



Edwina Kidd
Emeritus Professor Cariology

**Caries Aetiology and Prevention
From Cradle to Grave**

Caries is a ubiquitous, natural process occurring in the biofilm or plaque. Neither the formation nor the metabolism of the biofilm can be prevented. However, carious lesions do not have to form because the process can be controlled by oral hygiene with a fluoride toothpaste, additional fluoride in some cases, and a sensible diet limiting sugar intake. Established lesions can be arrested although cavities that cannot be cleaned, should be restored to allow oral hygiene. Where the mouth is dry, and this is common in multi-medicated older people, caries may be more difficult to control. Societal influences, such as deprivation and a lack of education, are also important determinants of caries prevalence but more difficult for the dentist to influence. It is vital that dentists explain to politicians that caries is yet another problem concentrated in socially deprived people.



David Ricketts
Professor of Cariology and Conservative Dentistry, Dundee Dental Hospital

**Caries Diagnosis:
The Caries Detective**

Dental caries is one of the most common diseases of mankind and yet it is a preventable disease. Lesions that do occur can also be treated preventively, but for this to be possible early caries detection and monitoring is important. This talk discusses whether this is possible with currently accepted clinical and radiographic examinations and explores how these can be optimised in clinical practice. New caries detection devices will also be explored and their use evaluated.

Operative management in adults: to drill or not to drill.

There is little evidence in the literature to suggest when a carious lesion should be treated operatively. When this decision has been made tradition has been for dentists to treat the caries like gangrene, excising it with a dental drill and restoring the tooth with a filling. Logical guidance will be presented as to when a lesion should be treated operatively and in contemporary practice how much caries should be removed. This time honoured approach is now being questioned and research will also be presented which suggests that it is possible to avoid extensive caries removal and inherent damage to the pulp and that decay can be "sealed" into the tooth, depriving organisms within of the sugar substrate they need to survive and so arresting the disease process.



Tim Watson
Director of Research, King's College London Dental Institute, Guy's Hospital

Preferential removal of caries using abrasive glasses and how to bond to caries-affected dentine

This talk will look at simple ways of diagnosing dental caries, using sound observational techniques, with diagnostic cleaning regimes using bioactive glass air abrasion. It will then give food-for-thought on how much decayed tissue needs to be removed during cavity preparation and how we can use new research methods to measure precisely the amount of remaining carious dentine. New (and old) techniques for caries removal will be introduced and assessed. Finally, the interactions occurring between restorative materials and the prepared tooth will be explored.

Dental caries is an infective process where there is a dynamic relationship between the host and the invading bacteria. There are now known to be hundreds of different types of bacteria present in the mouth, with or without the development of caries and, indeed, they will be present under restorations with absolutely no signs of disease. These bacteria work together to

respond to environmental changes e.g. either locally in a restoration-tooth interface or in the mouth as a whole. The dilemmas facing clinicians is more complex now than ever, as we have materials that can have a range of effects: from being simple sealers - to prevent bacterial ingress and proliferation, to materials with anti-bacterial properties. Furthermore, one mustn't forget that the pulp - dentine complex is a vital living organ and can respond by healing, with the laying down of reparative dentine, especially in the presence of therapeutic agents.

This talk will look at ways of determining the extent of dentine caries, using sound observational techniques backed up by microscopical imaging and bacteriological studies. The dynamics of the bacteria-tooth complex in clinical caries management experiments has shown that there are changes in the depths of a cavity with time, as bacteria and the pulp-dentine complex re-establish equilibrium. This may not result in the continuation of the carious process.

This lecture will therefore give food-for-thought on how much decayed tissue needs to be removed during cavity preparation and how we can use new research methods to measure precisely the amount of remaining carious dentine. New (and old) techniques for caries removal will be introduced, with the main emphasis being the interaction of the residual cavity surface with adhesive restorative materials.



Nicola Innes
Dental and Oral Health Psychology, Dundee University

Operative Caries Management in Children – The Hall Technique

The Hall technique is a method for managing carious primary molars in which preformed metal crowns, filled with glass ionomer cement, are pushed onto the tooth with no caries removal, no local anaesthesia or tooth preparation. This highly conservative approach embraces changing concepts in the management of dental caries. It moves from the old dogma requiring its complete surgical excision at the expense of cavity size and pulpal health to the newer understanding that caries in dentine can be slowed, arrested and possibly even reversed, within a meticulously sealed environment. There is research evidence supporting its use, with long term follow up. This presentation will show that the Hall technique offers clinicians a deliverable and, crucially, acceptable treatment option for children with dental caries.



Kevin Lewis
Dental Director – Dental Protection

Medico-Legal aspects of Novel Techniques

Dentistry is continually evolving, and some of today's 'novel' techniques may become mainstream techniques tomorrow. Others will find themselves abandoned or discredited. Practising at the margins of widely accepted practice invites a number of important dento-legal questions relating to our duty of care, consent and record keeping. This presentation will examine them in the context of complaints, negligence claims and regulatory (GDC) challenges.

Educational (CPD) Objectives

1. To explain how new techniques are viewed from a legal and regulatory perspective.
2. To highlight the key aspects of the consent process, and how a novel or unusual technique needs to be presented and discussed to avoid problems.
3. To allow participants to understand the inherent tensions between evidence-based dentistry and the requirements of the consent process.