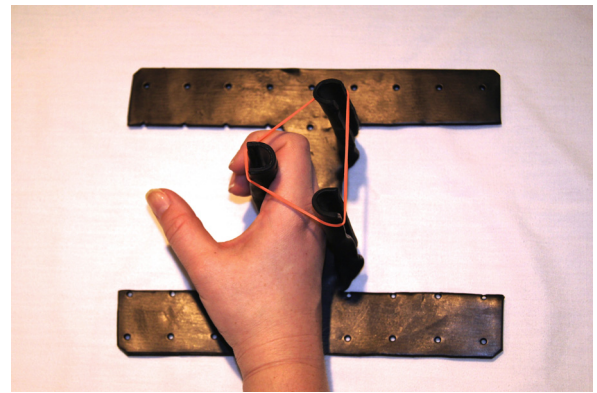


Fig. 5. Hook fist.

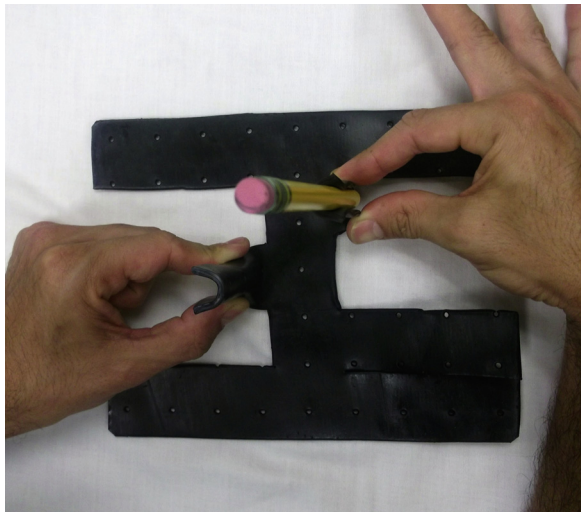


Fig. 3. Fabrication of dowels.

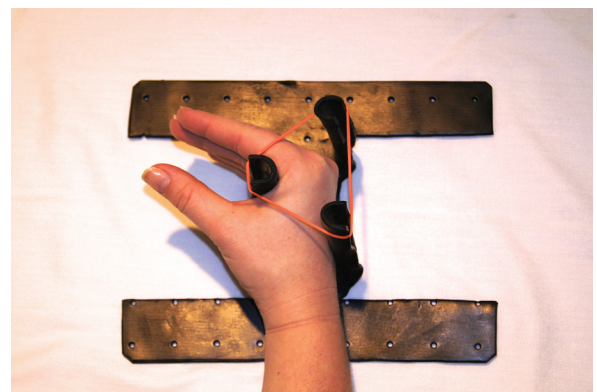


Fig. 6. Intrinsic plus.

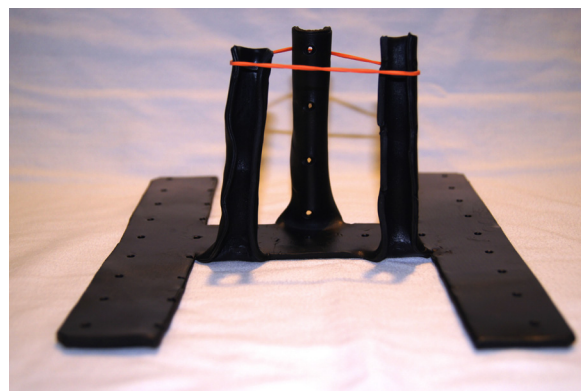


Fig. 4. Final product.

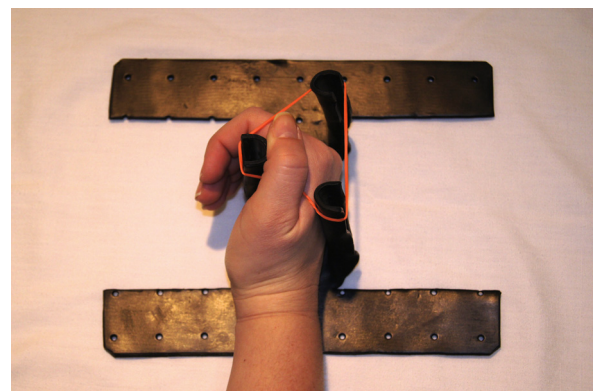


Fig. 7. Straight fist.

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