

Developing Dental Hand Skills

By Dr. Van Haywood



How can you help a young college or high school student determine if they have the skills and experiences needed for the profession of dentistry? If they are feeling the call to dentistry, they may need to evaluate or develop their hand skills by having some experiences that use fine motor skills and problem solving. In addition to shadowing or working in a dental office, there may be some “at home” experiences they can do to improve or develop those hand skills.

Here are some “non-dental” ideas about evaluating and developing hand skills, and experiencing some of the

fine motor skills necessary to become a competent dentist while remaining in an “at home” location:

- 1. Obtain a paint-by-numbers activity at a craft store.** Practice staying within the lines and using small paint brushes. This exercise helps develop attention to detail, patience and perseverance, as well as fine motor skills. It also uses fluid materials that resemble sealants and flowable composites, die spacer and bonding agents.
- 2. Obtain a power drill used to work on wood.** Using a small drill bit the size of a toothpick, drill five holes about one inch deep in a straight line that are perfectly vertical into a piece of wood (2”X 4” lumber). Put toothpicks

in the holes to see the accuracy of the vertical axis. Do they line up from all angles, and are they perpendicular to the flat side of the wood? This exercise helps with the concept of “path of draw” for crown preparations and operative procedures, as well as placement of pins and use of endodontic burs like gates gladdens for post space.

- 3. Crack a dozen eggs without breaking the yolk.** This exercise helps develop the “hard-soft” touch needed when working on teeth with surrounding soft tissue. Developing “touch” helps avoid being “heavy-handed” in injections and impressions. This is the “firm but gentle” approach needed with patients that requires experience to develop confidence.

4. Use an “adult” coloring book.

Using either crayons or colored pencils, determine accuracy of staying within the lines on fine detail. This exercise is different from painting, as this employs more controlled pressure, similar to using a handpiece and finishing a composite and performing esthetic recontouring on teeth. Crayons are different from colored pencils, and both develop different hand skills and touch.

5. Cook cupcakes from a recipe that uses flour, water, and eggs—and use hand mixing.

Use an oven with a temperature and time control to make the cupcakes. When successful with cupcakes, consider making a full cake and spreading icing over a larger area. Mixing ingredients for cooking resembles mixing alginate, and allows experience in the incorporation of water with a powder. Spreading icing is similar to loading crowns or veneers with cement, or placing direct composite restorations, pouring stone casts in alginate impressions, and wiping alginate on the surfaces of teeth to avoid bubbles.

6. Take a flat board about 16 to 20 inches long and two inches wide.

Use progressively finer grits of sandpaper to make it smoother and smoother in this step-wise fashion: Sand the entire board with coarse sandpaper; then leaving the first four inches unchanged, sand the remaining portion of the board with medium sandpaper until uniform. Then leaving the first eight inches untouched (the coarse part and a medium part), sand the remaining board with fine sandpaper. Continue this until all options of sandpaper have been used. Practice seeing and feeling the board to identify coarse, medium, fine, extra fine textures. This exercise helps develop both the visual and tactile touch to determine a polished composite, ceramic or acrylic restorations.

7. Try to carve something with a knife.

That could be a wood dowel about three inches long and one inch thick, or find the old dental exam where applicants carved a piece of chalk to specific dimensions (available at <http://www.lsusd.lsuhs.edu/Video/DDSchalk.html>). This exercise both helps develop hand skills as well as conceptual skills needed for waxing, direct composite and amalgam restorations, and recontouring teeth or ceramic restorations.

8. Build a wooden project like a bird house that uses a hammer and nails, glue and make sure to saw with a hand saw.

This exercise helps prepare for laboratory work such as creating working casts where you are cementing dowel pins, sawing and trimming dies, or making Essix appliances and immediate dentures where the teeth to be extracted are removed from the cast prior to the fabrication of the appliance. The use of a power saw can also be beneficial to help with understanding model trimmers, and the space allowed for the blade. Building helps with angles, instructions, materials and smoothness of margins.

9. Paint something with clear shellac.

Then when dry, re-paint and learn how to look at the reflection of the wet vs. dry by bouncing light to know where to place the second coat of paint. Learning to look at different angles for gloss helps with polishing dentures, composites and ceramics, as well as smoothing wax or provisional restorations.

10. Practice writing your name or looking around a corner in a mirror.

Place a book or board between you and the paper. Use a large hand mirror to watch your hand as you write your name or some words. Use a mirror to look down behind a sofa that is against a wall so you obtain the experience of angulating the mirror like a periscope to see in places you cannot see by direct vision.

These mirror experiences help pave the way for the use of a dental mirror, and how to position yourself to see in an awkward space.

11. Play the “Operation” game.

In this activity, you practice finger rests while moving through space without touching the sides of the hole. This is fine motor control and depth perception.

12. Help with a Habitat for Humanity house or another construction project.

You’ll begin to understand how items fit together, and what being “square” means. Install a mailbox, fence post or basketball goal post. This helps with path of draw and long axis of teeth.

Although these are non-traditional experiences, they are the type of cultural experiences that previous generations of dentists experienced, and the type of experiences that are used in dentistry as a foundation on which to build dental skills. However, the current younger students no longer have pre-dental experience as a foundation because of the changes in the culture, undergraduate education, and the world of technology. 🦷

The recommendations of this article are the opinions of the author, and do not reflect any policies or recommendations from the Admissions Committee or the Dental College of Georgia.

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