

# PREVENTION IN THE AGEING DENTITION

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## CARIES

Physiological ageing of a dentition results in gradual exposure of root surfaces, which can be prone to caries in later life i.e a new susceptible site emerges and consequently the pattern of disease experience changes with age.

Central to this philosophy is assessing the caries risk of our patients and recognizing that this assessment can change

## ASSESSING CARIES RISK

Caries risk assessment is defined as the risk that a patient will develop new lesions of caries or existing lesions will continue to progress assuming that all aetiological factors (diet, time, susceptible surface and plaque levels) remain equal. Individuals are assessed as being at high, medium and low risk of developing further lesions.

High	Factor	Low
Diet high in fermentable carbohydrate	<b>Diet</b> Check with diet history	Diet low in fermentable carbohydrates
Frequent consumption not confined to mealtimes	<b>Frequency</b> Check frequency of consumption with diet history	Infrequent consumption or confined to mealtimes
High plaque score	<b>Plaque</b> Amount and nature	Low plaque score
Low flow rates High lactobacilli and streptococcus counts	<b>Saliva</b> Amount and nature	High flow rates Low lactobacilli and streptococcus counts
Not dentally motivated Deprived background Low dental aspirations High caries family	<b>Socio-economic Status</b>	Dentally motivated patients Privileged background High dental aspirations Low caries family
High number of Filled and Missing Surfaces (FMS)	<b>Past Disease Experience</b>	Low number of Filled and Missing Surfaces (FMS)
High number of Decayed surfaces (DS)	<b>Current Disease Experience</b>	Low number of Decayed surfaces (DS)
Irregular and/or pain only attenders	<b>Attendance Pattern</b>	Regular attenders
Infrequent use of rinses and toothpaste Non-fluoridated water supply	<b>Fluoride and Chlorhexidine</b>	Frequent use of rinses and toothpastes Fluoridated water supply
Xerostomia, Learning difficulties Cariogenic medication	<b>Medical History</b>	Fit and well
Partial dentures used to replace missing units	<b>Other</b>	Bridgework used to replace missing units

## CARIES PREVENTION

### High Risk

High-risk patients require intensive prevention regimes to include:

- Baseline radiographs
- Prophylaxis with application of chlorhexidine for 1 minute followed by rinsing
- Apply sealant to pits and fissures, which must be checked for integrity at recall
- Fluoride varnish application. Patient should be advised not to brush or eat hard foods for 10 hours. Three applications of fluoride varnish are recommended over a 3-month period
- Brushing twice a day with a fluoridated toothpaste

- Rinsing daily for 1 minute with a fluoride mouthwash (0.05% NaF) at bedtime.
- Rinse weekly rather than daily with a chlorhexidine solution for 6 weeks
- After 6 months repeat baseline radiographs to monitor proximal lesions and restore any lesions, which have reached the middle third of dentine. If progression has been detected increase the application of chlorhexidine and apply fluoride varnish two to three times on a six monthly basis
- Oral hygiene instruction and dietary counseling are required to ensure success
- Monitor patient at six monthly intervals until patient's caries risk falls to moderate or low

### Moderate risk

Prevention for patients in this group should include:

- Prophylaxis followed by fluoride varnish application. Patient should be advised not to brush or eat hard foods for 10 hours. Three applications of fluoride varnish are recommended over a 3-month period for every year the patient remains at moderate risk
- Brushing twice a day with a fluoridated toothpaste
- Rinsing daily for 1 minute with a fluoride mouthwash (0.05% NaF) at bedtime.
- Monitor lesion size and depth and whether new lesions arise at 6–12 monthly intervals until the caries risk moves to low. If lesions progress or new lesions arise increase applications of the fluoride varnish and give further dietary advice

### Low risk

Prevention is limited to brushing twice a day with fluoridated toothpaste with reviews at 12–18 month intervals to check for white spot formation and proximal radiolucencies.

## PRESERVING TOOTH TISSUE

Elderly patients if prone to caries in their youth are likely to have relatively large restorations, as a consequence of the restorative cycle or staircase, and these will be prone to eventual failure.

Newer elderly cohorts will have progressively more sound teeth, as operative intervention will have been restricted to where indicated, with minimal preparations and where modern adhesive materials will have been used.

These patients will require different management strategies and this will pose a challenge for practitioners in the future.

Currently on average 60% of restorations placed by practitioners are replacement restorations that are deemed to have failed in clinical service.

The most common reason cited for replacing restorations is secondary caries.

Marginal defects are often misdiagnosed as secondary caries and restorations replaced needlessly. Similarly restorations are frequently replaced that could have been repaired, refurbished or simply monitored.

## NON-CARIOUS TOOTH TISSUE LOSS

Elderly patients frequently exhibit the effects of non-carious tooth tissue loss (NCTTL). NCTTL is often multifactorial and is a combination of erosion (intrinsic and or extrinsic), abrasion and attrition. Extrinsic erosion due to acid present in the diet will on the whole affect the labial surface of the anterior teeth and to a lesser extent the occlusal surfaces of the lower permanent molars. Intrinsic erosion due to acid regurgitation (gastric acid) will usually affect the palatal surfaces of the upper teeth and on occasion the occlusal surfaces of the lower permanent molars.

## HOW TO ASSESS?

Study casts

Dietary analysis

Liaison with a medical practitioner should intrinsic erosion be diagnosed will also be necessary.

Once a diagnosis is made the prime objective is to stabilize the disease process and prevent further tooth tissue loss before addressing the patient's functional, aesthetic or occlusal needs.

A significant number of patients are successfully managed on preventive regimes with relatively few patients needing extensive advanced restorative therapy.

## PREVENTION OF NON-CARIOUS TOOTH TISSUE LOSS

### Proper diagnosis???

A stabilization splint is designed to have the following features:

- Even contact of all teeth in centric relation
- Protrusive and excursive guidance
- No non-working interferences

To produce a stabilization splint for a patient on a semi-adjustable articulator the laboratory will need the following:

- Full arch impressions
- Facebow record
- Centric and protrusive occlusal records

### Dry mouth: An age-related phenomenon?

It is a myth that salivary flow reduces due to ageing. Dry mouth is however common for elderly patients who are on medication, which reduces salivary flow due to autonomic effects.

This can change a patient's caries risk and new lesions may develop consequently. Similarly patients who have had surgery to their salivary glands and or radiotherapy will have reduced salivary flow. These patients are best managed with a saliva substitute to ease the feeling of dryness.

There are several on the market but it is sensible to prescribe one that contains fluoride. At least one randomised controlled trial has shown that 10% chlorhexidine varnish is useful for controlling root caries in adults with a dry mouth.