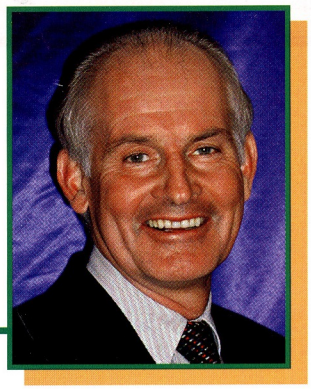
AESTHETIC Update



Compiled by Geoffrey M Knight

Risk assessment and management

As minimal intervention dentistry aims to predict and arrest dental disease at onset, the identification and management of 'patient risk' is one of the cornerstones of successful minimal intervention implication into general practice.

In reality the picture is more complex than it first appears. Individual risk profiles are constantly changing and successful management depends heavily upon unpredictable levels of patient compliance to professional advice.

Practitioners have the role of identifying risk levels for a patient and to present a management protocol based upon the severity of the problem and the perceived compliance by the patient to manage it.

A dentist's sanity requires that patients understand they own the problem (or the problem of the person they are accepting responsibility for) and while professional assistance is available to help them manage it, they are eventually responsible for the outcomes that are achieved.

THE 3F RULE

In western societies dental disease results from lifestyle choices that can be managed for the most part by application of the '3F Rule' – Floss, Fluoride and Food.

Floss – It is anti social not to brush but a chronic resistance to regular interproximal cleaning prevails. The dental profession has the opportunity to educate society of the importance of interproximal plaque control, particularly in preventing periodontal disease.

Fluoride – Topical application of fluorides either in low doses from toothpastes or higher doses under professional supervision is a predictable and cost effective way of reducing caries, especially for high-risk individuals and undoubtedly limiting the effects of erosion.

Food – Education programmes that promote a balanced diet and control the frequency of ingestion of foods and drinks high in refined carbohydrates and often low in pH can help raise awareness of caries and erosion problems and may lead to changes in individual behavior patterns.

RISK PROFILE IDENTIFICATION

Apart from medical problems there are four broad areas of risk that general practitioners can screen patients for when they present at their dental offices:

- Caries
- Periodontal disease
- Erosion
- Occlusal problems

Risk profile identification requires a subjective assessment of patient risk factors.

Fortunately, in terms of risk of dental caries, a patient's past caries rate is still one of the best predictors. If a patient has diabetes or smokes, then it is clear that these factors predispose to periodontal problems.

The likelihood of erosion depends on such factors as consumption of acidic beverages, the use of medications and other items that can affect salivary flow rate as well as conditions such as bulimia and gastric reflux.

TMJ or neck pains are reliable indicators of occlusal problems.

Much attention has been given to the prediction of dental diseases and the main items are:

- Current and/or previous caries or periodontal disease activity.
- Plaque control.
- Diet (frequency of intake of refined carbohydrates and low pH drinks).
- Fluoride exposure (use of fluoridated water and fluoride toothpastes).
- Salivary flow (poor salivary flow is a caries-risk factor) and presence of high levels of cariogenic bacteria such as *Mutans streptococci*.
- Smoking and other drugs of dependence.
- TMJ or neck pain.
- Socio-economic status (lower socio-economic groups tend to have higher caries and periodontal disease rates).
- Stress.
- Overall patient health.

Low risk patients are generally those who have a negligible caries activity with healthy gingivae and score well in most of the categories listed above.

Medium risk patients are generally those with some evidence of caries/ gingival inflammation and who score poorly in two or more of the categories above.

High risk patients are those that score poorly in several of the above categories and oral environments generally associated with active caries/ periodontal disease.

The challenge arises when there are discrepancies amongst the obvious risk factors that determine a healthy or unhealthy oral environment. In such cases an analysis of the problem and determination of possible aetiological factors are required. The Chart below attempts to assist a clinician identify possible risk factors, determining their aetiology and hopefully provide a means of managing them.

The Chart uses a split circle that is a monochrome version of the GC traffic light Saliva Check* system. Clear circle is low severity; half circle filled in is moderate severity and full circle filled in is high severity. There is a space below each chart for specific comments.

Once the aetiological factors have been determined there is an opportunity to discuss with a patient what factors are possible to manage and how they may reduce the overall risk profile.

Obviously, some things such as medications and stress levels are often difficult items to ascertain. However, identification of any condition as a possible aetiological factor is useful in risk reduction.

There are two excellent resources[†#] that dentists can use to assist them with Risk Profile Identification and management.

** Saliva Check, GC Corp: CRT Kit, Ivoclar Vivadent*

† How to spot a high caries risk profile. Dental Outlook, Vol 1, Number 4, March 2003. Email: dentaloutlook@bigpond.com

 # Saliva Testing. Good practice, good sense. 2002 GC Asia publication. Email: gcasia@singnet.com.sg

PROSPECTIVE VS RETROSPECTIVE ANALYSIS

An experienced practitioner can usually make a prospective analysis of a risk profile by looking into a patient's mouth and there is little to achieve by doing a comprehensive risk profile on every patient. Most risk factors can be managed within the '3F Rule' and when the costs and time involved are factored in, the routine comprehensive prospective risk assessment for patients has limited application.

In terms of dental decay it is worth remembering that the majority of disease occurs in about 20 per cent of the community (many of whom only seek emergency care) so, usually only a minority of one's patients will be truly at high risk.

Nonetheless, the prospective analysis of risk is an important teaching tool and should be an integral part of every dental school's curriculum.

PATIENT RISK ANALYSIS CHART

Date _____ **Name** _____ **Age** _____

Condition				
Caries	fissure Ø	proximal Ø	cervical Ø	root Ø
Periodontal	gingivitis Ø	localized Ø	general Ø	severe Ø
Erosion	facial Ø	lingual Ø	occlusal Ø	bulimic Ø
Occlusion	wear facets Ø	TMJ Ø	neck pain Ø	
Aetiology				
Plaque	cervical Ø	proximal Ø	occlusal Ø	tongue Ø
Saliva #	quantity Ø	viscosity Ø	pH Ø	buffering Ø
Health	general Ø	medications Ø	stress Ø	smoking Ø
Life style	diet Ø	liquids Ø	changes Ø	drugs Ø
Occlusion	interference Ø	TMJ pain Ø	neck pain Ø	
Rx				
Oral hygiene	brushing O	flossing O	advice O	instruct O
Diet	advice O	records O	refer O	
Fluoride	weekly O	tray O	topical O	
Chlorhexidine	daily O	weekly O	tray O	
Remineralize	daily O	weekly O	tray O	
Protection	fissures O	surface O	root O	
Occlusion	adjust O	splint O	refer O	
Review	1 month O	3 months O	6 months O	yearly O

RISK MANAGEMENT

Low risk patients and motivated moderate risk patients can usually be managed within the confinements of the '3F Rule'. The success or failure of such an approach really gets down to the degree of motivation of the patient.

As well as improving oral hygiene and diet, motivated children in the medium risk category can further benefit from targeted topical fluoride treatments and possibly other approaches as evidence for their efficacy comes to hand.

Children in all categories can be protected from fissure caries by targeting newly erupted permanent molars with fluoride varnishes such as Duraphat (Colgate), Fluorprotector (Ivoclar Vivadent) or protecting the fissures with a suitable high fluoride release glass ionomer cement (GIC). A thin GIC protectant can also be spread over a whole tooth surface at risk such an erupting second lower molar.

Older adults with xerostomia and a predisposition for root caries will also benefit from more intense fluoride regimens and from the surface protection afforded by a thin layer of GIC protectant.

The author has found that medium and high risk adults, in terms of periodontal disease, can often benefit from alternate daily applications of chlorhexidine and carbamide peroxide gels in a mouthguard tray. Gingival exudates and mobility levels rapidly improve and continual use over a number of months will substantially reduce moderate pocketing. Such an improvement may well provide the motivation to continue ongoing treatment with a periodontist.

Occlusal problems can often be resolved by analyzing the occlusion followed by minor occlusal adjustments or providing patients with an occlusal splint

Finally, practitioners must be aware of their limitations and be prepared to refer to appropriate dental or medical specialists patients who don't respond to initial therapy or who have problems that a clinician perceives beyond their ability to manage.

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