Welcome to
Perfect Alginates - Perfect Models & More!

This handout provides a sampling of the slides to be presented

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Always check your
State Dental Practice Act
before doing expanded functions!
Know the law.

Alginate Impressions are used for …

Exposure Hazards of Alginate Powder

Personal Protective Equipment
designed to protect skin and mucous membranes of eyes, nose, and mouth from exposure to blood and other potentially infectious material

Alginate Storage
**Alginate Working Time**
- Normal / Regular set = 1-2 min
- Fast set = 1 min

**Alginate Setting Times**
- Normal / Regular set = 2-4 min
- Fast set = 1-2 min

Check times with product directions

Cooler water increases working and setting time. (sets slower)
Warmer water decreases working and setting time. (sets faster)

Use water & powder measuring devices specific to manufacturer.

How many use a rubber bowl?

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**Functions of Adhesives**

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**Use of Utility / Beading Wax**

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**Impression Tray Selection**

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**Criteria for Tray Size**

Tray Size

Tori
Patient Cooperation

Swishful Thinking

Flavor Drops

Mandibular Impressions
are always taken first!

Mandibular
Clinician Stands in Front of Patient

Supplies

• PPE
• Basic set-up
• Room temp water
• Flavor drops
• Trays
• Adhesive
• Mixing bowl
• Spatula
• Alginate
• Bite registration material
• Disinfectant
• Paper towels
• Plastic bag
• Waterproof pen
• Disposable bowl for emesis basin

Mixing Technique for Mandibular

Gently Fluff

• Always take the mandibular impression first.
• Place water in the bowl first.
• Gently fluff the alginate powder canister.
• Place two level scoops of powder into the water.
• Mix water & powder with spatula until powder is moistened.
• Press mixture along sides of bowl. Smear mixture between bowl & spatula to remove air bubbles & to create a creamy mix.
• With spatula, collect the mixed mass of alginate in one area.
• Operator may take small amount of alginate and place it in the vestibule and occlusal surfaces for total anatomical coverage.
• Pick up half of the alginate with spatula & load it quickly in one side of the tray while firmly pressing down into the tray.
• Collect the second half and fill the opposite side of the tray.
• Make sure there are no voids (check the anterior area)
• Wet gloved fingers with cool water and pass them over the alginate with light pressure. (Smoothens alginate and allows removal of excess material.)

Seating the Mandibular

• Patient is seated in an upright position.
• The operator is positioned in front of the patient.
• Instruct the patient to open his or her mouth halfway.
• Retract the cheek with your index finger to enhance visibility.
• Insert the tray from the side and center it over the arch. The tray handle should be aligned with the patient’s midline.
• Seat the posterior portion of the tray first and continue to the anterior in one motion.
• For anatomical detail, roll the lower lip up over the anterior portion of the mandibular tray.
• Instruct the patient to lift their tongue and then relax it.
• Hold the tray with equal pressure on both sides of the patient’s mouth and wait for the final set of the alginate material.
• Do NOT let the patient hold the tray!
• Test for the final set by pressing into the alginate in the bowl and observe that no deformation occurs in the material.
### Removal of Mandibular Impression from Oral Cavity
- Have patient close slightly.
- Insert index fingers into vestibule at premolar area.
- Thumb under tray handle & fingers on top.
- Place fingers under tray periphery to break seal.
- One quick snap-out motion.

Pay attention to hand position.

### Inspection of Impression
- Observe for homogenous set.
- Ascertain impression did not separate from tray.
- Coverage of total dentition.
- No voids or air bubbles.
- No evidence of tray visibility.
- Observe for bioburden.
- Disinfect.

### Disinfection
- Quickly rinse under cool running water.
- Spray with intermediate level disinfectant.
- Follow product directions for contact time.
- Moisten paper towel with disinfectant.
- Wrap around tray.
- Transfer to plastic bag.
- Identify with patient’s name.

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### Ideas

Maxillary Alginate Impressions

- Maxillary.
- Clinician stands to the side of patient.

Maxillary Trays

- Adhesive application.

### Mixing Technique for the Maxillary
- Place water in bowl first.
- Gently fluff alginate powder canister.
- Place three level scoops of powder in water.
- Stir water and powder with spatula until all powder has been moistened.
- Press alginate along sides of bowl. Smear the mixture between the bowl and spatula to remove air bubbles.
- With spatula, collect the mixed alginate in one area. Operators may take a small amount of alginate and place it in the vestibule and/or occlusal surfaces for total anatomical coverage.
- Use spatula to load alginate into the tray from the palatal aspect and press down towards the bottom of the tray to avoid air bubbles.
- Wet gloved fingers with cool water and pass them over the alginate with light pressure.

### Seating Maxillary Tray
- Patient seated in upright position.
- Operator positioned at patient’s side.
- Instruct patient to open mouth halfway.
- Retract cheek with index finger - enhance visibility.
- Insert tray from side and center over maxillary arch. The tray handle is aligned with the patient’s midline.
- Press on posterior portion first and continue to press towards the anterior in one smooth motion.
- For anatomical detail, roll upper lip over anterior portion of tray.
- Hold tray in the patient’s mouth with equal pressure while awaiting the final set.
- The operator is located at the patient’s side. Instruct patient to tuck their chin down.
- Test for the final set by pressing the alginate in bowl to observe no deformation occurs in the material.
Inspect, Disinfect, Moist Paper Towel, Transfer to Plastic Bag, Identify

Chromatic Alginate

Alternate Mixing Methods

Vacuum Mixer

Alginator

Syringe Technique

Edentulous

Plastic Bag Technique

Alginate Replacement Materials

Advantages

Disadvantages
Recording Bite Registration
An occlusal record of the relationship between the upper and lower teeth
- Base plate wax
- Pre-formed wax
- VPS Open bite
- VPS Closed bite

Disinfecting Bite Registrations

Digital Impressions

Suggestions

Facial Aspect of Alginate

Things to Consider
The Art and Science of Pouring Models

Gypsum Materials
Plaster, Stone, and High-strength Stone

- Used in dentistry to create diagnostic study models of the maxillary or mandibular arches
- Composed primarily of calcium sulfate dihydrate
- Supplied as powder
- During setting process gypsum gives off heat - exothermic reaction

Uses for Gypsum

Gypsum...Plaster & Stone... a naturally mined mineral product

Strengths of Gypsum Products

Packaging

- 25-50 lb. boxes
- 100 lb. drums
- Individual packets

Store in cool, dry area in an airtight container
Plaster and Stone Storage

Setting time... the time required from the initial incorporation of powder with water until material hardens.

- Exothermic
- Should remain undisturbed until set
- Accelerators- warmer water, faster rate of spatulation, pinch of table salt, less water
- Retarders- cooler water, slower rate of spatulation, borax, too much water

Provide dental lab with written info regarding disinfection

Lab Work Area

No Eating or Drinking in Treatment Rooms or Lab Areas

According to the OSHA Bloodborne Pathogen Standard 1910.1030(d)(2)(ix), eating, drinking, smoking, applying cosmetics or lip balm, and handling contact lenses are prohibited in work areas where there is a reasonable likelihood of occupational exposure. i.e. in clinical areas such as the operatories or lab. Drinking and eating should be limited to such areas as the break room, offices or other non-clinical areas.

Not sure the impression was disinfected?

Disinfection of Stone Casts

Tips
Equipment and Supply Options

- Impressions
- Room temperature water
- Water measuring device
- Gypsum
- Bowl
- Spatula
- Lab vibrator / plastic barrier
- Bracket tray cover
- Model base items
- Tiles for inversion
- Knife
- PPE

Dental Vibrators

Armamentarium

Lab Preparation

Mixing Technique

Read and Keep Mixing Instructions
Mixing Gypsum
• Assemble all armamentarium, supplies and equipment.
• Place room temperature water in bowl.
• Add stone or plaster to the water.
• Gradually sift powder into water to prevent air entrapment.
• Allow wetting of powder particles e.g. pause for a few seconds to allow the powder to collapse in the water on its own.
• Stir the gypsum powder and the water together.
• Mix with spatula at 120 RPM for one minute in one continuous direction to avoid air entrapment.
• Place bowl with mixed gypsum on the platform of the vibrator.
• Secure bowl & mix with one hand while turning vibrator on “low”
• Hold bowl gently in place. Observe for release of air bubbles. If bubbles fail to break, mechanically break bubbles with spatula.
• Once air bubbles are released, the bowl is removed from the vibrator.

Pouring Models
Vibrator is on low speed, clinician proceeds with following steps:
• Rest the tray handle at an angle on the platform of the vibrator.
• Load tip of the spatula with a small amount of mixed gypsum.
• Start to fill in one posterior corner.
• Allow mix to flow in the occlusal surfaces of the adjacent teeth.
• Continue to add small increments to the same corner where the first increment was placed. Observe occlusal and incisal areas.
• Rotate impression tray to force the flow of material around arch. Keep the stone moving through the anatomical depressions from one side, through the anterior, and into the opposite side.
• Once all teeth have been filled, add larger increments.
• Vibrate for a few seconds. Remove impression from vibrator.
• Turn off vibrator.
• The study model will begin to set slightly while the operator prepares the base/art portion material for the study model.

Alternative Mixing Technique

Vacuum Mixer

Alginator

Points To Ponder

Techniques for filling the tongue prior to pouring models
Personal Protective Equipment

- Gown
- Mask
- Protective Eyewear
- Gloves

Silicosis the “Deadly Dust Disease”

- Long cancer – Silica has been classified as a human lung carcinogen.
- Bronchitis/Dry/Dyspneic Pulmonary Disorder.
- Tuberculosis – Silica makes an individual more susceptible.
- Scleroderma – a disease affecting skin, blood vessels, joints and internal organs.
- Possible renal disease.
- Symptoms of Silicosis
  - Shortness of breath, possible fever.
  - Fatigue, loss of appetite.
  - Costal pain, dry, nonproductive cough.
  - Respiratory failure, which may eventually lead to death.

Sources of Exposure
- Sandblasting for surface preparation.
- Crushing and drilling rock and concrete.
- Masonry and concrete work (e.g., building and road construction).
- Glass and brick manufacturing.
- Metalworking: grinding, buffing, sanding.
- Milling, grinding, demolition work.
- Carpet and upholstery padding manufacturing.

OSHA Quick Card
Protect Yourself
Silicosis

osha.gov/quickcards

Suggestions

Creating Model Bases

- Boxing Wax
- Rubber Molds
- Inverted
- Work Model Formers

Study Model Base Techniques
Fill tongue area

Create base – Make circumference larger than tray - Prop up sides

Invert – Prop up heel

Utility wax

Tray handle parallel with countertop

More Suggestions

Separation

Virtual Models

Thank You for Your Time!