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This is the third topic in a series of articles about lab related duties an assistant may perform.

LAB SERIES-PART 3: POURING UP MODELS

The next task after taking the impression, is pouring up the model. There are many variables involved in achieving an ideal model. Think back on how you learned to pour a model. Did you learn from an instructor at a school? Maybe it was your Dr. (employer) or perhaps a co-worker (assistant). I'm sure whoever taught you felt that their way was the best, but was it the ideal way to producing an adequate model?

It begins with choosing the proper stone, based on the reason for the impression. This chart shows just some of the most common used stones and the proper water/powder ratio.

<h3>SNAP STONE</h3> <p>Snap Stone is pink This is a rapid setting stone (about 3-5 min.) Can be used for temporary copings, denture repair, bleaching trays, mouth guards, vacuum formed splints, custom trays</p>	<h3>PLASTER</h3> <p>Dental Plaster is white The least hard and weaker of the stones It's used for study models, bleach trays, and orthodontic appliances Dental Plaster (100g) -- 45 to 50ml water</p>
<h3>GYPSUM</h3>	
<h3>DENTAL STONE</h3> <p>Dental stone is usually yellow It is stronger and harder than plaster Mostly used for products that require strength like retainers, opposing models, bite splints and removable Prosthodontics Model Stone (100g) -- 30 to 32ml water</p>	<h3>DIE STONE</h3> <p>Die Stone can be any color except yellow or white (it's usually green or orange) It is the strongest and hardest stone A die is a working replica of a single tooth Restorations are made on a "die" A laboratory uses this stone Die Stone (100g) -- 19 to 24ml water</p>

We all know the basic steps of pouring a model. There is a **proper way** and then there is the **popular way** which is done most often. It's important to know the right consistency of the stone, even if it is not measured "exactly by-the-book." The results need to be ideal including a model that is free of bubbles, voids and breakage when separated.

Proper Way

- Measure the water and weigh the powder
- Add water to bowl first, then add powder
- Mix is thick but flows easily
- Vibrate bowl to eliminate most air bubbles
- Start to load stone at the corner of the tray
- Model is placed upright to harden (about 45 min)
- Easy enough to separate with little effort

Popular Way

- No measuring, water from faucet is added to scoops of powder already in the bowl
- The powder/water mix should be thick like creamy peanut butter; while it's vibrating it starts to thin out
- A poured model is set on the counter with a paper towel double folded and placed under the rear of tray to keep it level

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LAB SERIES-PART 3 (continued): POURING UP MODELS

MISTAKES TO AVOID

Some people may not think of the things listed below are a mistake because they are done on purpose, but these are things that should be avoided. They can cause issues with the model.

#1 COMMON MISTAKE

When a mix is too runny...

- It has the consistency of pancake batter
- Material will run out the back of the tray
- Material runs over the sides, locking the tray onto the model
- Too much water makes the model weak
- It can cause voids and bubbles in the model

Solution...

Make sure mix is firm enough to cling to the spatula without dripping.

Tip...

Scoop the runny mix onto a paper towel, pat 2-3 times to absorb the excess water out of the stone, avoiding the need to add more powder.

COMMON MISTAKE

Loading the stone in middle of the tray...

- Material flowing from both sides can trap air in the impression, causing bubbles.

Solution...

Hold the tray at an angle on the vibrator, with a small amount of material, rest the spatula in the posterior corner to start loading from the end, rotating the tray to force the stone to flow around to the other end. Don't go too fast (causes voids and bubbles especially the incisal edges, corners and cusp.)

Tip...

Make sure spatula always rest against the tray, this allows the stone to flow smoothly off the edge.

COMMON MISTAKE

When the model is buried...

(material hangs high over the tray's edge causing the model to lock onto the tray)

- Makes it difficult to separate
- Model can break upon separating
- Can cause the models teeth to break
- A base need to be firm so the model won't sink down into it, causing it to be buried

Tip...

Use spatula to smooth stone against the edge of the tray removing any excess material.

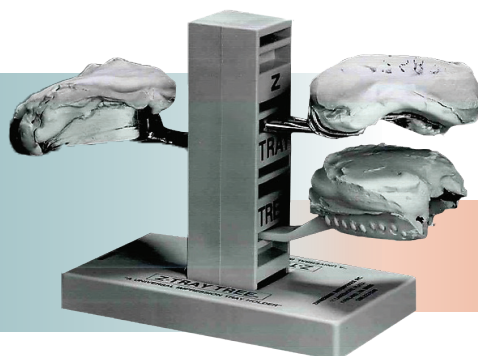
SUGGESTED TIPS:

- Cover vibrator with a plastic head rest cover to keep stone off unit if it should run down sides
- Trim excess alginate from back of tray before pouring (the excess overhang can move and distort the stone when set on counter)
- Rinse disinfected impression and shake off excess water. It's ok to leave moist, this relieves surface tension and helps stone to flow easier
- Place poured model on tray holder stand to dry without distortion
- If model has set overnight, soak tray in hot water for 5 minutes for easier removal to avoid breaking

RECOMMENDED:

Impression Tray Holder Stand Z-Tray Tree (Zimmerman)

Keeps models elevated and level to prevent deformation while setting.



NEXT MONTH:

My Favorite Things - LAB EDITION