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Clinical Practicum in Oral Hygiene



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Preface

Effective oral hygiene is not achieved through theory alone, but through consistent practice, clinical observation, and the development of precise manual skills. The ability to assess oral hygiene status, perform professional preventive procedures, and educate patients successfully represents a core competence for every future dental professional.

This practicum in Oral Hygiene is designed to bridge the gap between theoretical knowledge and clinical application. It provides students with step-by-step guidance for performing essential preventive and therapeutic procedures, while fostering confidence, accuracy, and professional responsibility in a clinical environment. Through hands-on exercises, clinical demonstrations, and structured practical tasks, students are encouraged to translate foundational concepts into effective patient care.

Particular attention is given to plaque control methods, the use of manual and powered instruments, professional plaque and calculus removal, polishing procedures, and oral hygiene maintenance for patients with specific clinical conditions, including orthodontic appliances and dental implants.

This manual is intended to support supervised clinical training and independent practice, promoting a systematic and evidence-based approach to oral hygiene. By completing the exercises and procedures outlined in this practicum, students will develop not only technical proficiency but also a preventive mindset essential for long-term oral health care.

The ultimate goal of this practicum is to prepare students to deliver high-quality preventive care and to become competent, confident, and patient-centered professionals in the field of oral health.

The Authors

Exercise 1: The Health History

A comprehensive health history is much more than just a checklist; it is a foundational clinical and legal document that ensures patient safety and tailored care.

Collecting a complete health history allows the dental practitioner to assess a client’s level of oral and systemic wellness, both past and present. Information from the health history is used to determine health status, contraindications to care, and need for medical consultation before dental hygiene procedures are implemented. The health history allows for identification of existing health conditions that may influence clinical outcomes, such as healing, predisposition to infection, or oral disease progression.

Because health status is dynamic, the health history is monitored for changes at the beginning of each appointment to learn about changes in health since the last dental visit. A complete health history includes appropriately documenting a written health history, building rapport through patient centered interviewing, and verifying key elements of the patient health status.

Below is a structured summary of the core components required for a complete health history based on professional standards.

1. Demographic Information

This section handles the administrative and legal aspects of care. This includes the client’s name, current address, phone numbers, date of birth, and gender.

Item	Rationale	Clinical Implication
Name & Contact	Facilitates communication and emergency contact.	Essential for follow-up and emergency protocols.
Date of Birth	Identifies age-related risks and legal consent requirements.	Minors: Need guardian consent. Seniors: May require slower chair

Item	Rationale	Clinical Implication
		adjustments to prevent orthostatic hypotension.

2. The Chief Complaint (CC)

The **Chief Complaint** is the client's primary reason for seeking the oral healthcare appointment and should always be recorded in the **patient's own words**. The patient's primary concern should be addressed early in the care plan, no matter how minor, to facilitate patient satisfaction, trust, and cooperation.

- **Purpose:** To address the patient's most immediate concern (e.g., "my tooth hurts" or "I don't like my smile").
- **Outcome:** Addressing this, early builds trust and ensures the patient feels heard, leading to better cooperation.

3. Dental History

Understanding a patient's past experiences helps the practitioner manage anxiety and predict future oral health trends. Key areas include:

- **Prior Care:** Frequency of visits and any negative past experiences.
- **Radiation History:** Tracking previous X-rays to limit unnecessary exposure.
- **Current symptoms and concerns** (e.g., fear of dental care, bleeding gums, loose teeth, oral malodor, tooth ache, swelling inside the mouth, appearance of teeth)
- **Oral Habits:** Identifying behaviors like bruxism (grinding), thumb sucking, or tobacco use.
- **Oral self-care practices:** evaluating the patient's current brushing and flossing effectiveness.
- **Fluoride/Sugar Intake:** Assessing the risk of caries (cavities) based on diet and water sources. Fluoride history (e.g., use of fluoridated community water; home water filtration; bottled water; fluoride toothpaste, rinses, drops, tablets)
- **Other oral care products used** (e.g., antimicrobial mouth rinse, moisturizing mouth rinse, saliva substitute, amorphous calcium phosphate, xylitol gum, or mints).

Frequently asked questions

1. Basic Routine

- How many times a day do you brush your teeth
- What type of toothbrush do you use: manual or electric?
- What is the texture of your toothbrush bristles (soft, medium, or hard)?
- How long does your brushing session usually last?

2. Interdental Cleaning

- Do you use dental floss or interdental brushes?
- How often do you clean between your teeth?

3. Additional Aids

- Do you use mouthwash? If so, which brand or type?
- Do you use a tongue scraper?
- Do you use any specific toothpaste for sensitive teeth or whitening?

4. Symptoms and Observations

- Do your gums bleed when you brush or floss?
- Have you noticed any swelling or redness in your gums?
- Do you experience any pain or sensitivity to hot, cold, or sweet food/drinks?
- Have you noticed any persistent bad breath (halitosis)?

5. Habits and Diet

- Do you smoke or use any tobacco products?
- How often do you consume sugary snacks or acidic drinks (like soda or juices)?

4. Medical History

Because the mouth is a gateway to the body, systemic health is critical. This section identifies conditions that may require **medical consultation** or **antibiotic prophylaxis** (e.g., heart valve replacements). On the other side, there is a **connection between oral and systemic health**.

Key Systems to Review:

- **Cardiovascular:** Hypertension, history of heart attack, or stroke.
- **Respiratory:** Asthma or COPD (may affect chair positioning or use of aerosols).

- **Endocrine:** Diabetes (impacts healing and infection risk).
- **Allergies:** Specifically reactions to **latex, local anesthetics, or antibiotics.**
- **Medications:** A list of all current drugs to check for interactions or side effects like dry mouth (xerostomia).

The Dental-Systemic Connection

Condition	Oral/Clinical Correlation
Diabetes	Increased risk of periodontal disease and delayed wound healing.
Hypertension	Risk of stroke or heart attack; local anesthetics with epinephrine must be limited.
Leukemia	May present as gingival enlargement or spontaneous bleeding.
GERD	Acid reflux can cause severe enamel erosion (perimolysis).

The "Stop & Consult" Red Flag Guide

1. Cardiovascular Warning Signs

Heart-related issues are the most common source of dental office emergencies.

- **Blood Pressure (BP) Extremes:** Any reading over **160/100 mmHg** usually requires a consultation; readings over **180/110 mmHg** typically require immediate medical referral and no dental treatment.
- **Unstable Angina:** Chest pain that occurs at rest or with minimal exertion.
- **Recent Myocardial Infarction (Heart Attack):** Generally, no elective dental care should be provided within **6 months** of a heart attack without clear physician clearance.
- **History of Infective Endocarditis (IE):** If the patient has a high-risk heart condition and has **not** taken their prescribed prophylactic antibiotics.

2. Metabolic & Blood Disorders

- **Uncontrolled Diabetes:** If the patient's blood glucose is too low (risk of insulin shock) or too high (risk of ketoacidosis). If they haven't eaten or taken their meds, do not proceed.
- **Active Tuberculosis (TB):** Symptoms like a persistent cough (3+ weeks), coughing up blood, or night sweats. This is a major infection control risk.
- **Bleeding Risks:** Patients on potent anticoagulants (blood thinners) who report spontaneous bruising or have not had their INR (International Normalized Ratio) checked recently.

Summary of Critical "Stop" Criteria

System	Red Flag Finding	Immediate Action
Vital Signs	BP > 180/110 or irregular pulse.	Do not start treatment; alert supervisor.
Allergies	History of Anaphylaxis to Penicillin or Latex.	Ensure emergency kit is ready; double-check all materials.
Medication	Use of Bisphosphonates (IV).	High risk for osteonecrosis; consult dentist for surgical procedures.
Pregnancy	First or third trimester with complications.	Consult with OB/GYN before taking X-rays or using certain drugs.
Infection	Active Herpetic lesion (cold sore).	Postpone treatment to prevent viral spreading (autoinoculation).

5. Social History

This provides context for the patient's lifestyle and potential barriers to seeking or delivering adequate health care:

- **Occupation & Living Situation:** This includes marital status, occupation, children or dependents, living situation, which can impact stress levels and appointment availability.
- **Cultural Practices:** Influences health beliefs and dietary habits.
- **Barriers to Care:** Financial constraints, transportation issues, or health literacy.

Summary Checklist for Every Appointment

Since health is **dynamic**, practitioners must update the history at every visit.

1. **Written History:** Patient completes the form.
2. **Patient-Centered Interview:** The practitioner asks clarifying questions to build rapport.
3. **Verification:** Confirming key elements (e.g., "Are you still taking your blood pressure medication?").
4. **Legal Documentation:** Ensuring all notes are accurate and signed.

"Patient-Centered Interview" questions

Moving from a written form to a verbal interview is where the "art" of dental hygiene happens. It's about building a bridge between the clinical data and the human being in the chair.

Quiz: The Health History

1 According to the "Stop & Consult" Red Flag Guide, which of the following patient findings would require immediate medical referral and postponement of elective dental treatment?

- a) A patient with a blood pressure reading of 150/95 mmHg
- b) A patient with an active herpetic lesion (cold sore)
- c) A patient who had a heart attack 12 months ago
- d) A patient who had a heart attack 12 months ago

Answer: d) A patient who had a heart attack 12 months ago

2 What is the primary purpose of documenting the Chief Complaint (CC)?

- a) To determine the patient's financial ability to pay for treatment
- b) To address the patient's most immediate concern in their own words, which helps build trust and cooperation
- c) To document all of the patient's past dental procedures in detail
- d) To identify the patient's age-related health risks for legal consent

Answer: b) To address the patient's most immediate concern in their own words, which helps build trust and cooperation

3 Based on the "Dental-Systemic Connection" table, which medical condition is directly correlated with an increased risk of periodontal disease and delayed wound healing?

- a) GERD
- b) Hypertension
- c) Diabetes
- d) Leukemia

Answer: c) Diabetes

4 Why is it crucial to update the patient's health history at every single appointment?

- a) To fulfill a legal requirement for insurance billing purposes only
- b) To ensure the patient's contact information is always current for administrative use
- c) Because a patient's health status is dynamic and can change, introducing new risks or contraindications to care
- d) To track the patient's fluoride and sugar intake since their last visit

Answer: c) Because a patient's health status is dynamic and can change, introducing new risks or contraindications to care

5 What is the primary rationale for collecting a patient's Social History?

- a) To identify all current medications and potential drug interactions
- b) To list all previous negative experiences with dental care
- c) To understand the patient's lifestyle, cultural context, and potential barriers to care
- d) To determine if the patient requires antibiotic prophylaxis before treatment

Answer: c) To understand the patient's lifestyle, cultural context, and potential barriers to care

Exercise 2 : Oral Hygiene Assessment: Soft and Hard Deposits

Oral hygiene is the degree to which the oral cavity is kept clean and free of soft and hard deposits by daily oral self-care or, when necessary, oral care provided by a caregiver. Before the dental hygienist can influence a client's oral health behavior, it is necessary to assess and document the client's current oral hygiene status.

Oral hygiene assessment is the process of determining the following about the client:

- **Amount of hard tooth deposits** (extrinsic dental stain, dental calculus) and **soft tooth deposits** (food debris, materia alba, oral biofilm)
- **Oral hygiene status**
- **Oral self-care effectiveness**
- **Motivation related to oral self-care.**

Assessment Tools

Oral hygiene assessment tools include the following:

- **Light:** Helps to visualize all areas of the mouth
- **Compressed air:** Aids in the detection of supragingival and subgingival soft and hard deposits
- **Mouth mirror:** Permits visualization of entire oral cavity

- Periodontal explorer: Allows access subgingivally and, when applicable, to deep pockets for accurate assessment of subgingival calculus and optimal tactile sensitivity
- Gauze: Maintains a clean instrument tip rather than trans locating soft deposits around the mouth
- Disclosing solution (disclosant): Allows visualization of supragingival plaque throughout the mouth and determines oral self-care effectiveness.

Soft and hard dental deposits are assessed according to the following:

• ***Location***

- Supragingival—above the free-gingival margin
- Subgingival—below the free-gingival margin
- Amount (degree) as indicated by slight, moderate, or heavy accumulations

• ***Extent and distribution***

- Generalized throughout the dentition (greater than one third of the dentition is involved)
- Localized to a single tooth or groups of teeth in the anterior or posterior areas but involving less than one third of the dentition

Table 1. Soft and Hard Deposits Found in the Oral Cavity

Term	Classification	Definition
Acquired pellicle and exogenous dental cuticle	Acellular, nonmineralized layer	An unstructured, homogenous film adhering to tooth surfaces, firm surfaces in the oral cavity, and old calculus; may be stained

		by tar products and tannin
Oral biofilm	Cellular, nonmineralized layer	A dense, transparent, nonmineralized, highly organized mass of bacterial colonies in a gel-like intermicrobial, enclosed matrix; a host-associated biofilm
Materia alba	Cellular, nonmineralized layer	Loose deposit of microorganisms, desquamated epithelial cells, and broken down food debris; white to yellowish-white in color; has cottage cheese-like appearance Can be displaced with rinsing and water irrigation
Food debris	Cellular nonmineralized layer	Unstructured particles that remain in the mouth after eating and are removed with irrigation unless impacted between the teeth
Extrinsic stain	Cellular, may be mineralized or nonmineralized	Discolorations that accumulate on the external surface of the tooth via pellicle, plaque biofilm, or calculus; can be removed by power toothbrushing, scaling, and/or polishing
Supragingival calculus	Cellular, mineralized layer	Mineralized bacterial plaque permeated with moderately hard calcium phosphate crystals; superficially covered with bacterial plaque

		biofilm; usually white or yellowish-white in color but may be stained darker
Subgingival calculus	Cellular, mineralized layer	Mineralized bacterial plaque; adheres to tooth structure in gingival sulcus; organic matrix of bacteria permeated with hard calcium phosphate crystals; may be stained dark green to greenish-black; superficially covered with bacterial plaque biofilm

Disclosing Agents

Disclosing agents, also known as disclosants, are used to make oral biofilm clinically visible. Available over-the-counter in liquid or tablet form, disclosants contain ingredients that temporarily stain plaque biofilm so that it can be observed and measured. Erythrosin dye, the most commonly employed agent, stains oral biofilm red, while methylene blue stains them in blue color. After application of the disclosant, excess is expectorated or suctioned from the mouth and the client is given a hand mirror to identify the stained deposits.

Because disclosants can camouflage clinical signs of disease, disclosing agents should be applied after the oral and periodontal assessment and after the client sees the oral findings in his or her own mouth. The location of oral biofilm also should be seen by the client before disclosing deposits so that the client understands the correlation among oral hygiene, infection, inflammation, and oral disease risks.

Clean tooth surfaces do not absorb the dye unless roughness is present (e.g., demineralization, hypocalcification, restorations, cementum). Acquired pellicle, plaque biofilm, debris, and calculus absorb the disclosing agent. This discriminate staining characteristic makes the disclosing agent an excellent oral hygiene aid because the client is able to use it at home for self-evaluation.

Assessment

The assessment of oral biofilm depends on its location:

- Supragingivally, coronal to the free gingival margin on the clinical crown of the tooth, and subgingivally, apical to the margin of the free gingiva. Supragingival locations include the occlusal surfaces (most common in areas without opposing teeth), buccal or lingual fissures and pits, inter proximal tooth surfaces, and free gingival margin.
- Subgingival plaque accumulates in the sulcus or periodontal pocket on all four aspects of the tooth (buccal, lingual, mesial, and distal interproximal spaces).
- On soft tissues such as specialized mucosa (tongue) and oral mucosa.

Next, a determination is made about the amount of plaque present (e.g., is it light, moderate, or heavy). Extent is an assessment about whether the plaque is generalized throughout the dentition or localized to several teeth.

Quiz: Oral Hygiene Assessment: Soft and Hard Deposits

1 Which instrument provides optimal tactile sensitivity for assessing subgingival calculus in deep pockets?

- a) Mouth mirror
- b) Compressed air
- c) Disclosing solution
- d) Periodontal explorer

Answer: d) Periodontal explorer

2 Which description best defines materia alba?

- a) An unstructured, homogeneous film adhering to tooth surfaces and firm oral surfaces

- b) A dense, organized mass of bacterial colonies in a gel-like matrix
- c) A loose deposit of microorganisms, desquamated epithelial cells, and food debris that is white to yellowish-white and can be displaced by rinsing
- d) Mineralized bacterial plaque covered with plaque biofilm, usually white or yellowish-white

Answer: c) A loose deposit of microorganisms, desquamated epithelial cells, and food debris that is white to yellowish-white and can be displaced by rinsing

3 When should a disclosing agent be applied during a dental appointment?

- a) Before any oral or periodontal assessment is performed
- b) After the oral and periodontal assessment and after the client sees their oral findings
- c) Before polishing to avoid camouflaging disease signs
- d) Only at home by the client, never in the clinic

Answer: b) After the oral and periodontal assessment and after the client sees their oral findings

4 In assessing extent and distribution of deposits, what does “generalized” mean?

- a) Less than one third of the dentition is involved
- b) Exactly one third of the dentition is involved
- c) Greater than one third of the dentition is involved
- d) Only posterior teeth are involved

Answer: c) Greater than one third of the dentition is involved

5 Which dye is most commonly used in disclosing agents to stain plaque red?

- a) Erythrosin
- b) Methylene blue

- c) Chlorhexidine
- d) Iodine

Answer: c) To understand the patient's lifestyle, cultural context, and potential barriers to care

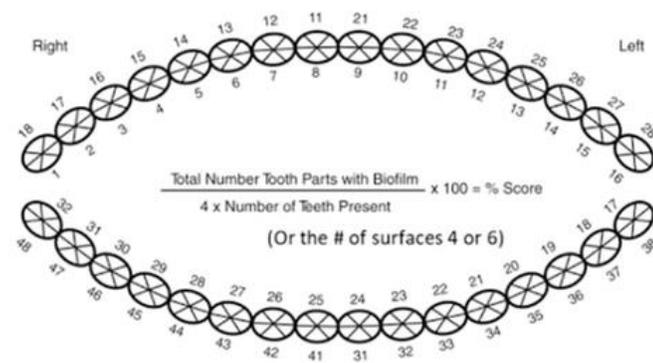
Exercise 3: Oral Hygiene Index (Plaque Control Record by O’Leary, Drake and Naylor, 1972)

Purpose

The O’Leary Plaque Control Record is used to evaluate the presence of dental plaque on tooth surfaces and to motivate patients to improve oral hygiene. It measures the percentage of tooth surfaces with plaque.

Procedure

1. Apply a disclosing agent to all tooth surfaces.
2. Rinse gently to reveal plaque deposits.
3. Examine each tooth surface (mesial, distal, buccal, lingual).
4. Mark each surface **with plaque** in the chart.
5. Count the **number of surfaces with plaque** and the **total number of available surfaces**.



Calculation Formula

Plaque Control Record (%) = Number of surfaces with plaque/Total number of available surfaces X 100

Example Calculation

Tooth No.	Buccal	Lingual	Mesial	Distal	Total surfaces with plaque
11	X		X		2
12				X	1
13					0
14	X		X	X	3
15	X	X			2
16			X		1
...
Total:					28 surfaces with plaque

If there are **28 surfaces with plaque** out of **112 total tooth surfaces**, then:

Plaque Control Record = $28/112 \times 100 = 25\%$

Interpretation

Score	Interpretation
0–10%	Excellent oral hygiene
11–20%	Good oral hygiene
21–30%	Fair oral hygiene
>30%	Poor oral hygiene – need for improved plaque control

Student Exercise

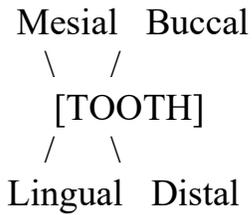
Each student should:

1. Select one patient or a peer for examination.
2. Apply a disclosing agent and record plaque presence on all tooth surfaces.
3. Fill in the chart and calculate the percentage of surfaces with plaque.

4. Interpret the result and propose individualized oral hygiene instructions.

Diagram Example (simplified format)

Each tooth is divided into 4 surfaces:



Mark (X) each surface with visible plaque.

O'Leary, Drake & Naylor – Plaque Control Record Worksheet

Student name: _____

Date: _____

Patient name / No.: _____

Instructions

1. Apply a disclosing agent to all teeth.
2. Examine each surface:
 - **M** = Mesial
 - **D** = Distal
 - **B** = Buccal
 - **L** = Lingual
3. Mark each surface **with plaque (X)**.
4. Count total number of surfaces with plaque and calculate percentage.

Recording Table

Upper Jaw

Tooth No. M D B L Total with Plaque

- 18
- 17
- 16
- 15
- 14
- 13
- 12
- 11
- 21
- 22
- 23
- 24
- 25
- 26
- 27
- 28

Total (upper): _____

Lower Jaw

Tooth No. M D B L Total with Plaque

- 48
- 47
- 46
- 45
- 44
- 43
- 42
- 41
- 31
- 32
- 33

Tooth No. M D B L Total with Plaque

34

35

36

37

38

Total (lower): _____

Calculation

Plaque Control Record (%) = No. of surfaces with plaque / Total no. of available surfaces X 100

Total available surfaces: 128 (32 teeth × 4 surfaces)

Surfaces with plaque: _____

Plaque Control Record (%): _____ %

Interpretation

Score Interpretation

0–10% Excellent

11–20% Good

21–30% Fair

>30% Poor

Quiz: O’Leary, Drake & Naylor Plaque Control Record (PCR)

1 What does the O’Leary PCR measure?

- a) Only gingival bleeding
- b) Presence or absence of plaque on tooth surfaces
- c) Calculus accumulation
- d) Tooth color

Answer: b) Presence or absence of plaque on tooth surfaces

2 How many surfaces of a tooth are examined in PCR?

- a) 1 (occlusal only)
- b) 2 (buccal and lingual)
- c) 4 (mesial, distal, buccal, lingual)
- d) 6 (including occlusal)

Answer: c) 4 (mesial, distal, buccal, lingual)

3 How is the Plaque Control Record expressed?

- a) As a percentage of surfaces with plaque
- b) As a total plaque score divided by number of teeth
- c) As a sum of calculus and plaque scores
- d) As the number of teeth with gingivitis

Answer: a) As a percentage of surfaces with plaque

4 What is considered excellent oral hygiene according to PCR?

- a) 0–10% of surfaces with plaque
- b) 11–30% of surfaces with plaque
- c) 31–60% of surfaces with plaque
- d) More than 60% of surfaces with plaque

Answer: a) 0–10% of surfaces with plaque

5 Which of the following is a key advantage of the O’Leary PCR?

- a) It evaluates calculus in detail
- b) It provides a simple, quick assessment of plaque distribution
- c) It measures gingival inflammation only
- d) It records tooth color changes

Answer: b) It provides a simple, quick assessment of plaque distribution

Exercise 4: Silness & Loe Plaque Index (1964)

Selected Teeth: 16, 12, 24, 36, 32, 44

Short Description

The **Silness & Loe Plaque Index (PI)** evaluates the **thickness of dental plaque** at the **gingival margin** on four surfaces of selected teeth:

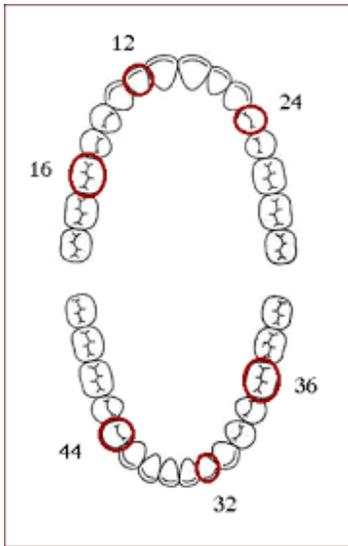
Mesial (M), Distal (D), Buccal (B), and Lingual (L).

Each surface is scored from **0 to 3** according to the amount of visible plaque.

The average score of all surfaces gives the overall **Plaque Index (PI)** for the patient.

Scoring Criteria

Score	Description
0	No plaque in the gingival area
1	Thin film of plaque detected only with a probe or disclosing agent
2	Moderate accumulation of plaque visible to the naked eye
3	Heavy accumulation of soft deposits on tooth and gingival margin



Example of Calculation

Tooth No. M D B L Total Mean per Tooth

16	2	1	1	2	6	1.5
12	1	0	1	1	3	0.75
24	2	2	1	2	7	1.75
36	1	1	0	1	3	0.75
32	0	1	1	0	2	0.5
44	2	1	2	2	7	1.75

TOTAL: 28

- **Number of surfaces examined: 24** (6 teeth × 4 surfaces)

$$PI = 28 \div 24 = 1.16$$

Plaque Index = 1.16 → “Fair oral hygiene”

Student Worksheet

Upper Jaw

Tooth No. M D B L Total Mean per Tooth

16

12

Tooth No. M D B L Total Mean per Tooth
24
Upper Total: _____

Lower Jaw

Tooth No. M D B L Total Mean per Tooth
36
32
44
Lower Total: _____

Final Calculation

Plaque Index = $\frac{\text{Sum of all scores}}{\text{Number of surfaces examined}}$

Total number of surfaces examined: 24

Sum of all scores: _____

Plaque Index (PI): _____

Interpretation

PI Value	Interpretation
0	Excellent oral hygiene
0.1 – 1.0	Good oral hygiene
1.1 – 2.0	Fair oral hygiene
2.1 – 3.0	Poor oral hygiene

Quiz: Silness & Loe Plaque Index (PI)

1 What does the Silness & Loe Plaque Index measure?

- a) Gingival inflammation only
- b) Plaque thickness at the gingival margin

- c) Tooth color
- d) Calculus only

Answer: b) Plaque thickness at the gingival margin

2 How many surfaces of a tooth are typically examined in the PI?

- a) 1 (occlusal only)
- b) 2 (buccal and lingual)
- c) 4 (mesial, distal, buccal, lingual)
- d) 6 (including occlusal)

Answer: c) 4 (mesial, distal, buccal, lingual)

3 What is the scoring range for the PI?

- a) 0–1
- b) 0–3
- c) 0–5
- d) 1–10

Answer: b) 0–3

4 What PI value corresponds to “Fair oral hygiene”?

- a) 0
- b) 0.1 – 1.0
- c) 1.1 – 2.0
- d) 2.1 – 3.0

Answer: c) 1.1 – 2.0

5 How is the overall Plaque Index for a patient calculated?

- a) Sum of plaque scores ÷ number of surfaces examined
- b) Sum of calculus scores ÷ number of teeth

- c) Total number of teeth with bleeding \div total teeth
- d) Average of tooth color scores

Answer: a) Sum of plaque scores \div number of surfaces examined

Exercise 5: Green & Vermillion – Oral Hygiene Index (OHI, 1960)

Selected Teeth: 16, 12, 24, 36, 32, 44

Short Description

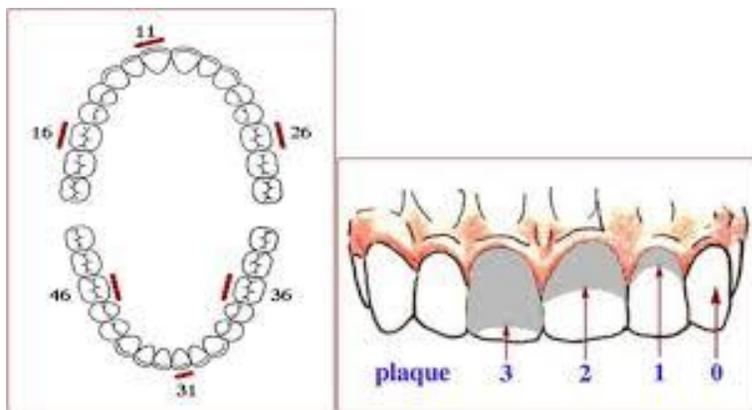
The **Green & Vermillion Oral Hygiene Index (OHI)** evaluates **plaque and calculus** on the **buccal and lingual surfaces** of selected teeth.

It consists of two components:

- **DI – Debris Index** (soft deposits, plaque)
- **CI – Calculus Index** (hard deposits, tartar)

Each surface is scored **0–3** according to the amount of debris or calculus.

The sum of scores is divided by the number of surfaces examined to calculate the **Debris Index (DI)**, **Calculus Index (CI)**, and **OHI = DI + CI**.



Scoring Criteria

Score	Debris (DI)	Calculus (CI)
0	No debris	No calculus
1	Soft debris covering $\leq 1/3$ of the tooth surface	Supragingival calculus covering $\leq 1/3$ of the tooth surface
2	Soft debris covering $> 1/3$ but $\leq 2/3$ of the tooth surface	Supragingival calculus covering $> 1/3$ but $\leq 2/3$ of the tooth surface or flecks of subgingival calculus
3	Soft debris covering $> 2/3$ of the tooth surface	Heavy supragingival and subgingival calculus covering $> 2/3$ of the tooth surface

Example of Calculation

Tooth No.	Surface	DI	CI	Total (DI+CI)
16	B	2	1	3
16	L	1	0	1
12	B	1	1	2
12	L	0	0	0
24	B	2	2	4
24	L	1	1	2
36	B	1	1	2
36	L	0	0	0
32	B	0	1	1
32	L	0	0	0
44	B	2	1	3
44	L	1	0	1
TOTAL		11	7	16

Number of surfaces examined: 12

$$DI = 11 \div 12 = 0.92, CI = 7 \div 12 = 0.58$$

$$OHI = DI + CI = 0.92 + 0.58 = 1.50$$

OHI = 1.50 → Fair oral hygiene

Student Worksheet – Upper Jaw

Tooth No.	Surface	DI	CI	Total
16	B			
16	L			
12	B			
12	L			
24	B			
24	L			
Upper Total				

Student Worksheet – Lower Jaw

Tooth No.	Surface	DI	CI	Total
36	B			
36	L			
32	B			
32	L			
44	B			
44	L			
Lower Total				

Final Calculation

DI = Total DI scores \ Number of surfaces examined

CI = Total CI scores \ Number of surfaces examined

OHI = DI + CI

Interpretation (OHI):

OHI Value Oral Hygiene Level

0.0 – 0.9 Good

1.0 – 1.9 Fair

OHI Value Oral Hygiene Level

2.0 – 3.0 Poor

Quiz: OHI (Oral Hygiene Index)

1 What are the two main components of the OHI?

- a) Plaque Index and Gingival Index
- b) Debris Index (DI) and Calculus Index (CI)
- c) Tooth color and cavity index
- d) Oral pH and saliva flow

Answer: b) Debris Index (DI) and Calculus Index (CI)

2 Which teeth are usually examined for the full OHI?

- a) Only 6 indicator teeth
- b) All or most teeth in the mouth
- c) Only anterior teeth
- d) Only molars

Answer: b) All or most teeth in the mouth

3 How is the Debris Index (DI) scored?

- a) 0–5 based on gum bleeding
- b) 0–3 based on amount of soft deposits (plaque)
- c) 0–10 based on tooth mobility
- d) Presence or absence only

Answer: b) 0–3 based on amount of soft deposits (plaque)

4 What is the formula to calculate the total OHI score?

- a) $OHI = DI + CI$ for all examined surfaces
- b) $OHI = \text{number of teeth with cavities}$

- c) $OHI = DI \times CI$
d) OHI = total tooth color score

Answer: a) $OHI = DI + CI$ for all examined surfaces

5 Which statement correctly describes the purpose of OHI?

- a) To measure oral hygiene comprehensively for clinical evaluation
b) To determine only the aesthetic appearance of teeth
c) To measure gum bleeding exclusively
d) To check saliva acidity

Answer: a) To measure oral hygiene comprehensively for clinical evaluation

Exercise 6: Simplified Oral Hygiene Index (OHI-S, Greene & Vermillion, 1964)

Selected Teeth: 16, 12, 24, 36, 32, 44

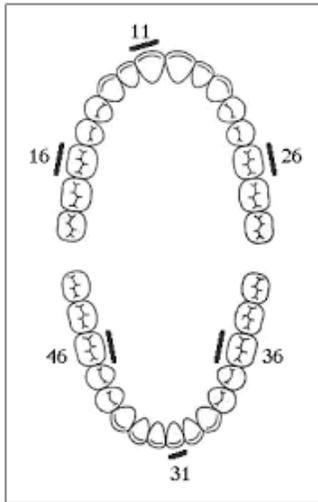
Short Description

The **Simplified Oral Hygiene Index (OHI-S)** evaluates **plaque (debris) and calculus** on **six selected teeth**.

It is a simplified version of the OHI, designed for **quick and practical student assessment**.

- **Debris Index (DI-S):** assesses soft deposits (plaque)
- **Calculus Index (CI-S):** assesses hard deposits (tartar)
- Each surface is scored **0–3**
- **$OHI-S = DI-S + CI-S$**

Scoring Criteria



Score	Debris (DI-S)	Calculus (CI-S)
0	No debris	No calculus
1	Soft debris $\leq 1/3$ of surface	Supragingival calculus $\leq 1/3$ of surface
2	Soft debris $> 1/3$ but $\leq 2/3$ of surface	Supragingival calculus $> 1/3$ but $\leq 2/3$ of surface
3	Soft debris $> 2/3$ of surface	Heavy calculus $> 2/3$ of surface

Example of Calculation

Tooth No.	Surface	DI-S	CI-S	Total (DI+CI)
16	B	2	1	3
16	L	1	0	1
12	B	1	0	1
12	L	0	0	0
24	B	2	1	3
24	L	1	1	2
36	B	1	1	2
36	L	0	0	0
32	B	0	1	1

Tooth No.	Surface	DI-S	CI-S	Total (DI+CI)
32	L	0	0	0
44	B	2	1	3
44	L	1	0	1
TOTAL		11	6	17

Number of surfaces examined: 12

$$\text{DI-S} = 11 \div 12 = 0.92, \text{CI-S} = 6 \div 12 = 0.50$$

$$\text{OHI-S} = \text{DI-S} + \text{CI-S} = 0.92 + 0.50 = 1.42$$

 **OHI-S = 1.42 → Fair oral hygiene**

Student Worksheet – Upper Jaw

Tooth No.	Surface	DI-S	CI-S	Total
16	B			
16	L			
12	B			
12	L			
24	B			
24	L			
Upper Total				

Student Worksheet – Lower Jaw

Tooth No.	Surface	DI-S	CI-S	Total
36	B			
36	L			
32	B			
32	L			

Tooth No.	Surface	DI-S	CI-S	Total
44	B			
44	L			
Lower Total				

Final Calculation

DI-S = Total DI scores \ Number of surfaces examined

CI-S = Total CI scores \ Number of surfaces examined

OHI-S = DI-S + CI-S

]

Interpretation (OHI-S):

OHI-S Value Oral Hygiene Level

0.0 – 0.9	Good
1.0 – 1.9	Fair
2.0 – 3.0	Poor

Main Differences between OHI and OHI-S

1 OHI – Oral Hygiene Index (Green & Vermillion, 1960)

Overview:

- Comprehensive index for assessing oral hygiene.
- Includes **Debris Index (DI)** and **Calculus Index (CI)**.
- Measures plaque and calculus on **all or most teeth**.
- More complex calculation, suitable for **clinical or research purposes**.

Characteristics:

- Uses a **larger number of teeth and surfaces**.
- Takes longer to record and score.

- Good for **complete clinical evaluation**, but may be complicated for student exercises.

2 OHI-S – Simplified Oral Hygiene Index (Greene & Vermillion, 1964)

Overview:

- **Simplified version of OHI**, designed for **quick student exercises and practical use**.
- Evaluates **only 6 indicator teeth**: 16, 12, 24, 36, 32, 44.
- Measures **plaque and calculus on these selected teeth**.

Characteristics:

- Faster and easier for students to record and calculate.
- Provides an approximate assessment of oral hygiene, sufficient for **practical exercises**.
- Primarily used for **training and laboratory exercises**, not full clinical documentation.

Key Differences

Feature	OHI	OHI-S
Number of teeth	Most or all teeth	6 indicator teeth
Complexity	Higher	Simplified
Time required	Longer	Short, practical for students
Purpose	Clinical and research evaluation	Student exercises and quick oral hygiene assessment
Calculation	DI + CI for multiple teeth	DI-S + CI-S for 6 selected teeth

Conclusion for Students:

- **OHI-S** is ideal for practical exercises and lab work.
- **OHI** is used for full clinical assessment and research studies.

Quiz: OHI-S (Simplified Oral Hygiene Index)

1 What does OHI-S measure?

- a) Only gingival inflammation
- b) Only dental cavities
- c) Plaque (debris) and calculus on selected teeth
- d) Tooth color and shape

Answer: c) Plaque (debris) and calculus on selected teeth

2 How many teeth are examined in the standard OHI-S?

- a) All teeth in the mouth
- b) 6 indicator teeth
- c) Only the front teeth
- d) Only molars

Answer: b) 6 indicator teeth

3 Which surfaces are evaluated in OHI-S?

- a) Only occlusal surfaces
- b) Buccal and lingual surfaces of selected teeth
- c) Only mesial surfaces
- d) Only distal surfaces

Answer: b) Buccal and lingual surfaces of selected teeth

4 How is the OHI-S calculated?

- a) Adding DI-S + CI-S scores and dividing by number of surfaces examined
- b) Counting only the number of teeth with plaque
- c) Measuring gum bleeding only
- d) Evaluating tooth color

Answer: a) Adding DI-S + CI-S scores and dividing by number of surfaces examined

5 What OHI-S value corresponds to “Fair oral hygiene”?

- a) 0.0 – 0.9
- b) 1.0 – 1.9
- c) 2.0 – 3.0
- d) Above 3.0

Answer: b) 1.0 – 1.9

Exercise 7: Toothbrushing Techniques

Learning Objectives

- Understand different **toothbrushing techniques**.
- Learn how to **adapt brush to tooth surfaces**.
- Practice **proper brushing sequence**.
- Recognize areas commonly **missed during brushing**.

Required Materials

- Toothbrush (soft or medium bristles)
- Dental mirror
- Toothpaste
- Model of teeth or extracted teeth
- Timer

Common Brushing Techniques

Technique	Description	Indications
Bass/Modified Bass	Bristles angled 45° to the gingival margin, short back-and-forth vibratory strokes	Best for removing plaque at the gingival margin
Stillman	Bristles angled slightly towards the root, gentle rotary strokes	Massage gingiva, good for sensitive gums
Fones	Circular motion covering both teeth and gingiva	Often recommended for children
Charters	Bristles angled toward occlusal surface, vibratory motion	Post-orthodontic, around fixed appliances
Roll/Modified Roll	Start at gingiva, roll bristles over teeth toward occlusal surface	General daily brushing for adults

Step-by-Step Exercise

1. Prepare

- Apply toothpaste to brush.
- Seat patient or model comfortably.

2. Bass Technique Example

- Place brush at 45° angle toward gum line.
- Gently vibrate for 10–15 strokes per segment.
- Repeat on all surfaces (buccal, lingual, mesial, distal).

3. Other Techniques

- Practice Fones circular motion on anterior teeth.
- Practice Roll technique on posterior teeth.
- Apply Charters technique around orthodontic brackets if available.

4. Sequence

- Divide mouth into 4 quadrants.
- Spend 2–3 minutes per quadrant.
- Ensure all surfaces are covered.

Student Worksheet

Quadrant	Tooth/Surface	Technique Used	Observations / Missed Areas
Upper Right	B	Bass	
Upper Right	L	Roll	
Upper Left	B	Fones	

Quadrant	Tooth/Surface	Technique Used	Observations / Missed Areas
Upper Left	L	Bass	
Lower Right	B	Roll	
Lower Right	L	Charters	
Lower Left	B	Bass	
Lower Left	L	Roll	

Evaluation Criteria

- Correct **angle and bristle adaptation**
- Proper **stroke type and length**
- Coverage of **all surfaces**
- Observation of **common missed areas**

Optional Extension

- Compare **manual brushing vs powered toothbrush**
 - Record **time spent, coverage, and efficiency**
 - Discuss **advantages and limitations** of each technique
-

Quiz: Toothbrushing Techniques

1 What is the correct angle of the toothbrush bristles for the Bass technique?

- 0° to the tooth surface
- 45° toward the gingival margin
- 90° perpendicular to the occlusal surface
- 30° toward the tongue

Answer: b) 45° toward the gingival margin

2 Which technique uses circular motions and is often recommended for children?

- a) Bass
- b) Fones
- c) Charters
- d) Roll

Answer: b) Fones

3 Which brushing technique is most suitable for patients with braces or orthodontic appliances?

- a) Stillman
- b) Bass
- c) Charters
- d) Fones

Answer: c) Charters

4 What is the main purpose of the Roll/Modified Roll technique?

- a) Massage gums without removing plaque
- b) Remove plaque from the gingival margin and roll bristles over the teeth toward occlusal surfaces
- c) Whiten teeth
- d) Apply fluoride evenly

Answer: b) Remove plaque from the gingival margin and roll bristles over the teeth toward occlusal surfaces

5 How should the mouth be divided for thorough brushing?

- a) Into 2 halves
- b) Into 4 quadrants
- c) Into individual teeth only
- d) Into upper and lower jaws only

Answer: b) Into 4 quadrants

Exercise 8: Mechanical Removal of Dental Calculus

Learning Objectives

- Understand the **purpose of mechanical scaling**.
- Identify **instruments used** for plaque and calculus removal.
- Practice **proper technique** for scaling.
- Record **observations and effectiveness** of calculus removal.

Equipment & Instruments

- **Manual scalers:**
 - Sickle scaler
 - Curettes (Universal, Gracey)
- **Ultrasonic scaler** (optional, if available)
- **Mirror, probe, explorer**
- **Gloves, mask, protective eyewear**
- **Artificial teeth or extracted teeth with calculus** for practice

Procedure Steps (Manual Scaling)

1. **Patient/Model Preparation**
 - Seat patient in upright or semi-supine position.
 - Apply protective barriers (gloves, mask, glasses).
2. **Examination**
 - Inspect teeth for visible plaque and calculus using **mirror and explorer**.
3. **Instrument Selection**
 - Choose appropriate **scaler or curette** for the tooth surface (anterior/posterior, mesial/distal).
4. **Scaling Technique**
 - **Adapt the tip** to the tooth surface.
 - **Insert subgingivally** with light pressure.
 - **Apply controlled strokes** from base of pocket to free margin.

- **Remove deposits carefully**, avoid damaging gingiva.
- 5. Check & Record**
- Use explorer to confirm removal of deposits.
 - Record **areas scaled, instruments used, observations.**

Scoring / Student Worksheet

Tooth No.	Surface	Amount of Calculus Before	Amount Removed	Remaining Deposits	Notes
16	B				
16	L				
12	B				
12	L				
24	B				
24	L				
...	...				

Safety & Hygiene Tips

- Always **wear PPE.**
- Maintain **sharp instruments** for effective scaling.
- Avoid **excessive force** to prevent tissue trauma.
- Clean and **sterilize instruments** after each practice session.

Optional Extension for Students:

- Compare **manual scaling vs ultrasonic scaling.**
- Record **time taken and effectiveness.**
- Discuss **advantages and limitations** of each method.

Quiz: Mechanical Removal of Dental Calculus

1 What is the primary purpose of mechanical scaling?

- a) Whitening teeth
- b) Removal of plaque and calculus
- c) Treating cavities
- d) Strengthening enamel

Answer: b) Removal of plaque and calculus

2 Which instrument is commonly used for manual removal of supragingival calculus?

- a) Sickie scaler
- b) Dental explorer
- c) Probe
- d) Mirror

Answer: a) Sickie scaler

3 When adapting a curette or scaler, the tip should be:

- a) Perpendicular to the tooth surface
- b) Parallel to the tooth surface and properly adapted to the gingival margin
- c) Floating above the tooth surface
- d) Pressed forcefully into the gingiva

Answer: b) Parallel to the tooth surface and properly adapted to the gingival margin

4 Which of the following is a safety precaution during scaling?

- a) Using excessive force to remove deposits quickly
- b) Not wearing gloves or mask
- c) Wearing PPE and using controlled strokes
- d) Ignoring patient comfort

Answer: c) Wearing PPE and using controlled strokes

5 How can a student confirm that calculus has been successfully removed?

- a) By looking at the tooth only
- b) Using a dental explorer to detect remaining deposits
- c) Asking the patient if it feels clean
- d) Scaling the same area multiple times without checking

Answer: b) Using a dental explorer to detect remaining deposits

Exercise 9: Interdental Aids and Oral Hygiene Maintenance

Learning Objectives

- Understand the **types of interdental cleaning aids**.
- Learn the **proper technique** for flossing, interdental brushes, and other aids.
- Apply interdental cleaning as part of **daily oral hygiene routine**.
- Identify areas commonly **missed by toothbrushing alone**.

Required Materials

- Dental floss (waxed/unwaxed)
- Interdental brushes (different sizes)
- Soft-picks or rubber tips
- Toothbrush and toothpaste
- Mirror
- Model of teeth, extracted teeth, or typodont

Types of Interdental Aids

Aid	Description	Indications
Dental Floss	Thin filament used between teeth	Tight contacts, normal embrasures
Interdental Brushes	Small bristled brushes	Wider spaces, open embrasures, orthodontic appliances
Soft-Picks / Rubber Tips	Flexible rubber tips	Sensitive gums, implant maintenance
Wooden Picks	Tapered wooden sticks	Minor plaque removal, food debris

Step-by-Step Exercise

1. Flossing Technique

- Cut 18–24 inches of floss.
- Wrap ends around middle fingers.
- Slide gently between teeth, curve around tooth in C-shape.
- Move up and down, cleaning both proximal surfaces.

2. Interdental Brushes

- Select correct brush size.
- Insert gently between teeth without force.
- Move back and forth to remove plaque.

3. Soft-Picks / Rubber Tips

- Hold at gum line, insert into interdental space.
- Massage and clean in gentle strokes.

4. Sequence

- Start with posterior teeth, move to anterior.
- Cover **all interdental spaces**.
- Combine with toothbrushing for complete oral hygiene.

Student Worksheet

Tooth/Interdental Space	Aid Used	Technique Applied	Observations / Missed Areas
16-15	Floss		

Tooth/Interdental Space	Aid Used	Technique Applied	Observations / Missed Areas
15-14	Brush		
12-11	Floss		
22-23	Soft-pick		
36-37	Brush		
32-31	Floss		
44-45	Brush		

Evaluation Criteria

- Proper **selection of interdental aid**
- Correct **adaptation and movement**
- Coverage of **all interdental spaces**
- Observation of **patient/model comfort and missed areas**

Optional Extension for Students

- Compare **efficiency of different aids** in plaque removal.
 - Record **time taken and patient comfort**.
 - Discuss advantages of combining **toothbrushing + interdental cleaning** for long-term oral hygiene.
-

Quiz: Interdental Cleaning Aids

1 What is the main purpose of interdental cleaning aids?

- To polish teeth
- To remove plaque and food debris from between teeth
- To whiten teeth
- To measure gum thickness

Answer: b) To remove plaque and food debris from between teeth

2 Which interdental aid is most suitable for tight contacts between teeth?

- a) Interdental brush
- b) Dental floss
- c) Soft-pick
- d) Wooden pick

Answer: b) Dental floss

3 When should interdental brushes be preferred over dental floss?

- a) For very tight contacts
- b) For wide interdental spaces or orthodontic appliances
- c) For only anterior teeth
- d) For children under 3 years old

Answer: b) For wide interdental spaces or orthodontic appliances

4 How should dental floss be adapted around a tooth during cleaning?

- a) Straight line, pressing hard on the gum
- b) C-shape around the tooth, moving up and down gently
- c) Zig-zag across the occlusal surface only
- d) Only along the gum line without contacting the tooth

Answer: b) C-shape around the tooth, moving up and down gently

5 Which of the following is a benefit of regular interdental cleaning?

- a) Reduces plaque accumulation and gingival inflammation
- b) Changes tooth color
- c) Increases tooth length
- d) Eliminates need for toothbrushing

Answer: a) Reduces plaque accumulation and gingival inflammation

Exercise 10: Practical Exercise: Tooth Polishing

Learning Objectives

- Understand the **purpose of tooth polishing**.
- Learn how to select **polishing instruments and abrasives**.
- Practice **proper technique and sequence** for polishing all tooth surfaces.
- Identify areas commonly **missed during polishing**.

Required Materials

- Prophylaxis cup (rubber cup)
- Polishing paste (coarse, medium, fine)
- Low-speed handpiece
- Dental mirror and explorer
- Suction and gauze
- Model teeth or typodont for practice

Purpose of Tooth Polishing

- Removes **extrinsic stains**.
- Smooths **tooth surfaces** to reduce plaque retention.
- Enhances **esthetic appearance**.
- Prepares teeth for **sealants or fluoride application**.

Step-by-Step Exercise

1. **Preparation**
 - Seat patient/model comfortably.
 - Apply protective barriers (gloves, mask, glasses).
 - Select appropriate **prophylaxis cup and paste**.
2. **Polishing Technique**
 - Place **prophylaxis cup lightly on the tooth surface**.
 - Use **circular motion**, moving **gingivally to occlusal/incisal surfaces**.
 - Apply **light to moderate pressure**.
 - Continuously **move the cup** to avoid frictional heat.
3. **Sequence**

- Divide the mouth into **4 quadrants**.
- Start with **posterior teeth**, then anterior teeth.
- Cover **all surfaces**: buccal, lingual, mesial, distal, occlusal/incisal.

4. Finishing

- Remove polishing paste with **suction and gauze**.
- Rinse teeth thoroughly.
- Inspect for **missed areas or stains**.

Student Worksheet

Quadrant	Tooth/Surface	Polishing Paste Used	Technique Applied	Observations / Missed Areas
Upper Right	B	Medium	Circular	
Upper Right	L	Fine	Circular	
Upper Left	B	Medium	Circular	
Upper Left	L	Fine	Circular	
Lower Right	B	Medium	Circular	
Lower Right	L	Fine	Circular	
Lower Left	B	Medium	Circular	
Lower Left	L	Fine	Circular	

Evaluation Criteria

- Proper **instrument selection** (cup and paste).
- Correct **pressure and movement**.
- Coverage of **all tooth surfaces**.
- Observation of **patient comfort and missed areas**.

Optional Extension for Students

- Compare **different types of polishing paste** (coarse vs fine).
- Evaluate **time spent and efficiency** for stain removal.

- Discuss **potential effects of over-polishing** on enamel.
-

Quiz: Tooth Polishing

1 What is the main purpose of tooth polishing?

- a) To remove extrinsic stains and smooth tooth surfaces
- b) To treat cavities
- c) To change tooth color permanently
- d) To strengthen enamel

Answer: a) To remove extrinsic stains and smooth tooth surfaces

2 Which instrument is commonly used for professional tooth polishing?

- a) Explorer
- b) Prophy cup (rubber cup)
- c) Dental probe
- d) Scaler

Answer: b) Prophy cup (rubber cup)

3 How should the prophy cup be moved during polishing?

- a) In a circular motion covering all surfaces
- b) In a straight line only
- c) Only over the occlusal surface
- d) Random movements without control

Answer: a) In a circular motion covering all surfaces

4 Why is it important to continuously move the prophy cup during polishing?

- a) To reduce frictional heat and avoid enamel damage

- b) To clean only the occlusal surface
- c) To apply more pressure in one spot
- d) To remove fluoride from teeth

Answer: a) To reduce frictional heat and avoid enamel damage

5 Which surfaces should be polished during a complete professional cleaning?

- a) Only the anterior teeth
- b) Only the occlusal surfaces
- c) All surfaces: buccal, lingual, mesial, distal, occlusal/incisal
- d) Only the posterior teeth

Answer: c) All surfaces: buccal, lingual, mesial, distal, occlusal/incisal