



ORAL HEALTH AND GENERAL HEALTH IN AUSTRALIA

# The great disconnect

# FOREWORD

The first report of its kind, 'Oral Health and General Health in Australia – The great disconnect', makes a valuable contribution to raising awareness of the current issues we are facing in relation to oral health and helps to educate Australians on why establishing good oral health habits at an early age really can enhance a healthy lifestyle.

The statistics and insights contained in this report emphasise the broader context of the impact that poor oral health has on general wellbeing. Oral health screening and preventive advice is very often not included in general health checks, discussions and patient education. This report aims to drive discussion around the current 'disconnect' between oral health and general health and, coupled with recommendations from the Oral Health Advisory Panel, provides a useful resource for all Australians.

The report provides a wealth of interesting information and advice for all Australians, be they living in metropolitan, regional or rural Australia.



**Dr Rick Olive AM RFD**

Federal President  
Australian Dental Association



# BACKGROUND

The Oral Health Advisory Panel (OHAP) was established in 2013 to raise the awareness of the importance of good oral health and its impact on general wellbeing. The panel comprises 13 independent health care experts including Dental Practitioners (Dentists, Dental Therapists & Oral Health Therapists), Academics leading research into improving oral health, Public Health Advisors, an Accredited Practising Dietitian (with expertise in oral health), a Developmental Psychologist and representation from the Australian Council for Health, Physical Education and Recreation (ACHPER), and the Australian Dental Association.

A priority for the OHAP is to elevate the value of oral health to a key 'wellness' priority in the minds of all Australians. With a focus firmly aimed at improving the oral health of all Australians as a means to enhance general health and wellbeing, the panel are taking oral health beyond the dentist chair. The aim is to help lessen the impact of some systemic conditions and address the outcomes of oral health diseases, such as tooth decay.

# ORAL HEALTH ADVISORY PANEL



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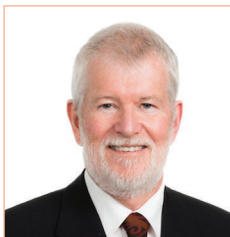
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# TOOTH DECAY AND THE LIFE STAGES

## INTRODUCTION

In this section we take a look at oral health, and in particular the most common chronic disease in our community, tooth decay, across the life stages:<sup>1</sup>

### Mothers & babies



### Childhood 5-14 years



### Young People 15-24 years



### Working Age 25-64 years



### Ageing 65+



## What is tooth decay?

Tooth decay, or dental caries, results from an imbalance among four critical factors – two risk factors – dental plaque and sugar – and two protective factors – saliva and fluoride.

Dental plaque is mainly composed of bacteria and forms a barrier between tooth surfaces and calcium-rich saliva. When foods and beverages containing sugar are consumed, plaque bacteria ferment the sugar to acid within seconds. The acid-soaked plaque dissolves calcium from tooth surfaces (demineralisation). After about 20 minutes, in a healthy mouth, the acid is neutralised by saliva and the lost calcium is naturally restored to tooth surfaces (remineralisation).

Demineralisation/remineralisation cycles occur daily each time foods and beverages containing sugar are consumed. When foods and beverages containing sugar are consumed frequently throughout the day, especially between meals, the balance between calcium loss and calcium gain breaks down – more acid is produced and more calcium is lost than gained. Loss of calcium (demineralisation) shows up as white spots or white patches on tooth surfaces and are the earliest signs of tooth decay. At this stage, efforts to reduce dietary sugar are necessary to starve the plaque bacteria and hence block acid production, otherwise continuing loss of calcium from tooth surfaces will cause them to break down and form cavities.

# What is tooth decay?

**Tooth decay, or dental caries, results from an imbalance among...**

### Two RISK factors

- dental plaque & sugar

# 4

## Critical factors

### Two PROTECTIVE factors

- saliva & fluoride

## Reducing risk of decay

Reduction in sugar exposure addresses the main risk factor. **Tooth brushing with fluoride toothpaste** addresses the remaining other critical factors:

- 1** removes dental plaque from tooth surfaces thereby reducing the bacterial load
- 2** enables remineralisation from calcium-rich saliva, and
- 3** supplies fluoride to enhance the rate of remineralisation.

In summary, risk of tooth decay can be reduced through:

- Control of dietary sugar – the main critical factor.
- Twice daily tooth brushing with fluoride toothpaste in order to:
  - remove plaque and bacteria
  - allow saliva to bathe tooth surface to:
    - > neutralise acid
    - > supply calcium for remineralisation; and
  - supply fluoride to enhance the rate of remineralisation.

In addition, decay risk is reduced further by:

- Application of dental sealants to the most vulnerable sites – the pits and grooves on chewing surfaces. Sealants block plaque accumulation at these sites.
- Use of fluoridated water for drinking and cooking.

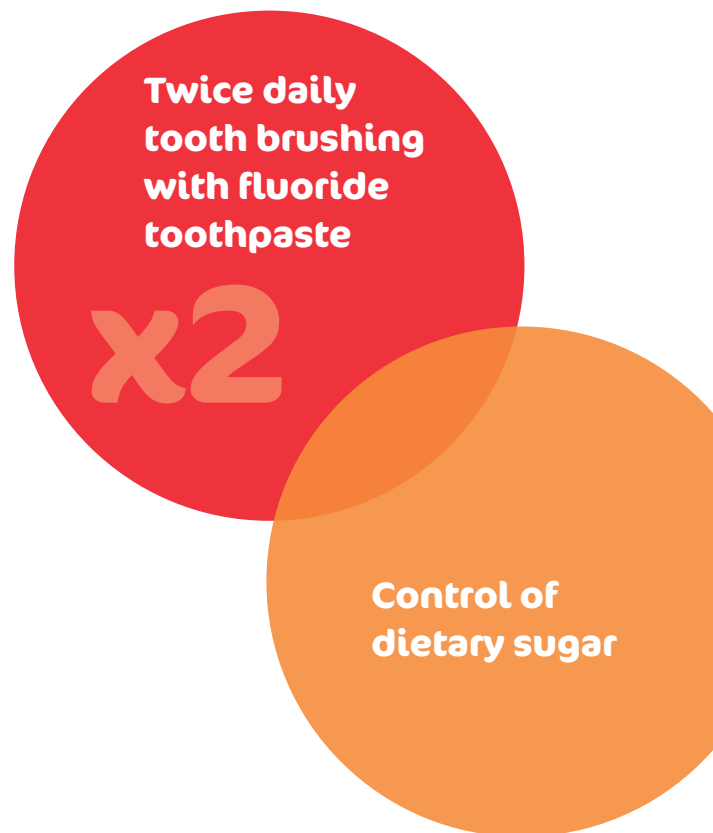
## Role of Fluoride

Fluoride reduces tooth decay, making it a major contributor to good oral health .

The demineraliation/remineralisation cycle is greatly affected by fluoride. Fluoride in drinking water and in toothpaste reduces the rate of demineralisation on one hand, and enhances the rate of remineralisation on the other; the nett effect therefore, reduces the risk of tooth decay.



## Risk of tooth decay can be reduced through



## RESEARCH & INSIGHTS

- Globally, sugar consumption is on a steady rise and has caught the attention of the World Health Organisation (WHO). In early 2014, the WHO issued recommendations on the consumption of free sugars to reduce the risk of non-communicable diseases (NCDs) in adults and children, with a particular focus on the prevention and control of weight gain and tooth decay. While we hear a lot about the impact on major health issues – such as diabetes, obesity and cardiovascular disease – we hear less about the impact on oral health.<sup>2</sup>
- **The in-depth systematic literature review conducted by the World Health Organisation supported the relationship between the amount of sugar intake and the development of tooth decay across age groups.**

This has resulted in evidence to support limited intake of free sugars to <10% of daily energy intake<sup>3</sup>. This equates to approximately 50gm (around 12 teaspoons) per day. Note that this includes sugars in many foods such as fruit juice, yoghurts and processed foods and so it is recommended to carefully read the nutrition information labels.
- The economic burden to treat tooth decay is continuing to increase. According to the World Health Organisation, dental care costs total between 5-10% of health budgets in industrialised countries. Moreover, in many lower-income countries, dental care costs exceed the financial resources available for the whole of health care for children.<sup>4</sup>

## Mothers & babies



- Only 12% of Australian children at two years of age have ever seen a dental practitioner<sup>5</sup> so primary care providers, such as General Medical Practitioners, Maternal and Child Health Nurses as well as Pharmacists and Child Care Workers who often have contact with children well before the age of the first dental visit may be well placed to offer anticipatory advice to reduce the incidence of early tooth decay.<sup>6</sup>
- Risk of tooth decay can be reduced through:
  - changed bottle feeding practices (for example, do not put baby to bed with a bottle containing anything other than water)<sup>7</sup>
  - limiting behaviours which transmit bacteria from parent to child (including tasting the child's food, sharing cups and utensils and cleaning the dummy in their own mouths)<sup>7</sup>
  - dietary modification<sup>8</sup>
  - fluoride delivery<sup>8</sup>
  - tooth brushing<sup>8</sup>
- Children are at risk of early childhood tooth decay as soon as their baby teeth begin to erupt.<sup>9</sup>

## Children are at risk of early childhood tooth decay

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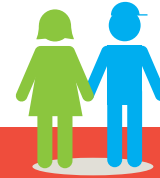
**Despite the fact this is largely preventable, tooth decay is the most common chronic disease of childhood.**

## Childhood 5-14 years



- Despite the fact this is largely preventable, tooth decay is the most common chronic disease of childhood.<sup>10</sup>
- Worldwide, 60-90% of school children have cavities.<sup>11</sup>
- Half (50.9%) of Australian children aged 5-6 years have a history of tooth decay in their baby teeth<sup>12</sup>, and more than 26,000 children under 15 years are hospitalised each year for dental treatment under general anaesthesia.<sup>13</sup>
- Tooth decay in early childhood is a significant predictor of long-term dental health problems.<sup>14</sup>
- A growing body of research shows that poor oral health at an early age can significantly affect school performance, social skills and self-esteem.<sup>15</sup>
- Children with parents who have poor oral health are more likely to experience an oral health impact themselves.<sup>16</sup>
- 72% of Australian parents worry about the appearance of their children's teeth, while half (49%) still believe getting cavities just happens to all children.<sup>17</sup>

## Young People 15-24 years & Working Age 25-64 years



- According to the World Health Organisation, worldwide, nearly 100% of adults have experienced tooth decay.<sup>18</sup>
- More than half (57%) of Australians admit they are not sure about the causes of tooth decay.<sup>19</sup>
- 49% of Australians forget to brush before bed.<sup>20</sup>
- 27.9% of adults with lower household income (up to \$20,000) compared with 7.5% of adults with higher household income (over \$80,000) experience severe impact on quality of life due to oral health conditions.<sup>21</sup>
- The adult Indigenous population have 2.3 times more untreated tooth decay than non-Indigenous people, with 57% of Indigenous people having one or more teeth affected, compared with 25% of non-Indigenous adults.<sup>22</sup>
- Over half 54.9% of people experiencing depression also suffer from one or more oral health problems that impact their daily life.<sup>23</sup>
- 37% of Australians believe Australians have poor oral health.<sup>24</sup>
- 75% of Australians aged 18 years and over wish they had taken better care of their teeth and 58% of Australians believe getting cavities happens to everyone.<sup>25</sup>

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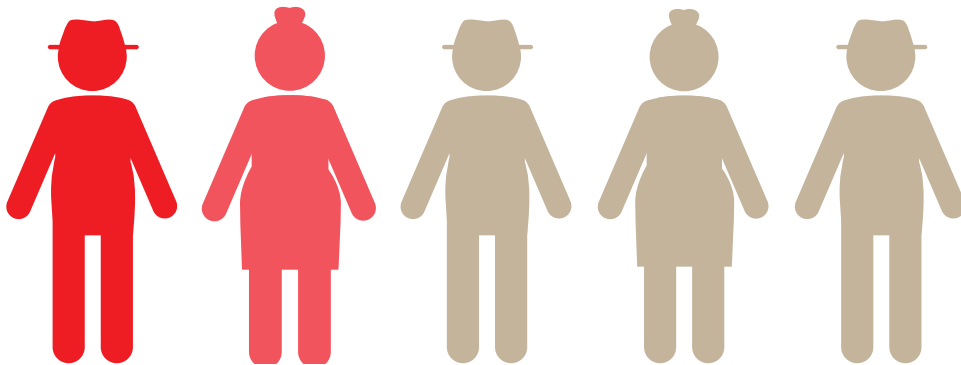
## Ageing 65+<sup>26</sup>



**More than one in five Australian adults aged over 65 have no teeth; most of this tooth loss is attributed to dental caries and gum disease.**

- Population projections from the Australian Bureau of Statistics show that while older people aged 65+ years comprised only 13.0% (2.60 million) of the population in 2004, by 2012 this was estimated to be 14.4% (3.34 million), and in 2023 this will increase to 16.8% (4.58 million).
- More than one in five Australian adults aged over 65 have no teeth; most of this tooth loss is attributed to dental caries and gum disease.<sup>27</sup>
- In the next few years there will be a great increase in the percentage of the population aged over 65. Not only will they have more teeth than previous generations, but also a large number of implants.
- This increase in age is accompanied by an increase in the prevalence and incidence of periodontal diseases and root surface decay (decay of tooth roots alongside gum margins).
- In addition, there is a decrease in manual dexterity and an increase in co-morbidity and medications affecting the oral cavity.

**More than 1 in 5  
Australian adults  
aged over 65 have no teeth**



### RECOMMENDATION

“ Tooth decay can impact us at any stage in life. The relationship between the amount of sugar intake and the development of dental decay (dental caries) across all age groups is evident and for this reason good oral health habits should be adopted from an early age to reduce the burden of tooth decay later in life. Tooth decay can be stopped, reversed, and prevented. ”

**A/Prof Wendell Evans**



# GUM DISEASE

## INTRODUCTION

Periodontal (gum) disease is a condition whereby the gums become inflamed due to a buildup of plaque (accumulation of bacteria on teeth and gums in the mouth) around the teeth, which can lead to weakening of the supporting bone, and may ultimately result in teeth needing to be taken out.

Gum disease is very common in our community with mild forms affecting up to 60% of the adult population and about 15% of adults suffering from advanced and destructive forms of this condition (known as periodontitis).<sup>28</sup> Apart from increasing the risk of tooth loss, periodontitis can adversely affect speech, nutrition, quality of life and self-esteem.<sup>29</sup>

Recently, periodontitis has been found to have a number of overall health consequences being linked to a number of systemic conditions including diabetes, cardiovascular disease, adverse pregnancy outcomes, rheumatoid arthritis, lung disease and kidney disease.



**Apart from increasing the risk of tooth loss, periodontitis can adversely affect**



## RESEARCH & INSIGHTS

- **There is more to gum disease than just simple plaque accumulation around teeth<sup>30</sup>, such as how an individual's immune system reacts to plaque bacteria and whether they have any underlying conditions that might influence their resistance or susceptibility to gum disease. Therefore a full patient assessment, and not just an assessment of oral hygiene, is crucial to successful management (and prevention) of gum disease.**

- There is a strong genetic component that determines an individual's risk for developing gum disease.<sup>31</sup>
- People with poorly controlled diabetes are 2-3 times more likely to develop gum disease than those with well-controlled blood glucose levels.<sup>32</sup>
- Smoking is a significant risk factor for developing gum disease.<sup>33</sup>

### **The importance of good oral hygiene and how to prevent gum disease:**

- Brush your teeth effectively and thoroughly twice a day.
- Clean between your teeth, e.g. with dental floss.
- Avoid smoking.
- Some medications can cause problems with the gums. In particular, some medications used for managing epilepsy and high blood pressure can cause enlargement of the gums, which hinders good cleaning and thus leads to ongoing periodontal problems. If this becomes advanced then surgical removal of the excess gum tissue becomes necessary.
- Have regular dental check-ups, especially if you are pregnant or have diabetes as these conditions increase your risk of gum disease.



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### **RECOMMENDATION**



Gum disease has been associated not only with cardiovascular disease but also a number of other systemic conditions including diabetes, adverse pregnancy outcomes, rheumatoid arthritis, lung disease and kidney disease. Poor oral health and its association with other health issues should not be underestimated.

**Professor Mark Bartold**



# ORAL HEALTH AND SELF-ESTEEM

## INTRODUCTION

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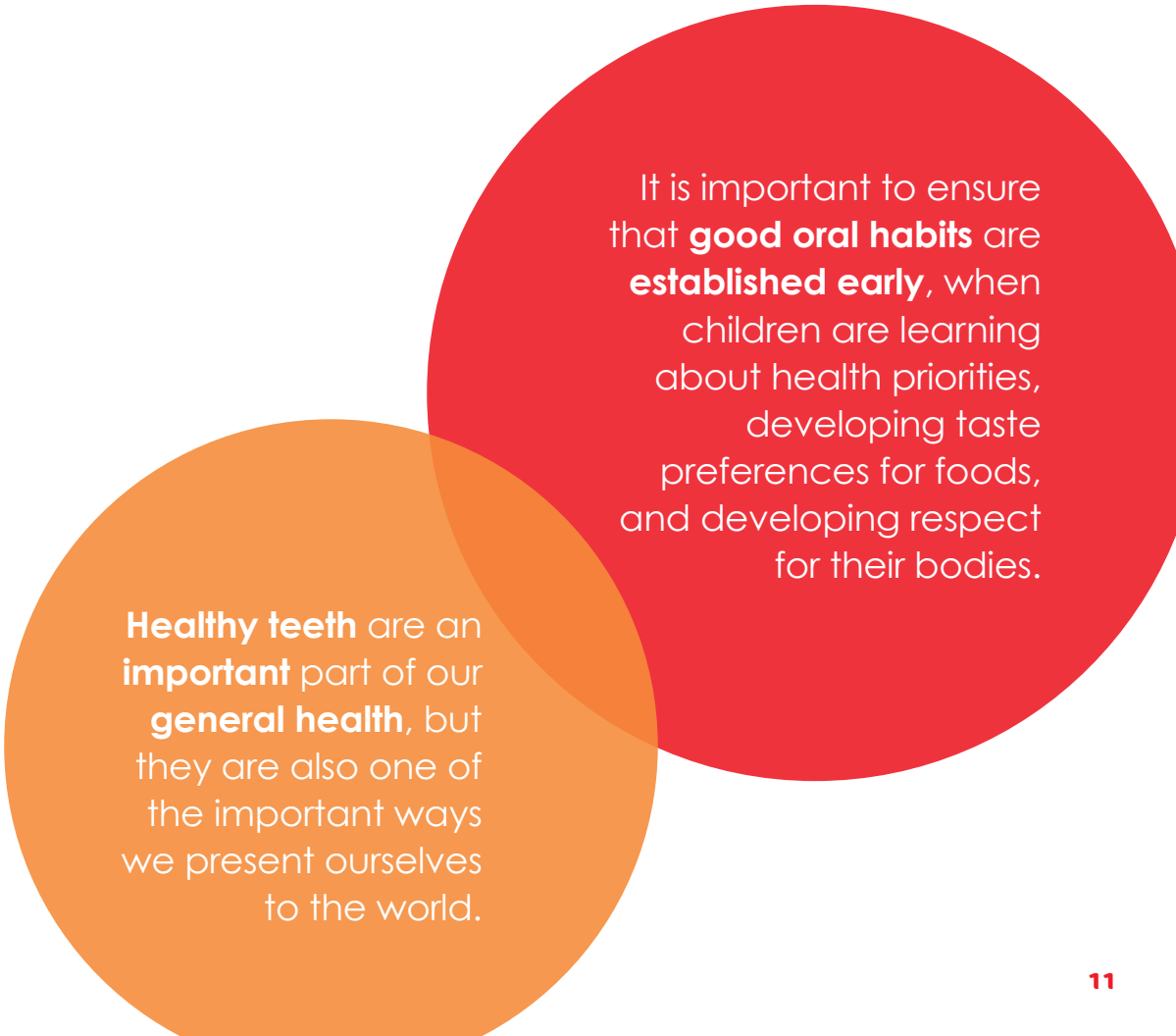
It is interesting to note the recent developments in dentistry and the ways these developments have affected people's attitudes towards teeth. In days gone by, we did not notice the odd crooked tooth, or teeth that were yellowed with age, smoke, or caffeine. These days, with the advent of teeth bleaching, invisible braces for teeth straightening, dental veneers and dental implants, we are becoming increasingly accustomed to seeing 'perfect teeth'. However, while we work towards achieving teeth that look great, the actual health of many Australians' teeth and mouths is in decline.

Tooth decay and periodontal disease are very common oral diseases that can result in bad breath, unsightly teeth, tooth loss and pain. Modern advances in dentistry cannot work magic, and there are limits to what can be achieved to make teeth 'look better' when they have not been well looked after. Furthermore, treatments for oral diseases can be complex and costly to manage, let alone what is required to

improve the poor appearance that may result from neglect. Thus, there appears to be a growing gap between the way we would like our teeth to look and the way our teeth actually look.

This gap can be a concern, particularly for those who do not look after their teeth in early life, and then regret that decision later. Individuals with poor oral health often feel dissatisfied and self-conscious about their teeth and smile, and this can affect self-confidence, self-image, and self-esteem. Indeed, there is a growing body of evidence to show that poor oral health can affect many aspects of our social lives.<sup>34</sup>

It is therefore important to ensure that good oral habits are established early, when children are learning about health priorities, developing taste preferences for foods, and developing respect for their bodies. Healthy teeth are an important part of our general health, but they are also one of the important ways we present ourselves to the world.



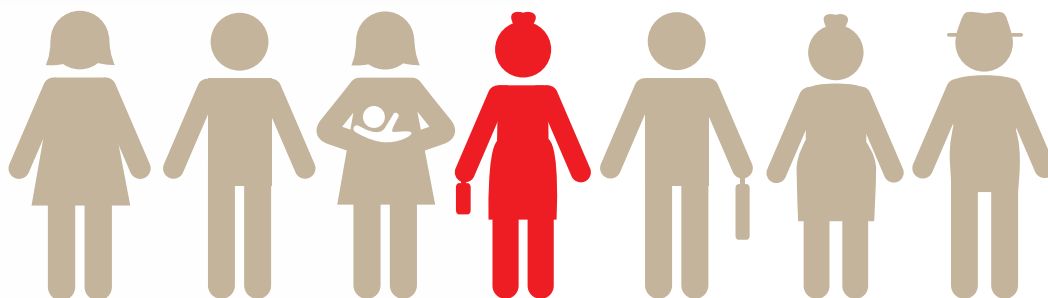
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## RESEARCH & INSIGHTS

- Toothache is common; about one in seven Australians over age 15 reported a toothache in the past 12 months.<sup>35</sup>
- About one in six Australian adults avoid eating certain foods because of problems with their teeth.<sup>36</sup>
- About a quarter of Australians over age 15 reported feeling uncomfortable about their dental appearance in the previous 12 months.<sup>37</sup>
- It is perplexing that despite our growing awareness and vigilance about health and appearance, the prevalence and severity of tooth decay has been increasing in Australian children and adults since the mid 1990s.<sup>38</sup>
- A recently commissioned report<sup>39</sup> shows that many Australians
  - feel self-conscious about the appearance of their teeth
  - wish they had taken better care of their teeth
  - agree that “nothing looks worse than bad teeth”

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and adults...**

**... since the mid  
1990s.**

## Is good oral health important?

Well yes, because we know that poor oral health in children is related to:

- inattention<sup>40</sup>
- reduced school attendance<sup>41</sup> and performance<sup>42</sup>
- feelings of worthlessness<sup>43</sup>
- problems with speech<sup>44</sup>, eating<sup>45</sup>, sleep, depression, and poor self-esteem<sup>46</sup>

In adults, we know that poor oral health is related to:

- Self-consciousness, depression, avoidance of social contact, and reduced quality of life<sup>47</sup>
- Avoidance of smiling and laughing<sup>48</sup>
- Depression<sup>49</sup>

These problems can affect important experiences, such as the confidence with which children and adults socialise with peers and approach new challenges, and these help to shape our developing identity.

Take smiling, for example. Our smile tells others how happy we are to see them, how likeable we find them, and how approachable we are.

- People who are self-conscious about their teeth do not smile as broadly as those with healthy teeth<sup>50</sup>. This can affect the way others perceive their smile, and interpret the emotions behind it.
- If we are already feeling self-conscious, luke-warm responses from others can further reduce fragile self-confidence and self-esteem.

### Poor oral health in children is related to:

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- Self-consciousness, depression, avoidance of social contact, and reduced quality of life<sup>47</sup>
- Avoidance of smiling and laughing<sup>48</sup>
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## RECOMMENDATION



So what can be done?

Encouraging good oral health behaviours in children from an early age is helpful and developing a relationship with oral health professionals will help prevent many potential oral health problems. Developing resilience in your child can help reduce the impact of negative experiences on them. For more information about resilience see the American Psychological Association or American Academy of Pediatrics websites, a Psychologist, General Practitioner, or Maternal & Child Health Nurse.

**Dr Merrilyn Hooley**



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The Oral Health Advisory Panel, an independent group of healthcare professionals, endorse the National Oral Health Plan (NOHP) and its desired outcomes seek to support the NOHP objectives.

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