

PERIODONTICS

PERIODONTITIS STAGING GRADING



MIND MAP & CUE CARDS



BY DR. JIGYASA SHARMA

Diagnostic Criteria for Periodontitis

- Interdental CAL detectable at ≥2 non-adjacent teeth defines periodontitis ←
- Buccal/oral CAL ≥3 mm with pocketing >3 mm at ≥2 teeth also meets periodontitis diagnosis

Forms of Periodontitis

- Necrotizing periodontitis: characterized by pain, ulceration, and necrotic gingival papillae
- Periodontitis as a manifestation of systemic diseases
- Classic periodontitis without necrotizing features or systemic link

Staging of Periodontitis: Severity and Complexity

- Stage I-IV based on severity (attachment loss) and management complexity
- Extent of disease classified as localized or generalized
- Factors: pocket depth, tooth loss due to periodontitis, infrabony defects, furcation involvement, tooth mobility, masticatory dysfunction

Complexity Factors Influencing Stage

- Furcation involvement stages III or IV
- High tooth mobility, posterior bite collapse can determine stage IV
- Presence of any complexity factor may upgrade the stage

Grading of Periodontitis: Rate of Progression

- Grading categories: Grade A (slow), B (moderate), C (rapid progression)
- Based on direct or indirect evidence of progression, including RBL-to-age ratio
- Risk factors like smoking or diabetes modify the grade assigned



STAGING AND GRADING OF PERIODONTITIS



Clinical Definition of Periodontitis

- Periodontitis involves microbiallyassociated, host-mediated inflammation causing periodontal attachment loss.
- Clinical attachment loss (CAL) is measured around teeth using a periodontal probe referencing the cemento-enamel junction (CEJ)



Understanding Clinical Attachment Loss (CAL)

- CAL = distance from CEJ to bottom of periodontal pocket
- Probing Depth (PD) measures gingival margin to pocket bottom; gingival recession = CEJ to gingival margin
- CAL excludes non-periodontal causes such as trauma-induced recession, cervical caries, third molar issues, endodontic lesions, or root fractures



Characteristics of Necrotizing Periodontitis

- History of pain and gingival ulceration
- Fibrin deposits and bone exposure in severe cases



Determining Initial Stage

- Use CAL primarily; if unavailable, radiographic bone loss (RBL) is alternative
- Tooth loss attributed to periodontitis may alter staging
- Complexity factors (e.g. furcation involvement, high mobility) can increase stage status



Post-Treatment Staging Considerations

- CAL and RBL remain primary evaluation metrics post-treatment
- Stage should not be downgraded even if complexity factor is resolved, due to maintenance needs



Criteria for Grading Disease Progression

- Direct evidence preferred, indirect relies on bone loss relative to age
- Start with Grade B as default; adjust to A or C upon evidence
- Grading also considers systemic health risks posed by individual's periodontitis





What is the clinical definition of periodontitis?





Periodontitis is characterized by microbially-associated, host-mediated inflammation that results in loss of periodontal attachment. This is detected as clinical attachment loss (CAL) by circumferential assessment of the erupted dentition with a standardized periodontal probe with reference to the cemento-enamel junction (CEJ).





How is a patient clinically diagnosed as having periodontitis?





Buccal or oral CAL of 3 mm or more with probing pocket depth greater than 3 mm is detectable at two or more teeth.





What is clinical attachment loss (CAL) and how is it measured?





Clinical attachment loss (CAL) is the distance from the cemento-enamel junction (CEJ) to the bottom of the periodontal pocket. It is calculated by combining probing depth (distance from gingival margin to pocket bottom) and gingival recession (distance from CEJ to gingival margin).





Which conditions cannot be considered causes of clinical attachment loss (CAL)?





A vertical root fracture





What are the three different forms of periodontitis identified based on pathophysiology?





Periodontitis (chronic or other)





What are key clinical features of necrotizing periodontitis?





Necrotizing periodontitis is characterized by pain history, ulceration of the gingival margin, fibrin deposits at sites with decapitated gingival papillae, and in some cases, exposure of marginal alveolar bone.





What factors are considered when staging periodontitis?





Staging is based on severity and extent of disease at presentation, including clinical attachment loss (CAL), radiographic bone loss (RBL), tooth loss attributable to periodontitis, and complexity factors such as pocket depth, furcation involvement, tooth mobility, infrabony defects, and masticatory dysfunction.





How does complexity influence the staging of periodontitis?





Complexity factors such as furcation involvement, high tooth mobility, or posterior bite collapse can shift the disease stage to a higher level (e.g., from stage III to IV), even if CAL or RBL remains unchanged.





What are the three categories for grading periodontitis progression?





Periodontitis progression is graded into three categories: slow (Grade A), moderate (Grade B), and rapid (Grade C).





How is grade determination primarily made and modified in periodontitis?





Grade is primarily determined by direct evidence of progression or indirectly by radiographic bone loss related to age (RBL/age). Initial assumption is grade B unless specific evidence supports grade A or C. Grade can then be modified based on risk factors such as smoking and systemic health.



PERIODONTICS

GINGIVITIS-DRUG INDUCED, ANUG



MIND MAP & CUE CARDS



BY DR. JIGYASA SHARMA

Medications Commonly Associated <

- Anticonvulsants: especially phenytoin for epilepsy control
- Immunosuppressants: especially cyclosporine A used in organ transplant prevention
- Calcium channel blockers: particularly nifedipine for cardiovascular conditions

Inflammation and Plaque Complications -

- Plaque accumulation worsens enlargement through secondary inflammation
- Inflamed lesions become red/bluish, bleed easily, lose lobulation
- Enlargement mostly affects teeth-bearing areas, sparing edentulous spaces

Prevention and Non-Surgical Treatment

- Good oral hygiene reduces inflammation but may not stop overgrowth
- Chlorhexidine toothpaste can improve plaque control
- Referral to physician for medication substitution when possible

Pharmacologic Adjuncts ←

- Systemic or topical folic acid may reduce enlargement
- Short courses of metronidazole or azithromycin effective, especially for cyclosporine-induced cases

Clinical Presentation of NUG

- Ulcerated interdental papilla with greyish pseudo-membrane and red halo
- Painful lesions bleed easily, "punched out" appearance pathognomonic
- Accompanied by bad breath, increased saliva, fever, malaise, and lymphadenopathy.

NUG Management Principles ← 🕢

- Gentle removal of plaque and necrotic debris, sometimes with local anesthetics.
- Local antiseptics: chlorhexidine 0.2% or hydrogen peroxide 1.5-3% rinses to reduce pain and plaque
- Antibiotics: metronidazole 400 mg twice daily for 3 to 5 days
- Pain control with analgesics and smoking cessation advised

Summary and Recommendations

- Early diagnosis and combined treatment of drug-induced gingival enlargement and NUG critical
- Collaboration between dental and medical providers for medication management.
- Emphasis on meticulous oral hygiene to prevent progression and recurrence







Drug-Induced Gingival Enlargement Overview

- Gingival enlargement is a side effect of certain systemic medications
- Classified by the American Academy of Periodontology as medication– modified, plaque-induced gingival disease



Clinical Features of Gingival Enlargem ent

- Begins as painless, beadlike growth on interdental papilla
- Enlargement extends to facial and lingual gingiva, may cover teeth crowns
- Lesions firm, pale pink, lobulated, no bleeding if uninflammated



- Higher prevalence in children due to phenytoin use
- Onset typically within 1–3 months of starting medication.
- Pseudo-pocket formation due to gingival swelling without bone loss.



- Gingivectomy via external or internal bevel excision for persistent enlargement
- Carbon dioxide laser excision ofers rapid hemostasis, less discomfort
- Postoperative chlorhexidine rinse advised to prevent recurrence

Necrotizing Ulcerative Gingivitis (NUG) Introduction

- NUG is a bacterial infection characterized by gingival tissue necrosis and ulceration
- Formerly called "Vincent's infection" and "trench mouth"
- Occurs in context of impaired host immune response

NUG Risk Factors and Differential Diagnosis

- Most common in young adult smokers, rare in children
- Children suspected of NUG should be evaluated for acute herpetic gingivostomatitis.



- Reassessment in 48-72 hours to complete debridement and evaluate oral hygiene
- Referral to specialist if poor response after 2 weeks or in immunocompromised patients
- Treatment failure commonly due to inadequate debridement or poor hygiene, not antibiotic resistance











What is drug-induced gingival enlargement and how is it classified by the American Academy of Periodontology?



GINGIVITIS- DRUG INDUCED, ANUG

Answer 1

Drug-induced gingival enlargement is an abnormal growth of the gingiva caused by the use of systemic medication. It is classified by the American Academy of Periodontology as a form of dental plaque-induced gingival disease modified by medication.





Which three pharmaceutical categories of medication are commonly associated with gingival enlargement?





The three pharmaceutical categories associated with gingival enlargement are anticonvulsants, immunosuppressants, and calcium channel blockers.





Which specific drugs have the strongest association with drug-induced gingival enlargement?





Phenytoin (an anticonvulsant), cyclosporine A (an immunosuppressant), and nifedipine (a calcium channel blocker) have the strongest association with drug-induced gingival enlargement.





What are the initial clinical features of drug-induced gingival enlargement?



GINGIVITIS-DRUG INDUCED, ANUG

Answer 4

The growth starts as a painless, beadlike enlargement of the interdental papilla and extends to the facial and lingual gingival margins. It is usually firm, pale pink, mulberry shaped, resilient, with a minutely lobulated surface and no tendency to bleed unless complicated by inflammation.





How does secondary inflammation affect drug-induced gingival enlargement?





Secondary inflammation caused by plaque accumulation increases the size of the lesion, produces a red or bluish-red discoloration, obliterates lobulated surface demarcations, and increases bleeding tendency.





What is a "pseudo-pocket" in the context of drug-induced gingival enlargement?





A "pseudo-pocket" is an increase in pocket depth greater than 3–4 mm caused by gingival swelling without apical migration of the junctional epithelium or bone loss.





Question 7

What are the main treatment options for drug-induced gingival enlargement?





Answer 7

Treatment includes oral hygiene instructions, supra- and subgingival scaling and polishing, referral to a physician for possible substitution of medication, and if necessary, surgical excision using external or internal bevel gingivectomy or carbon dioxide laser surgery.





Question 8

What are the characteristics and clinical features of necrotizing ulcerative gingivitis (NUG)?





Answer 8

NUG is a microbial disease characterized by ulceration and necrosis of interdental papillae, covered by a whitishyellow pseudomembrane, surrounded by an erythematous halo. Symptoms include pain, bleeding, oral malodor, lymphadenopathy, fever, and malaise. The ulcers look punched out and are highly sensitive.





Question 9

How is necrotizing ulcerative gingivitis (NUG) initially managed?



GINGIVITIS- DRUG INDUCED, ANUG

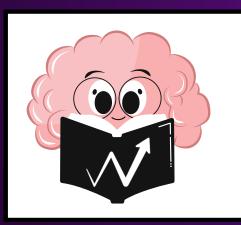
Answer 9

Management begins with gentle removal of plaque and necrotic debris, local irrigation with chlorhexidine 0.2% mouthwash or hydrogen peroxide solution, antibiotic therapy (metronidazole), analgesics, and smoking cessation advice.



PERIODONTICS

PERIODONTAL SCREENING (BPE) BASIC PERIODONTAL EXAM/SCORING/MANAGEMENT



MIND MAP & CUE CARDS



BY DR. JIGYASA SHARMA

Purpose of BPE

- Screening tool only, not for definitive diagnosis
- Represents a minimum standard of care for initial periodontal assessment

Sextant Division & Examination ←

- Sextants: Upper right (17-14), upper anterior (13-23), upper left (24-27)
- Lower right (47-44), lower anterior (43-33), lower left (34-37)
- Each sextant must contain t least 2 teeth to qualify for recording

Special Considerations for Code 4 ←

- If code 4 detected, examine all sites in sextant to understand full periodontal condition
- Furcation involvement should be marked with * alongside the code (e.g., 3*)

Implants and BPE ←

- Implants susceptible to plaque but have different tissue attachments than natural teeth
- BPE is inappropriate for implants due to different tissue resistance and anatomical diferences
- Detailed probing (4-6 points/site) and bleeding/suppuration checks needed for implants

Management Based on BPE Codes

- Code 3: Provide initial therapy including oral hygiene advice and risk factor control
- Post-therapy: 6-point pocket chart for affected sextant only
- A Code 4: Full mouth detailed probing (6 sites per tooth) required.

Referral Indications for Children

- Aggressive periodontitis diagnosis
- X Chronic periodontitis unresponsive to treatment
- Systemic conditions linked to periodontal destruction
- Genetic predispositions affecting periodontal health
- Root morphology negatively impacting prognosis
- Complex or rare non-plaque induced conditions requiring specialist care
- Drug-induced gingival overgrowth
- Cases needing periodontal surgery evaluation



WINSPERT

MIND MAP

BASIC PERIODONTAL EXAMINATION (BPE), PERIODONTAL SCREENING AND



Introduction to BPE

- BPE is a simple, rapid screening tool to indicate further examination needs
- Provides basic treatment guidance but is not diagnostic



Screening Procedure

- Probing periodontal tissues to assess bleeding, plaque, calculus, and pocket dept
- Dentition divided into 6 sextants for examination



- WHO probe with 0.5mm ball and 3.5-5.5mm black band used
- Light probing force (20–25 grams) applied around sulcus/pockets
- Highest score in each sextant recorded before moving on



- Six index teeth (UR6, UR1, UL6, LL6, LL1, LR6) assessed with simplified BPE
- WHO 621 probe recommended, with extended black band for false pocketing
- Codes 0-2 used for 7-11 years (mixed dentition), full codes 0-4+ *for 12-17 year

When to Record BPE

- All new patients (children and adults) should have BPE performed
- $\bullet\,$ Routine exams should include BPE if previous codes 0, 1, or 2
- More detailed charting needed for codes 3 and 4

Monitoring and Maintenance

- BPE not suitable to monitor post-treatment responses
- A 6-point pocket chart should be used pre- and post-treatment
- Full probing depths recorded annually during maintenance phase
- Hygienists should update periodontal charts to identify persistent problem sites.







Question 1

What is the primary purpose of the Basic Periodontal Examination (BPE)?



Answer 1

The BPE is a simple and rapid screening tool used to indicate the level of further examination needed and to provide basic guidance on required treatment. It is used for screening only and not for diagnosis.



Question 2

How is the dentition divided when recording the BPE for adults?



Answer 2

The dentition is divided into 6 sextants: upper right (17 to 14), upper anterior (13 to 23), upper left (24 to 27), lower right (47 to 44), lower anterior (43 to 33), and lower left (34 to 37).



Question 3

What are the criteria for a sextant to qualify for BPE recording?





Answer 3

A sextant must contain at least 2 teeth to qualify for recording in the BPE.



Question 4

Describe the type of probe used for the BPE and the probing force applied.



Answer 4

The WHO probe (BPE probe) has a ball end 0.5mm in diameter with a black band from 3.5 to 5.5mm. A light probing force of 20-25 grams should be used.



Question 5

What is indicated by a BPE score with an asterisk () such as "3"?



Answer 5

The asterisk (*) indicates the presence of furcation involvement along with the probing depth indicated by the number (e.g. 3.5-5.5mm probing depth plus furcation involvement).





Question 6

How is the BPE recorded differently for children?



Answer 6

In children and adolescents, six index teeth (UR6, UR1, UL6, LL6, LL1, LR6) are assessed with a simplified BPE to avoid false pockets. Codes 0-2 are used for 7 to 11-year-olds, while the full range of codes 0,1,2,3,4, and * can be used for 12 to 17-year-olds.



Question 7

Why is the BPE not appropriate for assessing implants?



Answer 7

The tissues around implants differ anatomically and are less resistant to probing, often producing deeper probing depths in healthy sites. Therefore, detailed probing and bleeding/suppuration assessment are preferred for implants instead of BPE.



Question 8

When is detailed 6-point periodontal charting required based on the BPE codes?



Answer 8

For patients with a BPE code 3, 6-point pocket charting is done in the affected sextant after initial therapy. For code 4 in any sextant, detailed 6-point probing for the entire dentition is required.



Question 9

Why can BPE not be used to monitor the response to periodontal therapy?



Answer 9

Because BPE records only the highest score per sextant and does not document individual sites, it lacks detail to track site-specific changes after treatment, so a 6-point pocket chart is necessary pre- and post-treatment.



Question 10

List some indications for referring a child to a periodontal specialist.



Answer 10

Indications include diagnosis of aggressive periodontitis, incipient chronic periodontitis not responding to treatment, systemic conditions affecting periodontal health, genetic predispositions, root morphology affecting prognosis, non-plaque induced conditions requiring specialist care, drug-induced gingival overgrowth, and complex or rare clinical pathology cases requiring specialist evaluation.



PERIODONTICS

PERIODONTAL PROBLEMS-PREGNANCY



MIND MAP & CUE CARDS



BY DR. JIGYASA SHARMA

Adverse Pregnancy Outcomes (APO) ←

- A Periodontal disease increases risk for preterm birth, fetal growth restriction, low birthweight, pre-eclampsia, and gestational diabetes (GDM).
- Pregnant women with periodontal disease have a higher chance of developing GDM compared to those without.

Periodontal Pathogens ← /!\

- Main bacteria involved: Porphyromonas gingivalis, Fusobacterium nucleatum, Prevotella intermedia, Actinobacillus actinomycetemcomitans, Treponema denticola.
- These gram-negative microaerophilic and anaerobic bacteria cause gum disease progression.

Gingivitis vs Periodontitis

- Gingivitis: inflammation without connective tissue or bone loss.
- Periodontitis: inflammation with destruction of connective tissue and alveolar bone resorption and presence of dental calculus in pockets.

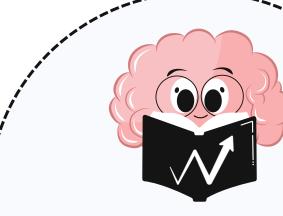
Limitations of Periodontal Treatment in Pregnancy

- Treatment during pregnancy has limited efect in preventing adverse pregnancy outcomes.
- Placental structure completes in first trimester, so later treatment may be too late to reduce complications.

Recommendations for Oral Health

- Emphasis on oral hygiene and dental interventions before conception is strongly advised to minimize pregnancy risks.
- Pre-pregnancy dental care is crucial for preventing periodontal disease-related complications during pregnancy.





WINSPERT MIND MAP

PERIODONTAL PROBLEMS AND PREGNANCY



Epidemiological Associations

- Periodontitis is linked to systemic diseases such as pneumonia, diabetes, atheros clerosis, pregnancy complications, and infertility.
- Positive association exists between chronic periodontitis and male infertility; female infertility relationship less reported.



Pathophysiology of Periodontal Impact on Pregnancy

- Periodontal bacteria can enter bloodstream causing direct efects on the feto-placental unit.
- Inflammatory mediators from gum infections travel to placenta inducing inflammatory responses affecting pregnancy.



Clinical Appearance of Periodontal Disease

- Healthy gums tightly attach to teeth with no inflammation.
- Mild to moderate periodontitis shows gum swelling and redness.
- Severe periodontitis involves gum recession and dental calculus buildup.



Dental Care During Pregnancy

- Periodontal bacteria and their toxins can damage trophoblast cells morphologically and functionally.
- Inflammatory mediators may trigger immune responses harmful to the feto-placental unit.



Attitudes Toward Dental Treatment in Pregnancy

- Obstetricians, dentists, and pregnant women often avoid invasive dental procedures due to concerns about side effects.
- This caution may reduce timely dental care during pregnancy.





Question 1

What systemic diseases have recent epidemiological studies suggested periodontitis can be a risk factor for?





Answer 1

Periodontitis is a risk factor for pneumonia (especially aspiration pneumonia) in the elderly, diabetes mellitus, atherosclerosis, pregnancy complications, and male and female infertility.





Question 2

What adverse pregnancy outcomes (APO) are associated with periodontal diseases?





Answer 2

Periodontal diseases are associated with preterm birth, fetal growth restriction, low birthweight, preeclampsia, and gestational diabetes.





Question 3

How is periodontal disease linked to gestational diabetes mellitus (GDM) among pregnant women?





Answer 3

Periodontal disease is associated with an increased risk of gestational diabetes mellitus (GDM) among pregnant women compared to those without periodontal disease.





What are the two pathogenic mechanisms that explain the potential impact of periodontal diseases on pregnancy outcomes?





Inflammatory mediators secreted at the subgingival inflammatory site are carried to the feto-placental unit, causing an inflammatory response.





Which bacteria are commonly involved in causing periodontal diseases?





Periodontal diseases are caused by multiple gram-negative microaerophilic and anaerobic bacteria such as Porphyromonas gingivalis, Fusobacterium nucleatum, Prevotella intermedia, Actinobacillus actinomycetemcomitans, and Treponema denticola.





How does the clinical appearance of gingiva differ between healthy individuals and those with periodontitis?





In healthy individuals, the gingiva is tightly located against the teeth. In mild to moderate periodontitis, swelling and redness are present. In severe periodontitis, gingival recession and dental calculus are observed.





What is the difference between gingivitis and periodontitis in the context of periodontal disease?





Gingivitis involves gingival inflammation without destruction of connective tissue or alveolar bone resorption, while periodontitis is characterized by gingival inflammation along with the loss of connective tissue and alveolar bone.





Why might dental care during pregnancy have limited effect on preventing adverse pregnancy outcomes?





Because the placental structure is completed in the first trimester, and trophoblast cells migrate early in pregnancy, dental care during pregnancy may occur too late to reduce pregnancy complications despite being effective in curing periodontal diseases.





What is the role of P. gingivalis and its components in pregnancy complications related to periodontal disease?





P. gingivalis and its components can injure the trophoblast morphologically and functionally, and inflammatory mediators from periodontal pockets can trigger an immune response at the feto-placental unit.





What is the recommendation regarding oral health care and dental interventions in relation to pregnancy?





Oral health care and dental interventions are strongly recommended before conception because invasive dental treatment is often avoided during pregnancy due to concerns about possible side effects.



PERIODONTICS

PERIO - DIABETES AND OBESITY



MIND MAP & CUE CARDS



BY DR. JIGYASA SHARMA

Diabetes and Periodontal Disease Association

- Poor diabetes control increases risk and severity of periodontal disease.
- Aggressive periodontitis is recognized as the sixth complication of diabetes.

Measuring Diabetes Control ←(♠

- Monitoring blood glucose and HbA1c levels is essential for assessing diabetes.
- Maintaining recommended glucose and HbA1c levels helps reduce oral complications.

Diabetes and Gingivitis

- Type 1 diabetes increases risk of gingivitis and gingival bleeding children.
- Type 2 diabetes-related gingivitis correlates with glycaemic control status.

Pathophysiology of Diabetes Impact on Periodontal Disease

- Hyperglycaemia causes an exaggerated immune-inflammatory response.
- AGE accumulation triggers severe local and systemic mediator secretion causing damage.

Clinical Management and Appointment Recommendations.

- Morning dental appointments optimize insulin efects and patient safety.
- Coordination with medical practitioners and periodontal referral is essential if deterioration occurs.

Role of Dental Practitioners in Diabetes Management

- Oral exams critical for newly diagnosed diabetic patients.
- Collaborative care with medical professionals for optimal oral/systemic management.

Behavioral and Lifestyle Factors Linking Obesity and Periodontitis (

- Obese individuals often have unhealthy habits: tobacco, alcohol, inactivity, poor diet.
- Low self-esteem contributes to neglect of oral hygiene and healthpromoting behaviors.

Summary

• Key findings highlight the complex interrelations among diabetes, obesity, and periodontal health.



WINSPERT MIND MAP

PERIO-DIABETESOBESITY: THE INTERCONNECTION BE TWEEN ORAL AND

SYSTEMIC HEALTH



Bidirectional Relationship of Oral and Systemic Health

- Oral health and systemic health influence each other mutually.
- Metabolic disorders like diabetes worsen oral conditions and vice versa.



Impact of Periodontal Disease on Diabetes Control

- Periodontal infection worsens glycaemic control in diabetic patients.
- Treatment of periodontal disease can reduce insulin demand and HbA1c levels.



Oral Manifestations in Diabetes

- Common complications include xerostomia, dental caries, Candida infections.
- Other issues: burning mouth syndrome, lichen planus, poor wound healing.



Diabetes and Periodontitis Severity

- Smoking exacerbates gingivitis and periodontitis diabetic patients.
- Poorly controlled diabetes leads to aster, more severe periodontal tissue destruction.



Diabetes-Related Complications Relevant to Dental Care

- Hypoglycaemia symptoms: sweating, tremors, confusion; managed by sugar intake or emergency care.
- Hyperglycaemia symptoms: weakness, frequent urination; requires medical referral.



Obesity as a Systemic Disease Affecting Oral Health

- WHO defines obesity as excessive fat accumulation causing health issues.
- Obesity increases susceptibility infectious diseases including periodontal disease.



Obesity and Increased Risk of Periodontal Disease

- Overweight individuals have a 27% higher risk; obese individuals 81% higher risk.
- Mechanisms include inflammatory pathways linking excess fat and periodontal inflammation.







What is the nature of the relationship between oral health and systemic health in metabolic disorders like diabetes?





The relationship between oral health and systemic health is bidirectional; systemic illnesses such as metabolic disorders affect oral health, and oral health may also impact systemic health.





How does diabetes affect periodontal disease progression?





Diabetes exaggerates the host response to local microbial factors, causing unusually destructive periodontal breakdown. Poor glycemic control increases the risk and severity of periodontal disease and leads to rapid progression and more severe tissue destruction.





Why is periodontal disease considered the sixth complication of diabetes?





Because research shows that people with diabetes, especially when poorly controlled, have a higher prevalence of gingivitis and periodontitis, which in turn worsens diabetes control, making periodontal disease recognized as the sixth complication of diabetes.





How does periodontal treatment impact diabetes management?





Controlling periodontal infection can improve glycemic control, evidenced by a decreased insulin demand and lower hemoglobin A1c levels.





What oral complications besides periodontal disease are commonly reported in patients with diabetes?





Common oral complications reported in diabetic patients include xerostomia, dental caries, Candida infection, burning mouth syndrome, lichen planus, and poor wound healing.





How does diabetes influence gingivitis according to the type of diabetes?





Type 1 diabetes increases the risk of gingivitis with more gingival inflammation and bleeding, particularly in children. Type 2 diabetes is also associated with gingivitis related to glycemic control.





What role does smoking play in periodontal disease among diabetic patients?





Smoking makes both gingivitis and periodontitis more severe in diabetic patients, especially when diabetes is poorly controlled, increasing the risk of periodontal disease progression.





What is the primary mechanism by which diabetes exacerbates periodontal tissue destruction?



PERIO - DIABETES AND OBESITY

Answer 8

Persisting hyperglycemia leads to an exaggerated immuno-inflammatory response to periodontal bacteria, involving AGE accumulation and excessive secretion of local and systemic inflammatory mediators, causing more rapid and severe tissue destruction.





What modifications are recommended for periodontal treatment in poorly controlled diabetic patients?



PERIO - DIABETES AND OBESITY

Answer 9

Treatment may require modifications due to poorer response and wound healing, including the use of systemic antibiotics alongside other therapies and scheduling morning appointments when insulin levels are optimal.





How does obesity relate to periodontal disease risk and oral health habits?



PERIO - DIABETES AND OBESITY

Answer 10

Obesity increases susceptibility to periodontal diseases due to systemic inflammation and unhealthy habits such as tobacco use, alcohol consumption, poor diet, and neglect of oral hygiene, often linked to low self-esteem and negative body image. Obese individuals have significantly higher risks of developing periodontal disease compared to normal-weight individuals.



PERIODONTICS

FOOD IMPACTION/ OPERATIVE FAULTS/ LOCALISED PERIO PROBLEMS



MIND MAP & CUE CARDS



BY DR. JIGYASA SHARMA

Localized Tooth-Related Factors Predisposing to Periodontal Disease

- Anatomical anomalies like cervical enamel projections and enamel pearls linked to attachment loss
- Other factors include root fractures, dental restorations, and root resorption.

Proximal Contact and Root-Related Issues

- Open interproximal contacts encourage food impaction leading to inflammation
- Close root proximity impedes hygiene, increasing attachment loss risk

Accessory Anatomical Features Afecting Periodontal Health

- Long root trunks like in taurodontism reduce furcation attachment loss risk
- Grooves (buccal radicular, palato-gingival) create plaque-retentive niches

Dental Restorations and Their Effects on Periodontium

- Overhanging margins promote plaque retention and gingival inflammation
- Restorations should respect biologic width and follow root contours for periodontal health

Mucogingival Deformities and Conditions Around Teeth

- Includes gingival recession, lack of keratinized gingiva, and decreased vestibular depth.
- Aberrant frenum e muscle positions and gingival excess affect oral hygiene and aesthetics

Occlusal Trauma as a Cause of Periodontal Destruction

- Trauma causes bone destruction via ligament compression, resorption, or
- Changes may be reversible if forces removed but chronic trauma leads to attachment loss

Primary and Secondary Trauma from Occlusion.

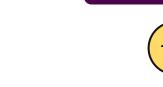
- Primary trauma results from altered occlusal forces in healthy periodontium, does not cause attachment loss
- Secondary trauma occurs when bone loss reduces tissue resistance, increasing vulnerability to occlusal forces





WINSPERT MIND MAP

FOOD IMPACTION. AND LOCALIZED **PROBLEMS**



Overview of Local Factors in Periodontal Disease

- Local factors enhance plaque accumulation or hinder plaque removal
- Four main subgroups contribute to periodontal disease progression



Tooth Anatomic Factors in Detail

- Cervical enamel projections (CEPS) common on molars, linked to furcation involvement
- Enamel pearls mainly found on maxillary molars, predispose to attachment loss



Root Morphology and Its Impact on Plaque Control

- Root concavities promote plaque retention and complicate instrumentation
- Root divergence eases cleaning; root fusion hinders access to furcation areas



Accessory Pulpal Canals and Periodontal-Endodontic Relationship

- Small canals may allow infection from pulp to periodontal ligament
- Accessory canals in furcations found in nearly half o molars, possibly linking plulpal infection to periodontal destruction



Root Fractures and Cervical Root Resorption

- Fractures cause apical plaque migration leading to periodontal involvement
- Cervical root resorption and cemental tears enable bacterial invasion resulting in destruction



Mucogingival Conditions on Edentulous Ridges

- Ridge deficiencies (vertical/horizontal) complicate prosthetic replacements
- Soft tissue enlargements and abnormal colors require surgical correction before implants.



Acute and Chronic Occlusal Trauma

- Acute trauma from sudden force causes pain, mobility, and possible abscess
- Chronic trauma from gradual occlusal changes and habits like bruxism more common and clinically significant



Summary of Clinical Implications

- Recognition of anatomical and operative factors essential for effective periodontal therapy
- Mucogingival surgery and occlusal adjustments improve periodontal prognosis.







Question 1

What are the four subgroups of local factors that contribute to the initiation and progression of periodontal disease?



Answer 1

Occlusal trauma



Question 2

What are cervical enamel projections (CEPs) and how do they affect periodontal health?



Answer 2

Cervical enamel projections are extensions of enamel onto the furcal area of the root surface. They may predispose a furcation to attachment loss because they prevent connective tissue attachment, allowing periodontal pockets to form and plaque to accumulate, which can lead to furcation invasion.



Question 3

Which teeth are most commonly affected by cervical enamel projections?



Answer 3

CEPs are most commonly found on mandibular second molars, maxillary second molars, mandibular first molars, and maxillary first molars, usually on the buccal surfaces.



Question 4

How can enamel pearls contribute to periodontal disease?



Answer 4

Enamel pearls are ectopic enamel globules usually found near the cementoenamel junction that may predispose furcations to attachment loss by creating plaque-retentive areas difficult to clean, leading to periodontal problems.



Question 5

What is the significance of proximal contact relations in periodontal disease?



Answer 5

Open interproximal contacts or uneven marginal ridge relations can encourage food impaction between teeth, which, without proper oral hygiene, can lead to inflammation and potential attachment loss in the interproximal area.



Question 6

How does root proximity affect oral hygiene and periodontal health?



Answer 6

Close root proximity between adjacent teeth makes oral hygiene difficult to maintain for both patients and dental professionals, increasing the risk of attachment loss if proper cleanliness is not achieved.



Question 7

What periodontal problems are caused by dental restorations with overhangs or open margins?



Answer 7

Overhangs or open restoration margins are plaqueretentive areas that can lead to gingival inflammation and attachment loss. Margins that violate the biologic width may cause gingival recession, bone loss, and exposure of the restoration margin.



Question 8

What is the difference between primary and secondary occlusal trauma?



Answer 8

Primary occlusal trauma is caused by altered occlusal forces on a tooth with a healthy periodontium, while secondary occlusal trauma occurs when reduced periodontal support due to bone loss renders normal occlusal forces traumatic.



Question 9

What are the effects of acute trauma from occlusion?



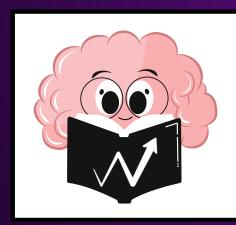
Answer 9

Acute trauma results from abrupt occlusal forces and can cause tooth pain, sensitivity, increased mobility, possible periodontal abscess, cementum tears, and potential necrosis if not resolved.



PERIODONTICS

GINGIVAL DEFECTS/LOCALISED RECESSIONS/STILLMANS CLEFT/MCCALLS FESTOONING



MIND MAP & CUE CARDS



BY DR. JIGYASA SHARMA

Types and Distribution of Recession ← (• C

- Can be localized to one or several teeth or generalized throughout the mouth.
- Incidence increases with age, from 8% in children to nearly 100% after age 50.

Trauma and Gingival Recession

- Trauma from occlusion suspected but not proven; deep overbite linked with gingival damage.
- Orthodontic movements can cause marginal bone loss and recession.
- Regular oral hygiene can cause minimal transient gingival injury if done improperly.

Impact of Restorative Dentistry on Gingiva

- Poorly designed restorations and partial dentures cause gingival trauma and recession.
- Violation of biologic width leads to inflammation, pocket formation, attachment loss, and bone loss.

Clinical Significance of Gingival Recession

- Exposed roots are prone to caries and increased dentinal sensitivity.
- Interproximal recession hampers oral hygiene and promotes plaque buildup.
- Hyperemia and pulp-related symptoms can arise from exposed roots.

McCall's Festoons

- Rolled, thickened bands of gingiva next to cuspids associated with advanced recession.
- Initially linked to traumatic occlusion but now understood as inflammatory gingival changes.



GINGIVAL DEFECTS AND LOCALIZED RECESSION: STILLMAN'S CLEFT AND MCCALL'S FESTOONING



Gingival Recession Overview

- Gingival recession is the apical migration of the gingiva exposing the tooth root.
- Exposure may cause tooth sensitivity due to exposed dentin and cementum.



Etiologic Factors of Gingival Recession

- Faulty toothbrushing technique causing gingival abrasion.
- Tooth malposition and friction from soft tissues leading to gingival ablation.
- Gingival inflammation and abnormal frenum attachments contribute to recession
- latrogenic factors, including poorly designed dentistry.



- Teeth rotation, tilting, and facial displacement thin the bony plate supporting gingiva.
- Root-bone angle, especially in maxillary molars, influences recession risk due to bone thinning.

Smoking and Gingival Recession.

- Smoking potentially impacts recession by reducing blood flow and altering immune response.
- Mechanisms remain inconclusive and multifactorial.

→ Stillman's Clefts

- Narrow, triangular-shaped gingival recessions starting at the margin.
- Progressively widens apically exposing root cementum and often inflamed at mucogingival junction.
- Difficulty in plaque control exacerbates inflammation.

Summary and Historical Context

- Both Stillman's clefts and McCall's festoons reflect inflammatory alterations rather than occlusal trauma.
- Effective plaque control and proper dental care are crucial to managing these lesions.







Question 1

What is gingival recession and what causes it?



Answer 1

Gingival recession is the exposure of the tooth caused by the apical migration of the gingiva. It may result in increased sensitivity due to exposed dentin and the exposure of cementum to the oral environment, often due to loss of attachment in pocket formation.



Question 2

How does the prevalence of gingival recession change with age?



Answer 2

Gingival recession increases with age, ranging from about 8% in children to nearly 100% in individuals over 50 years old. Some believe it might be a physiological process related to aging, but there is no convincing evidence supporting this.



Question 3

What are the main etiologic factors implicated in gingival recession?



Answer 3

The main factors include faulty toothbrushing technique (leading to gingival abrasion), tooth malposition, friction from soft tissues (gingival ablation), gingival inflammation, abnormal frenum attachment, and iatrogenic dentistry.



Question 4

What role does trauma from occlusion play in gingival recession?



Answer 4

Although previously suggested, trauma from occlusion as a cause of gingival recession has never been definitively demonstrated. However, conditions like deep overbite may be associated with gingival inflammation and recession due to traumatic injury to the gingiva.



Question 5

How can orthodontic movement affect gingival recession?



Answer 5

Orthodontic movement, particularly in a labial direction, can cause loss of marginal bone, connective tissue attachment, and gingival recession, as demonstrated in animal studies.



Question 6

Why might faulty toothbrushing lead to gingival recession even if oral hygiene is otherwise good?



Answer 6

Faulty toothbrushing, especially with hard bristles or incorrect technique, can cause lacerations, abrasions, keratosis, and recession, particularly affecting the facial marginal gingiva despite good oral hygiene.



Question 7

How does tooth position affect susceptibility to gingival recession?



Answer 7

Teeth that are rotated, tilted, or facially displaced often have thinner or reduced height of the bony plate. This makes the gingiva unsupported and more prone to damage from mastication or toothbrushing, leading to recession.



Question 8

What impact do poorly designed restorative materials have on gingival health?



Answer 8

Poorly designed and placed restorations, such as ill-fitting denture clasps or overhanging margins, can cause gingival trauma, inflammation, attachment loss, and recession by violating the biologic width.



Question 9

What clinical problems are associated with exposed root surfaces due to gingival recession?



Answer 9

Exposed root surfaces are prone to caries, abrasion or erosion of exposed cementum, dentinal sensitivity, pulp hyperemia, and plaque accumulation, particularly in interproximal areas, complicating oral hygiene.



Question 10

What are Stillman's clefts and McCall festoons, and what is their clinical significance?



Answer 10

Stillman's clefts are narrow, triangular gingival recessions that broaden apically, often leading to inflamed mucosa at the mucogingival junction. McCall festoons are rolled, thickened gingival bands near cuspids seen with recession. Both represent inflammatory changes of marginal gingiva, not traumatic occlusion as previously thought.



PERIODONTICS

PERIO GRAFTS, FLAPS, SURGICAL PERIO



MIND MAP & CUE CARDS



BY DR. JIGYASA SHARMA

Indications for Surgery

- Residual increased pockets and bleeding despite good plaque control
- Specialist referral recommended unless experienced practitioner

Techniques for Access and Pocket Depth Reduction ←

- Modified Widman flap: facilitates instrumentation, does not reduce pocket depth.
- Undisplaced flap: removes pocket wall, reduces pocket depth (excisional)
- Apically displaced flap: apical repositioning of soft tissue, increases attached gingiva.

Regenerative Surgery

- Encourages regeneration of cementum, periodontal ligament, and alveolar bone
- Uses membranes (resorbable/non-resorbable) to prevent epithelial down-growth
- Enamel matrix protein gels (e.g., Emdogain®) promote bone formation and attachment gain
- Defects may be filled with bone graft materials (autografts, allografts, xenografts, synthetics)

Crown Lengthening Surgery

- Removes periodontal tissue to increase crown height for aesthetics or restoration.
- May involve soft tissue removal alone or combined with bone removal depending on anatomy
- Gingival rebound expected after soft tissue removal without bone modification.

Planning and Healing

- Requires diagnostic wax-ups and careful planning, especially if bone removal needed.
- Wait 4-6 months for gingival contour stabilization before placing crowns or veneers.



Overview of Periodontal Flap Surgery

- Performed after thorough non-surgical treatment
- Only for motivated patients with optimal plaque and risk control

Primary Aims of Flap Surgery

- Access for subgingival root surface debridement
- Pocket reduction or elimination by reshaping bone and soft tissue

Anatomical Considerations in Flap Choice

- Pocket depth and mucogingival junction location determine flap technique
- Presence and width of attached gingiva guide surgical decision

Flaps for Reconstructive Surgery

- Bone grafts and membranes require maximal gingival tissue to cover materials
- Papilla preservation flap preferred to retain intact papilla
- Conventional crevicular incisions used if interdental space too narrow

Applications of Crown Lengthening

- Facilitates access to subgingival restoration margins.
- Provides mechanical retention when coronal tooth tissue s insufficient.
- Aesthetic crown lengthening improves appearance in high smile line or delayed passive eruption.

Summary

- Periodontal flap surgery is a specialist procedure following nonsurgical care
- Techniques vary by anatomy and treatment goals: pocket reduction, regeneration, reconstruction, or aesthetics
- Regenerative methods enhance healing beyond long junctional epithelium formation
- Proper flap design critical for success in grafting and crown lengthening outcomes

Indications for Surgery

- Surgery is technically demanding but improves aesthetics and longterm stability.
- Surgical root coverage mainly for Miller Class I and II recession defects in periodontally healthy patients.

Case Study: Clinical Assessment ← €

- Patient: 30-year-old woman with gingival recession
- Diagnosis shows recession likely multifactorial, influenced by anatomical variation and trauma

Conservative Management

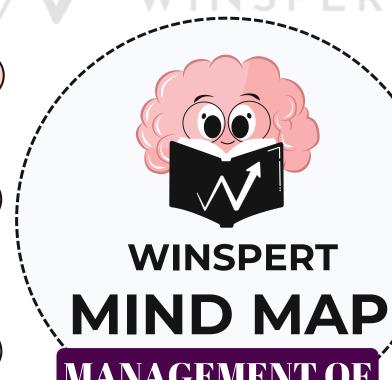
- Efective plaque control essential
- Dietary modifications and tailored oral hygiene recommended
- Use of high concentration fluoride preparations advised

Surgical Techniques for Increasing Attached Gingiva

• Free gingival graft to widen functional zone of attached keratinized gingiva

Challenges in Graft Placement Over Root Surfaces

- Root surfaces provide poor nutrient bed, making free graft survival unpredictable
- Pedicled or subepithelial connective tissue grafts offer better nutrient supply and predictability
- Subepithelial graft preferred for thin periodontal biotype cases



MANAGEMENT OF
RECESSION
(MUCOGINGIVAL
SURGERY)



Overview of Mucogingival Surgery

- Reliable surgical techniques exist to manage mucogingival problems like gingival recession
- Primary indication is aesthetics; other symptoms managed conservatively (e.g.,dietary advice, oral hygiene, fluoride)



- Used to assess extent and prognosis of gingival recession coverage
- Helps determine eligibility and expected success of surgical treatment

Aetiology of Gingival Recession

- Thin buccal soft tissue and bone predispose to recession
- Traumatic toothbrushing and plaque-induced inflammation contribute to tissue destruction
- Traumatic occlusion may also be a factor

Surgical Techniques for Recession Coverage

- Lateral pedicle graft
- Double papillae flap
- Coronally positioned flap

Graft Success and Placement

- Graft success depends on placement apical to gingival margin for stabilization
- Graft does not need to cover entire root surface
- Graft must be firmly bound for stability against lip movement

Graft Materials and Types

- Graft materials classified as autografts (self), allografts (same species), xenografts (different species)
- Bone graft potentials:
 - i.Osteogenesis: new bone formed by cells in graft
 - ii. Osteoinduction: graft molecules induce neighboring cells to form bone
 - iii.Osteoconduction: graft matrix acts as scaffold for new bone growth





Question 1

What is the primary prerequisite before performing periodontal flap surgery?



Answer 1

Periodontal flap surgery is almost always performed after thorough non-surgical treatment and should only be considered in highly motivated patients with optimal plaque and risk factor control.



Question 2

What are the main aims of periodontal flap surgery?



Answer 2

The main aims are to provide access for debridement by removing subgingival root surface deposits, reducing or eliminating pockets by reshaping bone and soft tissues, and creating gingival tissues that are easier to maintain.



Question 3

What is the difference between the modified Widman flap and the undisplaced flap?



Answer 3

The modified Widman flap facilitates instrumentation but does not reduce pocket depth, while the undisplaced flap improves accessibility and removes the pocket wall, reducing or eliminating the pocket as an excisional procedure.



Question 4

How does the apically displaced flap technique function in pocket reduction?



Answer 4

It improves accessibility and eliminates the pocket by repositioning the soft tissue wall apically, preserving or increasing the width of attached gingiva by shifting the mucogingival junction and muscle attachments apically.



Question 5

What is the purpose of regenerative periodontal surgery compared to conventional flap surgery?



Answer 5

Regenerative surgery aims to promote the regeneration of lost periodontal tissues—cementum, periodontal ligament, and alveolar bone—rather than just healing with a long junctional epithelium as in conventional surgery.



Question 6

What is Guided Periodontal Tissue Regeneration (GPTR) and how does it work?



Answer 6

GPTR uses membranes (resorbable or non-resorbable) to prevent rapid epithelial cell growth into surgical defects, creating a protected space for slower-growing tissues such as bone and periodontal ligament to regenerate.



Question 7

What flap designs are preferred for reconstructive periodontal surgery and why?



Answer 7

The papilla preservation flap is preferred because it retains the entire papilla and covers the graft materials. If interdental space is too narrow, a conventional flap with only crevicular incisions is used.



Question 8

What is the goal of crown lengthening surgery and what considerations determine whether bone removal is necessary?



Answer 8

Crown lengthening increases clinical crown height for aesthetics or restorative access. If soft tissue removal alone does not maintain crown exposure due to gingival rebound dictated by underlying bone, bone removal and raising a flap are necessary.



Question 9

What is the primary indication for mucogingival surgery to manage gingival recession?



Answer 9

The main indication is aesthetic improvement, though recession may also cause sensitivity and root caries; surgical root coverage is generally considered for Miller Class I and II recession defects in healthy patients.



Question 10

What are the three biological potentials of bone graft materials used in periodontal therapy?



Answer 10

Bone grafts can be osteogenic (forming new bone by cells in the graft), osteoinductive (inducing neighboring cells to become bone-forming osteoblasts), or osteoconductive (providing a scaffold that supports new bone growth from outside cells).



PERIODONTICS

PERIODONTAL DIAGNOSIS



MIND MAP & CUE CARDS



BY DR. JIGYASA SHARMA

Visual Inspection of Gingival Soft Tissues ←

- Assess gingival tissues for inflammation before probing
- Look for redness or changes in gingival margins/interdental papillae indicating gingivitis requiring oral hygiene modification

Detailed Periodontal Charting

- Record probing depth, bleeding on probing, recession, mobility, and furcation involvement
- Minimum requirement: chart all sites with probing depths ≥ 4mm and sites bleeding on probing

Understanding Probing Measurements \leftarrow

- Attachment loss distance from cemento-enamel junction (CEJ) to base of pocket.
- Probing depth distance from gingival margin to base of pocket
- Gingival recession = distance from CEJ to gingival margin

Elements of Full Diagnosis

- First determine presence or absence of attachment loss
- If no attachment loss: diagnose health or gingivitis (if inflammation)
- If attachment loss present: diagnose chronic or aggressive periodontitis considering patient risk level

Extent of Disease

- Mild: 1-2mm attachment loss
- Moderate: 3-4mm attachment loss
- Severe: ≥5mm attachment loss



PERIODONTAL DIAGNOSIS



Risk Assessment

- Collect patient history to identify risk factors for periodontal disease
- Combine risk factors with Basic Periodontal Examination (BPE) scores to guide further investigations



- Absence of bleeding on probing after repeated checks indicates periodontal stability
- Codes 3, 4, and * require detailed periodontal charting for further analysis

Periodontal Probes

- Use standard probes like 10mm Williams or 15mm UNC for accurate data collection
- Probing depth \geq 4mm signals inability to maintain soft tissue health by brushing/interdental cleaning alone, needing active therapy

Bleeding on Probing (BOP)

- BOP indicates inflammation, not necessarily active tissue destruction
- Smokers may have hidden BOP despite disease presence
- Bleeding from gingival margin shows gingivitis; bleeding from pocket base reflects periodontitis and treatment response
- Record BOP pre- and post-treatment to guide and monitor therapy

Pattern of Disease

- Generalised disease if >30% of sites involved
- Localised disease if <30% of sites involved

Comprehensive Diagnosis and Next Steps

- Combine all information to formulate a complete diagnosis
- Only after diagnosis can prognosis and treatment planning be determined











Question 1

What is the initial step in periodontal risk assessment during patient history taking?





Answer 1

Collecting information about risk factors for periodontal disease during the history taking phase is the initial step in periodontal risk assessment.





Question 2

What does redness or change in contour of gingival margins or interdental papillae indicate?





Answer 2

Redness or changes in contour of the gingival margins or interdental papillae indicate gingivitis and a need for oral hygiene modification.





Question 3

What is the best indicator of periodontal stability during repeated examinations?





The absence of bleeding on probing (BOP) over repeated examinations is the best indicator of periodontal stability currently available.





Which BPE codes require further detailed periodontal charting?





BPE codes 3, 4, and * require further investigation and detailed periodontal charting.





What measurements should be recorded during detailed periodontal charting?





Measurements such as probing depth, bleeding on probing, recession, mobility, and furcation involvement should be recorded, with a minimum requirement to record all sites with probing depth ≥ 4mm and any bleeding on probing.





Why are probing depths of 4mm or more significant in periodontal assessment?





Probing depths of 4mm or more are considered too deep to be controlled by tooth brushing and interdental cleaning alone, indicating a need for active periodontal therapy.





What two main questions does a periodontal probe answer during assessment?





A periodontal probe answers:

- 1. Where is the base of the gingival crevice? (attachment loss and probing depth)
- 2. Does the tissue bleed on probing (BOP), indicating inflammation.





What does bleeding on probing (BOP) signify in periodontal evaluation?





Bleeding on probing is a measure of inflammation; bleeding from the gingival margin indicates gingivitis, while bleeding from the base of the pocket indicates periodontitis and helps guide treatment.





How is the distinction made between localized and generalized periodontal disease based on affected sites?





If more than 30% of sites are involved, the disease is classified as generalized; if less than 30% of sites are involved, it is classified as localized periodontal disease.





How is the extent of periodontal disease classified based on attachment loss?





The extent of disease is classified as mild (1–2mm attachment loss), moderate (3–4mm), or severe (≥ 5mm) depending on the amount of attachment loss present.



PERIODONTICS

PERIODONTITIS AND SMOKING AND SMOKING CESSATION



MIND MAP & CUE CARDS



BY DR. JIGYASA SHARMA

Impact of Smoking on Periodontitis Risk ←

- Current smokers 2.5 to 6 times more likely to have periodontitis than non-smokers
- Former smokers nearly twice as likely compared to never smokers

Smoking Cessation and Disease Control

- Smoking causes irreversible damage but stopping can halt progression
- Heavy smokers often have refractory periodontal disease resistant to treatment

Additional Risks Associated with Smoking

- Osteoporosis and severe periodontitis in HIV patients
- Greater periodontal attachment loss and disease in diabetics
- Increased root caries, oral leukoplakia, cancer, failed implants

Efects of Smoking on Oral and Periodontal Health

- Decreased gingival bleeding and inflammation signs, thick fibrotic tissue in smokers
- Higher supra- and subgingival plaque and calculus prevalence
- Increased probing depth, bone loss, recession, mobility, and missing teeth in smokers

Immune Response and Healing in Smokers

- Reduced serum antibodies against key periodontal bacteria
- Lower vascular density and impaired angiogenesis in inflamed sites
- Poor response to periodontal treatment; 90% non-responsive cases are smokers

Necrotising Periodontal Disease Overview

- Acute painful condition with gingival bleeding and ulceration of interdental papillae
- Often has halitosis, swollen glands, and fever
- Classified by extent: Necrotising gingivitis, periodontitis, and stomatitis

Necrotising Periodontitis

- Involves periodontium and causes bone loss
- Requires urgent specialist referral





107



WINSPERT

MIND MAP



SMOKING ČESSATION



Etiology of Periodontal Disease

- Main cause: infection from dental plaque
- Smoking is a strong risk marker and factor in disease initiation and progression



Severity and Progression in Smokers

- Smokers 3 times more prone to severe periodontitis
- Increased tooth loss observed in smokers vs. non-smokers



Risk Factors for Periodontitis

- Modifiable: Smoking, diabetes, stress, nutrition, socioeconomic status
- Non-modifiable: Genetics, osteoporosis, systemic diseases, aging



Clinical Attachment Loss Explained

- Distance from cemento-enamel junction to bottom of pocket
- Probing depth = gingival margin to pocket bottom
- Gingival recession = cemento-enamel junction to gingival margin



Pathophysiology of Smoking Effects

- Tobacco smoke contains cytotoxic substances like nicotine
- Nicotine suppresses osteoblast proliferation but increases alkaline phosphatase
- Repeated vasoconstriction causes gingival vascular dysfunction and impaired healing.



Demographics and Smoking Patterns

- Highest male smoking rates: 20-29 years (28%)
- Females peak smoking rates in 30-39 years (24%)
- Lowest rates in 60+ age group
- Rising adolescent smoking, especially in females (16%) vs. males (14%)
- 89% of smokers start during teenage years-target for prevention



Necrotising Gingivitis (ANUG)

- More common in smokers; rare in children
- Linked to leukocyte dysfunction and fusospirochaetal bacteria proliferation
- Affects interdental papillae; can spread to bone if untreated

Necrotising Stomatitis

- Affects periodontium, bone, and soft tissues of oral cavity
- Requires prompt specialist management



Map Your Way to ADC Success!

Key New Topics Identified ←

- Pharmacotherapy combinations and dosages
- Relapse prevention strategies
- Nicotine replacement therapy (NRT) use during pregnancy
- Nicotine-containing e-cigarettes as cessation tools

Pharmacotherapy Recommendations (

- Pharmacotherapy (NRT, varenicline, bupropion) effective with behavioural support
- Combination NRT (patch + oral) preferred over monotherapy
- Additional NRT courses may reduce relapse risk
- NRT safe with stable cardiovascular disease; caution in recent cardiac events

Varenicline Use ←

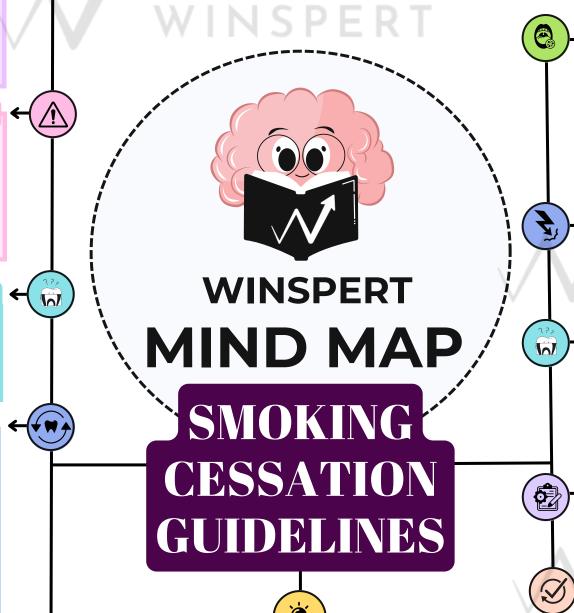
- Recommended with behavioural support if clinically suitable
- Additional courses may reduce relapse
- Combining varenicline with NRT may improve quitting outcomes

Nicotine-Containing E-Cigarettes

- Not first-line treatment due to unapproved products and unknown longterm effects
- May be considered for motivated patients after failed therapies with shared decision-making
- Patients must be informed about legality, safety, and recommendation for short-term use only
- Avoid dual use with tobacco

Health Benefits of Quitting

- 20 minutes: blood pressure & pulse normalize; temperature of extremities improves
- 8 hours: blood carbon monoxide & oxygen normalize
- 24 hours: heart attack risk begins to fall
- 14 days: better circulation, energy, lung function up 30%
- 1 month: nicotine withdrawal symptoms mostly gone
- 3 months: lung cilia regrow, mucus clearance & infection resistance improve
- 1 year: coronary heart disease risk halves
- 10 10 years: lung cancer risk 30-50% of smoker's
- 15 years: stroke & coronary disease risk equal to non-smoker



Advances Since 2014

- Smoking cessation field includes updated pharmacology and quitting apps
- Controversial nicotine delivery like e-cigarettes addressed



- All smokers should receive brief advice to quit
- Systems must identify and document tobacco use in every healthcare setting
- Brief cessation advice offered routinely during consultations
- Follow-up support for quit attempts is essential

Pregnancy and Pharmacotherapy

- NRT may be recommended if behavioral support fails, with monitoring
- Careful risk-benefit considerations needed in pregnancy

Bupropion and Other Agents

- Bupropion advised with behavioral support but less effective than varenicline/combination NRT
- Nortriptyline as second-line due to side effects

Behavioural and Advice-Based Support

• Referral to telephone counselling advised for all smokers

Dental Benefits of Quitting

- Improved gum & oral tissue health
- Enhanced taste after 48 hours
- Prevents bad breath; reduces tooth staining and smoker's palate
- Long term: less periodontal disease, tooth loss; better outcomes in oral surgeries and restorative dentistry
- Melanosis fades after 1 year; gingiva returns to normal color
- Oral leukoplakia may regress after cessation
- Risk of mouth, throat, and esophagus cancer halves after 5 years of quitting





What is the main etiologic factor causing the initiation and progression of periodontal disease?





The main etiologic factor is the infection produced by dental plaque.





How does smoking influence the risk of developing periodontitis compared to non-smokers?





Current smokers are 2.5 to 6 times more likely to have periodontitis than non-smokers, and former smokers are almost twice as likely to have periodontitis compared to people who have never smoked.





What are some modifiable risk factors for periodontitis?





Modifiable risk factors include smoking, diabetes mellitus, socio-economic status, psychological factors, stress, and nutrition.





Define clinical attachment loss in periodontal disease.





Clinical attachment loss is the distance from the cemento-enamel junction to the bottom of the periodontal pocket.





Describe the effects of smoking on gingival bleeding and tissue appearance.





In current cigarette smokers, gingival bleeding and all signs of gingival inflammation are considerably less, and gingival tissue has a thickened and fibrotic appearance compared to non-smokers.





What impact does smoking have on the immune response and wound healing in periodontal disease?





Smoking causes deficient host immune function, reduces vascular density and angiogenesis in inflamed sites, impairs inflammatory response, and compromises wound healing and revascularisation of bone and soft tissues.





What is necrotising periodontal disease, and how is it characterized?





Necrotising periodontal disease is an acute painful condition featuring gingival bleeding, necrosis or ulceration of interdental papillae often covered with a greyish pseudomembrane, halitosis, and may be associated with swollen glands (lymphadenopathy) and fever.





What are some key recommendations for health professionals regarding smoking cessation?





All people who smoke should be offered brief advice to quit, tobacco use should be identified and documented in every practice, routine brief smoking cessation advice and follow-up should be offered, and pharmacotherapy combined with behavioral support should be recommended when appropriate.





What are the health benefits of quitting smoking within the first 1 year?



PERIODONTITIS AND SMOKING AND SMOKING CESSATION

Answer 9

Within 20 minutes, blood pressure and pulse return to normal; within 24 hours, heart attack risk starts to fall; in 14 days, circulation and lung function improve; in 3 months, lung cilia regrow; and after 1 year, the risk of coronary heart disease is half that of a smoker.





List some dental benefits of quitting smoking.



PERIODONTITIS AND SMOKING AND SMOKING CESSATION

Answer 10

Improved gingival and oral tissue health, improved taste after 48 hours, prevention of bad breath, minimized tooth staining, reversal of smokers' palate, reduced risk of periodontal disease and tooth loss, and better treatment outcomes for oral surgery, periodontics, implants, and restorative dentistry.