

Submission  
No 167

## INQUIRY INTO DENTAL SERVICES IN NSW

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**Theme:**

**Summary**



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The Director,  
Standing Committee on Social Issues,  
Legislative Council,  
Parliament House,  
Macquarie Street,  
Sydney NSW 2000

June 5th 2005

Dear Ms Want

**Re: Inquiry into Dental Services in NSW**

We are pleased to have the opportunity to make the attached submission to the Standing Committee's Inquiry into Dental Services in New South Wales.

We feel qualified to comment on the medical implications of dental disease, particularly in economically and socially disadvantaged groups. A paper reporting on our research into the links between periodontal disease and cardiovascular risk will soon be published in the Journal of Dental Research, the world's leading dental journal, which has described it as important, timely, relevant and the first of its kind.

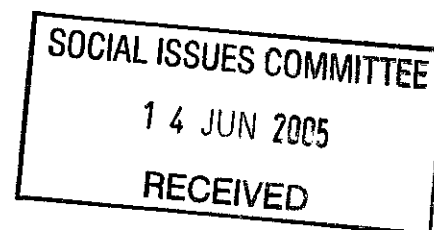
This submission also includes comments on the provision of dental services and the training of dental clinicians and specialists in New South Wales.

Yours sincerely,

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Sydney Dental Hospital

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Professor of Preventive Cardiology  
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Att. Submission: Inquiry into Dental Services in NSW



**Submission by Dr Barbara Taylor and Professor Geoffrey Tofler to the  
NSW Legislative Council Standing Committee on Social Issues  
Inquiry into Dental Services in New South Wales**

1. Introduction

Periodontal disease is important, not only because it is a leading cause of patient morbidity, but because it may have strong links with cardiovascular disease - such that good treatment will have extra benefits. Funding for clinical services and research is, however, inadequate. We suggest that further funding be put into public dental clinical care to improve oral health and, hopefully, lower cardiovascular risk. Greater investment is also required in research and academic work, together with training.

2. Medical Implications of Periodontal Disease

2.1 Background

Periodontal disease, the most common chronic infection in humans, is caused by pathogenic bacteria of the oral microflora. Factors such as genetic susceptibility to periodontal disease, oral hygiene, background systemic disease and, importantly, cigarette smoking can influence a person's susceptibility to periodontal disease.

Gingivitis is a reversible inflammation of the gingival margin. It is very common, affecting approximately 45% of dentate Australian adults. Periodontitis, the more severe form of periodontal disease, afflicts another 15-20% of dentate Australian adults and causes loss of the bone and soft tissues that support the teeth in the jaw. The teeth can be loose or painful on eating or speaking and may fall out or have to be removed to relieve symptoms.

Periodontal infection and inflammation has been implicated in systemic conditions including spontaneous preterm delivery of low birth weight infants, diabetes, and cardiovascular disease. All of these incur significant costs to individuals and to the health care system.

2.2 Pregnancy

Low birth weight infants are usually born as a result of premature rupture of membranes or preterm labour. The rate of such births remains unchanged at about 4% in the developed world today despite improvements in antenatal care and reduction in infant mortality over the last 40 years. Approximately 80% of the spending on neonatal morbidity is for these babies.

One third of premature births are of unknown cause but there is compelling research evidence that infection and inflammation are involved, even after excluding factors such as smoking, alcohol consumption, age, race and level of prenatal care. The incidence of periodontal disease, particularly gingivitis, is high amongst pregnant women. Thus, maternal infection, including periodontal infection, is associated with premature labour.

2.3 Diabetes

Diabetes mellitus is the name given to a group of metabolic disorders characterised by glucose intolerance. Adult onset diabetes is the predominant form of diabetes in developed countries. Its prevalence is increasing in Australia as a result of several factors such as greater awareness of the condition, which leads to more reporting, shifts in lifestyle patterns and an ageing population. Some groups of immigrants to Australia have a higher prevalence of diabetes than the general population and Indigenous Australians have the fourth highest prevalence in the world.

Diabetes causes both macrovascular and microvascular pathology, leading to disease of the eyes and kidneys, neuropathy, hypertension, and other manifestations of atherosclerosis. These create a significant health care burden. Numerous studies have shown that being diabetic is associated

with an earlier onset and a greater risk and severity of periodontitis, particularly if the diabetes is poorly controlled. Recent evidence indicates that periodontal disease may cause poor control of diabetes. Several trials have studied the effect of periodontal treatment on metabolic control of diabetes, inferring that alteration in glucose metabolism could be achieved through anti-inflammatory treatment directed at periodontitis, although the evidence is not conclusive.

## 2.4 Cardiovascular Disease

Cardiovascular disease remains the leading cause of death, responsible for about one out of every three deaths. An important recent advance in the understanding of the pathogenesis of cardiovascular disease has been recognition of the role of inflammation and thrombosis in atherosclerosis and acute coronary syndromes. Inflammation is currently considered to play a central role in the pathogenesis of cardiovascular disease.

Observational studies show that periodontal disease is associated with an increased risk of myocardial infarction and stroke. These studies are limited in that traditional risk factors such as age, cigarette smoking and diabetes are common to both periodontal and cardiovascular disease. Furthermore, both conditions are influenced by factors such as level of education, income, psychosocial stress and social isolation. Consequently, it is possible that the studies primarily show that people who are more health conscious and have better access to health care are at lower risk of both diseases.

A causal link between periodontal disease and cardiovascular disease has not been demonstrated but our recent research has strengthened the supporting evidence. We conducted a clinical trial between Sydney Dental Hospital and Royal North Shore Hospital that found that treatment of advanced periodontitis reduced systemic levels of inflammation and indicators of cardiovascular risk. This means that induction of systemic inflammation and increased levels of cardiovascular risk markers may be a way in which periodontal disease increases the chance of myocardial infarction and stroke. Our findings indicate that prevention and treatment of periodontal disease may reduce the risk of cardiovascular disease. We estimate that the magnitude of the effect is similar to that of the anti-cholesterol medications, the statins.

## 3. Provision of Dental Services

### 3.1 Partitioned Funding

Given the age distribution and characteristics of the Australian population, there will be a continued demand for repair of damaged dentitions. However, prevention of dental disease is likely to lead to greater health benefits, whether systemic or dental, than can be achieved through repair only. This would necessitate a partitioning of funds to be directed towards primary care rather than secondary or tertiary level care. As a result, young adults would be more likely to receive preventive advice and care, leading to potentially years of disease avoidance, than is currently the case.

### 3.2 Productivity and Efficiency

Hygienists are preventively oriented clinicians who are highly productive in terms of numbers of patients seen and effective in focussing on preventive interventions. Unfortunately, their remuneration in the NSW Public Service is very poor, with a gross per annum salary ranging from \$34,130 to a maximum of \$37,062. Putting this into perspective, a Dental Assistant Grade 1 earns more than a hygienist when the former has a one-year certificate and the latter has a three-year degree and, arguably, a great deal more responsibility. Hygienist's salaries need to be increased substantially.

### 3.3 Treatment Needs and Wants

Relatively little is known of dental quality of life measures in the Australian population. We would like to suggest that research should be conducted into patients' needs versus patients' wants. Treatment plans are traditionally formulated according to the dentist's assessment of treatment needs independently of what patients want. Information about dental quality of life measurements in Australian populations could then be used to inform policy development and workforce planning.

### 3.4 Specialist Services

There is one full-time equivalent staff specialist in periodontics employed in the New South Wales public health system. This is inadequate for tertiary clinical care, teaching, leadership, and succession. Recruitment of several periodontists to the public system would not only support clinical service and training more adequately but would also permit the establishment of specialist clinical services into rural New South Wales.

## 4. Training of Dental Clinicians and Specialists

### 4.1 Preventively Oriented Clinicians

There is an unmet need in New South Wales for preventively trained clinicians. Increased graduation of hygienists from the training programs at the Universities of Newcastle and Sydney should remedy this over the next few years providing that efforts are made to attract and retain them in the public service, as detailed above.

### 4.2 Specialist Training

There are not enough periodontists in Australia at the moment. Many are retiring from practice and, until recently, there were not enough graduating from university training programs to replace them. There are about 30 periodontists registered with the Dental Board of New South Wales and seven of them have retired or are close to doing so. The number of teaching staff available has limited specialist and hygienist training programs, as institutional salaries are usually considerably less than in private practice. There are four trainees at the University of Sydney with another two to start training next year.

## 5. Conclusion

Research evidence increasingly associates the inflammation of periodontal disease with adverse systemic health effects. We consider that there are sufficient indications to invoke the Precautionary Principle. Accordingly, public health policy should be formulated and practiced as though causality had been conclusively demonstrated.

Prevention is better than cure. Training, recruitment and retention of clinicians who can effectively and productively apply preventive health measures and conduct appropriate research to inform policy should be a priority.

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June 5th 2005