



**Meet Dr Stephen Cottrell,  
Director**



*Over the next few editions we will introduce the Directors of the eViDent Foundation Board.*

**Why did you choose to become a Director of the eViDent Foundation?**

I was fortunate to be involved at the inception of eViDent when I was President of the ADAVB. I was in a position to have direct input with the initial NHMRC submission regarding eViDent. The concept of having clinicians directly involved in research was very exciting. The ability to be involved in research and observe outcomes that can directly impact upon day to day practice is quite unique. From these perspectives I was very keen to see eViDent evolve and succeed. In addition I felt that my years on ADAVB Council had provided me the appropriate knowledge and skills to act as director on the Foundation.

**Why is dental and oral disease research so important?**

Oral health is inextricably linked with general health, whether you look at it from a clinical standpoint or a public policy point of view. From this perspective our clinical decisions and

those decisions made by policy makers must be guided by a sound knowledge/ evidence base. I would hope that eViDent will contribute to our knowledge and help further legitimise our day to day clinical decisions and improve policy decisions made on the broader scale that affect how we practice dentistry.

**What does the eViDent dental practice based research network offer to academics, practitioners, practice staff and patients?**

Hopefully there will be benefits seen by all. From an academic standpoint eViDent offers access to a broad spectrum of clinicians and data sets that will expedite clinical trials. From a practitioners perspective it provides the opportunity to be involved in clinical research without the rigours of having to design a project, obtain human trials approval etc. Any staff member that takes pride in their work and involvement in the dental team would be proud to be involved.

I would expect that the patient would and should be the main beneficiary from the work performed by eViDent.

**What other benefits does eViDent offer?**

Having had the opportunity to perform research during my postgraduate

training and during my time as a clinician, I found the outcomes of human clinical trials to be the most rewarding. I have been fortunate to work in the public hospital system on a sessional basis for almost 27 years. At the RMH I was involved in a clinical trial the outcome of which had direct and significant impact on the well being of renal transplant recipients. This is a good example of clinical research having a direct impact on clinical outcomes. This I feel, is one of the main benefits of eViDent.

**What impact do you think the eViDent Foundation will have on the dental profession, and why?**

I don't know what impact the Foundation will have on the profession. I know that eViDent as a practises based research network will have an impact at many levels. It is not going to revolutionise the way we practice dentistry, however our knowledge base consists of multiple building blocks, to which eViDent will contribute. The Foundation has been put in place to support eViDent.

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**eViDent project**

**Molar Incisor Hypomineralisation/  
Molar Hypomineralisation**

Molar-Incisor Hypomineralisation (MIH) and Molar Hypomineralisation (MH) are two related conditions affecting first permanent molars. The exact causal factors are still

unknown, so primary prevention is difficult. Many of these teeth provide great clinical challenges as they are sensitive, difficult to anaesthetise and restorations fail readily.

With the guidance of Emeritus Professor Louise Brearley Messer AM and Professor David Manton, Dr Narisha Chawla, Dr Karen Kan, Dr Fiona Ng, Dr Kelly Oliver, Clinical A/Prof Christopher Olsen, Dr John Sheahan, Dr Margarita Silva (and their practice staff: Helen Hannan, Liz King, Leanne Ryan, Kate Farrell, Leonie Gomm, Simone Angus, Sophie Andreawartha, Jessica Harris, Cathy Furey Maria Taliana, Jessica Willmott and Margaret Kan), have sought to:

- investigate the distribution and severity of MIH/ MH in dental practices in Melbourne;
- implement the use of the newly developed MH Severity Index in these practices to assist in the early detection,

- diagnosis and treatment of MIH/ MH; and
- propose and pilot new clinical management protocols for affected dentitions in order to maximise oral health and improve clinical outcomes.

The project team anticipates their findings will:

- provide information that would lead to evidence based clinical management protocols for affected dentitions in order to maximise oral health and improve clinical outcomes; and
- improve the diagnosis and management of MIH/ MH with particular reference to the first permanent molars of children and adolescents in order to maximize oral health and improve clinical outcomes.

When asked about their involvement in the project, the practitioners provided some valuable feedback:

*"I was pleased to take part in the study partly out of personal interest and partly with the hope that it would contribute to solving this clinical problem. MIH is a difficult clinical problem frequently experienced by clinicians who provide dental care for children, often without a totally satisfactory outcome and also which can have a significant and traumatic lifelong impact on child patients.*

I estimate that it took us at least 10 minutes per patient to explain the project, obtain written consent and do the examination + charting with an adequate degree of accuracy. Initially it was suggested that this would take only 5 minutes per patient, however looking back I think this was an unrealistic estimate", tells Clinical A/Prof Olsen.

"Participation in the data collection was not too onerous when we had stable staff. *We quickly got into a rhythm and the collection flowed well.*

Unfortunately, it was not possible to continue with the data collection when our original staff who had been with me for a long time resigned. Since then we have been short staffed as we have been unable to find a suitable replacement for one staff member", Dr Sheahan reports.

Dr Silva reports that, "It took extra time to go through on very busy days, but *our commitment to research is very strong and the parents were tolerant when we explained the background.*

At least 2 families that took the paperwork home before giving permission to join the project, therefore they missed out on joining, as their recall appointment had already passed and would not come back to be re-examined, as well as the practice could not offer that either.

It may be worth sending information via email to the parents ahead of time, so they have time to digest their willingness to participate".

Dr Kan mentioned that, "parental consent was forthcoming as parents were keen for more research in their child's dental condition which in future could aid in better understanding and management".

*The data collection easily fitted in with the clinical examination as the information required for the study was already documented as part of our routine comprehensive examination.* Following a succinct tutorial from Professor Brearley and Dr Oliver, our dental team was able to manage the data recording quickly and thoroughly".

Dr Ng found that, *"the majority of parents (and especially their children) were enthusiastic participants and appreciated the value of altruism in their involvement in our study".*

### Preliminary findings

- 283 children affected by MIH were enrolled in the study; males: n=156 (55%); females: n=127 (45%)
- Children were aged 5.7-18.0 yrs (mean: 9.7±2.5 yrs)

- 151 children (53%) were recalled and data were recorded on their treatment at least once
- 1,218 first permanent molars (FPMs) were examined; 902 (74%) were affected by MIH
- 803 affected FPMs (90%) had demarcated enamel opacities and 99 (10%) had stainless steel crowns (SSCs) or extractions due to MIH
- The colour distribution of demarcated enamel opacities by FPMs was: brown: 47%; yellow: 36%; white: 17%. The surface locations of opacities by FPMs were: cuspal: 74%; occlusal: 12%; smooth: 13%; and post-eruptive breakdown (PEB) was present on 43% FPMs
- Sensitivity of FPMs was reported for 20%, distributed as sensitivity to: temperature only: 12%; tooth-brushing only: 1%; temperature and tooth-brushing: 7%
- Restorations were placed or replaced on 44% of affected FPMs, distributed as: one placement: 34%; two or more placements: 5%; SSCs: 5%
- Atypical restorations were seen on 34% affected FPMs, including 5% which were SSCs
- 1,954 permanent incisors (PIs) were examined; 450 (23%) were affected by MIH
- Central incisors were the most frequently affected; 207 (46%) were maxillary incisors and 124 (28%) were mandibular incisors
- All affected PIs showed demarcated enamel opacities; no incisor was restored with a composite crown or extracted due to MIH
- The distribution of opacities by PIs was: white: 65%; yellow: 26%; brown: 9%
- Sensitivity of PIs was reported for 9%, distributed as: temperature only: 7%; temperature and tooth-brushing: 2%; no child reported sensitivity to tooth-brushing only
- Preliminary examination of the data shows that the MHS Index score for individual teeth ranged from 0-13, and dentition scores ranged from 7-48
- The next stage is correlative analysis of the data with reference to MHS Index, which is now in progress.

eviDent would like to thank all the children and their parents who participated in the study, the members of the project team, and the staff of the four participating dental practices.

eviDent would also like to thank the Australian and New Zealand Society of Paediatric Dentistry Victorian Branch, for their financial support.

MIH insert enclosed in this Newsletter provides more information. For further information:

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Photo provided by Dr Kelly Oliver