

# “The **goals of treatment** for primary teeth are not much different to that for permanent teeth”

An interview with Prof Jill Fernandez and Drs Neal Herman and Lily Lim, New York University, USA



Prof Jill Fernandez

**\_In July, paediatric dentistry** specialists gathered in Pasay City, the Philippines, for the 7<sup>th</sup> biennial congress of the Pediatric Dentistry Association of Asia. **roots** spoke with presenters Prof Jill Fernandez and Drs Neal Herman and Lily Lim from the New York University about their participation and recent developments in the field.

**\_roots:** *The US congress recently approved a new proposal for health care reform. In your opinion, what impact will this policy change have on children's dental care?*

**Prof Fernandez:** It is still too early to know what the final health reform bill will entail exactly, but as of now it does include mandatory paediatric dental care that requires dental coverage be offered as part of any essential benefits package for children under the age of 21. The new law will enable stand-alone dental plans to offer dental benefits as part of any health insurance exchange and/or subcontract with medical plans. The impact of this on the public and the profession could be monumental—the message is to begin oral-health preventive interventions early in the lives of children, and that oral health is an integral part of overall health.

**\_The oral health of children in the US is poor and caries figures are at an all-time high. What are the reasons for this?**

**Prof Fernandez:** Actually, the oral health of children in the US has improved significantly over the past few decades, when you look at a national sample across all age groups. Today, most American children have excellent oral health, but a significant

subset suffers from a high level of oral disease. The most advanced disease is found primarily amongst children living in poverty, some racial/ethnic minority populations, children with special needs, and children with HIV/Aids infection.

You might be referring to the National Health and Nutrition Examination Survey that demonstrated an increase in dental caries from 24 per cent to 28 per cent in the two to five-year-old group. The reasons for this are presently unclear, but this increase has reignited efforts in the US to improve access to care for this age group and motivate more dentists to treat very young children in our population.

**\_Early Childhood Caries (ECC) has increased not only in the US, but also worldwide. Should this area be considered a new priority in paediatric dentistry?**

**Prof Fernandez:** ECC, and efforts in the intervention and treatment of early dental decay, has always been a major priority. In order to combat the current national epidemic of ECC in young children effectively, a more comprehensive, collaborative approach to the education of parents by all newborn and paediatric health-care providers, such as nurses, paediatric and general dentists, dental hygienists, paediatricians, paediatric nurse practitioners, obstetricians and gynaecologists, is essential.

The American Academy of Pediatrics (AAP) began a collaborative effort with paediatric dentists to address the issue of ECC. The AAP has made strides in developing educational programmes for paedia-

tricians and family physicians to identify at-risk children and refer them for dental treatment.

However, for many children access to dental care remains a problem and the number with dental caries seems to be growing. Many parents do not have dental insurance; thus, they postpone dental treatments until the problem is so advanced that it can no longer be ignored. It is unfortunate that even parents who have third-party coverage for dental care (Medicaid, Child Health Plus) and are from lower socioeconomic backgrounds often fail to seek dental care as part of general health-care services. As a result, pre-school children with Medicaid may still have untreated decayed teeth.

*—Frequent bottle-feeding at night has been identified as a driving factor for ECC. Other studies have found a microbiological connection between mother and child, labelling ECC a transmissible disease. What is your opinion on the latest research and how will it affect the way children should be treated?*

**Dr Herman:** The nursing bottle is only one of many confounding factors in ECC. What we conclude from the latest research is that dental caries is highly complex and perplexing, not easily prevented

or treated in the most susceptible children. It is believed these days that there are nutritional, behavioural, immunological and bacterial factors that must be considered in order to understand and prevent dental caries.

The surgical approach to ECC—the 'drill and fill' solution of placing restorations in teeth as they become cavitated—has long been proven futile and often counter-productive. Therapeutic interventions, particularly utilising fluoride varnish, have shown promise in preventing, arresting and reversing carious lesions. Much more work must be done to document its success, but at least this 'medical model' has begun to address the fact that ECC is a bacterial disease that requires more than just filling up the holes that are merely its symptoms.

*—Root-canal treatments in primary teeth are also becoming more common. Does the treatment differ in any way from that of permanent teeth?*

**Dr Lim:** We're not sure that pulp therapy is on the increase but if it is, it's probably because more parents (and dentists) realise it's best to try to preserve a primary tooth rather than extract it (whenever possible). The goals of treatment for primary teeth

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Dr Lily Lim (middle) with colleagues bringing smiles to a child after treatment.

are not much different to that for permanent teeth; in both cases, diseased portions of the dental pulp are removed in an effort to preserve the hard structure of the tooth for functional or cosmetic purposes.

Anatomical and physiological differences between primary and permanent teeth make a difference to the principle of root-canal treatment. A permanent tooth requires an inert, solid, non-resorbable material that can last a lifetime, and gutta-percha fits that bill. The ideal root-canal filling material for primary teeth should resorb at a similar rate to the primary root in order to permit normal eruption of the successor tooth; not be harmful to the underlying tissues or to the permanent tooth germ; fill the root canals easily; adhere to the walls and not shrink; be easily removed, if necessary; be radiopaque; be antiseptic; and not cause discoloration of the tooth. There is currently no material that meets all these criteria, but the filling materials most commonly used for primary pulp canals are non-reinforced zinc-oxide-eugenol paste, iodoform-based paste (KRI), and iodoform and calcium hydroxide (Vitapex).

*A study in the Netherlands has found that prevention involving the counselling of parents on caries-promoting feeding behaviour is often ineffective in the long term. Is there a lack of quality intervention strategies?*

**Dr Herman:** If we (or the WHO) could answer this question, we'd have found the key to unlocking the mystery of improving or enhancing human motivation. It is probably true that without continual and periodic follow-up, counselling will wear off even amongst highly motivated individuals. We think the key lies with education that begins early and pro-

Dr Neal Herman.

motes a sound nutritional and sustainable oral-hygiene model for parent and child alike. As you might imagine, this is a task not well suited to the traditional dental-care delivery model, and will require some serious paradigm changes to permit effective implementation.

*What preventative measures do you recommend based on your clinical experience in New York?*

**Dr Herman:** Preventive measures and conservative therapies that confront the cause of the disease, rather than treat the symptoms, are the most effective and work the best. Fluoride varnish has proven to be a godsend, although most of the evidence to date is empirical and anecdotal. Good long-term longitudinal studies are needed to prove conclusively what we already know as clinicians—an intensive regimen of fluoride varnish, along with adjunctive measures, can control and often reverse dental decay, as well as prevent it.

**Dr Lim:** Starting in infancy, children at-risk for dental decay should be receiving twice-yearly applications of fluoride varnish, whether by a dentist or dental professional, or as part of their well-baby care from their paediatricians. More than 40 states in the US have implemented such programmes, and the outcomes are impressive—as much as 40 per cent fewer children with early signs of ECC.

**Prof Fernandez:** Collaboration between other health providers and the dental professions is key to combating the incidence of ECC.

*Editorial note: The interview questions were kindly provided by Daniel Zimmermann, DTI.*





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11:20 - 12:20 John Flucke, DDS  
**LIGHT CURED ADHESIVE DENTISTRY - SCIENCE AND SUBSTANCE - COURSE: 3030**

1:20 - 2:20 Martin Goldstein, DMD  
**A SIMPLIFIED APPROACH TO MULTI-LAYER DIRECT COMPOSITE BONDING - COURSE: 3040**

2:40 - 3:40 Jay Reznick, DMD, MD  
**3D IMAGING AND CT-GUIDED DENTAL IMPLANT SURGERY - 3050**

4:00 - 5:00 Louis Malcmacher, DDS, MAGD  
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10:00 - 11:00 Mrs. Noel Brandon-Kelsch  
**ECO-FRIENDLY INFECTION CONTROL-UNDERSTANDING THE BALANCE - COURSE: 4120**

11:20 - 12:20 Gregori Kurtzman, DDS  
**INCORPORATING NEW ADVANCES IN DENTAL MATERIALS AND TECHNIQUES INTO YOUR RESTORATIVE PRACTICE - COURSE: 4130**

1:20 - 2:20 Various Speakers  
**OPTIMIZING YOUR PRACTICE WITH 3D CONE-BEAM TECHNOLOGY - COURSE: 4140**

2:40 - 3:40 Daniel McEowen, DDS  
**HIGH RESOLUTION CONE BEAM WITH PREXION 3D - COURSE: 4150**

4:00 - 5:00 Maria Ryan, DDS, PhD  
**DETECTING CORONARY HEART DISEASE THROUGH PERIODONTITIS AND PERIIMPLANTITIS - COURSE: 4160**

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11:20 - 12:20 Greg Diamond, DDS  
**LASERS IN PERIODONTAL THERAPY - COURSE: 5120**

1:20 - 2:20 Dov Almog, DMD  
**INTRODUCTION TO CONE BEAM CT (CBCT), ESPECIALLY AS IT PERTAINS TO PREVENTION OF FAILURES IN ORAL IMPLANTOLOGY - COURSE: 5130**

2:30 - 3:30 Maria Ryan, DDS, PhD  
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4:00 - 5:00 Dwayne Karateew, DDS  
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11:20 - 12:20 Glenn van As, DMD  
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12:45 - 4:45 Drs. David Hoexter, Jeffrey Hoos, Dwayne Karateew, Enrique Merino, Kenneth Serota, Marius Steigmann  
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