Dental Hygiene Care Plan in Prevention/Treatment

Dentalelle Tutoring
True learning results in belief change that leads to behavioral change, which in turn leads to positive results. I call this “The Learning Ladder.” It’s been argued that you have not truly learned if your behavior doesn’t change. All significant learning follows a pattern which begins at the bottom of the ladder as you move from unawareness to taking action. The six steps are:

- **HABIT** – proper oral hygiene as a part of a daily routine
- **ACTION** – testing new knowledge
- **INVOLVEMENT** – awareness and application to self
- **SELF-INTEREST** – application of facts/knowledge
- **AWARENESS** – patients may know a few dental facts
- **UNAWARENESS** – overall patients need your help
There are many ways to teach a client proper oral hygiene including:

- Drawing photos
- Education on biofilm
- Demo on brushing and flossing
- Disclosing agent

Remember to record everything told and demonstrated to the client in the chart.
Disclosing Agent

Floss recommended before brushing.
Be sure to slide the floss past the contact between teeth, up/down between the gum and the neck of the tooth, pulling the floss around the curvature of the tooth!
Pull in and out 3-5 times!
Disclosing Agent

- Is a great educational tool!
- **Two-Tone** – thicker (older) plaque stains blue; thinner (newer) biofilm stains red
Xerostomia

- This is something commonly noticed in a lot of patients.
- Due to medications especially – pilocarpine therapy acts to increase salivary output.
### TABLE 25-1 COMPARISON OF NATURAL BRISTLES AND MAN-MADE FILAMENTS

<table>
<thead>
<tr>
<th>Source</th>
<th>Filaments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Historically made from hair of hog or wild boar</td>
<td>Synthetic plastic materials, primarily nylon</td>
</tr>
<tr>
<td>Uniformity</td>
<td>Uniformity controlled</td>
</tr>
<tr>
<td>No uniformity of texture. Diameter or wearing properties depending upon the breed of animal, geographical location, and season in which the bristles were gathered</td>
<td></td>
</tr>
<tr>
<td>Diameter</td>
<td>Range from extra soft at 0.075 mm (0.003 inch) to hard at 0.3 mm (0.012 inch)</td>
</tr>
<tr>
<td>End shape</td>
<td>End-rounded to ensure fewer traumas. Research has shown a direct relation between gingival damage and the abrasiveness of end-rounding. Figure 25-3 shows examples of nonrounded and end-rounded bristles.</td>
</tr>
<tr>
<td>Advantages and disadvantages(^6)</td>
<td>Rinse clean, dry rapidly, Durable and maintain longer, End-rounded and closed, repel debris and water, More resistant to accumulation of microorganisms</td>
</tr>
</tbody>
</table>

- **NATURAL BRISTLES**
  - **Uniformity**: Varies depending on portion of bristle taken, age, and life of animal
  - **Diameter**: Varies depending on the animal
  - **End shape**: Deficient, irregular, frequently open-ended

- **FILAMENTS**
  - **Uniformity**: Uniformity controlled
  - **Diameter**: Range from extra soft at 0.075 mm (0.003 inch) to hard at 0.3 mm (0.012 inch)
  - **End shape**: End-rounded to ensure fewer traumas. Research has shown a direct relation between gingival damage and the abrasiveness of end-rounding. Figure 25-3 shows examples of nonrounded and end-rounded bristles.

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**Toothbrushes**
Bass Method

- This technique of tooth brushing is one of the most common and is often recommended for the majority of patients. In this method, the brush cleans the teeth at a 45 degree angle by being rubbed in small circles along the gingival sulcus, in order to maximize the amount of plaque removed and ensure that the bristles of the brush clean most effectively.

Fone's Method

- This method is similar to the bass method, except the mouth remains closed for the technique's initial duration. The brush is applied in large circular motions against the teeth, moving back and forward until all surfaces have been adequately cleaned. This style of brushing is typically suggested for younger children or people who have difficulty moving their wrists.

Rolling Stroke Method

- The Rolling Stroke method involves the toothbrush being pointed downwards towards the gums and brushed on top of the tooth. The toothbrush then is gently swivelled over the teeth, moving back and forward until all tooth surfaces are treated.

Charter's Method

- This method involves first completing the rolling stroke method. Then, direct the toothbrush to a 45 degree angle and apply small circular strokes to the lower area of the teeth (where they emerge from the gums). After this, the toothbrush is positioned vertically against the teeth and gently brushed up and down to remove any remaining plaque.

Modified Stillman's Method

- This method is similar to the rolling stroke method, except the brush is continually vibrated in a lateral gesture.
<table>
<thead>
<tr>
<th>Types</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magnetostrictive</td>
<td>• Flat metal strips or ferromagnetic rod; transducer connected to tip coil contained within handpiece, which becomes magnetized, causing expanding and contracting currents.</td>
</tr>
<tr>
<td></td>
<td>• All sides work in magnetostrictive ultrasonic tips</td>
</tr>
<tr>
<td></td>
<td>• Power dial controls amplitude; Amplitude is the area (range) of the vibrations. High power would result in large elliptical movements, whereas low power would result in smaller elliptical movements. When using subgingivally, low power would be preferred.</td>
</tr>
<tr>
<td></td>
<td>• Tapping dial controls frequency; some units are automatic. Tapping gives you the option to increase the vibrations even when utilizing low power.</td>
</tr>
<tr>
<td>Piezoelectric</td>
<td>• Contained within handpiece; alternating electrical current applied to reactive crystals; dimensional change transmitted to tips.</td>
</tr>
<tr>
<td></td>
<td>• Linear vibrations</td>
</tr>
</tbody>
</table>
The term "periodontal debridement" has been used to refer to the treatment of periodontal diseases by instrumentation. It is a more comprehensive title in its reference to treating an infection, as opposed to the term scaling or root planning, which places emphasis on removing calculus from the tooth.

Treating an infection requires elimination or suppression of the infectious microbes, elimination or controlling the source of the infection to prevent re-infection, establishing a biologically acceptable environment to promote health, consideration of host-related factors, and the use of antimicrobial agents as adjuncts to dental hygiene therapy. The considerations most definitely surpass the need to focus solely on removal of calculus.

With the definition of periodontal debridement in mind, it is important to understand the effects of ultrasonic cavitation on the periodontium. Cavitation occurs when water passes over the intense vibrations of the oscillating tip. The rapid formation and destruction of small air cavities occur at maximum vibrating points along the working end. These small air cavities or "cavitation bubbles" implode. When this happens, the implosion releases short bursts of energy. This energy can actually tear apart bacterial cell membranes, killing them.

The lavage helps to remove plaque from hard to reach areas. In fact, one study supported the concept that ultrasonic lavage destroyed plaque far beyond the surfaces actually touched by the tip. The study reported that when water was used with the tip, the activated water removed plaque by 500 percent. This means that the power of the small air cavities make the ultrasonic most effective in hard to reach areas.
Two Types

- Remember for the exam – two types:
  - **Magnetostrictive** ultrasonic scalers (18,000 – 45,000 cps)
    - Elliptical motion and all sides active
    - Cross section is round
  - **Piezoelectric** ultrasonic scalers (25,000 – 50,000 cps)
    - Linear motion and lateral sides active
    - Cross section is trapezoidal with angular edges

- When scaling implants, make sure the tip needs to be plastic or covered with a plastic shield.
- Older pacemakers you CANNOT use the ultrasonic on these patients
- Water helps to cool the instrument to prevent pulpal damage
See ‘Instrumentation’ for further notes
Antimicrobial Therapy
Antimicrobial therapy is the use of chemicals to kill or slow down the growth of bacteria that cause periodontal (gum) disease. The two most common forms of this therapy are antiseptics and antibiotics.

**Antibiotics** are used to kill specific bacteria. They are placed under the gums or given as pills to treat gum disease. Antibiotic pills typically are given only for acute (sudden and short-term) infections.

**Acute and long-term (chronic) gum infections** require a procedure called scaling and root planing. Some people also may need periodontal surgery.

**One of the newest ways to** kill bacteria is laser therapy. Dentists now use lasers to kill bacteria in the gum pockets around teeth. This treatment also seems to stimulate healing.
Antiseptics

- Bacteria can grow and form clusters or colonies on the tongue and tonsils and in the saliva. Mouth rinses can control the excess growth of bacteria. The goal is to prevent them from causing disease. These rinses contain:
  - Alcohol
  - Chlorhexidine
  - 0.1% sodium hypochloride
  - Rinses also can be used at home to wash out the pockets around the teeth with irrigation devices.
Antibiotics

• Dentists often prescribe antibiotics to treat an acute gum infection called an abscess. A periodontist also may use antibiotics for some cases of gum disease that are hard to treat.

• They include:
  • Necrotizing ulcerative gingivitis (NUG), a rare form of periodontal disease that becomes severe very quickly
  • Severe forms of periodontitis (advanced gum disease)
  • Periodontal disease that has not improved with other types of treatment
  • Periodontal disease in people who have weakened immune systems
The type of antibiotic prescribed depends upon the exact type of the bacteria. Several antibiotics have been used to treat aggressive periodontal disease. They include:

- Penicillins
- Tetracyclines-HCL
- Doxycycline
- Metronidazole
- Ciprofloxacin
- Clindamycin

Most of the time, the first treatment for periodontal disease is scaling and root planing. This combined approach can successfully treat many forms of periodontal disease.

Bacteria cause periodontal diseases, but dentists don't routinely use antibiotics to treat them. That's because today many bacteria can resist antibiotics. This makes it harder to cure some infections. Resistance develops when antibiotics are used too much or when people don't take them exactly as instructed. Most forms of gingivitis and periodontitis can be treated without antibiotics. Therefore, dentists avoid using them unless absolutely necessary.
If you are given antibiotics in oral (pill) form, you will take them for 7 to 10 days.

Your dentist also can place an antibiotic directly into the affected parts of your mouth. This is called local therapy. It can take several forms, including:

- **Gel** — Your dentist injects a gel containing doxycycline under your gums. The area is sealed and covered with a special bandage called a periodontal pack. After 7 to 10 days, your dentist removes the bandage and any remaining gel.
- **Powder** — Your dentist squirts a powder containing minocycline under your gums. The powder dissolves over three weeks.

**Periostat** is another type of pill that sometimes is used. It contains doxycycline at very low levels. It does not kill bacteria. Instead, it reduces the body's immune-system response to the bacteria. This response is what causes gums and bone to become inflamed and damaged. Reducing the immune response helps to stop bone from dissolving. Patients usually take Periostat for 6 months or more to control bone loss.

If your dentist owns a dental laser, it will be used after root planing and scaling. The dentist places the laser tip in the space between your tooth and gum, then moves it around the entire tooth. This process begins from the base of each pocket.
Chemotherapy

- Please see the following PDF link:
  - [http://www.cdho.org/Advisories/CDHO_Advisory_Chemotherapy.pdf](http://www.cdho.org/Advisories/CDHO_Advisory_Chemotherapy.pdf)
You have extrinsic and intrinsic stain:
- **Extrinsic** – stain from outside sources
- **Intrinsic** – stain from inside the tooth

- **Pumice** – can be mild or very abrasive
- **Calcium carbonate** – various grades used
- **Emery (corundum)** – not used on enamel
Constituents

- Most polishing pastes contain the following:
  - **Abrasives** – 50-60% of main ingredient
  - **Water** – 10-20% solvent
  - **Humectant** – 20-25% as a moisture retainer
  - **Binder** – 1.5-2.0% prevents separation, no-spatter
  - **Sweetener** – artificial but also noncariogenic
  - **Flavoring and Coloring Agents**
Air Powder Polishing

- Anterior teeth – nozzle should be placed at 60° angle to the facial and lingual surfaces
- Posterior teeth – nozzle placed at 80° angle to the facial and lingual surfaces
- Occlusal surfaces – nozzle should be placed at 90° angle to occlusal plane

- Incorrect angulation can result in excess aerosol production.
Figures 1-3: Universal angulations for air polishing:

Figure 1. 60° to anterior teeth away from gingiva.

Figure 2. 80° to the posterior teeth.

Figure 3. 90° to the occlusal service.

Dimensions of Dental Hygiene, March 2010
Sodium Bicarbonate or Aluminum Trihydroxide

<table>
<thead>
<tr>
<th>RESTORATIVE MATERIAL</th>
<th>SPECIALLY PROCESSED SODIUM BICARBONATE AIR POLISHING POWDER</th>
<th>ALUMINUM TRIOXIDE AIR POLISHING POWDER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gold</td>
<td>Yes*</td>
<td>No</td>
</tr>
<tr>
<td>Porcelain</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Hybrid Composite</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Microfilled Composite</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Glass Ionomer</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Composers</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Luting Agents</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

*Only if margin is avoided.
Restorations

- **Overhanging Margins** – result from a poorly made restoration
- **Flash** – occlusal ledge or flash left during carving (from cement)
- **Open Margin** –
  - **Undercontoured** – not enough dental material between margin and cavity wall
  - **Overcontoured** – too much material

- Please remember that if a patient asks for an amalgam to be changed into a white filling, **ONLY** replace the filling if it had to be replaced anyway. **Esthetics is not a good reason to change a filling because every time a filling is changed you take away more of the tooth structure**
# Table 4.2-1: Comparison of Restorative Dental Materials

<table>
<thead>
<tr>
<th>MATERIAL</th>
<th>COMPOSITION</th>
<th>USES</th>
<th>LEAKAGE AND RECURRENCE RATES</th>
<th>RESISTANCE TO WEAR AND FATIGUE</th>
<th>CLINICAL CONSIDERATIONS</th>
<th>DURABILITY</th>
<th>ESTHETICS</th>
<th>SENSITIVITY</th>
<th>COST AND NUMBER OF VISITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMALGAM</td>
<td>Mixture of mercury and silver alloys</td>
<td>Fills cavities, fills spaces</td>
<td>Moderate leakage</td>
<td>High resistance to wear and fatigue</td>
<td>Moderately resistant to fracture</td>
<td>Good to excellent in large restorations</td>
<td>Gray to silver, metallic</td>
<td>Possible early sensitivity to hot and cold</td>
<td>Depends on size and location</td>
</tr>
<tr>
<td>COMPOSITES</td>
<td>Glass-filled resin composites</td>
<td>Fills cavities, fills spaces</td>
<td>Low leakage</td>
<td>Low resistance to wear and fatigue</td>
<td>Moderately resistant to fracture</td>
<td>Good to excellent in small restorations</td>
<td>Mirror natural tooth color</td>
<td>No sensitivity to hot and cold</td>
<td>Moderate</td>
</tr>
<tr>
<td>GLASS CEMENT</td>
<td>Glass and silicate</td>
<td>Fills cavities, fills spaces</td>
<td>Low leakage</td>
<td>Low resistance to wear and fatigue</td>
<td>Moderately resistant to fracture</td>
<td>Good to excellent in small restorations</td>
<td>Mirror natural tooth color</td>
<td>No sensitivity to hot and cold</td>
<td>Moderate</td>
</tr>
<tr>
<td>PORCELAIN</td>
<td>Ceramic</td>
<td>Fills cavities, fills spaces</td>
<td>Low leakage</td>
<td>High resistance to wear and fatigue</td>
<td>Highly resistant to fracture</td>
<td>Excellent in small restorations</td>
<td>Mirror natural tooth color</td>
<td>No sensitivity to hot and cold</td>
<td>High</td>
</tr>
<tr>
<td>GOLD ALLOY</td>
<td>Precious metals</td>
<td>Fills cavities, fills spaces</td>
<td>Low leakage</td>
<td>High resistance to wear and fatigue</td>
<td>Highly resistant to fracture</td>
<td>Excellent in small restorations</td>
<td>Mirror natural tooth color</td>
<td>No sensitivity to hot and cold</td>
<td>High</td>
</tr>
</tbody>
</table>

Review
Carving Restorations

- **Amalgam knife** – short, overlapping and shaving strokes
- **File** – push or pull motion
- **Cleoid and Discoid Carvers** – redefine margins (not needing for occlusals)
- **Finishing Strips** – use after gross amalgam removed
- **Scaler** (can be used if needed)
- **Curet** (can be used if needed)
Code of Ethics

Dentalelle Tutoring
The mission of the College of Dental Hygienists of Ontario is to regulate the practice of dental hygiene in the interest of the overall health and safety of the public of Ontario. To this end, the CDHO had developed and implemented several programs to monitor whether or not its registrants are providing high quality care to the public.

- **The first CDHO Code of Ethics was developed in 1996.** As professions evolve so must their guiding principles. The current approach to the Code of Ethics is one that encourages problem-solving and critical thinking.
Beneficence

- **PRINCIPLE I: BENEFICENCE**
  - Involves caring about and promoting the good of another
  - Dental hygienists use their knowledge and skills to assist clients to achieve and maintain optimal oral health and to promote fair and reasonable access to quality care.
• PRINCIPLE II: AUTONOMY
  • Pertains to the right to make one’s own choices
  • By communicating relevant information openly and truthfully, dental hygienists assist clients to make informed choices and to participate actively in achieving and maintaining optimal oral health.
PRINCIPLE III: PRIVACY AND CONFIDENTIALITY

- Privacy pertains to a person’s right to control the collection, use and disclosure of personal information; the right to access and correct inaccurate information; and the right to expect that the information is kept secure.

- Confidentiality is the duty to hold secret any information acquired in the professional relationship.

- Dental hygienists respect the privacy of clients and hold in confidence the information disclosed to them, subject to certain narrowly defined exceptions.
• PRINCIPLE IV: ACCOUNTABILITY

• Pertains to the acceptance of responsibility for one’s actions and omissions in light of relevant principles, standards, laws, regulations and the potential to self-evaluate and to be evaluated accordingly.

• Dental hygienists practise competently in conformity with relevant principles, standards, laws, and then regulations under the RHPA, 1991 and DHA, 1991 and accept responsibility for their behaviour and decisions in the professional context.
• **PRINCIPLE V: PROFESSIONALISM**

• ■ Is the commitment to use and advance professional knowledge and skills to serve the client and the public good.

• Dental hygienists express their professional commitment individually in their practice and communally through the CDHO and their participation in the CDHO Quality Assurance Program.
• **STEP 1 IDENTIFY THE PROBLEM**
  • Identify, in a preliminary way, the nature of the challenge or problem.

• **STEP 2 GATHER INFORMATION**
  • Become suitably informed and gather relevant information including factual information, sequence of events; applicable policies, laws, and regulations and the views of stakeholders.

• **STEP 3 CLARIFY THE PROBLEM**
  • Clarify and elaborate the problem based on the additional information obtained. Identify the ethical principles at stake.

• **STEP 4 IDENTIFY OPTIONS**
  • Identify the various options for action.
STEP 5 ASSESS OPTIONS
- Assess the various options.

STEP 6 CHOOSE A COURSE OF ACTION
- ACTION Decide on and justify/defend a course of action.

STEP 7 IMPLEMENT THE ACTION
- Implement one’s decision as thoughtfully and sensitively as possible.

STEP 8 EVALUATE OUTCOMES
- Assess the consequence of your decision and evaluate the outcomes.
References

- CDHA code of ethics