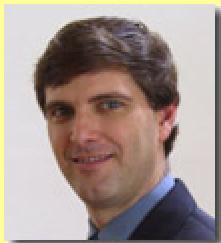


## SCIENTIFIC PROGRAMME - KEYNOTE SPEAKERS

### Prof. Ian Meyers

BDS, FICD, FADI, FPFA

– General Stream Division Keynote Speaker



Prof. Meyers graduated BDS from The University of Queensland in 1982 and practiced in both private and public sector clinics before returning to the University of Queensland as a lecturer in 1988.

- ◆ He became a Fellow of the International College of Dentistry in 1996 and was appointed as the Professor and Colgate Chair in General Practice Dentistry at The University of Queensland School of Dentistry in 2001, and continues in this position as well as maintaining a part time private dental practice in Brisbane.
- ◆ Prof. Meyers is involved in a wide variety of research projects in the applied dental biomaterials area and is currently an executive officer of ADA Queensland, amongst other appointments.
- ◆ More recently he has been involved with the RACDS in the development and examination of the new MRACDS programme. His major interests include adhesive restorative dental materials, diagnosis and management of the worn dentition and teaching and development in general practice dentistry.

### Lecture Theme: “Diagnosis and Management of the Worn Dentition”

#### Lecture Topic 1.

#### The Oral and Dental Environment – Risk Management Strategies for worn dentition

While caries and periodontal disease are still concerns for the oral health profession, there is a substantial increase in yet another disease area, that of non-carious tooth surface loss (NCTSL), or more commonly termed, tooth wear. Although not specifically a micro-organism related disease, it is a non-reversible pathological condition which if untreated can cause substantial concerns for a patient. The multifactorial nature of the disease and the variability in its clinical presentation provides a range of treatment challenges for the clinician. The patient's awareness and knowledge of the condition is often limited and with some individuals the rate of tooth breakdown can be very rapid. Tooth wear affects all age groups, but presents a particular challenge in the heavily restored aging dentitions. Over the past few decades the overall median population age has been increasing, and with the increasing number of individuals keeping their teeth longer, the requirement for the profession to provide geriatric dentate dentistry, including management of tooth wear, continues to increase. In many instances the patient's expectations of dental treatment still focuses on traditional restorative procedures involving simple and complex restorative interventions. While these restorative treatments restore form and function, they may do little to manage the disease process. The long term success for any restorative treatment will be very much affected by the patient's oral environment and the impact of diet, lifestyle and medical factors that modify this environment. Early determination of the factors involved in producing accelerated tooth wear is essential in the planning and sequencing of any restorative treatments. Changes in quantity and quality of saliva will have a marked effect on disease progression. Erosion due to uncontrolled levels of acids present in the oral cavity exists as a key underlying and direct causative factor for increased tooth wear. Heightened awareness of acid erosion and associated non-carious tooth surface loss has occurred within the dental profession, but it appears the transfer of this information to patients has been somewhat limited. Management of any patient with tooth wear must be more than just restoration. It requires a thorough evaluation and risk assessment with the patient as well as a commitment from both professional and patient that management of the risk factors underpins the success of any restorative treatments.

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### Lecture Topic 2.

#### Stabilisation and Pre-Restorative Requirements for managing worn dentition

Recognition of the causative factors of tooth wear provides the basic framework on which to build a management and restorative strategy for the patient. Elimination of those factors which put the patient at risk will reduce or prevent progression of the disease and minimise additional tooth surface loss. Once the oral environment is stabilized the tooth structure must then be enhanced by the provision of appropriate remineralisation procedures to provide the best possible tooth substrate for restorative repair. The majority of the restorative procedures involved in the management of tooth wear will at some point require adhesion to enamel and dentine. The quality and longevity of this adhesion is dependant on the nature and properties of the substrate and the ability to obtain predictable mechanical and chemical adhesion. The use of fluorides, CPP-ACP, CPP-ACFP and other remineralisation agents in the appropriate therapeutic regimes is essential to produce a tooth surface which will be able to minimize adhesive failure and thereby enhance long term success. The use of topical therapeutics not only enhances tooth structure but assists in further reducing many of the risk factors present in the oral environment and provides protection for any restorative treatments undertaken. This is extremely important for the xerostomic patient where tooth wear and disease progression will be rapid. The negative impact that many medications have on saliva must be addressed and where possible saliva enhanced to improve its protective functions. Diet, and lifestyle factors will also affect hydration levels and modification is often required in the stabilisation phase. Strategies which assist patients to manage their own oral health effectively and reduce the risk factors will include palliative care products as well as therapeutic regimes. Ultimately the patient's understanding of the condition, their compliance and involvement are critical in the overall successful management of tooth wear and ensuring better long term outcomes.

### Lecture Topic 3.

#### Conservative Restorative Options for managing worn dentition

It is often considered that the definitive restorative treatment for tooth surface loss is to provide multiple crowns and bridges to restore form and function. As this treatment is complex, highly invasive and costly many patients prefer to delay commencement until they perceive it becomes essential. Consequently the extent of tooth wear may become more severe before this definitive treatment is provided thus compromising the success of the treatment. There are currently available a range of materials and techniques which enable cost effective and conservative alternatives to the restorative management of patients with tooth wear at an earlier stage. Options exist for the use of direct adhesive restorative materials to address the immediate functional and aesthetic concerns of the patient and minimise further damage. In a well stabilized oral environment these treatments provide an intermediate restorative option aiming toward the long term occlusal rehabilitation of the worn dentition. Careful case selection and preparation involving diagnostic records, diagnostic wax-ups and an understanding of the limitations of the materials can provide simple solutions for these complex cases. The use of preformed templates and keys for the reconstruction of lost tooth structure is well established. These techniques can be extended to the use of a transparent polyvinyl siloxane template constructed from the diagnostic wax-up to rapidly reproduce the anatomical structure with direct restorative materials in the mouth.

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This technique becomes beneficial for some geriatric patients who would be unable to undertake long and complex dental treatment sessions and provides an alternative for those unable to meet the immediate costs of multiple indirect restorations. As many of these cases also require an increase in vertical dimension to create space for the new restorations, the adjustable nature of the composite resin material is seen as a distinct advantage. Often restorative reconstruction utilising a combination of direct and indirect procedures provides more control and predictability over the restorative result and takes into consideration the limitations of the restorative materials. In the short to medium term, the use of minimally invasive adhesive techniques enables tooth surface loss to be replaced with minimal destruction of the remaining sound tooth material, yet still enables the option for a more definitive restorative option at a later date.

### Lecture Topic 4.

#### Materials and Aesthetic Considerations

The profession is continually faced with manufacturers providing an increasing range of restorative dental materials to meet their demands. Many of these materials come with promises that they will be better, stronger, more adhesive and last longer than any of their predecessors. Unfortunately most of these materials have had limited clinical evaluation and the ultimate test of success comes from the oral health professionals using the materials clinically. Restorative failures however, do not always occur through the fault of the material, but more through incorrect or inappropriate use of the material. Many of the newer restorative materials are very technique sensitive and are not tolerant of incorrect use techniques. Appropriate case selection, correct manipulation and handling of the materials and maintenance of the final restoration are all essential factors in achieving long term clinical success. Contemporary restorative materials must meet the balance of achieving both the biological and physical requirements of the oral cavity. The challenge of creating biomimetic, bioactive and therapeutic materials which also provide the required physical and mechanical elements for aesthetics and function, continues to be the aim of new dental materials development. Restorative materials that release therapeutic compounds, antibacterial adhesives and reduced shrinkage, ring-opening polymer resins are examples of materials that aim to address some of these issues. Other new developments, such as the development of nano-filled composite resins, appear to have provided benefits in improving aesthetics and surface polish on restorations and may also assist with reducing plaque retention. The added benefit of layering techniques which utilise a range of opacities and translucencies within the selection of composite resin materials has improved the ability to achieve optimum aesthetics with direct composite restorations. High level aesthetics and strength can also be achieved with all ceramic restorations, and with the inclusion of zirconia copings and cores, they have become suitable for both anterior and posterior teeth. While materials development has improved to meet the level of aesthetics that patients demand, the oral health of patients is far more than just appearance and sound biological principles must underlie any restorative treatment provided.