WINSPERT

HEALTH PROMOTION

H.O.T

HIGH-PRIORITY ORGANISED THEORY

NOTES

By Dr. Jigyasa Sharma

Dear Students,

We'd like to remind you about the importance of respecting the integrity of the resources provided in our app.

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We're committed to providing you with the best tools for your success, and we appreciate your cooperation in maintaining a fair and secure learning environment.

Thank you for your understanding and continued dedication.

Best regards,
WINSPERT TEAM

WINSPERT

HEALTH PROMOTION

H.O.T TOPICS

1. ADA Policies
2. Pregnancy and Breastfeeding
3. Indigenous People
4. Medically Compromised Patients
5. Heart Diseases
6. Nutrition and Oral Health
7. Disabilities
8. Dementia Patients
9. Dental Fear and Anxiety
10. Caries Risk Assessment and Sweetners
11. Oral health and disability in children/ Assistance Animals in Clinic
12. Medico-legal considerations in aged population

ADA POLICIES

POLICIES ON

1) Dental records (Policy statement 5.17 amended by ADA on 2016)

- The dentists have a professional and legal obligation to maintain clinically relevant accurate and contemporaneous dental records of their patients.
- Dental record consists of:

2.1. Records consist of a variety of material generated and stored in handwritten and electronic format and include:

- Notes made by clinicians and staff
- Completed written medical history
- Consent documents
- Copies of correspondence about and with the patient
- Radiographs, tracings, measurements
- Digital records including CAD/CAM records
- Diagnostic images, reports and casts
- Special test findings
- Photographs
- Records of financial transactions
- Appointment books

- Entries must be made in chronological order and when they are hand written, a non-erasable pen should be used.
- The dental record should contain patient details, details of substitute decision maker if present, consent and restriction disclosure, Clinical details, Including radiographs examination details, BCI (Batch control identification), advice, referrals etc.
- When corrections are necessary on dental records it should be done by striking out the incorrect words and rewriting the correct words, if the document is being rewritten original document should be kept as a reference. (Liquid paper and erasable pens should not be used)
- Primarily, dental records should be used and disclosed for treating the patient and if necessary, the secondary purpose of disclosing or using dental records is for billing purposes or if you are provided with a court order (subpoena or warrant).
- Detailed records containing identifying personal information should not be used for research purposes without the consent of the patient.
- Dental records should be maintained on a durable paper and if stored electronically should be encrypted.
- Retention of dental records:
  If collected while the patient is an adult- at least for 7 years from the last occasion on which the health service was provided.
  If collected while the patient was under the age of 18 years- It should be retained for at least until the individual has attended the age of 25 years.

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ADA POLICIES

POLICIES ON

1) Dental records (Policy statement 5.17 amended by ADA on 2016)

- If the records are destroyed after the required retention periods, it must be destroyed in a secure manner such as document shredding.
- The dentist (or the dental practice) owns the dental records.
- It is recommended that when a patient seeks to access their dental records, the dentist offers to meet with the patient and explain the record to them.
- It is preferred that the information is provided in a report, and not simply by sending a copy of the records (never an original, unless an original document is required by court order).
- When a dental practice closes a dentist must take reasonable steps to notify patients in advance and facilitate the transfer of care of current patients to other practitioners (including a secure and consensual transfer of dental records of those patients)

2) Dental Fees: (Policy statement 6.26 Amended by ADA on 2023)

- Dentists must be able to determine their own fees.
- The primary relationship in the delivery of dental care remains between the dentist and the patient.
- Information about the treatment costs should be provided to the patient prior to their treatment.
- The dentist should provide their patients sufficient detail to identify the nature and cost of the services provided.
- Dentist should have tact (discretion)to charge at an hourly rate or per procedure.
- ADA does not publish a scale of recommended fees because such scales take no account of variation in overhead costs, variation in clinical content, the technique employed and the degree of difficulty in each case.

ADA POLICIES

POLICIES ON

3) Informed Financial Consent (Policy statement 5.6 Amended by ADA on 2021)

- Information about the treatment costs should ideally be provided to the patients prior to their treatment.
- Informed financial consent should be part of sound ethical professional practice.
- Informed financial consent may not be appropriate if it would delay and therefore compromise emergency patient care.
- Dental fees may be based on either itemized schedule of the treatment or on time taken to complete the procedure. Dentists can only provide a range of estimated costs based on the expected time needed and the complexity of the procedure.
- Any information of the expected charged (estimated amount) that is mentioned to the patient prior to treatment should include advice that if a planned procedure takes longer than expected or changed as unforeseen circumstances arise, then the final fee may increase. Patients should be informed about any change in fee at an appropriate time.
- In some circumstances patients may wrongly assume that the fee of the dental service is fully or mostly covered by their health fund. Patients should be encouraged to contact their health fund to better understand the applicable benefits and they should also be given appropriate time to give considerations to out of -pocket costs before the treatment are commenced.
- If the patient is concerned for the cost of dental service, they should discuss their concern directly to the treating dentist. And dentists should take reasonable steps to confirm that the patient have adequately understood the estimated cost of treatment.

ADA POLICIES

POLICIES ON

4) Prevention and management of Oral injuries (Policy statement 2.2.5 amended by ADA on 2024)

- Oral injury can occur anywhere. Young children and teenagers have been identified as high-risk groups, particularly when learning to walk and when new or high-risk activities are involved.

> 1.3. Certain occupations expose workers to oral injuries. Such hazards can arise from:
>
> - Physical impact from work equipment where fracturing of teeth is likely, including labourers, tradespeople, and riggers.
> - Tooth abrasion where abrasive dust or particles may enter the mouth, including miners, bricklayers, and tilers.

- The most effective protection against oral damage is a custom fitted mouthguard, where precision fit and quality materials offer maximum comfort and injury prevention.
- It is better to use over the counter mouthguards then no mouthguards at all, however, their protection varies depending on design, comfort, thickness and adaptation of the final product. Quality control of at home custom adaptation is not achievable.

> Types of mouthguards:
>
> - **Over-the-counter (boil and bite) mouthguards**
> These mouthguards include stock mouthguards that do not require fitting, and mouthguards that can be placed in hot water and then self-fitted by biting into them. These offer little or no protection and can dislodge during play but may be appropriate during orthodontic treatment.
> - **Custom-fitted mouthguards**
> Custom fitted mouthguards are superior to over-the-counter mouthguards and are made by a dental practitioner from a dental impression (mould) and a plaster model of the teeth. They provide the best protection fit and comfort for all levels of sport.

- Categorization into 4 risk levels based on particular sports with oral protective measures appropriate to the risk is present, that are:
  i. Sports where Mouth Guard is strongly recommended: Off road bike riding, skateboarding, rock-climbing, white-water rafting, trampolining, combat sports, football, basketball, squash and field hockey.
  ii. Sports where Protective equipment is worn, which may thus prevent the need for mouth guards: Like players who wear full-face helmets in sports like ice hockey or goalkeeper in field hockey, cricket, roller blading, and cycling.
  iii. Sports during which oral protective equipment is not normally worn but where use of mouthguards can be justified under certain circumstances: High diving, Surfboarding and skiing
  iv. Sports where use of mouth guards will be impractical or not warranted as there is low risk of injury: Swimming, athletics, aerobics and rowing.

ADA POLICIES

POLICIES ON

4) Prevention and management of Oral injuries (Policy statement 2.2.5 amended by ADA on 2024)

- Oral piercing jewelry also increases the risk and degree of oral injury.
- Children with prominent front teeth are also at higher risk of injury and may benefit from orthodontic assessment and early treatment to reduce the risk.
- Recreational and work environments should be designed to minimize oral and facial injury.
- There should be public education programs, social marketing, and community action to promote awareness of potential oral injuries and protocols such as use of mouthguards to reduce the risk.
- Protective equipment such as helmets and mouthguards should be used during training as well as competition.
- There should be community action in sport clubs, schools and workplaces to reduce risk and encourage mouth guard use. Where there is risk of oral injury, sporting bodies should adopt a mandatory mouthguard policy.

The mouthguard policy

Considering the safety and protection benefits presented by mouthguards, the **<insert club name>** committee have voted unanimously to instigate a mouthguard policy with immediate effect.

Mouthguards are mandatory and are required to be worn by all players during training and games.
The club will operate a strict **'No Mouthguard, No Play'** policy without exception.

Coaches and Managers will be directed to actively check all players for compliance and remove non-complying players from training or game environments until such time as they comply.

The club's priority is to deliver the highest standards of safety on and off the field at all times. This policy is implemented as part of this objective.

By registering your child with the Club you agree to abide by this policy.

<Insert name of Club President>

- The need to wear a mouth guard should be assessed by a dentist based on risk factors, like individual's sporting or occupational activities and dental anatomy.
- There should be appropriate legislation/regulation on the use of protection, assessment of risk and training of supervisors of activities of risk.
- There should be targeted training in assessment and provision of oral protection in schools, sporting clubs and workplaces.
- Relevant bodies and dentists should refer to International Association of Dental Traumatology (IADT) guidelines for management of traumatic dental injuries, ensuring that any therapeutic treatment is in compliance with local regulations.

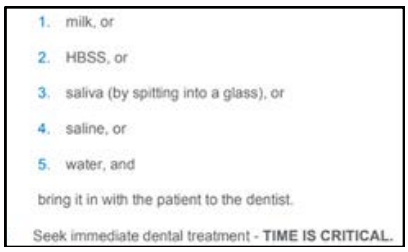
ADA POLICIES

POLICIES ON

4) Prevention and management of Oral injuries (Policy statement 2.2.5 amended by ADA on 2024)

ADA POLICY FOR KNOCKED OUT TOOTH

- When a tooth is knocked out, keep the patient calm, find the tooth.
  - i. If it's a baby tooth- Do not replace it into the socket, seek immediate dental treatment (transport in milk, Hanks Balanced Salt solution (HBSS), saliva or saline.
  - ii. If it is an adult tooth-
    - Avoid touching the root, and handle the tooth by crown only. If the tooth is clean then replace it in the mouth immediately.
    - If the tooth is dirty, rinse, it gently in milk, saline or patients' saliva before replacing it in original position in the jaw immediately.
    - When replacing use other teeth as a guide.
    - Once the tooth is replaced, have the patient hold the tooth in place with the fingers or by biting gently on a handkerchief.
    - If you are unable to replace the tooth or if the root appears fractured, keep the tooth moist by placing it in the following medium (in order of preference)


1. milk, or
2. HBSS, or
3. saliva (by spitting into a glass), or
4. saline, or
5. water, and

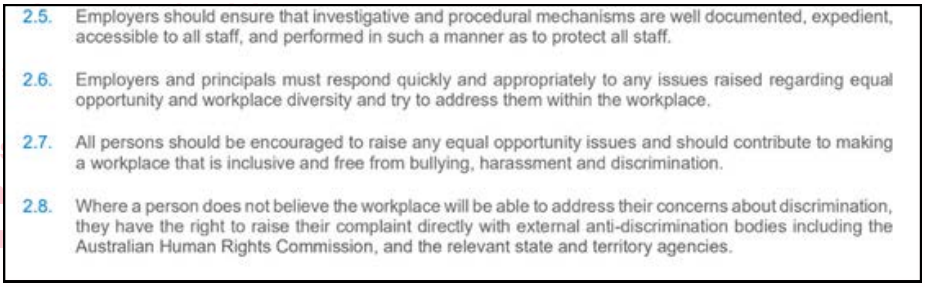
bring it in with the patient to the dentist.

Seek immediate dental treatment - **TIME IS CRITICAL.**

Image-Ada policy statement 2.2.5 amended by ADA on 2021

5) Equal Opportunities and workplace Diversity (Policy Statement 1.6)

- Employers of dental practitioners should have policies and processes that address equal employment opportunity and work place diversity to create work places that encourage and support equity and fairness and eliminate all forms of discrimination.
- Employers must respond quicky and appropriately to any issue raised in accordance with relevant federal, state and territory legislation.


2.5. Employers should ensure that investigative and procedural mechanisms are well documented, expedient, accessible to all staff, and performed in such a manner as to protect all staff.

2.6. Employers and principals must respond quickly and appropriately to any issues raised regarding equal opportunity and workplace diversity and try to address them within the workplace.

2.7. All persons should be encouraged to raise any equal opportunity issues and should contribute to making a workplace that is inclusive and free from bullying, harassment and discrimination.

2.8. Where a person does not believe the workplace will be able to address their concerns about discrimination, they have the right to raise their complaint directly with external anti-discrimination bodies including the Australian Human Rights Commission, and the relevant state and territory agencies.

ADA POLICIES

POLICIES ON

6) Dental Amalgam (Policy statement 6.18 Amended by ADA on 2023)

- The Minamata Convention on Mercury, stated that the use of bulk mercury is prohibited and Amalgam can only be used in its capsulated pre-dosed form After 1 January 2024.
- The convention also strongly discourages use of amalgam in deciduous teeth, patient under 15 years of age and pregnant women, except, when necessary, based on patient needs.

1.3. Dental amalgam has been used as a dental restorative material for more than 150 years. It has proved to be a durable, safe and effective material which has been the subject of extensive research over this time[1].

1.4. The FDI World Dental Federation's position on amalgam safety[2] includes:

- dental amalgam is a clinically well-proven and successful filling material for teeth. It releases very small amounts (nanograms) of mercury, some of which are absorbed by the body. The level of urinary mercury is positively correlated with the number and size of amalgam restorations, but it is usually more affected by sources other than amalgam. Concerns have been expressed about the safe use of dental amalgam for the general population.
- the preponderance of available evidence does not link the presence of amalgam restorations with chronic and degenerative diseases, kidney disease, autoimmune disease, cognitive dysfunction, adverse pregnancy outcomes or any non-specific symptoms in the general population. Vulnerable groups are patients with a proven allergy to amalgam or to one of its components, or with an existing severe renal disease. As with any other medical or pharmaceutical intervention, caution should be exercised when considering the placement of any dental restorative materials in pregnant women.

- There is no evidence that replacing sound amalgam fillings by alternative materials, without clinical indications, produces a better outcome for patients.
- ADA policy positions itself as, dentists should minimize the use of dental amalgam in children, breast feeding or pregnant women and in individuals with kidney disease.
- Dental clinic should practice mercury hygiene and correctly dispose of amalgam waste.
- Dental amalgam restorations should not be replaced with alternative restorative materials for non-specific or perceived health complaints unless the patient has been fully informed of the implications of the decisions.

ADA POLICIES

POLICIES ON

7) Neurotoxins and Dermal Filler in Dentistry: (Policy statement 6.30 amended by ADA on 2021)

- The use of Neurotoxins and Dermal fillers has become a part of dentistry over the past decade. The TGA (Therapeutic Goods Administration) regulates neurotoxins and dermal fillers.
- Dentists through their oral and maxillofacial anatomy education are only appropriately qualified dental practitioners to administer neurotoxins and dermal fillers.
- Some applications of neurotoxins and dermal fillers are classified as Off-Label Use. The TGA does not assess off- label use. Off-label scheduled medication requires clinical judgement of the practitioner and the consent of the patient.

2.7.	The use of neurotoxins and dermal fillers may be limited by state and territory drugs and poisons legislation.
2.8.	There are restrictions on the advertising of neurotoxins and dermal fillers.

- Dentist who uses neurotoxins and dermal fillers as a part of their practice are expected to have completed appropriate education to ensure the safety of the public.

3.3.	Before administering neurotoxins and dermal fillers dentists must have knowledge of and skills in:
	• patient assessment and consultation for neurotoxins and dermal fillers;
	• indications and contraindications for their use;
	• safety and risk issues for neurotoxins and dermal filler injectable therapy;
	• appropriate preparation and delivery techniques for desired outcomes;
	• enhancing and finishing treatments with dermal fillers;
	• the pharmacology of neurotoxins and dermal fillers;
	• adverse reactions and management of possible complications; and
	• the appropriate treatment of temporomandibular disorders with neurotoxins.

- Before using neurotoxins and dermal fillers dentists must confirm that their professional indemnity policy provides appropriate cover for the treatment.
- Dentist must not delegate treatment involving neurotoxins and dermal fillers.

ADA POLICIES

POLICIES ON

8) Forensics in Dentistry (Policy statement 6.16 amended by ADA on 2021)

- Identification of deceased persons by comparing dental remains with ante-mortem dental records(they are the dental records of patients made before death) is an important function especially in the event of mass disaster and individual incineration, fragmentation, decomposition and skeletalisation. Hard tissue such as teeth remain even after such circumstances.
- International and Australian Authorities such as Interpol and State Coroners in Australia have endorsed three primary forensic identifiers:
  a) Friction ridge (finger print) analysis
  b) Comparative dental analysis
  c) DNA analysis
- Anyone of the above 3 can be standalone identifier, with dental analysis being the most expedient and cost effective.
- Dental evidence may be used to investigate situations both criminal and civil.
- The expertise of dentists is often needed in investigations pertaining to living, deceased or missing persons. Legible and comprehensive dental treatment records including radiographs greatly assist forensic processes.

1.7.	For legal purposes it is necessary that all available original dental records (including radiographs) are supplied in order to provide the highest quality material to compare (this is known as the Best Evidence Rule).
1.8.	There is not a national standardised minimum time limit for the retention of dental records.
1.9.	The importance of forensics in dentistry is acknowledged by specialist recognition and the establishment of the Australian Society of Forensic Odontology.

- Dentists should release all original dental records requested by law enforcement agencies in a timely manner. However, they should be given the opportunity to copy them before supplying the originals.
- Legible and comprehensive dental records must be kept for at least the minimum statutory period and it is encouraged to retain dental records for as long as practicable.
- To avoid accusations of fraud or corruption pf evidence, original records must not be altered unless it remains obvious as to what was present beforehand.

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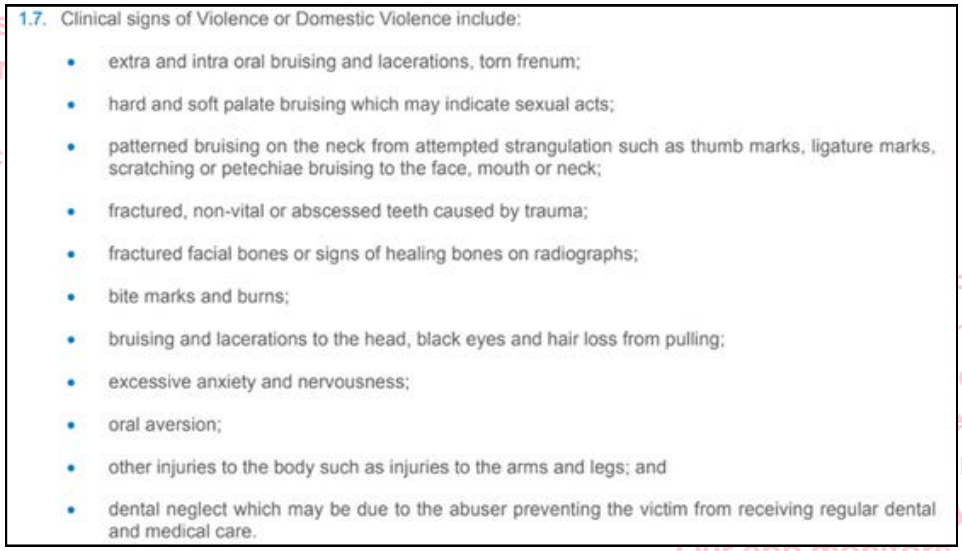
ADA POLICIES

POLICIES ON

9) Abuse and Violence Victims in Dentistry (Policy statement 2.12 amended by ADA on 2023)

- Abuse and violent behavior is unacceptable in all circumstances.
- Dental practitioners should play a role in the detection, intervention, and provision of advice to those suffering the consequences of abuse and violence.
- State and territories have mandated that evidence of Child Abuse must be reported to relevant authorities.
- Elder Abuse can occur both at home and age care facilities. The victims of violence are not alone in needing assistance and support, their family members and carers may also be affected and patients may present to dental clinics accompanied by their abuser who may attempt to maintain intimidation and control.



1.7. Clinical signs of Violence or Domestic Violence include:

- extra and intra oral bruising and lacerations, torn frenum;
- hard and soft palate bruising which may indicate sexual acts;
- patterned bruising on the neck from attempted strangulation such as thumb marks, ligature marks, scratching or petechiae bruising to the face, mouth or neck;
- fractured, non-vital or abscessed teeth caused by trauma;
- fractured facial bones or signs of healing bones on radiographs;
- bite marks and burns;
- bruising and lacerations to the head, black eyes and hair loss from pulling;
- excessive anxiety and nervousness;
- oral aversion;
- other injuries to the body such as injuries to the arms and legs; and
- dental neglect which may be due to the abuser preventing the victim from receiving regular dental and medical care.

- Dental practitioners should attempt to provide a safe and compassionate environment for the patients to discuss the issues of abuse and violence with them and have appropriate referral pathways in place.
- Dental practitioners should be aware of the state and territory laws with respect to the reporting requirements of family and domestic abuse and violence.
- There are several well established agencies including, 1800RESPECT (1800 737 732) which provide support and assistance to those suffering from effects of violence.

ADA POLICIES

POLICIES ON

10) Ankyloglossia and Oral Frena (Policy Statement 2.13 amended by ADA on 2022)

- Oral frena refers to the band of tissue connecting one surface within the mouth to another which includes the lingual frenum and labial frenum.
- Ankyloglossia or Tongue Tie has been reported in neonates, infants, children and adults and refers to restricted movement of tongue by lingual frenum.
- Ankyloglossia has been linked with a range of health issues, including breastfeeding, speech, and dental problems like malocclusion.
- Breastfeeding issues can be associated with ankyloglossia and current evidence shows non-surgical management strategies as an effective first line therapy for the management of functional limitations related to ankyloglossia.
- There is insufficient evidence to definitely conclude that ankyloglossia causes other health problems, including sleep disordered breathing, GORD, colic or difficulty transitioning to solid foods.
- In the recent years, there has been large increase in referral and surgical management of newborns, infants and children with ankyloglossia where the frenum may be divided or removed by variety of techniques.
- A minority of older children and adults with intraoral frena associated with malocclusion, may benefit from timely surgical release of frena as a part of orthodontic treatment.

1.9.	There is insufficient evidence to support the surgical release of the labial or buccal frena in infants to assist with breastfeeding difficulties, speech outcomes, or orthodontic issues including midline diastema closure
1.10.	The surgical management of ankyloglossia carries the risk of both acute and chronic complications. Complications can include deep ulceration, bleeding, bruising, airway compromise, swelling, restricted tongue movement, scar tissue formation, salivary gland duct injury, oral aversion, cysts, tongue paraesthesia, infection, and potentially life-threatening loss of blood.
1.11.	No training courses exist that allows any member of a health profession to register as a specialist or 'expert' in the treatment of ankyloglossia.
1.12.	There is no evidence supporting the use of musculoskeletal therapy or orofacial myofunctional therapy for the management of ankyloglossia.

- The diagnosis of ankyloglossia should be made after considering following steps and not made solely based on anatomic appearance

1) A thorough case history has been taken.
2) Objective functional assessment of tongue function has been completed using a recognized diagnostic system.
3) A complete assessment of factors impacted by suspected ankyloglossia by a qualified practitioner, such as a Breast feeing observation by an International Board-Certified Lactation Consultant.

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ADA POLICIES

POLICIES ON

10) Ankyloglossia and Oral Frena (Policy Statement 2.13 amended by ADA on 2022)

- In absence of functional limitation, the lingual frenum should be considered functionally normal.
- Surgical management should only be considered after failure of non-surgical management and only be undertaken by trained health professionals working in an appropriate clinical setting that can manage possible complications.
- The surgical management in adults should be considered as an elective treatment.
- Treating clinicians must understand surgical techniques and possess the ability to identify and manage complications appropriate to the age of the patient, including access to specialist care.
- Individuals must not advertise themselves as registered specialist in ankyloglossia or tongue tie management specifically.

11) Community Oral health Program

- Everyone including those with special needs should have a chance to have a healthy mouth as a part of their overall health. Dental services to the community should be provided by mix of private and public practices with dentist being leader of their team. Oral health promotion, research and dental work force training should be well funded by the government.

Community Oral Health Promotion

2.1. The following areas are identified as being essential to improve the oral health of the community.

- Maintenance of good oral hygiene
- Promotion of and access to healthy diet choices
- Community and individual use of fluorides
- Discouragement of tobacco and e-cigarette use
- Discouragement of the use of alcohol
- Discouragement of illicit drug use
- Oro-facial trauma prevention and management

2.2. Governments should address the social determinants of health.

ADA POLICIES

POLICIES ON

11) Community Oral health Program

a) Oral Hygiene (Policy statement 2.2.3 amended by ADA on 2022)

- Maintenance of oral hygiene (Brushing at least twice a day with fluoridated tooth paste, interdental cleaning at least once a day and seeing dental professional regularly) are essential for good oral health and should be promoted by Governments, Dental profession, Schools and health organizations through public education campaigns, health awareness campaigns, education and training courses.
- Oral hygiene should be embedded into educational curriculum at all levels, tertiary education programs for carers and health care providers should mandatorily include oral health component, it should also be included in antenatal care and education for parents.

b) Tobacco and Vaping (Policy statement 2.2.4 and 2.2.11 amended 2022(tobacco) and 2023 (vaping)

- Dental practitioners should incorporate tobacco cessation guidance into patient care including external referral to appropriate agencies.
- While the sale of tobacco products is legal, government should increase taxation on their sale, continue to restrict smoking in public areas and ban all tobacco advertisement, sponsorship and promotion.
- Appropriate funding and access to nicotine replacement therapies and other quit smoking programs should be ensured by government.
- Health professionals should not smoke in public when they are identifiable in their occupational role.
- Use, sell or buy of nicotine for use in Vaping (AKA E-cigarettes) is illegal in Australia unless prescribed by a medical practitioner. However, nicotine has been found in vape liquids that has claimed to be nicotine free.
- E cigarettes consists of harmful substances and the vapors produced could increase the risk of lung disease, heart disease and cancer. The evidence to support use of vapes for smoking cessation is insufficient.
- On oral cavity, the use of vape increases the risk of transformation of premalignant lesions and development of cancers and poses greater risk of oral fungal infections.
- Emerging research suggests that vaping may contribute to increase the risk of periodontal disease.
- Research on the health impact of long-term use and exposure to vaping is lacking and further research to examine the effects of use should be done.
- Ada policy positions itself as no one should use vapes and the packaging and flavors of vaping liquid should not be made to appeal children and teenagers.
- Smokers wishing to quit should be encouraged to discuss smoking cessation methods with dental or medical practitioners.

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ADA POLICIES

POLICIES ON

11) Community Oral health Program

c) Betel Nut use: (Policy 2.2.12 – amended by ADA on 2020)

- Betel Nut is inaccurately used term to describe betel quid, which consists of areca nut, fruit of areca palm.
- The use of betel quid should be avoided to prevent precancerous and cancerous lesions of mouth, which can have fatal consequences.

d) Body modifications: (Policy 2.2.9- amended by ADA on 2020 and 2023)

- Body modifications in and around mouth should be avoided because they cause bleeding, infection, nerve and tooth damage, and other health issues, including potentially fatal consequences.

> HIGHER RISK PERSONAL APPEARANCE SERVICES are those body modification services involving skin or mucous membrane penetration procedures where the release of blood or other bodily substances is an expected result. Examples of these services include body piercing, skin implants, tongue splitting, and tattooing.

- If body modifications are to occur, then a valid consent must be obtained prior to the procedure which should include information on details about health risk, usual post insertion care and signs and management of complications that is written in plain language.
- Appropriate time should be allowed to take into consideration of possible risk before the procedure. (A three-day waiting period after the initial request for higher risk personnel services should be mandated, to prevent spur of the moment decisions and allow full proper valid consent.
- Persons who provide the higher risk personal appearance services must be adequately trained and indemnified in the event of an adverse outcome.
- An appropriate review appointment following the service must be scheduled to check the healing process.
- Uniform legislation should be introduced by state and territory governments to ensure that persons under the age of 18 years cannot undergo higher risk personal appearance services.
- Dental practitioners should discourage individuals from having body modifications in their oral cavity.

> 1.6. In the UK, the Court of Appeal found that tongue splitting, when performed by a body modification practitioner for no medical purpose, constitutes grievous bodily harm even if someone has given consent, and is therefore illegal.[2]

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ADA POLICIES

POLICIES ON

11) Community Oral health Program

e) Fluoride Use (Policy 2.2.1- Amended by ADA on 2023)

- All Australians should have access to the benefits of fluoride. Water fluoridation is safe, effective and ethical way to help reduce tooth decays across the population. The NHMRC supports Australian states and territories fluoridating their drinking water supplies within the range of 0.6 to 1.1 ppm or milligrams per litre (mg/L)
- When community water supplies are fluoridated their must be adequate control and supervision of the procedure and manufactures and producers of bottled water should be encouraged to ensure that their products contain fluoride at a range of 0.6-1.1 PPM and that the fluoride content is included in the labelling.
- Only water filters that do not remove fluorides should be recommended.
- Fluoridation to community water benefits all age group, tooth decay is decreased by 26-44% in children and adolescent and by 27 % in adults as per NHMRC.
- When pregnant and breast-feeding mothers drink water fluoridated at Australian levels it is safe for the unborn child and infant. Breast milk already contains 5-10 micrograms per litre of fluoride which remains steady when a nursing mother drink fluoridated water.

ADA POLICIES

POLICIES ON

11) Community Oral health Program

f) Diet and Nutrition (Policy statement 2.2.2 amended by ADA on 2020)

- Dietary sugars and acids cause damage to teeth. Oral health education should encourage consumption of healthy food and drinks and discourage consumption of unhealthy food and drinks.
- In both adults and children, WHO strongly recommends reducing the intake of free sugars to less than 10 % of total energy intake.
- It is desirable to further reduce the intake of free sugars to below 5 % of total energy intake to further decrease the risk of tooth decay as per WHO.

> 1.9. Free sugars include monosaccharides and disaccharides added to foods and beverages by the manufacturer, cook or consumer, and sugars naturally present in honey, syrups, fruit juices and fruit juice concentrates.

- Oral health education should encourage individuals to consume no more than 6 teaspoons (24 grams) of free sugar per day (5 % of total energy intake)
- The ADA positions itself as Governments should apply tax on sugar and sugar containing confectionary and soft-drinks. The money from such taxation should be used to fund health promotion and oral care for disadvantaged Australians.
- Education campaigns should educate Australian consumers to understand and interpret food labels to make healthy food choices.

> 2.5. Dietary education should be targeted to specific high risk age groups:
>
> - Infants and babies – sleeping with sweetened pacifiers/dummies, food or bottles with products containing sugar, including milk and fruit juices, should be discouraged.
> - Children and young adults – frequent consumption of drinks and foods with high sugar and/or acid content should be discouraged.
> - The elderly –reducing the dietary sugar and acid intake should be encouraged because of the increased risk of caries from reduced saliva flow and more exposed root surfaces.

ADA POLICIES

POLICIES ON

11) Community Oral health Program

g) Elective Oversees Dental Treatment (Policy Statement 2.2.6 amended by ADA on 2020)

- Oversees dental treatment carries a risk of adverse oral and general health outcomes with long term problems which may be difficult to resolve on return to Australia.
- Australian residence should seek dental treatment in their place of residence to ensure Australian Standards are met and good oral health is maintained.
- All Australian dentists are required to have professional indemnity insurance. This may not be the case for oversees clinics.
- Australian promoters of oversees elective dental treatment promoters should be required to indemnify consumers of all adverse outcome of such treatment.

2.1. Australian residents should only seek dental care in Australia.

2.2. Australian residents should not seek treatment overseas due to the:

- inability to maintain supportive maintenance dental visits;
- possible communication difficulties with the practitioner and practice staff;
- risk of adverse oral and general health outcomes (temporary or permanent);
- possible lack of insurance cover for complications;
- lack of recourse for treatment and maintenance problems;
- Inability to necessarily see the same dentist who provided the care on subsequent visits to that country for ongoing care;
- lack of access to treatment records: and
- potential to introduce new antimicrobial resistant organisms and disease transmission into Australia.

- Australian residents should see the advice of an Australian Dentist before embarking on oversees dental treatment.

ADA POLICIES

POLICIES ON

11) Community Oral health Program

h) Emergency Overseas Dental Treatment (Policy statement 2.2.7 Amended by ADA on 2021)

- Travellers should not depart from Australia with a pre-existing dental condition/ problem.
- Travellers should have a dental examination at least three months before departure to allow time for completion of any necessary dental treatment before they leave Australia.
- Travellers especially young adults should know the status of their wisdom teeth. They should have any associated problem treated prior to departure.
- They should be advised that if any dental emergency occurs whilst overseas, information on availability of treatment can be obtained from the consular services provided through Australian Embassies, High Commissions and Consulates. Where there is no Australian Overseas post, Canadian Embassies, High Commissions and Consulates provide this advice to Australian citizens.
- Travellers should request a written report including radiographs on any emergency dental treatment received overseas to be passed on to their regular dentist on return from abroad.

i) Bleaching (Tooth Whitening) by Persons Other than dental practitioners (Policy Statement 2.2.8 amended by ADA on 2022)

- On the grounds of public safety, only registered dental practitioners who are educated, trained and competent in tooth whitening procedures should use or supply teeth bleaching products containing more than 3% hydrogen peroxide or equivalent.

> Hydrogen peroxide is the active bleaching agent in most products used by dental practitioners to bleach vital teeth. The effective concentration of hydrogen peroxide varies greatly from concentrations as low as 3-6% for some products supplied to patients for home-use to 35% in some office-based bleaching products. Many bleaching products contain carbamide (urea) peroxide, one-third of its concentration being equivalent to hydrogen peroxide, e.g., 18% carbamide peroxide approximates 6% hydrogen peroxide. While weak solutions (<3%) of hydrogen peroxide have been used in the oral cavity in the form of mouthwashes and toothpaste for many years with few problems, the potential for adverse effects on the oral tissues is increased when higher concentrations are used.

- Only dentists should be able to supply patients with bleaching products incorporating hydrogen peroxide at concentration exceeding 6% or carbamide peroxide exceeding 18%.
- Bleaching should only be performed if the treatment is justified, and after comprehensive dental examination is done by the dentist.
- Regulatory authorities should take appropriate action to educate public about the risk of tooth whitening procedures undertaken by persons other than dental practitioners and encourage them to report any concerns they have about teeth whitening products or services to appropriate authorities.

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ADA POLICIES

POLICIES ON

12) Delivery of Oral health to Special Groups:

a) For Children (Policy statement 2.3.1 amended by ADA on 2021)

- Children caries risk have increased recently, reinforcing the increased need for appropriate prevention and access to high quality dental care for all children.
- All children should begin regular dental examinations by the time of their first tooth erupting or by their first birthday and assessed by a dentist.
- All children from around six years of age should have their oral development periodically assessed by a dentist.
- Effective preventive procedures should be provided for all children to achieve and maintain good dental health.

b) For Adolescents and young adults (Policy statement 2.2.3 amended by ADA on 2020)

- All adolescents and young adults should have access to education, oral health products, and oral health services that contribute to maintenance of good oral health.
- Oral health strategies should be funded and implemented to address the life style, general health needs of adolescent and young adults.
- These strategies should be targeted to high-risk groups and should be prioritized for publicly funded dental care.
- Adolescent and young adults have the lowest proportion of people having dental health cover. Public funding should be available for financially disadvantaged adolescent and young adults to access dental services.
- Oral health promotion strategies should target the following adolescent and young adults:

• reducing the gap for general and oral health amongst people from disadvantaged groups, Aboriginal and Torres Strait Islander people, and regional and remote groups; • dietary habits that are harmful to oral health, including grazing, snacking and frequent consumption of foods and drinks with high sugar and acid content; • transitioning living arrangements, including leaving family support structures; • frequent and excessive consumption of alcohol; • use of tobacco products and/or e-cigarettes (vaping); • use of illicit drugs; • unprotected oral sex and exposure to sexually transmitted infections; • the short and long-term association between systemic diseases and oral health, e.g. diabetes and eating disorders; • side effects of medications, e.g. for asthma and mental health conditions; and • prevention of dental trauma, e.g. from contact sports, recreational activities, and orofacial piercing and/or body modification.

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ADA POLICIES

POLICIES ON

12) Delivery of Oral health to Special Groups:

c) For Older people (Policy Statement 2.3.3 Amended by ADA on 2023)

- Geriatric dentistry is a part of "Special needs Dentistry". All older people should be able to access adequate and timely health care.
- All new permanent residents of aged care facilities and intermediate or high home aged care packages should have a referral pathway to a dentist or dental services recorded by their aged care provider.
- Frail and care dependent older people in residential aged care facilities esp. those with limited independent movement or non-ambulatory, should have access to oral health onsite by domiciliary care dental provider and Government should support private dental practitioners to cover any significant travel costs that may be associated with the provision of domiciliary care for such patients.
- Government should implement a Seniors Dental Benefits Schedule as outlined in the ADA's Australian Dental Health Plan.

d) For Infants and Preschool Children (Policy statement 2.3.8 amended by ADA on 2021)

- All children should have a dental check up by the time their first teeth erupts or by their first birthday and be regularly seen by a dentist from that age onwards.

> 1.1. Primary teeth, also known as baby teeth or deciduous teeth, begin to form five weeks after conception and, by the time a baby is born, all 20 primary teeth are usually present but un-erupted. These teeth begin to erupt at about six to nine months of age and it is important that healthy dietary habits are established before this age. A coordinated effort from all involved in the care of the infant and pre-school child is needed to ensure that optimal oral health is achieved for them.

- Dental practitioners can advise parents and carers on issues such as, oral hygiene, diet, appropriate breast feeding and bottle-feeding practices, symptomatic care during help with teething problems, prevention and management of dental injuries, habits like non-nutritive sucking- e.g., fingers/dummies/ pacifiers which may influence normal growth and development of teeth and jaws.
- Information about appropriate use of fluorides should be discussed with parents/carers.
- All professionals involved in care of infants and pre school children including maternity and early childhood nurses, day-care, child-care center, and preschool staff should be aware of the importance of oral health for general health and well being and should be actively involved in oral health promotion.
- All health professional should possess knowledge regarding appropriate referral for oral health care of children when needed.

ADA POLICIES

POLICIES ON

12) Delivery of Oral health to Special Groups:

d) For Infants and Preschool Children (Policy statement 2.3.8 amended by ADA on 2021)

2.7. Maternity and early childhood nurses should have access to information regarding oral hygiene, teething remedies, appropriate feeding practices, avoidance of disruption to normal growth patterns, prevention and management of dental trauma and the appropriate use of fluorides.

2.8. Day care, child-care centre and pre-school staff should be informed on all issues related to the development and maintenance of appropriate dietary and oral health guidelines for their facilities.

2.9. All health professionals involved in the care of infants and pre-school children should possess knowledge regarding their appropriate referral for oral care when required. Governments, hospitals, public health centres and day procedure centres should ensure dentist access for children to behavioural management modalities including access to treatment under relative analgesia and general anaesthesia.

e) For Individuals in Remote Areas (Policy statement 2.3.4 amended by ADA on 2020)

- The oral health of people living in remote or very remote areas may be compromised because of significant disadvantage in obtaining timely and comprehensive oral health care.
- A major factor for this disadvantage is the difficulty in establishing and retaining dentists and specialist dentists in remote areas. There remains a difficulty in accessing specialist services in outer regional and remote areas.
- Tele dentistry has the potential to be particularly beneficial for rural and remote population, however, tele dentistry must only be provided in cases where direct treatment or specialist advice cannot be provided. Prevention of tooth decay is the cornerstone to better oral health in rural and remote communities.
- Reticulated drinking water in remote and very remote areas should be fluoridated and government should consider appropriate fluoridation methods for non-reticulated water.
- Dentist should be included in rural and remote health associations and organizations.
- Efforts to recruit and retain dentist to remote areas and specialist dentist to regional and remote areas must be of high priority. For those areas where it is difficult to recruit a dentist following should be included:

2.11.1. **Education and training initiatives**, particularly appropriate continuing professional development

2.11.2. **Local community support and incentives**

- education of prospective remote and very remote dentists about the community; and
- assistance for dentists to integrate into the community including aid in providing practice rooms and accommodation for dentists, their spouses and families.

2.11.3. **Working conditions and incentives**

- relocation grants and retention payments;
- financial incentives such as HELP debt subsidies; better locum schemes;
- mentor support from experienced dentists;
- provision of equipment and other facilities for service delivery, including hospital sessions where appropriate;
- regional and remote health informatics to assist in professional exchange on clinical matters and continuing education issues; and
- access to specialist services and advice.

ADA POLICIES

POLICIES ON

12) Delivery of Oral health to Special Groups:

e) For Individuals in Remote Areas (Policy statement 2.3.4 amended by ADA on 2020)

- **Dentist practicing in regional and remote areas should have access to professional support and flexible continuing education opportunities. A regional and remote dentist's network should be established.**

f) For Aboriginals and Torres Strait Islander Australians (Policy statement 2.3.5 amended by ADA on 2020)

- **Oral diseases are more prevalent in indigenous Australians than non- indigenous Australians. In addition, they may have reduced access to oral health care. Both these issues contribute to serious ill-health and lower life expectancy of Aboriginal and Torres Strait Islander people.**

1.4. Compared to non-Indigenous Australians:

- Indigenous children have approximately twice the caries experience and more untreated carious lesions than non-Indigenous children, and caries experience in children is rising.
- Indigenous adults have more missing teeth.
- periodontal disease is more prevalent for Indigenous Australians and evident in younger populations.
- non-insulin dependent diabetes, smoking, poor oral hygiene and infrequent dental care are more common in Indigenous people, leading to more rapid progress of periodontal disease.
- Indigenous adults are at a much higher risk of exacerbating diabetes and related conditions from uncontrolled periodontal disease which also reduces the effectiveness of chronic disease treatment.
- Aboriginal and Torres Strait Islander people are at increased risk of rheumatic heart disease.

- **The social and cultural determinants of Indigenous oral health must be recognized and addressed. The cultural and social determinants are:**

- places for the storage of oral hygiene products;
- adequate hygiene facilities;
- adequate housing; and
- education.

- access to affordable healthy food, such as fresh fruit and vegetables;
- reduce access to and consumption of sugars, especially sugar sweetened beverages;
- access to oral hygiene products;

ADA POLICIES

POLICIES ON

12) Delivery of Oral health to Special Groups:

f) For Aboriginals and Torres Strait Islander Australians (Policy statement 2.3.5 amended by ADA on 2020)

- **Aboriginals and Torres Strait Islander people should be actively involved in design, delivery and control of future services. The participation of Indigenous practitioners within the oral health workforce should be encouraged.**
- **Oral health promotion and care should be integrated within targeted primary health care programs and services, particularly in Aboriginals and Torres Strait Islander community-controlled health services.**
- **Government should encourage and support dental schools and dental workforce to work with indigenous community-controlled health services within Indigenous communities.**
- **Training in cultural safety to raise awareness of oral health and social issues among indigenous people should be provided to all dental programs (undergraduate, post graduate and continuing professional development program)**

2.3. The following known effective strategies need special modification to target the social, cultural, economic and geographic disadvantage suffered by Indigenous people:

- community water fluoridation of all Indigenous communities with a population of 500 or more;
- promotion of fluoride usage, such as fluoridated toothpaste and professional application of fluoride varnish;
- education relating to diet and nutrition;
- oral hygiene instruction;
- discouragement of tobacco use and betel nut use;
- trauma prevention and management; and
- minimisation of alcohol, drug and substance abuse.

ADA POLICIES

POLICIES ON

12) Delivery of Oral health to Special Groups:

g) For Individuals with Disabilities (Policy statement 2.3.6 amended by ADA on 2020)

- There is a growing cohort of Australians with disabilities with around 17.7 % of the population living with disabilities as per Australian bureau of statistics.
- People with disabilities often have restricted employment opportunities may be financially compromised in seeking dental care in private practice and thus financial burdens may be placed upon these individuals in dealing with their oral health.
- Patients with disabilities are entitled to same level of access to oral health care as any other members of the community. Dentists must firstly assess their own ability to assist individuals with disabilities based on based on their capacity, training and availability of appropriate facilities.
- Individuals with disabilities can be accompanied by their carer or assistance animal. Carers and assistance animal should be allowed access to accompany them where needed, provided that the facilities are appropriate.

> 1.6. An ASSISTANCE ANIMAL is a dog or other animal:
>
> (a) accredited under a law of a State or Territory that provides for the accreditation of animals trained to assist persons with a disability to alleviate the effect of the disability; or
>
> (b) accredited by an animal training organisation prescribed by the regulations for the purposes of this paragraph; or
>
> (c) trained:
>
> (i) to assist a person with a disability to alleviate the effect of the disability; and
>
> (ii) to meet standards of hygiene and behaviour that are appropriate for an animal in a public place.
>
> 1.7. A DISABILITY is an ongoing presence of one or more limitations, restrictions or impairments.

- Government funding must be available so that individuals with disabilities have improved access to oral health care.
- Dentists and allied dental personnel should be trained to provide care for individuals with disabilities within clinics, nursing home and residential care facilities.
- Whenever possible, the design of new dental surgeries and modification of existing facilities should be attempted to provide access for individuals with disabilities.

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ADA POLICIES

POLICIES ON

12) Delivery of Oral health to Special Groups:

h) For Individuals Unable to access Dental Clinics (Policy statement 2.3.7 amended by ADA on 2020)

- Most dental care in Australia is provided by dentists in well-equipped surgeries. However, there are some circumstances where this is not possible, and the dentist must travel to the patient to provide care.
- These services may be provided in patients home, hospitals or residential aged care facilities.
- Many remote areas of Australia with low population are at some distance from a dental clinic.

> 1.7. Some areas of Australia are so remote that dentists visit the location periodically, bringing their own equipment. Some remote communities have a basic dental surgery which is available for visiting dentists.

- Dentists should be available to provide dental care in locations other than their dental clinics.
- Careful planning is required to provide care at these locations and assessment of dental clinic should be done prior to treatment session.
- There must be a balance between the benefits that a patient gains from the dental treatment and the potential risk to general health in moving the patient to dental clinic for more complex treatment.
- Specialized equipment should be available to facilitate dental treatment in locations other than dental clinic. Remote communities should consider establishing dental facilities to encourage dentists to visit them and government should support these initiatives. Funding agencies should provide adequate reimbursement for travel and to recompensate dentist's time.
- Residential aged care facilities should ensure that the staff have training enabling them to understand the oral health consequences of the care provided to its residents and to provide oral health promotion and dental screening.
- Residential aged care facilities should comply with legislated quality of care principles including ensuring residents are treated by dental practitioners and anybody accrediting these facilities must consult ADA regarding appropriate dental standards.

ADA POLICIES

CHILD BENEFIT SCHEDULE

(Source- version 13, effective of January 2025)

- The Child dental benefit schedule (CDBS) is a program for eligible children that provides up to $1,132 in benefits (the benefit cap) over a relevant two calendar year period for basic dental services.
- Services that receive a benefit under the program include examinations, x-rays, cleaning, fissure sealing, fillings, root canals, extractions and partial dentures that can be provided in a public or private setting. However, benefits are not available for orthodontics, cosmetic dental work or any services provided in a hospital (Dental benefits are not payable where the person requires dental services in a hospital)
- Claims under the CDBS are processed by Services Australia.
- A child is eligible if they are:
  a) eligible for Medicare, aged
  b) aged 0-17 years at any point in the calendar year, and
  c) receive a relevant Australian government payment, such as Family Tax Benefit Part A, at any point in the calendar year
- Once a child has been assessed as eligible, they are eligible for that entire calendar year (even if they turn 18 or stop receiving the relevant government payment). However, they must be eligible for Medicare on the day the service is provided.
- You can check a child's eligibility online through Health Professional Online Services or by calling Services Australia on 132 150 (call charges may apply).
- The amount of dental benefits available to an eligible patient is capped per eligible patient over two consecutive calendar years. This maximum amount of dental benefits is known as the benefit cap and the two consecutive calendar years is known as the relevant two year period.
- The relevant two-year period commences from the calendar year in which the eligible patient first receives a dental service under the CDBS.
- For example, if the patient's first dental service is on 15 May 2025, the relevant two year period will be the entire 2025 calendar year and, if the patient is eligible the following year, the entire 2026 calendar year. If the patient is eligible in 2027 or a later year they will then have access to a new benefit cap.
- A patient's entire benefit cap can be used in the first year if needed. If the entire benefit cap is not used in the first year, the balance can be used in the following year if the child is still eligible.

> Scenario 1: If a child receives CDBS services and benefits to the value of $550 in 2025, then in 2026 if they are still eligible for the CDBS they can receive more dental services and benefits to the value of $582.
>
> Scenario 2: If the child receives all of the services in 2025 they would reach their $1,132 benefit cap in first year of the relevant two year period, and would have to wait until 2026 before they can access a new benefit cap.

- Any registered dental practitioner that includes dentist, dental hygienist, dental therapist, dental prosthetist, oral health therapist can provide services under CBDS.

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PREGNANCY AND BREASTFEEDING

Source: Pregnancy and periodontal disease article, Oral Heath in pregnancy (special topic no 4) - TG

- Pregnancy, the period from conception to birth is characterized by profound hormonal changes. Fluctuation in hormones, particularly female steroid hormones (oestrogens and progesterones), influences many tissues in the body.
- The tissue supporting the teeth, including the periodontium and specially the gingiva is affected.
- The pregnancy period can be divided roughly into 3 trimesters: (Source-Victoria State Government (better health channel)
  a) First trimester: Conception to 12 weeks
  b) Second trimester: 13- 27 weeks
  c) Third trimester: 28-40 weeks
  Length of pregnancy can vary between women- babies are considered full term if they are born anywhere between 37-42 weeks.
- Adaptation to the physiological changes of pregnancy can include dietary changes such as increased craving for particular foods and a higher frequency of snacks between meals. Therefore, to maintain good oral health during pregnancy, dental care and special home management is required.

Common Oral Problems During pregnancy includes:

1) Caries

- Some changes in the caries risk behavior occurs during pregnancy but they need to be substantial and maintained over a long period to have an impact on dental caries rate.
- Behavior that might have an impact on caries risk is increased craving and eating sugary foods and frequent ingestion and use of carbonated drinks to alleviate nausea.

2) Periodontal diseases:

- Periodontal diseases involves both gingivitis and periodontitis, where plaque is the initiator. The initiation and progression of periodontal diseases depends on the immunological response of the individual to infection.
- The accumulation of hormones in gingival tissues during pregnancy affects gingival vasculature, the local immune system and its response to dental plaque.
- Immunological changes during pregnancy are associated with decreased neutrophil chemotaxis and phagocytosis, altered lymphocyte response and depressed antibody production.
- The most important risk factors for development of periodontal disease are cigarette smoking, cannabis smoking, age , stress, diabetes and high plaque levels.

PREGNANCY AND BREASTFEEDING

Common Oral Problems During pregnancy includes:

2) Periodontal diseases:

a) Gingivitis

i. The prevalence of gingivitis during pregnancy varies among studies form 30%-100%.

ii. The accumulation of dental plaque can lead to pregnancy induced (hormonal induced) gingivitis, characteristically beginning in the 2nd month of pregnancy and increasing up to 8 months, after which it declines.

iii. The effects of these changes on periodontal tissues results in increased gingival swelling and increased bleeding and probing during pregnancy.

iv. Hormonal changes in pregnancy are also associated with generalized gingival enlargement. (Source- Case report on gingival enlargement in pregnant women with acute monocytic leukemia)

b) Periodontitis:

i. There is some evidence that periodontal disease may progress during pregnancy.

ii. Those more at risk as per a US study are African- American, smokers and those on public assistance.

3) Pyogenic Granuloma

- Occasionally, localized gingival inflammatory enlargement known as pregnancy tumor or pyogenic granuloma can be found in up to 5% of pregnant women.
- Pyogenic granulomas bleed easily due to their high vasculature which can be painful.
- Management: For Smaller lesions- generally they regress with extraoral hygiene measures like scaling and meticulous cleaning. However, if the lesions are causing problems due to size or discomfort then it can be excised, only if there is no medical contraindication for the procedure.
- The patient needs to be warned about the risk of recurrence during the rest of the pregnancy even after management. The risk of recurrence is also decreased with meticulous oral hygiene.

4) Erosion

- The most common symptom during early pregnancy are nausea and vomiting.
- Persistent vomiting may have an erosive affect on tooth structure and pregnant women should be advised to have a drink of Milk or Water following a vomiting episode.
- They should also be advised to NOT BRUSH their teeth immediately after vomiting.

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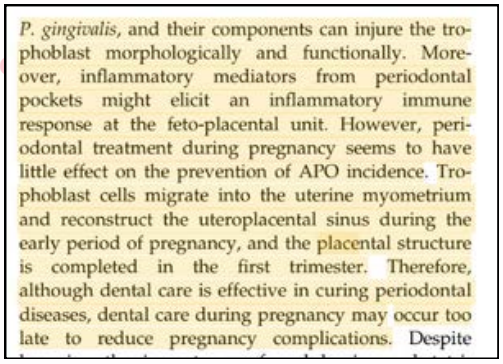
PREGNANCY AND BREASTFEEDING

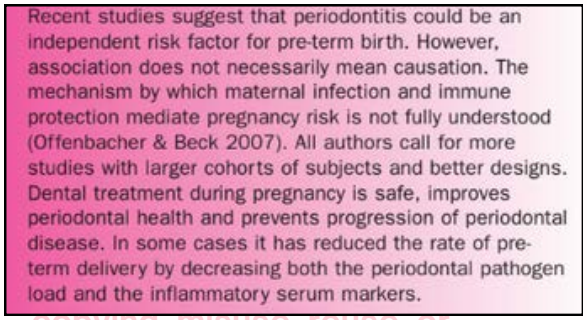
Periodontal diseases as a risk factor for pregnancy complications:

- In the last two decades, many researchers have investigated the relationship between periodontal diseases and various adverse pregnancy outcomes (APO).
- This potential adverse effect of periodontal disease can be explained by 2 mechanisms:
  a) The translocation of periodontal pathogens to the feto-placental unit.
  b) The effect of inflammatory mediators such as Interleukin (IL)-1, IL-6, IL-8, TNF-ALPHA or prostaglandin E2 (PGE2) on the feto-placental unit.
- There is association between oral health and general health in pregnant women which have been supported by studies and pregnant women should undergo full dental examinations to detect periodontal disease.
- However, the association between the periodontal disease and adverse pregnancy outcome does not indicate a causal relationship.
- It is possible that both are caused by the same yet unknown factor and further studies are required.
- Multiple factors are associated with Adverse pregnancy outcomes (APO) and periodontal disorders are an independent risk factor.



P. gingivalis, and their components can injure the trophoblast morphologically and functionally. Moreover, inflammatory mediators from periodontal pockets might elicit an inflammatory immune response at the feto-placental unit. However, periodontal treatment during pregnancy seems to have little effect on the prevention of APO incidence. Trophoblast cells migrate into the uterine myometrium and reconstruct the uteroplacental sinus during the early period of pregnancy, and the placental structure is completed in the first trimester. Therefore, although dental care is effective in curing periodontal diseases, dental care during pregnancy may occur too late to reduce pregnancy complications. Despite

Image- Article on periodontal disease and pregnancy



Recent studies suggest that periodontitis could be an independent risk factor for pre-term birth. However, association does not necessarily mean causation. The mechanism by which maternal infection and immune protection mediate pregnancy risk is not fully understood (Offenbacher & Beck 2007). All authors call for more studies with larger cohorts of subjects and better designs. Dental treatment during pregnancy is safe, improves periodontal health and prevents progression of periodontal disease. In some cases it has reduced the rate of pre-term delivery by decreasing both the periodontal pathogen load and the inflammatory serum markers.

PREGNANCY AND BREASTFEEDING

1) Pre term birth and low birth weight babies

- Pregnant ladies with severe periodontal disease may have an increased risk of having low birth weight/ pre term babies (before 37 weeks)
- Periodontal disease results in inflammatory markers in the bloodstream which are also thought to have a role on onset of labor.

To complicate the story further, some studies have found that treating periodontal disease in pregnancy can reduce the likelihood of pre-term birth (Lopez et al. 2002; Jeffcoat et al. 2003; Offenbacher et al. 2006), while others have not found any such reduction for births at less than 37 weeks but have suggested that there is evidence of a benefit for births before 32 weeks (Michalowicz et al. 2006). To date there is not sufficient evidence that treating periodontal disease decreases the rate of adverse pregnancy outcomes (Kinane et al. 2008) – larger and better designed clinical trials are needed (Offenbacher & Beck 2007).

Image - Source (Article)

2) Pre-eclampsia

- Pre-eclampsia is a set of symptoms including hypertension and proteinuria that affects 5-10% of pregnant women.
- There are multiple risk factors for pre-eclampsia including pre-existing diabetes and first pregnancy.

Studies by Boggess et al. (2003), Contreras et al. (2006) and Ruma et al. (2008) found that women were at higher risk of pre-eclampsia if they had severe periodontal disease or progression of periodontal disease during pregnancy. It was hypothesised that periodontal disease contributes to placental inflammation. It is unclear whether the relationship between periodontal disease and pre-eclampsia is an association that is due to factors related to both conditions independently, or whether there is a causal linkage. Other studies have not found this relationship (Khader et al. 2006).

3) Gestational diabetes

- An association between periodontal disease and gestational diabetes have been found.
- It has been suggested that those with gestational diabetes had a greater risk of developing more severe periodontal disease during pregnancy than those without gestational diabetes.

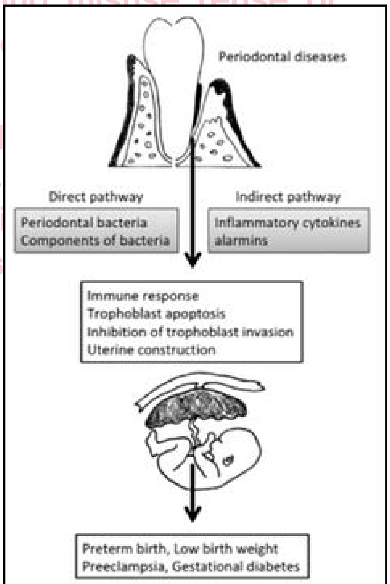


Figure 3 Potential biological mechanisms of periodontal disease induces adverse pregnancy outcome. The pathophysiology of periodontal inflammation-related pregnancy complications could be explained by two mechanisms. The direct pathway is the dissemination of periodontal pathogens from periodontal pockets into the feto-placental unit. The indirect pathway is mediated by locally and systemically produced inflammatory mediators.

PREGNANCY AND BREASTFEEDING

For prevention of Oral Disease in Pregnancy

- A visit to the dentist is recommended for all pregnant women to check on periodontal conditions, as well as to minimize cariogenic oral flora through treatment of existing dental caries and advice on oral hygiene habits.
- Plaque control through meticulous oral hygiene is suggested for minimization of gingivitis and to reduce the load of oral bacteria.
- Smoking cessation advice should be part of a preventive strategy for periodontal disease and for the range of conditions with which periodontal disease has been associated.

> Standard preventive measures such as drinking of fluoridated water, twice daily use of fluoridated toothpaste and a low-sugar diet should be recommended for pregnant women (Griffin et al. 2007; Yeung 2007). Fluoride supplements are not recommended in pregnancy as there is no evidence of effectiveness (ARCPOH 2006).

For treatment of Oral Diseases in Pregnancy

- Oral treatment during pregnancy is an important strategy to improve both maternal and infant oral health.
- Most dental treatment can be carried out safely during pregnancy. (Tg)
- In General, Elective dental treatment is best performed in the second trimester (4th ,5th and 6th months) of pregnancy. (Tg)
- Elective procedures that require General anesthesia or IV sedation should be deferred until birth and preferably until after breastfeeding has stopped. (Tg)
- Treatment decision should be deferred until the pregnancy status of a patient is known if a patient is unsure about their pregnancy status. (Tg)
- The precautionary measure recommended by NHMRC (1999) is that-During pregnancy it is prudent to minimize exposure to all foreign substances including materials used in dental restorations, which indicates that placement or replacement of dental amalgam restorations should be avoided, especially during 1st trimester.
- Routine dental treatment (checkups and scaling) can be carried out at any stage of pregnancy. (Source- NSW government dental treatment in pregnancy and breastfeeding 2020)
- In the third trimester pregnant women can be uncomfortable lying on their backs for long periods.
- Procedures such as root canal treatment, fillings and tooth extraction may be undertaken at any time during pregnancy and do not increase the risk of poor pregnancy outcomes.
- Local anesthetics can be given to pregnant women without increasing the risk of poor pregnancy outcomes.
- The NHMRC (1987) stated that there is no need to defer use of radiographs for pregnant women if collimation and appropriate shielding is used. If necessary, radiographs can be taken in any stage during pregnancy.
- Dental X-rays are safe during pregnancy as the actual radiation dose the unborn baby is exposed to is insignificant. Usual practice is to provide lead apron for shielding when having dental X-rays. (Source-NSW government review 2020)

PREGNANCY AND BREASTFEEDING

For treatment of Oral Diseases in Pregnancy

If intraoral radiographs are necessary for assessment or diagnosis of infection or trauma, there is no reason, on radiation protection grounds, to defer them. The Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) guidelines* state that intraoral radiographs are not contraindicated during pregnancy; however, a leaded drape is recommended when the X-ray beam is directed downwards towards the patient's trunk (eg when taking occlusal views of the maxilla).

Image - Source (TG)

Association of Oral health care of Pregnant women with Oral issues in newborns

- Early colonization of oral cavity with streptococcus mutans has been associated with high rates of dental caries. Reduction of maternal streptococcus mutans through restorative and preventive regimen reduces the caries level in their young children.
- With a good oral hygiene, low sugar diet and appropriate fluoride exposure this risk can be reduced further. Parents should be advised to minimse the transfer of saliva from parent to child and to ensure that their own oral health care is as good as possible.
- The use of dummies/ pacifiers have general health benefits like analgesic effect, shorter hospital stays for pre- term babies and reduced risk of sudden infant death syndrome. But prolonged use will have negative consequences like malocclusion and otitis media.
- Non- nutritive sucking (i.e., on dummies, finger or thumb) either very actively or for a prolonged time can produce changes in the oral cavity and majority of children have non- nutritive sucking habit at some time.
- Dummy sucking has a greater effect in developing occlusion than finger or thumb, but the sucking habit with dummy will be easier to Break than finger or thumb. The dummy should not be dipped in anything sweet.
    i. If the use of dummy or digits lasts less than 12 months: No detrimental effect on dentition.
    ii. When used for 36 months or more: Prolonged non nutritive sucking habits can cause detrimental effects on occlusion (of late deciduous dentition with anterior open bite)
    Class II canine relationship is more common in them than non-suckers.
    iii. Where a dummy was used for 36 months or more, posterior crossbite was more common.
    iv. Where a digit sucking habit lasted for 60 months or more, an excess overjet was more common.
- Most children cease the sucking habit by 4 years of age.

PREGNANCY AND BREASTFEEDING

Dental Considerations in Breast Feeding Women

(Source- Colgate dental education programs Australian research center for population oral health special topic no.12, TG)

- According to WHO breast feeding can be considered as:
  - i. **Exclusive Breastfeeding:** Where no other food or drink, not even water is offered to the baby for the first 6 months of life. But an infant is allowed to receive ORS (Oral Rehydration Solution), syrups and drops such as vitamins, minerals and medicines.
  - ii. **Predominant Breastfeeding:** When the predominant source of nutrition for an infant is breast milk but the infant may also receive liquids such as water, water-based drinks and fruit juice including ORS, syrups and drops such as minerals, vitamins and medicines.

- **Potential for the drug to cause harm, weighed against the benefits of breastfeeding:** For the infant, breastfeeding has multiple benefits, including improved immunocompetence (eg decreased rates of otitis media) and enhanced cognitive development (eg increased IQ in the older child). For the woman, breastfeeding provides psychological benefits (eg enhanced maternal–infant attachment) and physiological benefits (eg better uterine involution, decreased risk of breast and ovarian cancers).

Image - Source (TG)

- The WHO and NHMRC in Australia recommend exclusive breast feeding for six months and continued breastfeeding combined with solid foods for 12-24 months or as long as the mother and baby desire.
- As health professionals' Dental practitioners have an important role in encouraging breastfeeding as a healthy behavior. Some general recommendations are:

> Encourage exclusive breastfeeding during the first six months and continued breastfeeding combined with solid foods for 12–24 months or as long as mother and baby desire;

> Establish a positive relationship with patients' midwives and advise on the importance of breastfeeding for infants' general and oral health;

> Inform mothers on general and oral health-related benefits of breastfeeding;

> Advise mothers to reduce the frequency and amount of sugar intake of their children;

> Provide oral hygiene and fluoride advice to mothers, such as tooth brushing with an appropriate fluoride toothpaste according to the age of the child.

- Dental practitioners should clearly understand the effects of drugs on milk production and explain the effects to the patient as well as consider dose adjustment during breastfeeding

PREGNANCY AND BREASTFEEDING

Dental Considerations in Breast Feeding Women

(Source- Colgate dental education programs Australian research center for population oral health special topic no.12, TG)

Breastfeeding can influence two important oral health conditions:

a) Dental Caries
b) Malocclusion

a) Dental Caries

- Breastfeeding has protective effect against dental caries, especially when compared to other substitutes like (Infant Formula). Lactose is the main type of sugar in breast milk and it is less cariogenic than sucrose which is usually found in infant formulas.
- Evidence suggests that there is reduced risk of dental caries to children who are more breastfed up to 12 months compared to those who are less breastfed.
- However, Meta-analysis of studies has shown increased risk of dental caries in children breastfed over more than 12 months in comparison with children who are not. The potential explanation for this increased risk of caries is frequent and nocturnal breastfeeding.
- Mothers who are breastfeeding should be advised on dietary and oral hygiene practices for their children at the earliest stage possible.

b) Malocclusion

- Breastfeeding acts on the process of sucking, influencing the development of facial muscles and bones.
- Children who are breastfed present greater facial muscle activity (due to the necessary effort to get the breast milk out) than those who are bottle fed (more passive movement)
- There is greater potential of inadequate craniofacial growth and development of bones leading to consequent lack of space to accommodate teeth in children who are bottle fed.
- Moreover, the nipple of the infant breastfeeding bottle is usually made from less flexible material, that can press the interior of oral cavity leading to inappropriate alignment of teeth and interference in adequate growth of the palate.
- Mother's nipple adapts to the internal shape of the oral cavity enabling the perfect oral seal which in turn leads to satisfactory development of nasal breathing. (Children who nasal breath are less likely to develop open mouth posture that causes excessive vertical facial dimension)

PREGNANCY AND BREASTFEEDING

Use of Drugs in women who are pregnant and breast feeding (Source- TG)

- Drug use during pregnancy and breastfeeding should be carefully considered as it can have more than one harmful effect on the fetus and individual effects depend on the time of fetal exposure to the drug.
- During the first two weeks after fertilization and before full implantation, the embryo is thought to be resistant to any teratogenic effects of drugs as there is no direct communication between the embryonic tissue and maternal tissue until the placenta is formed.
- The most critical period for teratogenic effect in pregnancy is during organogenesis. This period starts at about 17 days after conception and is complete by 60-70 days.

> A woman may not be aware of her pregnancy until after the early stages of organogenesis. For this reason, drugs in the most severe category of risk (X in the Australian categorisation of drugs in pregnancy; see p.281) should not be prescribed to a woman of childbearing potential, unless a pregnancy test is negative and she is using an effective method of contraception.

- Paracetamol is the first line of choice of analgesic during pregnancy, and for severe pain situation oxycodone and paracetamol can be given. (Source- NSW government dental treatment in pregnancy and breastfeeding 2020)

NSAIDs in pregnancy: (TG)

- If possible, avoid NSAIDs throughout pregnancy.
- The safety of NSAID in the first 8 weeks of pregnancy is uncertain.
- NSAID should not be used beyond 32 weeks of gestation as they can be associated with adverse maternal and fetal outcomes.
- If a decision is taken, to use NSAID in pregnant women up to 32 weeks of gestation, a Non-Selective NSAID (Ibuprofen) is preferred.
- This is also partly because there is even fewer data on use of Cox-2 selective NSAID (celecoxib) in pregnancy.
- Small amounts of NSAID are excreted into breastmilk, but these amounts are unlikely to cause any harm to breast fed infants. Ibuprofen is the preferred NSAID to women who are breastfeeding.
- Advise breast feeding mothers to feed their baby just before taking their medication, to minimize the amount of drug in breast milk.

INDIGENOUS PEOPLE

(Source- Oral health of Indigenous Australians and New Zealanders, Colgate dental education programs special topic No. 17)

- In Australia, people of Aboriginal and Torres Strait Islander descent are referred to as Indigenous Australians who represent 3% of the Australian Population.
- Studies have indicated that oral health of Indigenous children and Adults is overall poorer on all indicators when compared with their non- Indigenous counterparts.
- The emerging evidence suggests that the magnitude of oral health inequalities between Indigenous and non- indigenous populations is increasing.

In Indigenous Children

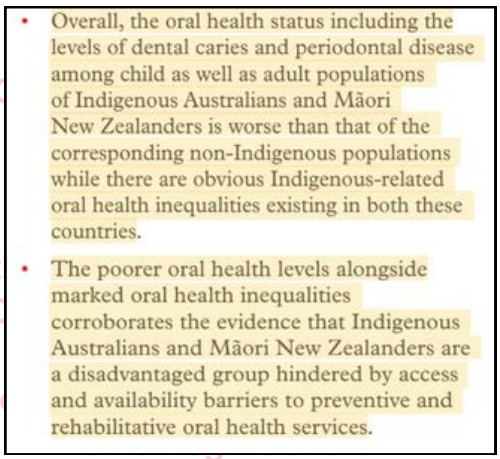
- The prevalence of untreated dental decay and total dental caries experience in the primary dentition was 1.7 and 1.5 times greater in indigenous children than non-indigenous children.
- Resembling the pattern in primary dentition, Indigenous children have higher dental caries experience in their permanent dentition than non- Indigenous children.
- Gingivitis experience is also increased in Indigenous children (1.6 times greater) than non- Indigenous children.

In Indigenous Adults

- The indigenous adult' experiences greater levels of dental caries than non-Indigenous counterparts.
- The prevalence of untreated coronal caries is increased by 2.3 folds in indigenous adults.
- However, lower proportion of indigenous adults have filled teeth than non-indigenous population.
- The incidence of periodontal disease is higher in Indigenous Australians than in non- indigenous Australians with respect to indictors which includes presence of gingivitis, moderate to severe periodontitis, deep periodontal pockets, clinical attachment loss 4 mm or more.

Recommendations for Dental Practioners:

- Dental practitioners should recognize that Indigenous people are at higher risk for oral diseases than non- indigenous people.



- Overall, the oral health status including the levels of dental caries and periodontal disease among child as well as adult populations of Indigenous Australians and Māori New Zealanders is worse than that of the corresponding non-Indigenous populations while there are obvious Indigenous-related oral health inequalities existing in both these countries.
- The poorer oral health levels alongside marked oral health inequalities corroborates the evidence that Indigenous Australians and Māori New Zealanders are a disadvantaged group hindered by access and availability barriers to preventive and rehabilitative oral health services.

INDIGENOUS PEOPLE

(Source- Oral health of Indigenous Australians and New Zealanders, Colgate dental education programs special topic No. 17)

Recommendations for Dental Practioners:

- The policy makers and dental practitioners should make a collective effort to reduce (access and availability) barrier among Indigenous people and also develop Culturally sensitive and appropriate oral health promotion and preventive programs.
- Dental practitioners should provide appropriate preventive and rehabilitative oral health services to cater to the needs of indigenous people, which might include flexible appointment times and willingness to allow family members to observe in the clinic.

*Note: For more policies and strategies-Refer to the Ada policies for Aboriginal and Torres Strait Islander peoples.

MEDICALLY COMPROMISED PATIENTS

(Source- Oral health of medically compromised patients' Special topic-22, TG)

- Oral care is pivotal in maintaining oral health.
- There are increasing number of evidences supporting the oral health- general health relationships and the impact of oral care on general health cannot be understated.
- Some of the main general health conditions that are associated with poor oral health (i.e., mostly uncontrolled periodontal disease) are:
  i. Type 2 Diabetes
  ii. Cardiovascular diseases
  iii. Respiratory Diseases
  iv. Adverse Pregnancy Outcomes
- There are certain groups of people who are at a greater risk of further deterioration of their oral health and consequently they present additional challenges for dental practitioners. They include:

1) Patients who are NIL by mouth (NBM)

- These patients are restricted from eating and drinking due to range of medical conditions such as dysphagia, unconsciousness/ compromised consciousness, acute abdomen and non-functional bowel, during surgery.
- The oral complications in such patient occurs mainly due to dehydration, after-effects of anesthetic agents, as well as fear and anxiety associated with having surgery (in patients undergoing surgical procedures)
- The common oral complications in patients who are Nil by mouth include:
  i. Xerostomia
  ii. Thicker saliva
  iii. Dry cracked lips
  iv. Difficulty in swallowing and speaking
  v. Halitosis
  vi. Difficulty in wearing dentures.

2) Patients on Feeding Tubes

- For those patients who are not able to take adequate nutrition orally, it is common practice to retort to tube feeding or enteral nutrition.
- The two main methods of enteral feeding are
  a. Nasogastric (NG) tube: enteral tube connected to stomach
  b. Percutaneous endoscopic gastrostomy (PEG): connected to small bowel.
- The absence or restricted oral nutrition intake among these patients can lead to alterations in the biomechanical composition of saliva, salivary flow rate and disruption to the normal equilibrium of oral microbial flora.
- The oral complications for patients on Feeding tubes are:
  i. Xerostomia
  ii. Thicker saliva
  iii. Oral infections such as candidiasis
  iv. Difficulty in swallowing
  v. Oral ulcerations.

MEDICALLY COMPROMISED PATIENTS

(Source- Oral health of medically compromised patients' Special topic-22, TG)

2) Patients on Feeding Tubes

- There is an increased risk of aspiration pneumonia in tube fed patients, this is mainly attributed to an overgrowth of pathogenic gram-negative bacteria in tube fed patients. The natural oral feeding is also a protective mechanism against colonization of oral cavity with pathogenic bacteria.

3) Patients on Chemotherapy, Radiotherapy and those in palliative care

- Oral mucosa has rapid cell turn over rate and hence high risk for both direct and indirect noxious effect of chemotherapy and radiotherapy.
- These patients may be present with following oral complications:
  - i. Oral mucositis
  - ii. Xerostomia
  - iii. Oral infection including candidiasis and viral/ bacterial infections.
  - iv. Salivary gland dysfunctions including sialadenitis.
  - v. Taste dysfunction including dysgeusia (altered taste) and ageusia (absence of taste)
- In addition, patients who are on radiotherapy can develop osteoradionecrosis, which leads to poor healing of bones.

Common Oral Complications

1) Xerostomia

- The subjective perception of dry mouth, which is not necessarily accompanied by hyposalivation or reduced salivary flow rate is known as xerostomia.
- A significant reduction in stimulated or unstimulated whole salivary flow rate is known as Salivary Gland hypofunction (SGH) which is sometimes reported as Xerostomia.
- As Xerostomia is a subjective condition, it is essential to evaluate this condition by direct conditioning the patient.
- Clinical signs and symptoms include:
  - a) Thick and stingy saliva
  - b) Dryness, crusting and cracking of lips
  - c) Atrophy and fissuring of tongue
  - d) Fragile oral mucosa
  - e) Difficulty in speech, eating, chewing and swallowing.
  - f) Oral burning sensation and pain/sensitivity to spicy foods.
  - g) Difficulty in wearing dentures
  - h) Taste disturbances
  - i) Increased thirst

Figure 1: Dry/cracked lips

Figure 2: Fissuring of the tongue

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MEDICALLY COMPROMISED PATIENTS

(Source- Oral health of medically compromised patients' Special topic-22, TG)

Common Oral Complications

1) Xerostomia

Recommendations in patients for management of Xerostomia in these patients can be:

- **Frequent sips of water that helps to keep the mouth moist, unless patient is on Nil by mouth or on fluid restriction.**
- **Apply dry mouth moisturizing gels, sprays or mouthwashes to lubricate the mouth, mainly before tooth brushing, mouth cleaning or eating.**
- **Artificial saliva including salivary substitutes and stimulants can be prescribed particularly for patients with severe dry mouth.**
- **Chewing sugar free gum can help in stimulating salivary flow.**
- **Restriction of sugar intake and regular check for oral thrush is important in patients with xerostomia as they are at high risk of developing dental caries and oral candidiasis.**

*(*For further management refer to Tg)*

2) Oral mucositis

- **Inflammation of oral mucosa which is characterized by erythema or ulcerations, as a consequence of chemotherapy or radiotherapy is referred to as Oral Mucositis.**
- **There are several stages in development of oral mucositis which includes:**
  - a) Initiation
  - b) Ulceration
  - c) Spontaneous healing
- **Onset of oral mucositis can occur following 1-2 weeks of chemotherapy/radiotherapy.**
- **Spontaneous healing can happen 2-4 weeks after cessation of chemotherapy/ radiotherapy.**
- **Clinical presentation of Oral mucositis:**
  - a) Erythema
  - b) Erythematous lesion
  - c) Burning mucosal discomfort
  - d) Pain/ soreness
  - e) Ulceration and bleeding from ulcers
  - f) Deep submucosal ulcers
  - g) Difficulty in eating, chewing and swallowing
  - h) Difficulty in wearing dentures

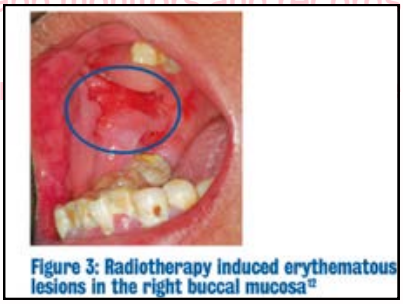

Figure 3: Radiotherapy induced erythematous lesions in the right buccal mucosa[12]

MEDICALLY COMPROMISED PATIENTS

(Source- Oral health of medically compromised patients' Special topic-22, TG)

Common Oral Complications

2) Oral mucositis

- WHO grading for severity of Oral Mucositis

Table 1. WHO scale for grading oral mucositis

Grade	Criteria
Grade 0	No oral mucositis
Grade 1	Erythema and soreness
Grade 2	Ulcers, able to eat solids
Grade 3	Ulcers, requires liquid diet
Grade 4	Ulcers, alimentation not possible

Recommendations in patients for management of Oral mucositis in these patients can be:

- Application of local analgesic gel, mouthwashes including bland rinses such as sterile water and normal saline, and moisturizing gels and spray helps in reducing pain and discomfort.
- In severe cases, systemic analgesic including NSAIDs or Opioids may be recommended as per severity.

*(*For further management refer to Tg)*

3) Oral Candidiasis

- Candida Albicans is a commensal fungal organism in the oral cavity, that cohabits with normal oral flora in most individuals and does not cause an infection under normal circumstances.
- However, alteration in oral/systemic environment can lead to excessive growth of this organism resulting in an opportunistic infection i.e., oral candidiasis.
- Cause of Alteration can be

- Loss of equilibrium in the oral flora following antibiotic treatment
- Immunosuppression due to drugs/disease
- Hyposalivation caused by drugs, disease or radiotherapy
- Damage to local tissues/mucositis after radiotherapy/chemotherapy

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MEDICALLY COMPROMISED PATIENTS

(Source- Oral health of medically compromised patients' Special topic-22, TG)

Common Oral Complications

3) Oral Candidiasis

- Pseudomembranous and erythematous candidiasis are the most common forms of oral candidiasis among the patients on chemo/radiotherapy.

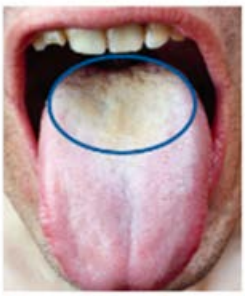

Figure 4. Pseudomembranous candidiasis of tongue

Recommendations in patients for management of Oral Candidiasis in these patients can be:

- Use of antifungals in appropriate dosage (as given in Tg).
- Patients wearing removeable dentures are advised to remove them before starting antifungal treatment and to soak them overnight in antifungal solutions such as peroxide- enzyme based or sodium bicarbonate solutions.

*(*For further management refer to Tg)*

Overall Management strategies for medically compromised patients:

- A multidisciplinary approach is needed for overall management of these patients.
- Oral and potential systemic complications such as aspiration pneumonia, and malnutrition, among these patients require dental practitioners to collaborate with other health professionals like dieticians, speech pathologists, general medical practitioners and medical specialist as well as carers of these patients.
- Dental practitioners have a key role in referring these patients for further management, where appropriate.

- These groups of patients may develop long-standing systemic complications such as malnutrition and aspiration pneumonia because of their oral complications.
- Given the vulnerability for further deterioration of oral health, it is essential to instil and maintain good oral hygiene practices in these patients.
- In order to minimise the general health risks, and to improve the quality of life of these patients, dental practitioners have a responsibility to collaborate with other health professionals as well as carers of these patients and to refer them for further management, where appropriate.

MEDICALLY COMPROMISED PATIENTS

(Source- Oral health of medically compromised patients' Special topic-22, TG)

For Oral care of Medically compromised patients

- As these patients are present with common oral complications, they are more susceptible for further deterioration of their oral as well as general health.
- Maintaining good oral hygiene practices like tooth brushing is pivotal for them.
- Some patients like those who are very sick or lacking the energy to clean their teeth and/or cannot grip a toothbrush properly, are unable to perform self-oral care and hence they may require assistance from carer.

Oral care practices can include the following

- Using small headed and soft bristle brush to clean the tooth and gums using a fluoridated toothpaste two times a day.
- For patients with manual dexterity issues: a powered toothbrush may be recommended.
- Along with Tooth brushing, dental flossing, mouth rinsing, and topical application of fluoride is also recommended.
- For patients without dysphagia- a pea size amount of toothpaste is used and For patients with dysphagia a smear of non- or low foaming toothpaste is preferred.
- For patients who are unable to rinse or have poor oral control/damaged gums: a piece of gauze can be used to remove debris.
- To maximize the effect of fluoride, patients should be encouraged to spit the toothpaste but not rinse.
- Denture care for patients wearing dentures include cleaning the denture with mild soap and water and a tooth brush, denture brush or soft nail brush. Advise to clean regularly twice a day to remove food debris and plaque. (TG)
- Avoid cleaning dentures with hot water, toothpaste, kitchen detergents, laundry bleaches, methylated spirits, antiseptics or abrasives. (TG)
- Dentures should be cleaned and then placed in a dry environment overnight.

> cleaning them. Traditionally, it was recommended that dentures were kept in liquid overnight. However, allowing the cleaned denture to dry out at night is more effective for reducing yeast colonisation and plaque accumulation, compared with both denture cleansers and water. Although repeated cycles of hydration and dehydration can change the shape of the denture, these changes are small and not clinically significant.

- If there is build up of hard deposits (tartar, calculus) dentures can be soaked overnight in a solution of white vinegar (diluted 1:4), and then cleaned as usual.

> **Denture-associated erythematous stomatitis** is prevented by regular cleaning of the dentures and storing them in a dry environment overnight. Advise patients with denture-associated erythematous stomatitis to optimise denture hygiene—it can take 1 month for symptoms to improve; see p.117 for further information.

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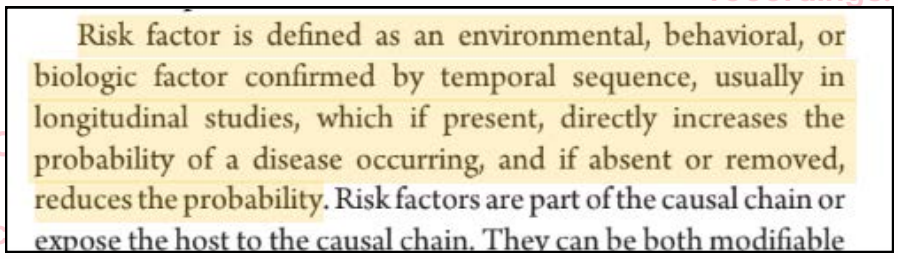
HEART DISEASES

(Source- Health promotion heart diseases article, Special topic no.8, Review article on Risk factor associated with periodontal disease and their clinical considerations)

Associations Between Cardiovascular diseases and periodontal disease.

- There is emerging evidence that points towards the significant association between periodontal disease and certain systemic conditions including cardiovascular disease, respiratory disease, diabetes and complications of diabetes, and, adverse pregnancy outcomes.
- The etiology of both cardiovascular disease (CVD) and periodontal disease (PD) is multifactorial in nature.



Risk factor is defined as an environmental, behavioral, or biologic factor confirmed by temporal sequence, usually in longitudinal studies, which if present, directly increases the probability of a disease occurring, and if absent or removed, reduces the probability. Risk factors are part of the causal chain or expose the host to the causal chain. They can be both modifiable

Image: Article on periodontal disease and risk factors

Risk Factors For CVD:

Modifiable Risk factor for CVD includes:

- Dyslipidemia
- Smoking
- Diabetes mellitus
- Hypertension
- Physical inactivity
- Obesity

Non modifiable risk factors of CVD

- Age
- Ethnicity
- Sex
- Family history of CVD

These risk factor play a prominent role in atherosclerosis and timely intervention in modifiable risk factors is crucial in halting the atherosclerotic process and manifestations associated with it.

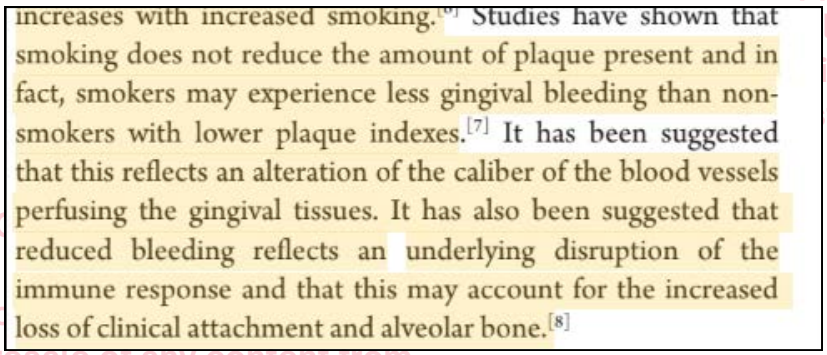
HEART DISEASES

(Source- Health promotion heart diseases article, Special topic no.8, Review article on Risk factor associated with periodontal disease and their clinical considerations)

Risk factors for Periodontal diseases:

Modifiable Risk Factors:

- **Smoking: The risk of developing periodontal diseases as measured by clinical attachment loss and alveolar bone loss is increased with smoking.**



increases with increased smoking.[6] Studies have shown that smoking does not reduce the amount of plaque present and in fact, smokers may experience less gingival bleeding than non-smokers with lower plaque indexes.[7] It has been suggested that this reflects an alteration of the caliber of the blood vessels perfusing the gingival tissues. It has also been suggested that reduced bleeding reflects an underlying disruption of the immune response and that this may account for the increased loss of clinical attachment and alveolar bone.[8]

- **Diabetes mellitus (DM): It is proven beyond doubt that poorly controlled diabetes can lead to aggravation of periodontal infection and exaggerated bone loss and vice versa is also true (i.e., chronic periodontitis causes poorly controlled diabetes)**
- **Microorganisms: Particularly Porphyromonas Gingivalis, tannerella forsythia (formerly Bacteroides forsythus) and Actinobacillus actinomycetemcomitants have been implicated as etiologic agents in periodontitis.**
- **Socio-economic status: Low income and rural residence are significant risk indicators for attachment loss.**
- **Psychological factors: It is well established that psychological stress can downregulate the cellular immune response, and disrupt the hemostasis of network of signals linking nervous, endocrine and immune systems.**
- **Stress: Periodontal disease is more widespread and severe in those with higher level of stress.**

HEART DISEASES

(Source- Health promotion heart diseases article, Special topic no.8, Review article on Risk factor associated with periodontal disease and their clinical considerations)

Risk factors for Periodontal diseases:

Non-Modifiable risk factors for periodontal disease:

- Genetic factors: Interleukin 1 (IL-1) gene polymorphisms have been linked to periodontal disease
- Osteoporosis: Studies have shown a relationship between osteoporosis and alveolar bone loss, and not between osteoporosis and clinical attachment loss.
- Ageing: Ageing is associated with increased incidence of periodontal disease.
- Other systemic disease:

> *Other systemic diseases*
> Several deficiencies of neutrophil function have been related to periodontal disease. These include Chediak-Higashi syndrome, cyclic neutropenias, lazy leukocyte syndrome, agranulocytosis and leukocyte adhesion deficiency and Down syndrome and Papillon–Lefevre syndrome. Except for Downs's syndrome, these diseases are exceedingly rare, so probable though not definitive relationships to periodontal disease have not been established.[6]

- Conditions associated with etiology of Periodontal disease:
  - i. Local colonization of dental plaque forming bacteria
  - ii. Systemic Conditions including DM, osteoporosis, Rheumatoid Arthritis (RA), and respiratory diseases
  - iii. Age, ethnicity, smoking, sex, stress and poor coping behavior and obesity also have a key role in development of the disease.

- PD and CVD share many risk factors like smoking, sex, ethnicity, DM, Socioeconomic status, stress and obesity which can result in confounding (confusing/mixing up) any association between them. For e.g., Strong association of smoking with both CVD and PD.
- However, cardiovascular events may also occur among non-smoker patient with periodontal disease, so PD may be related to CVD regardless of the confounding effects of smoking.
- Evidence of association:

> Budoff and colleagues[32] have stated that the level of evidence in evidence-based research can be categorised into three levels, namely A (supporting data emanating from multiple randomised clinical trials), B (supporting data derived from single randomised trials or non-randomised trials) and C (consensus opinion of experts). A recent scientific statement from the American Heart Association indicates that, while evidence for both periodontal–cardiovascular disease relationships and the beneficial effects of periodontal therapy in reducing local periodontal inflammation is corroborated by level of evidence A, neither the causative role played by PD in CVD nor the effect of periodontal therapy in decreasing systemic inflammation is supported by levels of evidence A or B[11].

Image: Health Promotion in Heart Disease Article

HEART DISEASES

Pathogenic mechanisms to explain the association between PD and CVD:

- Porphyromonas gingivalis and streptococcus sangius (commonly associated with PD) have shown to stimulate platelet aggregation and thrombosis (leading to CVD).
- Autoimmune reaction can occur due to cross reacting antibodies to periodontal bacteria and human heat shock proteins (HSP) in endothelial cells. These autoimmune reactions could provoke endothelial damage and atherosclerosis.
- There can be invasion and uptake of periodontal bacteria in endothelial cells and phagocytes.
- Systemic inflammatory marker like C- reactive protein (CRP) is increased in both PD and CVD. Increased CRP is indicated as an independent predictor of future CVD.

Role of Health Care professionals in prevention and Control of CVD.

- As both PD and CVD share common modifiable risk factors, both health professionals and dental practitioners can adopt a standardized approach, to educate patients, about such risk factors and associated life style changes. This will help in successful prevention and control of both these conditions.
- The standardized approach includes encouraging patients to:
  i. Reduce their calorie intake
  ii. Reduce consumption of foods that are high in cholesterol, saturated and trans- fatty acids and salts.
  iii. Increase consumption of food with low saturated fat and high fiber.
  iv. Control weight via reduced calorie intake and increased physical exercise.
  v. Discontinue smoking.
- Reducing the sugar intake along with other lifestyle changes reduces the cardiovascular risk, and Dental practitioners can effectively convey this message while routinely advising their patients to cut down sugar.

Management of Periodontal disease In Cardiovascular disease patients:

- The standard treatment for periodontal disease can be carried out and is effective without any undesirable cardiovascular consequence, in patients with established cardiovascular disease.
- Standard treatment includes: plaque and gingivitis control, Oral hygiene instructions including mouth rinses, anti-plaque toothpaste, and interproximal cleaning.
- The basic recommendations include:
  i. Patients with moderate to severe periodontal disease should be advised that
  ii. they may have a higher risk of developing cardiovascular disease than periodontally healthy people.
  iii. Periodontal disease patients with one or more risk factors for CVD should
  iv. seek medical evaluation if they have not done so in past 12 months.
  v. Cardiovascular risk factors like hyperlipidemia, hypertension, smoking and metabolic syndrome present in Periodontal disease (PD) patients should be controlled and co-managed by dental and medical professionals.
  Medical and dental professionals should work together to control common risk factors for CVD and PD in patients with both these conditions.

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NUTRITION AND ORAL HEALTH

(Source- Article on Nutrition and oral health special topic no 21)

- Nutrition is a complex process that involves ingestion, digestion, absorption, transportation, utilization, storage and excretion of food or drink to maintain health and well being
- For proper functioning of body six main nutrient that are obtained from food are Carbohydrates, Lipids, Proteins, Vitamins, Minerals and Water.
- Poor diet and nutritional deficiencies lead to increased risk of contracting both systemic diseases as well as oral diseases.

1) Nutrition and Dental caries:

- Dental caries is considered as the most common oral disease as well as most prevalent chronic systemic disease worldwide.
- Nutrition plays a key role in initiation and progression of dental caries.
- Role of Sugars:

  All monosaccharides-Glucose, fructose
  All disaccharides- Lactose, Sucrose
  Sugar free sweeteners
- Sugars are classified as:
  i. Intrinsic sugars: Sugar molecules held within cell structure- like whole fruits,
  ii. vegetables, and grains have naturally present intrinsic sugars
  Extrinsic sugars: Sugar molecules that are outside the cellular structure of
  iii. food or added to the food. These includes milk sugars like lactose and galactose, that are naturally present in milk and milk products and also non milk extrinsic sugars aka added, free or hidden sugars.

- Intrinsic sugars and Milk sugars that are present naturally are less cariogenic and also have health benefits.
- The free sugar includes all monosaccharides and disaccharides, that are added to the food by cook or consumer and also sugars naturally present in honey, syrups and fruit juices. These added/ free sugars are highly cariogenic and also add to unnecessary calorie and have no nutritional value.
- Amount as well as frequency of sugar consumption and form of sugar (sticky versus non sticky) are all associated with risk factors of caries.
- The WHO guidelines on Sugar intake:
  i. For both children and adult, Free sugar consumption should be less than 10 %
  ii. of total dietary energy intake.
  Restricting free sugar intake to less than 5% of total dietary energy intake has additional oral health benefits,
  iii. Free sugars should be reduced right through the life course.

Australians are recommended to limit foods and drinks containing added sugars such as confectionery, sugar-sweetened beverages including soft drinks and cordials, fruit drinks,

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NUTRITION AND ORAL HEALTH

(Source- Article on Nutrition and oral health special topic no 21)

1) Nutrition and Dental caries:

- Systematic reviews have shown that consumption of Rapidly digestible Starch (RDS) has significantly increased the risk of dental caries across all age groups while there is no association of total starch consumption with caries risk.
- The intake of Slowly digestible starch (SDS) containing food, that includes whole grains, fruits and vegetables should be endorsed by dental practitioners while it should be promoted that the consumption of RDS only esp. combined with free sugars should be limited.
- The adequate daily intake of milk and dairy products such as cheese and yoghurt have a protective effect against root caries.
- Drinking plenty of tap water is main requirement to maintain health according to both Australian and New Zealand dietary guidelines.
- With the established anti- cariogenic effect of fluoride drinking fluoridated tap water provides additional oral health benefits.

> While helping to reduce the intake of sugar added soft drinks and acidic drinks, drinking plenty of water augments the protective effect of saliva on oral health. Consequently, it provides extra protection against oral conditions such as dental erosion, abrasion and attrition in addition to dental caries.[29]

2) Nutrition and Periodontal Health

- Several studies have indicated that high saturated fatty acid consumption was significantly associated with more periodontal disease events.
- Deficiency of Vit C and D in diet and serum have been implicated in increasing the risk of gingivitis as well as periodontitis. (Vit C is essential in synthesis of collagen and vit D in maintaining alveolar bone mineral density)
- Diets rich in antioxidants such as Vit. C, Vit D, polyunsaturated fatty acids, as well as high fiber food including fruit and vegetables have protective effect against periodontal disease.

3) Nutrition and Oral Cancer

- Slowly digestible starch has protective effect on oral cancer which is supported by low quality evidence.
- There is some evidence for suggestive associations between
  - i. Consumption of vegetable and fruits is associated with reduced oral cancer risk.
  - ii. Consumption of preserved vegetable is associated with increased cancer risk.

NUTRITION AND ORAL HEALTH

(Source- Article on Nutrition and oral health special topic no 21)

4) Nutrition and other Oral Health outcomes

- Dental erosion due to dietary acids
- Micronutrient (Iron, folate, Vit A, C, D, and B 12) deficiencies related oral disease/condition are other oral health outcomes associated with nutrition.

The oral disease due to micronutrient deficiency includes:

- Developmental anomalies of teeth such as enamel hypoplasia and salivary gland atrophy
- Oral candidiasis
- Cleft lip and palate
- Potentially malignant oral diseases including oral lichen planus and leukoplakia
- Mucosal diseases/conditions such as glossitis (Figure 1), recurrent oral ulcers (Figure 2), angular cheilitis (Figure 3) and mucositis

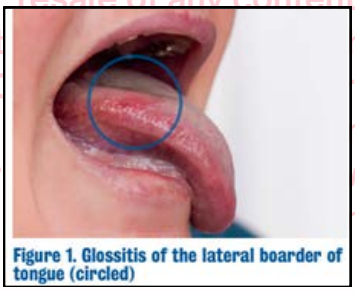

Figure 1. Glossitis of the lateral boarder of tongue (circled)

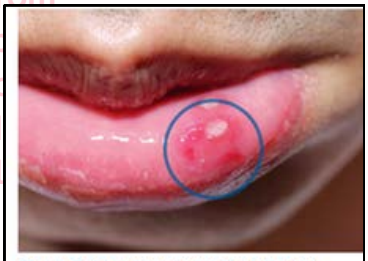

Figure 2. Ulcers on lower lip (circled)

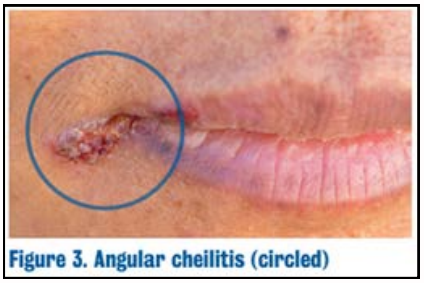

Figure 3. Angular cheilitis (circled)

Population at high risk of developing micronutrient deficiencies include:

- Elderly, mentally ill , alcohol/drug addicts, Indigenous, homeless people and those who consume fad diets.
  *Fad diet consists of low carb, vegan, and ketogenic diets that exclude or restrict food group.
- Children, pregnant and lactating women
  i. Dental practitioners can potentially be the first health care professionals to detect disorders due to micronutrient deficiencies as most clinical features initially manifest peri-orally.
  ii. Hence, dental practitioners play an important role in making appropriate referral of these patients for further management if needed.

NUTRITION AND ORAL HEALTH

(Source- Article on Nutrition and oral health special topic no 21)

4) Nutrition and other Oral Health outcomes

Recommendations by dental practitioners regarding nutrition:

- **Dental practitioners have an obligation in educating and providing appropriate dietary advice to their patients.**
- **Such advise should be customized individually and directed at promoting oral health as well as general health.**
- **The following advice should be highlighted:**

> Limiting the intake of foods and drinks containing added (free) sugars such as confectionary, sugar-sweetened beverages including soft drinks and cordials, fruit drinks, vitamin waters, energy and sport drinks.
> Encouraging the consumption of all types of fruits and vegetables (unpreserved), nuts, seeds and whole grain starch rich foods.
> Encouraging the intake of water, particularly fluoridated tap water, milk and other dairy products (mostly reduced fat except for children under the age of 2 years) without added sugars.
> Discouraging the consumption of preserved vegetables (salted, dried, fermented or pickled).

> Discouraging consumption of foods high in fats, particularly saturated fat and salts.
> Potentially being the first healthcare providers to detect, particularly the mucosal diseases/conditions associated with micronutrient deficiencies, dental practitioners can play an important role in early detection of such diseases/conditions and appropriate referral of these patients for further management.

Image: Source- Article

DISABILITIES

(Source- Heath promotion, people with disabilities special topic no 7, ADA policies)

- People with mild to severe disabilities depend partially or completely on their carers for their daily care. Those people who depend partially or completely on their carers for their daily care are referred to as care-recipients.
- Education and training of health care workers and carers of individuals with disabilities regarding oral hygiene maintenance, dietary instructions, and basic dental awareness should be readily available. (Source-Ada policy)

- For people with disabilities providing dental care is a team effort (from carers at home and dental professionals) which involves:
  - i. Daily oral hygiene care, healthy diet and screening for any oral changes and maintaining regular dental visits by Carers.
  - ii. Dental professionals provide clinical care and advice that can help patient to avoid gum disease and tooth loss.
- People with disabilities may not be able to tell what is causing their problem and soreness and lose gums might make it hard for them to eat and sleep, hence healthy teeth and gums are very important for people with disabilities.
- Prevention of oral diseases for care-recipients is a challenging problem for carers and dental professionals. Therefore, if possible they should be encouraged and supported in their efforts to care for themselves.

Daily Home Care:

- All people with disabilities should eat a well-balanced diet, high in fruit and vegetables and consume minimal sugary food and soft drinks (using straws) that should be limited to meal times.
- They should drink tap water after meals to rinse mouth and wash away food particles from teeth.
- Brushing twice a day after breakfast and after dinner should be done using pea sized fluoride toothpaste and a soft brush. Electric or battery operated tooth brush and interdental brushes is preferred.
- For people needing assistance with tooth brushing, assistance from carers should be provided. Tips for carers include:
  - i. Carers should work in pairs, if possible, where one carer supports the head of the care- recipient and the other carer brushes the teeth.
  - ii. If difficult to keep the mouth open, mouth props can be used to help in keeping the recipients mouth open.

Figure 1: Mouth prop formed by taping tongue depressors together

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DISABILITIES

(Source- Heath promotion, people with disabilities special topic no 7, ADA policies)

Daily Home Care:

- The handle of plastic tooth brush can also be modified by placing under hot water to soften the plastic and gently bending the brush handle to create a better angle to clean the inner surfaces of lower front teeth.

Figure 2: Toothbrush handle bent to create a better angle

- If the recipient bites the tooth brush then a second toothbrush can be used.
- For people who pouch food, carers should inspect the mouth after each meal or dose of medicine and remove any remaining food or medicine from the mouth by sweeping the mouth with finger wrapped in gauze or using a disposable swab.
- For care recipient who are less compliant and at higher risk of developing tooth decay – high strength fluoride toothpaste, gels or rinses can be used on professional dental advice. For For gum disease, CHX gel application on gum margins before bed can be suggested.
- If a patient gag or cannot rinse or spit, a smear of high strength fluoridated toothpaste can be used.
- Alternatively, fluoride rinse can be poured in a cup, and brushing the teeth can be done by dipping the head of toothbrush into the cup. CHX can also be applied in the same manner.

Regular Dental Visits

- Regular dental visits should be maintained for patients with disabilities as recommendation or if any changes in the mouth or behavior are noted esp. when brushing teeth or at meal times
- Dentists and allied dental personnel should be trained to provide care for individuals with disabilities within clinics, nursing homes and residential care facilities.
- Individuals with disabilities should be allowed access with carers, assistance animals, where needed provided that the facilities are appropriate.

DEMENTIA PATIENTS

(Source- Health promotion special topic no 9 oral care for dementia pateints article, SMART technique in Covid 19 situation article)

- **Dementia is a syndrome associated with more than 100 different diseases that are characterized by the impairment of brain functions that includes, language, memory, perception, personality and cognitive skills.**
- **Dementia is usually of gradual onset, progressive in nature and irreversible. But, the type and severity of symptoms varies with the type of dementia as well.**
- **Alzheimer's disease is the most common type of dementia, accounting for 50-70% of dementia cases worldwide.**
- **Other types of dementia, includes vascular dementia, frontotemporal dementia, and dementia with Lewy bodies.**

Stages of Dementia (Based on Clinical dementia rating scale)

1) Mild (55% of people with dementia)

- **Deficits are in number of areas like memory and personal care but the person can still function with minimal assistance.**

> Symptoms include: moderate memory loss especially for recent events, some disorientation in time, moderate difficulties with problem-solving, reduced interest in hobbies, and the need for prompting regarding personal care tasks.

2) Moderate or middle (30%)

- **Deficits become more obvious and sever, and increased levels of assistance are required to help the person maintain their functioning in home and community.**

> Symptoms include: severe memory loss, considerable difficulty orienting to time and place, obvious difficulties in finding words, severe impairment of judgment and problem-solving, need for assistance with personal care tasks, and emergence of behavioural difficulties (for example, wandering, aggression, sleep disturbance and disinhibited behaviour).

3) Severe or late (15%)

- **Characterized by almost total dependence on the care and supervision by others.**
- **By this stage majority of the people with dementia are in residential care.**

> Symptoms include: very severe memory loss, very limited language skills, unable to make judgments or solve problems, regularly not recognizing familiar people, frequent incontinence, requires substantial assistance with personal care, and increased behavioural difficulties.

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DEMENTIA PATIENTS

(Source- Health promotion special topic no 9 oral care for dementia pateints article, SMART technique in Covid 19 situation article)

One of the major challenges for dentists in cognitively impaired older adults is communication. The following techniques can be used to aid in communication.

a) **Use of multiple communication forms.**
b) **Maintenance of sensory contact**

Different communication technique includes:

Table 2. Communication techniques for people with dementia[9]

Techniques	Examples
Rescuing	The dentist is unable to remove the resident's dentures, so a carer enters, takes over, and removes the dentures.
Distraction	A rummage box or busy apron/cushion/board (with a familiar theme) is used to occupy the active hands of the resident during the examination.
Bridging	The dentist places the lower denture in the resident's hand then places his/her hand over the resident's to guide the lower denture back into the mouth.
Chaining	A hygienist or carer places the toothpaste on the toothbrush and places it in the resident's hands, and then the resident brushes his/her teeth.

- **Dentists must obtain the informed consent from a patient with legal capacity before dental procedures can be undertaken.**
- **In people with dementia ta capacity of the patient to understand the information provided, make decisions on treatment and participate on the consent of treatment is affected.**
- **If there is a doubt about the patient's ability to comprehend or make informed decision the dentist must obtain further clinical advice on the patient's capacity and seek the consent of a legally authorized substitute decision maker.**

There is a hierarchy of persons from whom the person responsible for a person other than a child or a person in the care of the Director-General under section 13 is to be ascertained.

That hierarchy is, in descending order:

a. the person's guardian, if any, but only if the order or instrument appointing the guardian provides for the guardian to exercise the function of giving consent to the carrying out of medical or dental treatment on the person;

b. the spouse of the person, if any, if:
(i) the relationship between the person and the spouse is close and continuing, and
(ii) the spouse is not a person under guardianship;

c. a person who has the care of the person;

d. a close friend or relative of the person.

Operation of hierarchy will be implemented if:

a. a person who is, in accordance with the abovementioned hierarchy, the one responsible for a particular person who declines in writing to exercise the functions under this part of a person responsible, or

b. a medical practitioner or other person qualified to give an expert opinion on the first person's condition certifies in writing that the person is not capable of carrying out those functions, the person next in the hierarchy is the person responsible for the particular person.

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DEMENTIA PATIENTS

(Source- Health promotion special topic no 9 oral care for dementia pateints article, SMART technique in Covid 19 situation article)

- If the patient is physically disabled or cognitively impaired, dentists need to understand their wider needs, such as how they function in their environment with their medical problems, pharmacotherapy and their social support systems, as well as how oral health care fits into their environment.

Different communication technique includes:

- In the initial dental visit it is essential to include the elderly patients medical history, medications, functional status, cognitive status, behavioral issues and social support and also consider all these factors before making treatment plan.
- During the examination dentists usually initiate a systematic dental examination method like starting with upper right 3rd molar and finishing with lower right 3rd molar. However, in cognitively impaired individuals a flexible approach should be carried out (assessing any area that is visible or assessable at any time), Anterior teeth may be needed to examined before posterior teeth.
- Particular strategies might be adopted like bending the tooth brush or using mouth props to assist assessing mouth for patients with cognitive impairment like dementia.
- Due to functional dependence and cognitive impairment, leading to impaired self-care ability these patients are at high risk of developing oral diseases.
- They may depend on their carers for their daily activities, and maintenance of hygiene including visits so a team approach is recommended.

- For those who depend on their carer for their daily activities, dentists need to educate the carers to integrate daily oral hygiene activities to their daily activities.
- For instructions and tips for carers * Refer to hot notes of oral care for peripli with disabilities.
- In patients with high risk of caries use of fluoridated toothpaste in increased concentration twice per day is recommended. Also, application of fluoride varnishes every 3 or 6 months are suggested for high risk of caries.
- For treatment, minimally invasive procedures like SMART TECHNIQUE (Silver modified atraumatic restorative technique) OR ART TECHNIQUE (Atraumatic restorative technique) are recommended.
- ART is a minimally invasive approach for treating carious lesions, which is simple. In ART technique sharp hand instruments are used to gain access and excavate soft caries. Moisture control is achieved with cotton rolls and preparations are not extended to remove an adjacent tissues. GIC is used as a restorative material which is mixed and applied into the cavity and a firm finger pressure is applied over the surface of the restoration.

> In a randomised clinical trial testing, the ART approach in treating root caries in elders living in Hong Kong residential and nursing homes, achieved 12-month survival rates of 91.7% for conventional restorations (via drilling and filling) and 87.0% for ART restorations[13].

DEMENTIA PATIENTS

(Source- Health promotion special topic no 9 oral care for dementia pateints article, SMART technique in Covid 19 situation article)

- **SMART technique is a new paradigm in caries intervention and management where Silver diamine fluoride (SDF) along with ART technique is used together. SMART technique provides dual benefit of arresting carious lesion and restoring the tooth without use of any aerosol producing instrumentation.**
- **Despite the numerous, benefits the unesthetic black stains of carious tissue hampers the broader acceptance of SDF, however, SMART is preferred in cases where there is no esthetic concerns and minimally invasive technique is required like in patients with dementia or in situation where aerosol production should be limited (like in COVD -19 pandemic situation).**
- **Steps in clinical technique for SMART procedure includes:**

Silver Modified Atraumatic Restorative Technique: Step by Step Clinical Technique

1. Language appropriate informed consent inclusive of color clinical pictures of SDF treated lesions should be obtained prior highlighting the risk, benefits and alternate treatment options for parents, particularly for caregivers with low oral health literacy. It should include that caregiver understands that the decayed part of the tooth may stain black. This is emphasized to make them aware of the staining and partial appearance of the stains at the restoration-tooth interface [44-46].
2. Wear standard personal protective equipment, and make sure the patient is wearing safety glasses and a plastic-lined bib.
3. Apply cocoa butter or petroleum jelly to perioral areas and/soft tissues that would possibly come in contact with SDF. Care should be taken that the petroleum jelly dos not contact the caries lesion as it could inhibit the uptake of SDF and affect bonding.
   Clinical tip: A scented lip balm would mask the ammonia odor of SDF
4. Remove gross debris, biofilm and pellicle with pumice, non-fluoride prophylaxis paste or moist cotton pellet from the cavity to enhance direct contact of SDF to the carious dentin [6].
   Clinical tip: Alternatively, etch with 37% phosphoric acid for 5-15 seconds, rinse and dry. Do not desiccate.
5. Isolate with isodry or isolite, saliva ejector, suction bite-block, gauze, cotton rolls, finger guard, absorbent triangles or dri-angle and dry with a cotton pellet.
   Clinical Tip: Alternatively, dry the tooth both prior and after SDF placement using a clean and dry microbrush.
6. No operative intervention (e.g., affected or infected dentin removal) is necessary to achieve caries arrest.
7. Dispense 1 drop of SDF into a disposable plastic dappen dish and use a micro-brush to apply on the lesion with scrubbing motion. Leave SDF in place for 1 minute. The arrested lesion should be matte black in color and firm on using a periodontal probe.
   Clinical Tip: Use a plastic dappen dish as SDF corrodes glass and metal and digital timer for application time. The dentist's finger could be used to block for the child's tongue when applying SDF on lower posterior teeth, which augments tooth isolation and prevents a metallic taste [46].
8. Excess should then be appropriately removed with cotton wool or a gauze.
   Clinical Tip: Avoid rinsing post SDF application to reduce the chance of staining soft tissues and metallic taste [46].
9. KI is placed on a separate dish, and a separate microbrush fully immersed in the KI should be applied to the SDF treated carious tissue. KI should be repeatedly applied one to three times until the white precipitate turns colorless. Wait for 5 to 10 seconds between applications and remove excess with cotton. Rinse with water and air-dry [47].
10. If required, the cavosurface margins could be prepared with a high-speed handpiece, slow-speed round bur, hard-tissue laser, air abrasion, or a spoon excavator.
11. Remove debris and condition with 20% polyacrylic acid for 10 seconds, then rinse for 10 seconds and blot dry with cotton leaving a moist glossy surface. This is essential to remove the smear layer and ensure good chemical bond to the tooth structure activating the surface for ionic exchange.
12. Place matrix system if required. GIC is mixed and placed into the cavity. Do not disturb the GIC for 2.5 minutes from the start of the mix. Use "finger push" technique wherein a gloved finger lubricated with unfilled resin or manufacturer's coat is used to push the GIC and at the same time removing excess material. Excessive GIC should be removed from unwanted areas using an instrument lubricated with a thin film of unfilled resin.
13. If restoring with resin modified GIC or composite, a layer of auto-cure GIC is placed up to the dentinoenamel junction, bonding agent is applied to the surface, bulk fill composite or resin modified GIC is condensed into the cavity and light cured. This is indicated only when using SDF+KI [48].
14. Finishing and polishing should be accomplished with light pressure with high-speed finishing burs and polishing cups, respectively. Manufacturer's coat or unfilled resin (without light cure to avoid blackening of tooth and restoration) should be used post restoration.
15. Invert all used cotton, microbrush, and dappen dish into a glove so SDF does not drip on any surface or skin.

Image- (Source: SMART Technique during COVID -19 pandemic article)

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DENTAL FEAR AND ANXIETY

(Source- Dental fear and anxiety article, special topic no 11, TG)

- Dental phobia which is a high dental fear can significantly impact someone's life and affects about 5 % of Australian population.
- High dental fear affects approx. 1 in 6 Australian adults and about 1 in 10 children.
- If patients with high levels of dental fear are not managed properly then "a viscous cycle of dental fear" might be stablished. The patient avoids dental visits due to fear leading to worsening of problems, that require more intensive and potentially traumatic treatment which reinforces or exacerbates the fear again leading to continued avoidance.

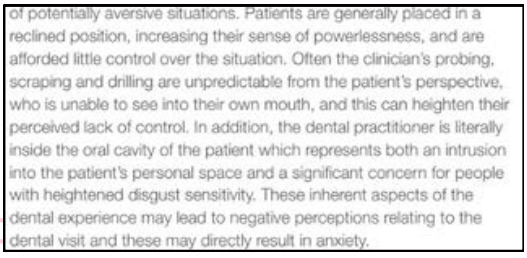
Consequences of High levels of Dental Fear:

- People with high dental fear are much more likely to avoid or delay dental visit, and a number of fearful people regularly cancel or fail to show for appointments. This leads to poorer dental health of such individuals and might require more complex and complicated treatment due to delay.
- People with high dental fear (both adults and children) may prove difficult to treat. They require more time and are present with behavioral problem that can result in stressful and unpleasant experience for both patient and treating practitioner.
- Managing patients with dental fear is a source of considerable stress for dentists as indicated by research.

Potential reasons for Dental Fear (Directly or Indirectly implicated)

1) Dental experiences and perceptions:

- Generally, the underlying cause of anxiety is regarded as direct negative dental experience. However, the nature of dental anxiety is more complicated.
- Evidence has suggested that, how a person perceives the dental environment is more important determinant of dental fear than having a previous distressing dental visit.


of potentially aversive situations. Patients are generally placed in a reclined position, increasing their sense of powerlessness, and are afforded little control over the situation. Often the clinician's probing, scraping and drilling are unpredictable from the patient's perspective, who is unable to see into their own mouth, and this can heighten their perceived lack of control. In addition, the dental practitioner is literally inside the oral cavity of the patient which represents both an intrusion into the patient's personal space and a significant concern for people with heightened disgust sensitivity. These inherent aspects of the dental experience may lead to negative perceptions relating to the dental visit and these may directly result in anxiety.

2) Source of a patient's anxiety may be in relation to specific treatment aspects like, fear of gagging or choking, fear of injection or a strong aversion to the sight or thought of blood. They might also have concerns about perceived problems with getting numb, low pain threshold or have issues with trusting dental practitioners. Good communication and building rapport with the patients are critical in these circumstances.

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DENTAL FEAR AND ANXIETY

(Source- Dental fear and anxiety article, special topic no 11, TG)

2) Avoidance of dental fear can also be an aspect of some other condition like social phobia (fear of social evaluation), fear of germs (an obsessive-compulsive disorder), panic disorder (fear of being far away from home) with/without agoraphobia i.e., the fear of strangers. Other conditions like depression can also be related to reduced dental visit and increased dental need.
3) There is also an observed association between dental anxiety and having been the victim of past sexual abuse.
4) Concerns about pain is still one of the reasons for dental anxiety despite recent advances in dental techniques.

Assessment of patients for dental anxiety:

- To work successfully with a fearful dental patient, a dental practitioner must first identify that if an individual is scared or nervous. After that, the dental practitioner should adopt an appropriate treatment approach that is tailored to the patient's concern.
- Earlier identification of a dental fear in patients leads to greater likelihood of success in working with the patients.
- Assessment includes:

1) Observing the patient behavior and psychology:

- The behavior of the patient in the waiting room can provide an early indication of dental anxiety.
- Anxious patient may demonstrate various behaviors such as:

> fidgeting with their hands
> sitting on the edge of their chair
> rapidly flicking through magazines
> changing sitting positions often
> sweating
> sighing deeply or breathing rapidly
> talking loudly
> making negative comments about dentists and dentistry
> pacing or walking around the waiting room
> rapid head motions or startle reactions to office noises

- Observing the patients behavior can provide indications of possible anxiety, but there may be many other explanations for this behavior, so patient observation should not be used as a method of diagnosing dental anxiety.

2) Asking the patients:

- The simplest way to identify dental anxiety in a patient is to ask them.

DENTAL FEAR AND ANXIETY

(Source- Dental fear and anxiety article, special topic no 11, TG)

Assessment of patients for dental anxiety:

- **Assessment includes:**
  3) **Using a self-report dental anxiety scale:**
     - **There has been a long-standing recommendation of using structured dental fear questionnaires during clinical assessment.**
     - **There are several structured, psychometrically valid self-report scales which can be used to assess dental anxiety.**
     - **These include:**

> Self-report scales that can be used include:
>
> 1. the Dental Fear Survey (DFS) for adults which has 20 items related to various situations, feelings and reactions to dental work[9];
> 2. the Modified Child Dental Anxiety Scale (MCDAS) which has eight items and is used for children[12];
> 3. the Index of Dental Anxiety and Fear (IDAF-4C+), used for adults, and which contains an eight-item module measuring the physiological, cognitive, emotional and behavioural components of dental fear and an additional 10-item stimulus module designed to assess possible areas of specific concern (see Table 1)[13].

DENTAL FEAR AND ANXIETY

(Source- Dental fear and anxiety article, special topic no 11, TG)

Working with anxious patients:

1) Effective communication and building trust

- Communication, rapport and trust form the backbone of any anxiety management approach.
- Communication between dental practitioner and patient is crucial for a productive working relationship that results in competent clinical care.
- Essential elements of good communication are:
  i. Establishing an effective two way interaction.
  ii. Genuinely acknowledging rather than dismissing patients concerns
  iii. Attending to non-verbal cues
  iv. Effective listening
  v. Accurate reflection of patient's words.
  vi. Showing empathy
  vii. Using appropriate voice and tone.

2) Modification in dental visits and treatment plan.

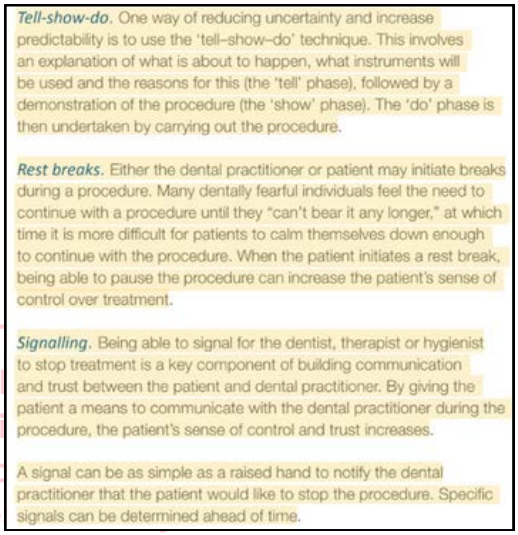
- Treatment planning for dentally anxious patients should be flexible.
- The order for treatment plan should be determined by what the patient fears and what he/ she considers most important.
- Treatment should be provided in phases:
  i. Initial phase: It involves getting the patient used to the clinic, establishing rapport, and talking through issues and concerns of the patient. An anxious patient may/ may not be ready to underdo diagnostic procedures at this point so a second visit might be needed for diagnosis.
  ii. An early treatment phase: It includes a discussion around the treatment plan and if possible, should also include treatment designed to increase patients' ability to tolerate treatment such as simple preventive treatments.
  iii. A second/third phase: Includes other areas of dentistry.

DENTAL FEAR AND ANXIETY

Techniques for helping people with dental anxiety:

1) Providing control to the patient:

- It includes Tell- Show-Do technique, Rest breaks and Signaling



Tell-show-do. One way of reducing uncertainty and increase predictability is to use the 'tell–show–do' technique. This involves an explanation of what is about to happen, what instruments will be used and the reasons for this (the 'tell' phase), followed by a demonstration of the procedure (the 'show' phase). The 'do' phase is then undertaken by carrying out the procedure.

Rest breaks. Either the dental practitioner or patient may initiate breaks during a procedure. Many dentally fearful individuals feel the need to continue with a procedure until they "can't bear it any longer," at which time it is more difficult for patients to calm themselves down enough to continue with the procedure. When the patient initiates a rest break, being able to pause the procedure can increase the patient's sense of control over treatment.

Signalling. Being able to signal for the dentist, therapist or hygienist to stop treatment is a key component of building communication and trust between the patient and dental practitioner. By giving the patient a means to communicate with the dental practitioner during the procedure, the patient's sense of control and trust increases.

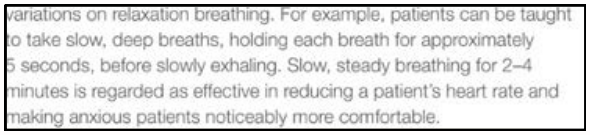
A signal can be as simple as a raised hand to notify the dental practitioner that the patient would like to stop the procedure. Specific signals can be determined ahead of time.

2) Distraction:

- For patients with mild to moderate dental anxiety there is evidence that focusing on specific alternative visual or auditory stimuli in the clinic is beneficial.
- These can be ranging from background music to television sets, computer games to 3D video classes to watch movies.

3) Relaxation Breathing:

- One exercise which is believed to be most beneficial to almost every fearful patient is relaxation through breathing techniques.
- Various breathing technique can be taught very easily in the clinic and can be practiced at home by a patient prior to initial examination



variations on relaxation breathing. For example, patients can be taught to take slow, deep breaths, holding each breath for approximately 5 seconds, before slowly exhaling. Slow, steady breathing for 2–4 minutes is regarded as effective in reducing a patient's heart rate and making anxious patients noticeably more comfortable.

4) Progressive muscle relaxation

- Although the procedure used in progressive muscle relaxation is relatively simple it will require an investment of time.
- Firstly, to teach the patient and then for the patient to practice at home (once/twice per day for 1-2 weeks), in order to master the technique.
- There are several specific muscle sequences that can be used for practicing progressive muscle relaxation.

5) Systemic desensitization:

- It involves gradually exposing a fearful individual to the aspect of dentistry that they find frightening while encouraging them to use relaxation strategies to reduce their anxiety.

DENTAL FEAR AND ANXIETY

Pharmacological strategies to dental anxiety management

- In many cases, using a caring and patient-centered approach in combination with various behavioral and psychological approaches to fear management, yields superior short term and long-term results than the use of pharmacological methods.
- However, for some people sedation might prove more effective.
- These pharmacological approaches are often only effective for people who:

> just want it over with;
> don't want to be conscious while receiving dental treatment;
> just need a little help relaxing ('laughing gas');
> have fear-specific issues such as needles;
> have tried other approaches, such as those listed above, and had no success.

- The three types of sedation are:

> Inhalation sedation using a combination of nitrous oxide and oxygen
> Oral sedation, primarily through the use of benzodiazepines (e.g., Valium, Xanax) which act as sedatives and/or anti-anxiety drugs.
> Intravenous (IV) sedation, which involves administering a drug to produce a deep sedation.

- Only dentists endorsed by Dental Board of Australia should practice conscious sedation.
- Anxiolysis refers to a range of both pharmacological and non-pharmacological methods used to alleviate fear and dental anxiety. Anxiolysis should only result in minimal sedation.
- For pharmacological approach for minimal sedation (used in dental practice refer to TG- page 211)

Summary of steps to take with anxious patients

1. For all patients, establish good two-way communication, build rapport, and always aim to foster a trusting relationship.
2. Appropriately identify the anxious person and their specific concerns, worries, comorbidities and issues.
3. Work with the patient to establish a treatment plan which is flexible and organised in phases and which works well for the patient.
4. Use various behavioural and cognitive anxiety management techniques to help the patient undergo the treatment phases.
5. Consider pharmacological anxiety management approaches in consultation with the patient.

CARIES RISK ASSESSMENT AND SWEETNERS

(Source- Caries Risk assessment for children, Special topic NO.10 , Sweeteners article NSW government)

- Caries risk assessment is an important and useful tool for both individual and groups.
- For individuals: early identification of subjects with different caries risk levels and is important for planning appropriate preventive measures.
- At a population level: Caries risk assessment (CRA) driven dental programs are more efficient and cost effective.
- One of the aims of CRA in children is to maintain good oral health of low-risk individuals and improving the oral health of high-risk individuals by providing a targeted oral care usually through more frequent visits.

Use of Caries Risk assessment

> CRA and clinical examination provide an overview of exposures to potential caries risk/protective factors such as plaque, frequency of sugar intake, and exposure to fluoride while encouraging management strategies developed specifically for the patient.

> CRA is useful to evaluate the degree of the patient's risk of developing caries to determine the intensity of the treatment and frequency of recall appointments or treatments.

> CRA helps in identifying the main aetiological agents that contribute to the disease and/or in determining the type of treatment and in making restorative treatment decisions including whether to intervene or not, preparing cavity designs and selecting dental materials.

> CRA can improve the reliability of the prognosis of the planned treatment and assess the efficacy of the proposed management and preventive treatment plan at recall visits.

- Dental caries risk assessment based on child's age, biological factors, protective factors, and clinical findings should be a routine component of new and periodic examination of oral health practitioners.
- CRA models currently involve a combination of risk indicators and protective factors that interplay with variety of social, cultural and behavioral factors.

1) Risk indicators:

- Past caries experience: Most consistent predictive factor obserced in caries risk assessment studies. However, not particularly useful in young children as determining caries risk before the disease manifests is much more important in them. White spot lesions are considered good indicators to predict future caries development in young children.

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CARIES RISK ASSESSMENT AND SWEETNERS

(Source- Caries Risk assessment for children, Special topic NO.10 , Sweeteners article NSW government)

1) Risk indicators:

- **Socio economic status (SES):** There is an inverse association between caries and SES, showing high caries experience in socially disadvantaged individuals.
- **Sugar Consumption:** Both quantity and frequency of sugar intake contributes to dental caries. More the consumption and higher the frequency the greater is the caries severity.

> caries[6]. However, consumption of beverages with high sugar content such as soda pop or powdered beverage concentrates made with sugar was associated with progression of dental caries[7,8]. Recently, WHO guideline on sugar intake for adults and children concluded that even a small reduction in risk of dental caries due to less consumption of sugar in childhood is of significance in later life[9].

- **Oral Hygiene Habits:** The available evidence does not show a clear and consistent prevalence between oral hygiene and dental caries prevalence.
- **Bacteria:** Streptococcus mutans and Lactobacilli are the main bacteria involved in caries process. At group level, bacterial count has been weakly associated with caries experience. At individual level, bacterial count is poor predictor of future caries.
- **Saliva:** Decreased salivary function, as manifested by extreme xerostomia, is a consistent predictor of high caries risk.

2) Protective Factors:

- **Fluoride:** The protective effect of water fluoridation is well documented and use of fluoridated toothpaste is the benchmark intervention for the prevention of dental caries. Professional fluoride application and fluoride varnishes are also effective in reducing caries.
- **Fissure Sealants:** Sealants are evidence-based method to boost the tooths resistance to carious lesions in pits and fissures of teeth.

CARIES RISK ASSESSMENT AND SWEETNERS

(Source- Caries Risk assessment for children, Special topic NO.10 , Sweeteners article NSW government)

Various Tools Available for CRA

- **Amongst the commonly used CRA tools none are unequivocally accepted, therefore practitioners are advised to use their own clinical judgement and experience in choosing a tool, assessing caries risk and making decisions.**
- **The four commonly used Caries risk assessment tools are:**

1) Caries Risk assessment Tool (CAT)

> **Caries Risk Assessment Tool (CAT):** This tool was developed by the American Academy of Paediatric Dentistry (AAPD)[19]. Depending on the age of children CAT incorporates three factors in assessing caries risk, namely, biological as well as protective factors and clinical findings (Table 1).

Table 1. Caries risk assessment form based on CAT[19]

Factors	Risk: High	Moderate	Low
Biological			
Mother/primary caregiver has active caries (for child only)	Yes		
Parent/caregiver/patient is of low SES	Yes		
Child has >3 between meal sugar-containing snacks or beverages per day	Yes		
Child is put to bed with a bottle containing natural or added sugar	Yes		
Child/patient has special health care needs		Yes	
Child/patient is a recent immigrant		Yes	
Protective			
Child/patient receives optimally-fluoridated drinking water or fluoride supplements			Yes
Child/patient brushes teeth daily with fluoridated toothpaste			Yes
Child/patient receives topical fluoride from health professional			Yes
Child/patient has regular dental care			Yes
Patient has additional home measures (e.g., xylitol, MI paste, antimicrobial)			Yes
Clinical findings			
Child has >1 decayed/missing/filled surfaces	Yes		
Child/patient has active white spot lesions or enamel defects	Yes		
Child has elevated mutans streptococci levels	Yes		
Child has plaque on teeth		Yes	
Patient has ≥1 interproximal lesions	Yes		
Patient has low salivary flow	Yes		
Patient has defective restorations		Yes	
Patient wearing an intraoral appliance		Yes	

Child= aged <6 years Patient= aged ≥6 years

Overall caries risk assessment: High ☐ Moderate ☐ Low ☐

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CARIES RISK ASSESSMENT AND SWEETNERS

(Source- Caries Risk assessment for children, Special topic NO.10 , Sweeteners article NSW government)

2) Caries management by Risk Assessment (CAMBRA)

> **Caries Management by Risk Assessment (CAMBRA):**
> This has been designed to use with newborns to children aged five years[20]. CAMBRA is essentially based on the same factors as CAT to assess caries risk (Figure 1).

Figure 1. CAMBRA risk assessment form[20]

CAMBRA — Caries Risk Assessment Form for Age 0 to 5 Years

Patient Name:_____ ID#_____ Age:_____ Date:_____

Assessment Date:_____ Please circle: BASELINE, three-month follow-up or six-month follow-up

NOTE: Any one Yes in Column 1 signifies likely "High Risk" and an indication for bacteria tests	1 Yes =CIRCLE	2 Yes =CIRCLE	3 Yes =CIRCLE	Comments:
1. Risk Factors (Biological Predisposing Factors)				
(a) Mother or primary caregiver has had active dental decay in the past 12 months*	Yes			
(b) Bottle with fluid other than water, plain milk and/or plain formula		Yes		Type of fluid:
(c) Continual bottle use		Yes		
(d) Child sleeps with a bottle, or nurses on demand		Yes		
(e) Frequent (>3 times/day) between-meal snacks of sugars/cooked starch/sugared beverages		Yes		#times/day:
(F) Saliva-reducing factors are present, including: 1. medications (e.g., some for asthma [albuterol] or hyperactivity) 2. medical (cancer treatment) or genetic factors		Yes		
(g) Child has developmental problems/CSHCN (child with special health care needs)		Yes		
(h) Caregiver has low health literacy, is a WIC participant and/or child participates in Free Lunch Program and/or Early HeadStart		Yes		
2. Protective Factors				
(a) Child lives in a fluoridated community or takes fluoride supplements by slowly dissolving or as chewable tablets (note resident ZIP code)			Yes	
(b) Child drinks fluoridated water (e.g., use of tap water)			Yes	
(c) Teeth brushed with fluoridated toothpaste (pea size) at least once daily			Yes	
(d) Teeth brushed with fluoride toothpaste (pea size) at least 2x daily			Yes	
(e) Fluoride varnish in last six months			Yes	
(f) Mother/caregiver chews/dissolves xylitol chewing gum/lozenges 2–4x daily			Yes	
3. Disease Indicators/Risk Factors – Clinical Examination of Child				
(a) Obvious white spots, decalcifications enamel defects or obvious decay present on the child's teeth*	Yes			
(b) Restorations present (past caries experience for the child)*	Yes			
(c) Plaque is obvious on the teeth and/or gums bleed easily		Yes		
(d) Visually inadequate saliva flow		Yes		

Child's Overall Caries Risk* (circle): High Moderate Low

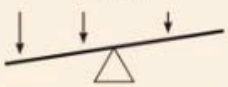
Child: Bacteria/Saliva Test Results: MS: LB: Flow Rate: Ml/min: Date:

Caregiver: Bacteria/Saliva Test Results: MS: LB: Flow Rate: ml/min: Date:

Self-management goals:

1)_____

2)_____



VISUALIZE CARIES BALANCE

*Assessment based on provider's judgment of balance between risk factors/disease indicators and protective factors.

CARIES RISK ASSESSMENT AND SWEETNERS

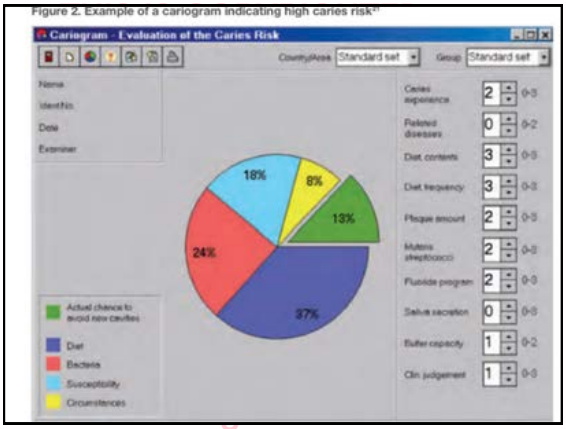
3) Cariogram

> **Cariogram:** This graphically illustrates as a pie-circle diagram a patient's risk of developing new caries while simultaneously expressing the contribution of different factors on the caries risk for that particular patient[21]. A cariogram is divided into five colour-coded sectors – green, dark blue, red, light blue and yellow – representing factors that of relevance for caries. These factors are assigned a score based on a stipulated scale and entered into an interactive PC-program, which produces a pie-diagram. Table 2 indicates the factors and the relevant information required to create a cariogram. Figure 2 shows an example of a cariogram.

Table 2. Factors and relevant information required to create a cariogram[21]

Factor	Comment	Information needed
Caries experience	Past caries experience, including cavities, fillings and missing teeth because of caries. Several new cavities definitely appearing during preceding year should give a high score even if number of fillings is low	DMFT, DMFS, new caries experience in the past 1 year
Related diseases	General diseases or conditions associated with dental caries	Medical history, medications
Diet, contents	Estimation of the cariogenicity of the food, in particular sugar contents	Diet history, lactobacillus test count
Diet, frequency	Estimation of number of meals and snacks per day, mean for 'normal days'	Questionnaire results, 24- hour recall or dietary recall (3 days)
Mutans streptococci	Estimation of levels of mutans streptococci (Streptococcus mutans, Streptococcus sobrinus) in saliva, for example using Strip mutans test	Strip mutans test or other laboratory tests giving comparable results
Fluoride program	Estimation of to what extent fluoride is available in the oral cavity over the coming period of time	Fluoride exposure, interview patient
Saliva secretion	Estimation of amount of saliva, e.g., using paraffin-stimulated secretion and expressing results as milliliter saliva per minute	Stimulated saliva test – secretion rate
Saliva buffer capacity	Estimation of capacity of saliva to buffer acids, e.g., using the Dentobuff test	Dentobuff test or other laboratory tests giving comparable results
Clinical judgement	Opinion of dental examiner, 'clinical feeling'. Examiners own clinical and personal score for the individual patient	Opinion of dental examiner, 'clinical feeling'. A pre-set score of 1 comes automatically

Figure 2. Example of a cariogram indicating high caries risk[21]



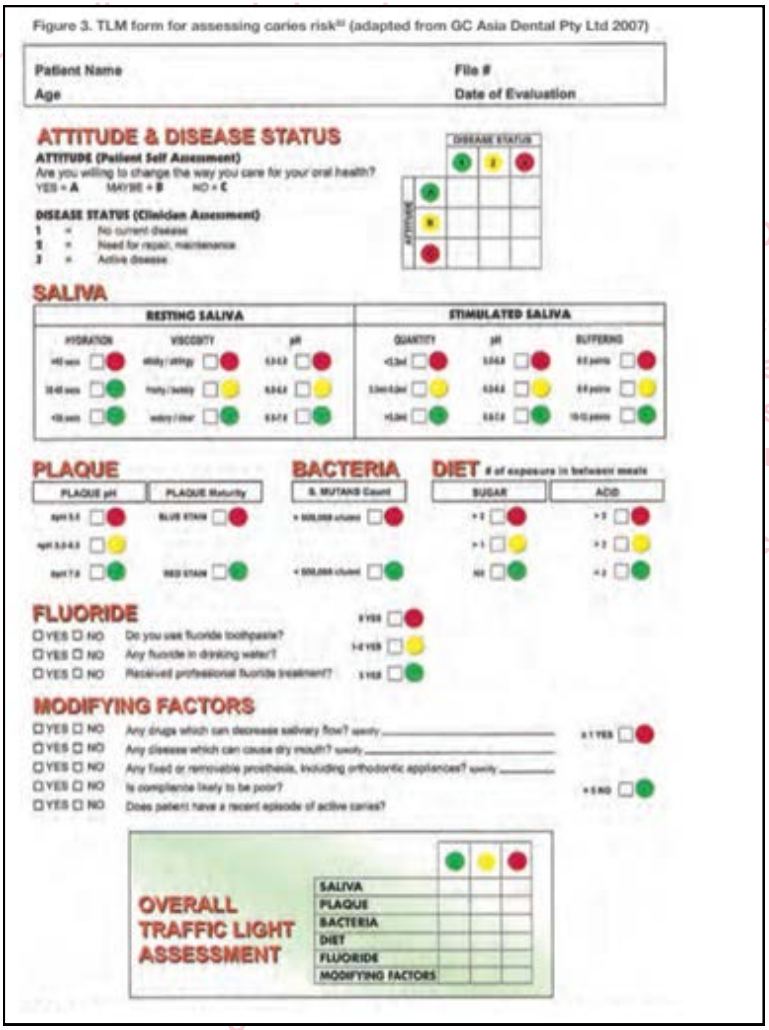
CARIES RISK ASSESSMENT AND SWEETNERS

4) Traffic light Matrix (TLM)

> **Traffic Light Matrix (TLM):** This is a commonly used CRA tool in Australia[22]. TLM is based on 19 criteria in 5 different categories including saliva (6 criteria), plaque (3 criteria), diet (2 criteria), fluoride exposure (3 criteria) and modifying factors (5 criteria where traffic light colours convey varying risk levels (red=high, yellow=moderate and green=low).

- Saliva: a) Resting: hydration, viscosity and pH b) Stimulated: quantity/rate, pH and buffering capacity
- Plaque: pH, maturity and bacteria – Mutans count
- Diet: number of sugar and acid exposures in between meals/ day
- Fluoride: exposure to fluoride via water/toothpaste/professional treatment
- Modifying factors: drugs that reduce salivary flow, diseases resulting in dry mouth, fixed/removable appliances, recent active caries and poor compliance

Figure 3 shows a modified form developed by GC Asia Dental Pty Ltd (2007) to assess caries risk using TLM incorporating patient motivation and compliance[22].



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CARIES RISK ASSESSMENT AND SWEETNERS

SWEETENERS / SUGAR ALTERNATIVES AVAILABLE:

(Source- NSW sweeteners article)

- Sweeteners provide an intense sweet flavor.
- Sweeteners provide an alternative to sugar without the associated energy.
- Sweeteners can be incorporated in our diet in lots of different ways, and selection of one sweetener above another depends on what one is trying to achieve.

> For those trying to resist the sweetness in a cup of tea or coffee, an artificial or 'tabletop' sweetener can be used instead. Or perhaps you are looking to use a sweetener in a recipe as a sugar substitute. A natural intense sweetener would be the pick as it is more heat stable than other sweeteners. And if you don't have any particular preference for sweeteners, you are bound to experience a huge variety when you next eat or drink products such as 'diet' soft drinks, 'lite' ice-cream or chewing gum, to name a few.

- There is some evidence that consuming food and drinks with sweeteners can help in weight loss by reducing calorie intake.
- However, fizzy drinks, both sugar sweetened and using sweeteners, may still cause dental problems.
- Sweeteners can be divided into 3 major categories:

a) Artificial Sweeteners/Non-nutritive sweeteners:

- They are often used as an alternative to sugars and these sweeteners are calorie-free.
- Most commonly used artificial sweeteners in Australian food supply are:

The most commonly used artificial sweeteners in the Australian food supply are:

Name	Code number	Brand name
Acesulphame K	950	Hermesetas® Sunnett®
Alitame	956	Aclame®
Aspartame	951	Equal® Equal Spoonful® Hermesetas® Nutrasweet®
Cyclamate	952	Sucaryl®
Neotame	961	
Saccharin	954	Sugarella® Sugarine® Sweetex®
Sucralose	955	Splenda®

CARIES RISK ASSESSMENT AND SWEETNERS

SWEETENERS / SUGAR ALTERNATIVES AVAILABLE:

(Source- NSW sweeteners article)

- **Sweeteners can be divided into 3 major categories:**

b) Nutritive sweeteners:

- These are based on different types of carbohydrates, and product with this type of sweeteners are labeled as Carbohydrate modified.
- They provide a sweet taste, have less energy/calorie than sugar but are not calorie free.
- Most commonly used nutritive sweeteners in food are:

Name	Code number	Comments
Fructose	No code	• fruit sugar • same kilojoules as sugar but sweeter
Isomalt	953	• less kilojoules than sugar but half the sweetness • may have a laxative effect • can also be listed as 'humectant'
Erythritol Lactilol Mannitol Maltitol Xylitol Sorbitol	968 966 421 965 967 420	• these are all sugar alcohols • same kilojoules as sugar, except mannitol • may have a laxative effect and cause wind and diarrhoea • can also be listed as 'humectant'
Maltodextrin	No code	• same kilojoules as sugar • also listed as 'hydrolysed corn syrup' or 'glucose syrup'
Polydextrose	1200	• provides minimal kilojoules • may have a laxative effect
Thaumatin	957	• can also be listed as 'flavour enhancer'

c) Natural intense sweeteners

- Recently, natural sweeteners are getting popular and this includes Stevia and Monk Fruit Extract.
- They are typically derived from plants.
  - i. Stevia- It is between 200-300 times sweeter than sugar and contains no energy/calorie.
  - ii. Monk Fruit Extract- It is between 250-400 times sweeter than sugar and contains no energy/calorie.
- Both are approved for use in Australia.

ORAL HEALTH AND DISABILITY IN CHILDREN/ ASSISTANCE ANIMALS IN CLINIC

(Source-Oral health and disability in children (article) , dogs and dentistry ADA guidelines)

- Good oral health is central to good overall health.
- However, children and young people with disability are at increased risk of poor oral health and face multiple barriers to accessing dental services.

> "Oral health is considered integral to general health, with poor oral health likely to exist when general health is poor and vice versa. Oral health refers to the standard of health of the oral and related tissues that enable an individual to eat, speak and socialise without active disease, discomfort or embarrassment. While oral diseases are common, they are largely preventable through population-level interventions (including water fluoridation), and individual practices such as personal oral hygiene and regular preventive dental care."
>
> (Centre for Oral Health Strategy NSW, 2013:4)

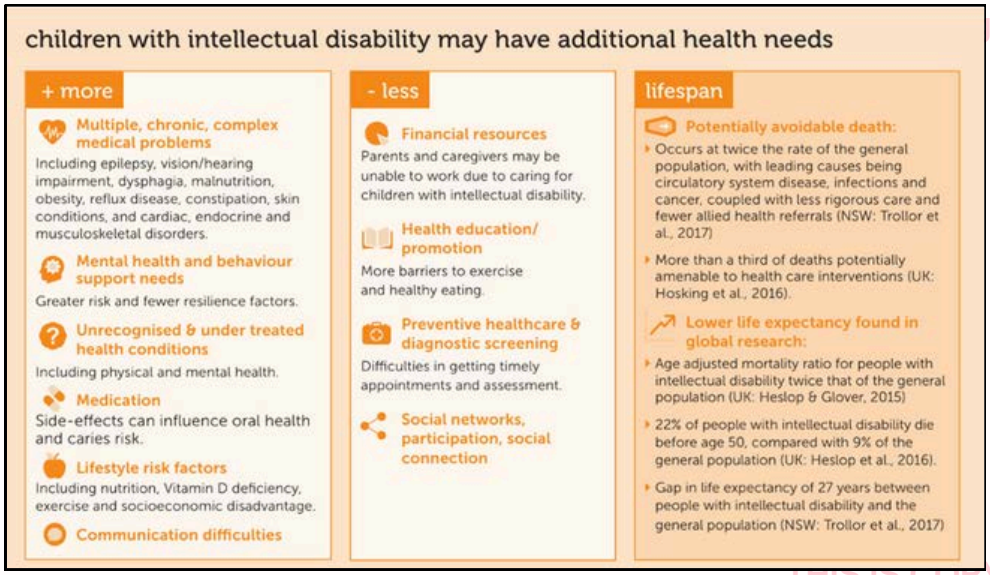
- Most patients with Mild to Moderate Disability can be treated successfully in general dental clinic.
- Individuals with disability have poorer outcomes including, extractions rather than fillings, increased severity of [periodontal diseases, and lack of functional replacement of extracted teeth.
- The dental needs of children with disability is greater than other patients in general community due to:
  - i. Lack of focus on oral care due to volume of competing pressures like therapeutic interventions and supporting early learnings.
  - ii. Lack of self-care.
- The approach for treatment planning for a patient with intellectual disability may require modifications such as:
  - i. Additional attention given to communication, familiarization, and consent.
  - ii. Creative and efficient solutions to some of the practical barriers experienced by the patient.

ORAL HEALTH AND DISABILITY IN CHILDREN/ ASSISTANCE ANIMALS IN CLINIC

Barriers include:

- Heightened anxiety
- Stretched support networks
- Infrequent dental care
- Procedures that require a series of appointments.

Children with intellectual disabilities may have additional health needs and these includes:

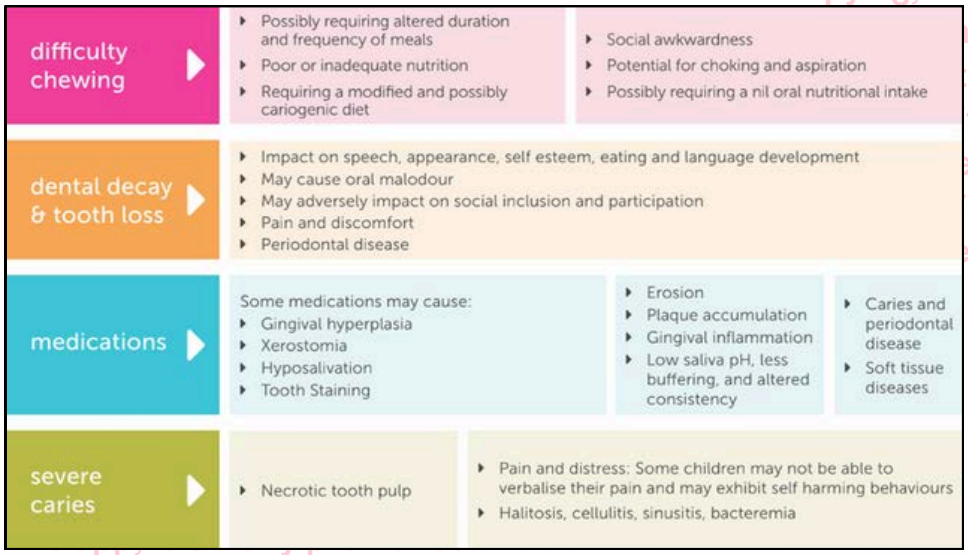


- There is well established link between oral and systemic health in literature. Early intervention has potential to avoid more risky health outcomes that can appear during later adolescence and adulthood.
- Poor oral health has been liked to increased risk of cardiovascular disease, diabetes, and other chronic conditions.

> Martinez 2012). For example, diabetes has been linked to the presence of periodontal disease (Bascones-Martinez 2012) with patients having "six times higher risk of worsening glycaemic control and the development of the macro and microvascular complication of diabetes, in particular cardiovascular and kidney disease" (Watanabe 2011).

ORAL HEALTH AND DISABILITY IN CHILDREN/ ASSISTANCE ANIMALS IN CLINIC

Cause, conditions and adverse effects experienced by children and young people with disability.



- **Poor oral health in children and young people may lead to complication in adult patients:**

Approaches to achieve better outcomes for children with disability

- **In addition to the focus on diagnosis and interactions in appointments, dentists, should expand the focus on support, relation ship with families and planning with other oral health professionals.**
- **The key challenge for dental practitioner lies in addressing the support and psycho-social needs of patients.**

> Improved collaboration and communication have the power to reduce 'behaviours of concern' in many people with intellectual disability, thus avoiding the need for restrictive practices - both in the community and in healthcare settings.

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ORAL HEALTH AND DISABILITY IN CHILDREN/ ASSISTANCE ANIMALS IN CLINIC

Approaches to achieve better outcomes for children with disability

It can be divided into two categories:

1. Collaboration:

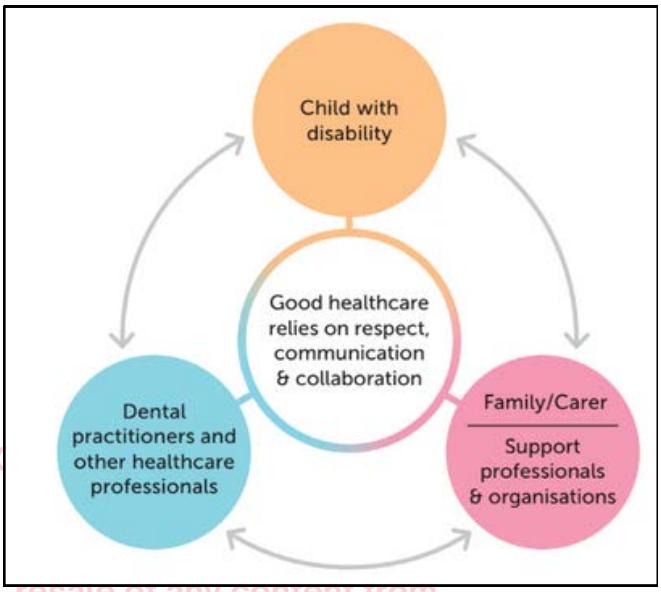
- Effective collaboration with parents /care givers, families, health providers that includes general practitioner, specialist, dietitians, speech pathologists, oral health therapists, and occupational therapists, key support professionals (social workers and case managers) is essential to ensure optimum health outcomes.

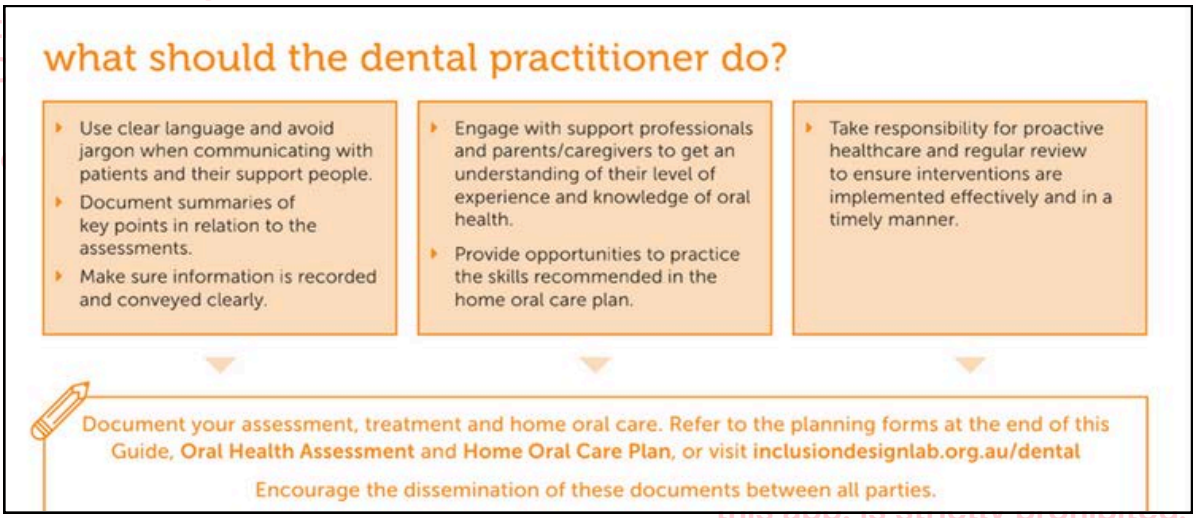
> It is important to ensure dental advice goes home with the family and can be incorporated into an oral health plan that all carers have access to, particularly advice about serious oral health concerns, treatment, and home care.

2. Communication:

- Some children with intellectual disability communicate verbally, in ways that are similar to any other child. However, some children cannot or do not speak, while some have limited speech.
- In some cases, alternative methods of communication may be required, which is known as complex communication and is different for each person.
- It is important to take the time to communicate directly with the child and build a relationship with good rapport.
- It is essential to spend time discussing how the child best communicates with parent/ care giver prior to commencing any treatment.
- For children with complex communication needs, the following methods can be used:
  - i. Use of communication techniques like Tell-show-do, providing breaks and reassurances, giving extra time to responses and desensitization.
  - ii. Good communication with child's family (parents/caregivers) will often result in better outcomes. Clear explanations, printed, written and emailed information and guidance can be useful.
  - iii. Recognizing that behaviors which are referred to as challenging behaviors are better viewed through communication.
- Good oral care can be achieved by ensuring effective collaboration and communication between all parties, including documenting assessment, treatment and daily oral care.

ORAL HEALTH AND DISABILITY IN CHILDREN/ ASSISTANCE ANIMALS IN CLINIC





Common Conditions found in children with intellectual disability:

- **99% of individuals with intellectual and developmental stability have been identified with poor oral hygiene and it is the greatest threat to these patients.**
- **The common issues found in these children are:**

1) Autism Spectrum Disorder (ASD) / or other conditions/syndromes which may have behavioral issues

Autism Spectrum Disorder (ASD) and other conditions/syndromes which may have behavioural issues or oral/dental associations e.g. Fragile X, Rett Syndrome, Williams Syndrome, ADHD, Oppositional defiant disorder (ODD), compulsive disorders, dyspraxia, dyslexia, dysphagia

ORAL HEALTH AND DISABILITY IN CHILDREN/ ASSISTANCE ANIMALS IN CLINIC

1) **Autism Spectrum Disorder (ASD) / or other conditions/syndromes which may have behavioral issues**

- **Common issue which may impact oral health in ASD children are:**

- Sensory issues, such as increased or decreased sensitivity to touch, taste, textures, sounds, light, liquids, and temperature
- Damaging oral habits are common and may include: bruxism, tongue thrusting, self-injurious behaviour such as picking at the gingiva or biting the lips, pica
- May have limited food selections including variety of foods and textures
- May have taste and texture aversion to common oral health products, e.g. toothpaste, prophy paste, fluoride varnish
- Difficulty with motor skills or dexterity, brushing, spitting, swallowing
- Level of co-operation may affect possible modality of completing dental treatment (e.g. sedation, nitrous oxide and general anaesthesia)
- Communication difficulties
- Cooperation challenges

- **Clinical dental findings include:**

- Some evidence shows a possible increase regarding caries risk
- Periodontal disease, contributed to by poor daily oral hygiene and medication, occurs in children with autism in much the same way it does in adults without developmental disability
- Oral habits and low muscle tone may contribute to dental caries and periodontal disease, and malocclusion

- **Treatment plan should include, Positive desensitization appointment(s) to familiarize the patients with the staffs, office, and equipment using step by step process. This has shown beneficial results for children with ASD.**

ORAL HEALTH AND DISABILITY IN CHILDREN/ ASSISTANCE ANIMALS IN CLINIC

2) Intellectual disability

- It is also called, learning, cognitive or Developmental disability.

COMMON OR OCCASIONAL ISSUES THAT MAY IMPACT ORAL HEALTH

- Difficulty understanding regular child-focused health promotion strategies and the importance of good oral health
- Difficulty in achieving required dexterity for oral care
- Families and carers having lower awareness of the importance of oral hygiene practice
- Reduced ability to understand new information and complex instructions
- May find routine dental treatment more challenging
- Reliance on parents and carers to assist them with food selection and daily oral hygiene beyond what might otherwise be expected for other children
- Medication which may affect gingivae and saliva production, quality and function
- Oro-motor dysfunction with reduced food clearing and contribution to occlusal issues
- Communication difficulties

CLINICAL DENTAL FINDINGS

- Some evidence shows a possible increased caries risk for children with intellectual disability, however due to poor access to appropriate diagnosis and treatment, it is likely that the extent of decay is under-reported
- Poorer oral hygiene (leading to increased levels of plaque and worse gingival status)
- Worse periodontal conditions (likely related to poorer oral hygiene)

- Cooperation to oral health treatment may be challenging for people with intellectual disability.
- Taking breaks and making sure patients understands what is happening are often beneficial to children with intellectual disability.

ORAL HEALTH AND DISABILITY IN CHILDREN/ ASSISTANCE ANIMALS IN CLINIC

3) Down Syndrome

COMMON OR OCCASIONAL ISSUES THAT MAY IMPACT ORAL HEALTH

- Greater incidence of cardiac anomalies
- Increased risk of epilepsy or other seizure disorders
- Fine motor issues e.g. compromised ability to perform effective oral hygiene
- Increased risk of obstructive sleep apnoea (OSA)
- Relatively larger tongue mass and forward posturing

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ORAL HEALTH AND DISABILITY IN CHILDREN/ ASSISTANCE ANIMALS IN CLINIC

4) Cerebral palsy:

- **Motor/ movement conditions like cerebral palsy may contribute to access barriers and limitations to adequate oral care regimes.**
- **They are more commonly treated by pediatric dentists.**

COMMON OR OCCASIONAL ISSUES THAT MAY IMPACT ORAL HEALTH

- Possibility of oro-motor dysfunction
- May have dysphagia
- Lack of normal masticatory function in some children
- Bruxism (particularly in children with severe motor and cognitive issues)
- Gastro-oesophageal acid reflux more common
- Excessive salivation/drooling (sialorrhea)/difficulty swallowing
- Regurgitation, vomiting and aspiration can result in dental erosion
- Tactile intolerance
- Temporomandibular joint (TMJ) dysfunction
- Motor and coordination difficulties – can affect ability to perform adequate oral hygiene
- Fine motor issues that compromise the ability to clean teeth effectively
- Communication difficulties
- Cooperation challenges
- Special seating and positioning adjustment may be required

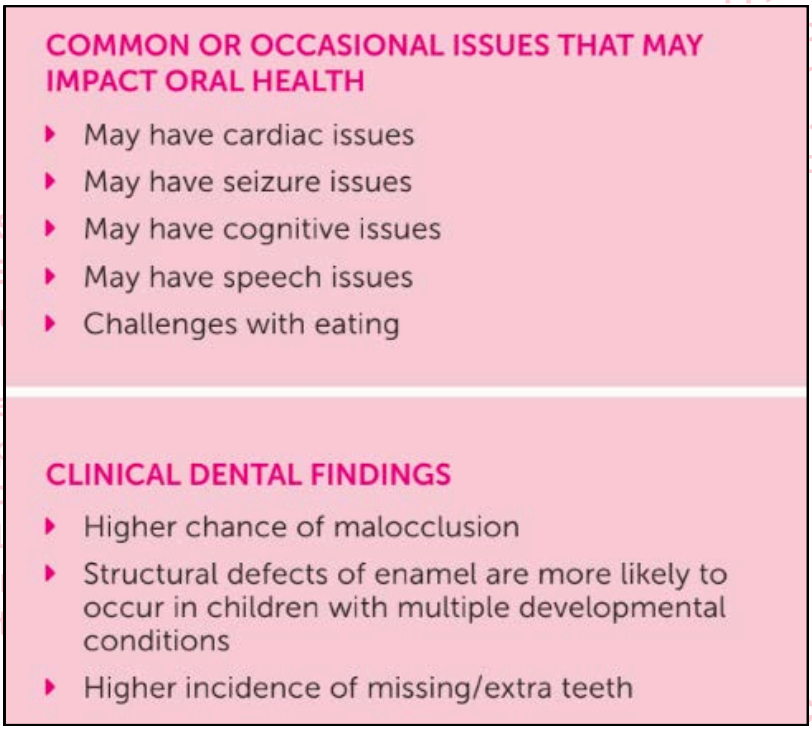
CLINICAL DENTAL FINDINGS

- Structural defects of enamel are more likely to occur in children with multiple developmental conditions
- Gingival hyperplasia (can be related to difficulties in oral hygiene, intraoral sensitivity, oro-facial motor dysfunction, anti-epileptic drugs)
- Erosion and tooth wear (due to GORD and bruxism) with associated pulpal risk and tooth sensitivity
- Higher prevalence of malocclusion (including anterior open bite and overjet)
- Dental trauma (linked with prominent maxillary incisors and incompetent lips as well as motor deficits)

ORAL HEALTH AND DISABILITY IN CHILDREN/ ASSISTANCE ANIMALS IN CLINIC

5) Craniofacial conditions:

- **These includes Cleft lip and palate, Pierre- Robin, Ve0-Cardi-Facial Syndrome (VCFS)**



ORAL HEALTH AND DISABILITY IN CHILDREN/ ASSISTANCE ANIMALS IN CLINIC

Dental treatment Pathways for Children with disabilities:

- Good oral health can be achieved and sustained if communication, reporting and monitoring channels between the patients, their caregivers/family, the dental clinic, and other medical and allied health professionals are developed and maintained.
- Dental practitioners can follow treatment pathway outlined below and use during appointments to ensure that the oral care plans they made for their patients are effective.
- The given pathway outlines the questions and suggestion that a dental practitioner can use:

1) What can be done to improve Access to Services? (Preparing for appointments, accessing dental clinics, transport)

A	Who is the main carer or person that provides consent for this child (parent, caregiver, caseworker/case manager)? Does the patient have an Oral Care Plan or Home Oral Care Plan they can bring with them? Does this plan include specific instructions relating to treatment? Can they provide consent for additional dental care if required?
B	Does the child have any other protocols prescribed by their GP, specialist or allied health care providers (e.g. Dietitian, Speech Pathologist, Physiotherapist, Occupational Therapist) that may be relevant to oral/dental care? For example, modified texture diets, current medications, modified tooth brush, oral care devices. Are these documented clearly and can these be accessed by the dental practitioner?
C	Pre-planning is vital. i. Consider arranging a longer appointment to get to know the child. If possible, schedule time for the patient to explore the space without treatment in the days before their first treatment. ii. If possible, organise phone discussions with the carer/parent about how they could prepare their child for the appointment. Talking to children before their appointment about what to expect, and using the Your Dental Health dual read guide and videos are ideal tools (inclusiondesignlab.org.au/dental). iii. Does the accompanying parent or carer have access to the child's disability support plans (eg. behaviour plan, consistent approaches documents, Oral Care Plan)? Can you ask them to bring these documents to the appointment? Will they be supporting the child after the appointment? iv. Extra time may be needed to allow for a thorough assessment of the current Oral Care Plan – including diet, social, and medical history – and provide space to determine the barriers to good oral health care experienced by the child. v. Consider recommending appointments at quieter times for ease with transport and to help with behaviour and anxiety that may be experienced by the child. vi. Dental practitioners need to assess the child's ability to tolerate lengthy procedures. If the child is not in pain and does not need an emergency procedure, a series of preventative appointments can familiarise the child with the dental environment and the dental practitioner's approach (i.e. build trust first). This may enhance the child's capacity to tolerate a lengthy procedure in the dental chair. vii. Good planning, familiarisation, and regular preventative appointments can help minimise the reliance on chemical restraints (sedation and general anaesthesia). viii. Preventive appointments and good oral home care can prevent diseases from manifesting themselves, and identify and address risk factors early.
D	Are transport and scheduling arrangements required to get the child to the dental clinic? Is the clinic accessible to the child, including the main entrance, width of doorways, stairs, toilet facilities and the dental chair? Simply getting to the appointment can be a challenging experience for some children. Is accessible parking required and available? Accessibility is a journey for every organisation, business and workplace. Examining accessibility legislation and developing an accessibility plan is a great way to get started.

ORAL HEALTH AND DISABILITY IN CHILDREN/ ASSISTANCE ANIMALS IN CLINIC

Dental treatment Pathways for Children with disabilities:

2) What can be done to improve Access to Services? (Preparing for appointments, accessing dental clinics, transport)

A	Where the accompanying person is not a primary caregiver or parent, what is the relationship of the accompanying person to the child? Does the person support or live with the patient regularly? Has the dental clinic requested that a regular staff person or family member attend the appointment? How well do they know each other? Can they provide consent for additional dental care if required?
B	If unsure of the frequency with which the accompanying parent or carer provides home oral care support to the child, it is appropriate for the oral health practitioner to ask for clarification.
C	Refer to the child's disability support plans (e.g. behaviour plan, consistent approaches documents, Home Oral Care Plan) when discussing possible side effects or pain, and when developing at home recommendations. Will the accompanying person be supporting the child after the appointment?

3) Communication behavior and Consent.

A	Instead of viewing consent as a one-off verbal affirmation, consent should be viewed as a process that begins in planning before the appointment and is confirmed: i. during the introductory conversations between dental practitioner, child and carer/parent(s), subject to the child's communication style ii. throughout the consultation, and iii. at the end of the consultation when planning future appointments. Consider sending forms to the child's home so that the carer/parent(s) responsible can have a conversation about consent, the appointment, and details about the treatment with the child before the appointment.
B	Communicate using the style that the child or their parent/carer has identified as their preferred style. For many this will be simple, plain language. Communicate directly with the child and provide opportunity for accompanying supporters to be involved in the discussion and for the child to ask questions.
C	Spend a few minutes conversing in their communication style (and practising using communication equipment if relevant) before beginning clinical assessment/treatment. Invite feedback and guidance from the child and their carer/parent.
D	Consider altering the clinic/surgery environment e.g. dim lighting, non-white gowns and masks, music on/off, reducing loud sounds where possible.
E	If the procedure is lengthy, consider taking breaks. Involve the child and carer/parent in making decisions about what can be done to keep the child comfortable during the appointment.
F	Using a portable device or tablet, show videos or use pictures to explain any procedures that may cause concern to the child, including information about the X-ray machine, fillings, and complex procedures. The Your Dental Health video series and dual-read guide are ideal tools (inclusiondesignlab.org.au/dental).
G	The first appointment with the child will necessitate a further conversation related to future treatment options, including costs. It is important that parents or carers are informed about public and private options, and any additional significant costs that these options may incur.

ORAL HEALTH AND DISABILITY IN CHILDREN/ ASSISTANCE ANIMALS IN CLINIC

Dental treatment Pathways for Children with disabilities:

4) Management of care at home

A	It is vital that the child's Home Oral Care Plan makes its way to the child's home and onto a support plan. This might be a Person Centred Plan, a Support Plan or a Personal Schedule. Ensure that the instructions can be communicated clearly to carers, parents, and other support people. This may involve a slightly different process for each child or young person as each plan is different. Are there any other considerations that should be included in the Home Oral Care Plan. *This step may be the difference between consistent and inconsistent oral health care for the child.*
B	The dental practitioner should discuss the Home Oral Care Plan with the carer/parent(s) including plan updates and manageability.
C	Ensure further appointments are booked. This may involve more frequent appointments or booking multiple appointments in advance.
D	Children with intellectual disability may be able to obtain funds through their NDIS plan to allow oral health professionals to come to their home, however this is on a case-by-case basis and is dependent on a range of factors such as level of support, diagnoses and outcomes. Encourage supporters to discuss oral health in detail with the child's NDIA planner.
E	When required, contact the child's allied health or other professionals.

What is ORAL HOME CARE PLAN?

home oral care plan

Dental practitioners can use this form to outline the ideal home care for the patient.

This form is best completed with the input of the patient and any supporters who accompany them to the appointment.

The form provides clear, simple directions for supporters so that they can gather helpful information using observation between appointments.

ORAL HEALTH AND DISABILITY IN CHILDREN/ ASSISTANCE ANIMALS IN CLINIC

ASSISTANCE AND THERAPY DOGS IN DENTAL PRACTICE

- The use of therapy and assistance dog has become more common for people and children with diabilities.
- There are three situations under which a dog may enter a dental practice:
  - i. when the patient has a disability and uses an assistance dog (also known as a service dog)
  - ii. when a patient or staff member brings in their own pet with them to the clinic
  - iii. when the dental practice has a 'therapy dog' which it allows patients to come into contact with in the waiting room in order to reduce anxiety.

A) Assistance/Service Dog

- These dogs are rigorously trained to facilitate the participation of people with disability which includes sight loss, epilepsy, etc.
- These dog facilities in various aspects pf public and professional life and provide an essential function.
- The Commonwealth Disability Discrimination Act 1992 (DDA) sets out in Section 9 the legal definition of an assistance animal as a dog or other animal that: (a) is accredited under a State or Territory law to assist a person with a disability to alleviate the effects of disability; or (b) is accredited by an animal training organization prescribed in the regulations; or (c) is trained to assist a person with a disability to alleviate the effect of the disability and meets standards of hygiene and behaviour that are appropriate for an animal in a public place
- These dogs are permitted in dental practice, including clinical areas, with a patient.

B) Private Pet

- There is no obligation to accept private pets of staff or patients in the dental practice.

C) Therapy Dogs

- The literature on using therapy dogs in healthcare is centered around use with conditions such as cancer, chronic pain or dementia, where a trained person accompanies a specially trained dog and completes specific interventions which improve the mental well-being of the patient.
- The positive results reflect specialized therapy dog training, testing, and certification, as well as careful planning to ensure interactions will be positive, safe, and not disruptive. Part of the handlers'(dog handler) special training is around infection control protocols.
- There are no published studies on the use of therapy dogs in dental practice settings.

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ORAL HEALTH AND DISABILITY IN CHILDREN/ ASSISTANCE ANIMALS IN CLINIC

ASSISTANCE AND THERAPY DOGS IN DENTAL PRACTICE

C) Therapy Dogs

- The training process for the therapy dog extends well beyond obedience training, including veterinary assessments of the dog's mental health and physical health.
- Health tests include mandatory vaccinations, and faecal culture at least annually to ensure no gastrointestinal parasites are being carried
- If a therapy dog is considered to be used Dentists must take into account the infection control issue with having therapy dogs in the waiting room and the Hygiene requirements of Dental Board of Australia.
- Typical protocols include:
  i. hand hygiene before and after any contacts with the dog,
  ii. not using the dog with patients when it is unwell,
  iii. keeping the dog away from patient care areas, and
  iv. ensuring the dog is not playing with toys that children may handle.
- In practical terms, It means that Two – front desk staff will have to be trained in handling dog so that they can make sure it is properly supervised.
- Two are needed to provide cover when one is absent.
- These two staff need to organize between them who takes the dog out regularly during the day for comfort stops, who provides its food, water and bedding, who arranges for its periodic veterinary visits for tests and vaccination, and who cares for the dog after hours and when the practice is closed on vacations and public holidays.
- Possible risk for patient infection includes:
  i. Zoonoses (infection contracted from dog)
  ii. Dog acting as a reservoir for infectious agent being spread like MRSA.
  iii. Healthy dogs also carry Salmonella spp., Campylobacter spp., Leptospira spp., Giardia spp., dermatophytes, Toxocara spp., and hookworms. Which are potentially infectious.
- The risk of infection increases:
  i. When the dog licks the face of people
  ii. When the patient is immunocompromised.
- Dentists must be aware of all the associated legal risk of having a therapy dog in the clinic which includes:
  i. Personal injury to patient or staff from the dog
  ii. The practice owner would be held liable to Property/ possession/ Fitting damage
  iii. Compliance issues with the term of lease if the lease did not permit animals.
  iv. Adverse reaction. (Both psychological and immunological) to dogs must be considered. This includes fear of dogs and allegry to animal hair (may affect even if the animal is not in the same room).

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MEDICOLEGAL CONSIDERATION IN AGED POPULATION

The assessment of lack of competence of a dental patient may result in the need to involve a substitute decision maker. Each state and territory have enacted legislation that has created guardianship bodies. Elder abuse is known to occur, and dentists may be in a position to be aware of this possibility.

This article will discuss:

i. The ethical basis of dental treatment
ii. Informed consent
iii. The assessment of competence/capacity
iv. Substitute decision makers
v. Elder abuse

The ethical basis of dental treatment

The dentist-patient relationship is the basis of all successful dental practice. Ethics exists in the space between the dentist and the patient. It is in that space that the needs of the patient meet the knowledge and skill of the dentist.
Dentists have a profound responsibility and duty to always act in the best interests of the patient, even if that means that a patient might choose to reject advice from the dentist.

Principle based ethical theory

In Australia and other western countries there are four generally accepted principles in medical ethics that can be applied to varying clinical situations.

(1) Respect for patient autonomy:

Autonomy, self-rule, is the capacity to think, decide and act on the basis of such thought and decision freely and independently. Respect for patient autonomy requires that a dentist help the patient come to his or her own decisions and to respect and follow those decisions.

(2) Beneficence:

The promotion of what is best for the patient. Patients usually want what is objectively in their own best interests and respect for autonomy will almost always coincide with beneficence. Very occasionally there will be a competent patient who will choose not to do what is in his or her best interests.

(3) Non-maleficence – avoiding harm:

This is the opposite of beneficence and includes actively and consciously avoiding doing anything to harm a patient. If a treatment has a very small chance of doing more harm than good, it is not a reason to avoid that treatment but risks and benefits must always be considered.

MEDICOLEGAL CONSIDERATION IN AGED POPULATION

Principle based ethical theory

(4) Justice:

Unfortunately, not all patients can receive the very best or ideal treatment. Time and resources, of both money and personnel, are always limited. We must try and distribute these resources fairly. A good example of the challenges posed by the ethical principle of justice is the generally poor level of oral health care provided to residents of aged care facilities.

These four principles provide a useful framework for considering ethical dilemmas. It is impossible to prescribe a course of action for the many and varied clinical situations that we face as dentists. By considering the best interests of the patient and applying these principles we can come to a fair and rational answer.

As individuals' dentists will have a range of personal beliefs and what might be called 'moral DNA' that comes from family, cultural and religious beliefs, the examples of mentors and the dentist's own experience. In treating all patients, and particularly the ageing and aged, it is important to have a consistent and logical approach to dealing with ethical problems.

Informed consent

- Consent is the conscious act of an autonomous rational individual who, with understanding, agrees to a course of action.
- In dentistry informed consent is required before treatment is carried out.
- Consent can be express (written or oral) or implied. An example of implied consent is when a dentist says to their patient, 'I will need to examine your mouth', and the patient opens their mouth to allow the dentist to carry out the examination.
- This implied consent does not extend to the dentist taking a radiograph without asking the patient if they agree to that being done, oral consent is sufficient for this.
- If the treatment proposed is more complicated, and if the potential exists for significant complications, then obtaining written consent is sensible and prudent.
- Whilst the principles of informed consent are relatively easy to understand, applying them to the full range of patients requires care and attention to individual circumstances.
- The legal consequences of a dentist failing to properly obtain informed consent can be severe. Negligence, professional misconduct and unprofessional conduct have all been found in informed consent cases before the courts and tribunals.

MEDICOLEGAL CONSIDERATION IN AGED POPULATION

The ethical basis of informed consent

Respect for autonomy is the basis of the doctrine of informed consent. Autonomy, self-rule, is the ability to think, decide and act on the basis of appropriate information and free of any external constraint. For a person to be considered autonomous they must make evaluations.

Respect for autonomy importantly includes a patient's right to refuse treatment, even though that treatment is in the patient's best interest. This right supersedes the ethical principle of beneficence, the promotion of what is best for the patient.

The legal basis of informed consent

Every human being of adult years and sound mind has a right to determine what shall be done with his own body; and a surgeon who performs an operation without his patient's consent commits an assault, for which he is liable in damages.

The court found that doctors had the duty to disclose 'any facts which are necessary to form the basis of an intelligent consent by the patient to proposed treatment'. patient should be given enough information to make a rational decision before proceeding with a proposed treatment.

Competence and capacity

- The ability of a patient to understand the risks and benefits of dental treatment is fundamental.
- As patients age there can be subtle and more profound changes in their cognitive abilities.
- Dementia describes a syndrome associated with many conditions that are characterized by impairment of brain functions. Language, memory, perception, personality and cognitive skills can all be affected. Dementia usually has a gradual and progressive onset and is irreversible.
- Alzheimer's disease, vascular dementia and Pick disease, among others, can all cause dementia.
- Capacity is a legal term and is equivalent to competence. The two terms are interchangeable. It is fundamental to the concept of consent that a patient is able to hear, understand and process the information provided by the dentist.
- The test of competence is a functional test. The patient must be able to understand and retain treatment information; believe the information; weigh the information and come to a decision and then communicate their decision.
- Competence should be assessed if the dentist believes that the patient is not making rational decisions. This might be caused by dementia or the delirium associated with infections such as urinary tract infections.

MEDICOLEGAL CONSIDERATION IN AGED POPULATION

Substitute decision makers

If a patient is deemed not to be competent, then it will be necessary to ask the following questions.

i. Does the patient have a valid advance directive that applies in the circumstances? If 'yes', then follow the directive. If 'no', go to next question.
ii. Has a court or guardianship authority appointed a guardian or made orders relating to the patient's treatment? If 'yes', seek consent from the guardian or follow the orders of the court or guardianship authority. If 'no', go to next question.
iii. Has the patient created an enduring power of attorney of health matters? If 'yes', seek consent from the attorney. If 'no', go to next question.
iv. Is there a person responsible or not? (not available in the ACT or Northern Territory). If 'yes', seek consent from person responsible. If 'no', go to next question.
v. Is the treatment in the patient's best interests and necessary to save their life or prevent injury or damage to their health? If 'yes', provide the treatment under the principle of necessity. If 'no', do not provide the treatment.

Guardians are persons appointed by a court or tribunal to make decisions on behalf of an incompetent adult.

A competent person, the donor, can assign enduring powers of attorney with respect to health to another person who then becomes a substitute decision maker for the person who appointed them. The donor can appoint more than one attorney. Both donor and attorney must be over 18 years of age. The attorney's primary duty is to follow the wishes of the donor once the donor is incapacitated and unable to communicate his or her wishes. The wishes of donors often relate to the express rejection of heroic measures being instituted if the donor is in a critical medical state.

Most jurisdictions now also have legislation that allows family members to consent to treatment for an incompetent adult relative. The nearest relative is the first available per- son on a prioritized list who is willing to undertake the task. In Victoria the list of relatives, in descending order, is as follows:

- spouse
- son or daughter
- father or mother
- brother or sister
- grandfather or grandmother
- grandson or granddaughter
- uncle or aunt
- nephew or niece

The person responsible may consent to the carrying out of any medical or dental treatment but they must act in the best interests of the patient.

MEDICOLEGAL CONSIDERATION IN AGED POPULATION

A recent Victorian case has been reported where the difficulties in gaining a clear assessment of the competence of an elderly female patient, who had rejected lifesaving surgery, are thoroughly discussed. In this case the patient presented with airway obstruction secondary to a large goitre. Without surgery to remove the thyroid she would almost certainly die. She rejected the surgery proposed because of a cultural concern from her country of origin regarding the presence and meaning of scars on the neck being related to criminal behaviour. Multiple senior doctors assessed the patient as being competent to make the decision to reject surgery. Because of the gravity of her decision advice was sought from a neuropsychologist. This assessment was that the patient was deemed incompetent because although 'she could state the risks and consequences, she was not adequately and rationally weighing these up against the benefits'. Her sons were then engaged as substitute decision makers. They gave consent for the surgery to proceed. The patient made a full recovery and was happy with the outcome. This case, albeit somewhat unusual, illustrates the difficulty experienced by senior clinicians in making an accurate assessment of a patient's competence.

Elder abuse

The term 'elder abuse' was adopted in the 1980s to describe family violence situations involving older people, and is still used in many countries.

Any act occurring within a relationship where there is an implication of trust, which results in harm to an older person. Abuse may be physical, sexual, financial, psychological, social and/or neglect.

Elder abuse is a violation of human rights and a significant cause of injury, illness, lost productivity, isolation and despair.

Neglect can be defined as the failure of a carer or responsible person to provide for the necessities of life and to respect the human dignity of the patient. This includes failure to provide adequate food, shelter, clothing and medical and dental care. The refusal to permit others to provide appropriate care is known as abandonment.

Conclusions

It is important, when treating ageing or aged patients, that dentists have a clear understanding of the following areas:

- The ethical and legal bases for gaining appropriate informed consent.
- The assessment of competence/capacity in the ageing and aged patient.
- The types of substitute decision makers and their role when treatment needs to be provided to incompetent adult patients.
- An awareness of the potential for neglect both in aged care facilities and in the patient's home.

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