

Risk Factors for Dental Disease

INTRODUCTION

The most common dental diseases—dental caries and periodontal diseases—are infectious processes. Bacteria collect and grow in the deposits on the teeth and gums and in the supporting structures of the tooth in its socket. The deposits are in the form of soft plaque which can harden into calculus. While dental caries are caused by the acid produced by bacterial fermentation of carbohydrates, periodontal diseases are inflammatory responses to bacterial invasion of the gums and supporting periodontal structures. Periodontal diseases start as gingivitis.



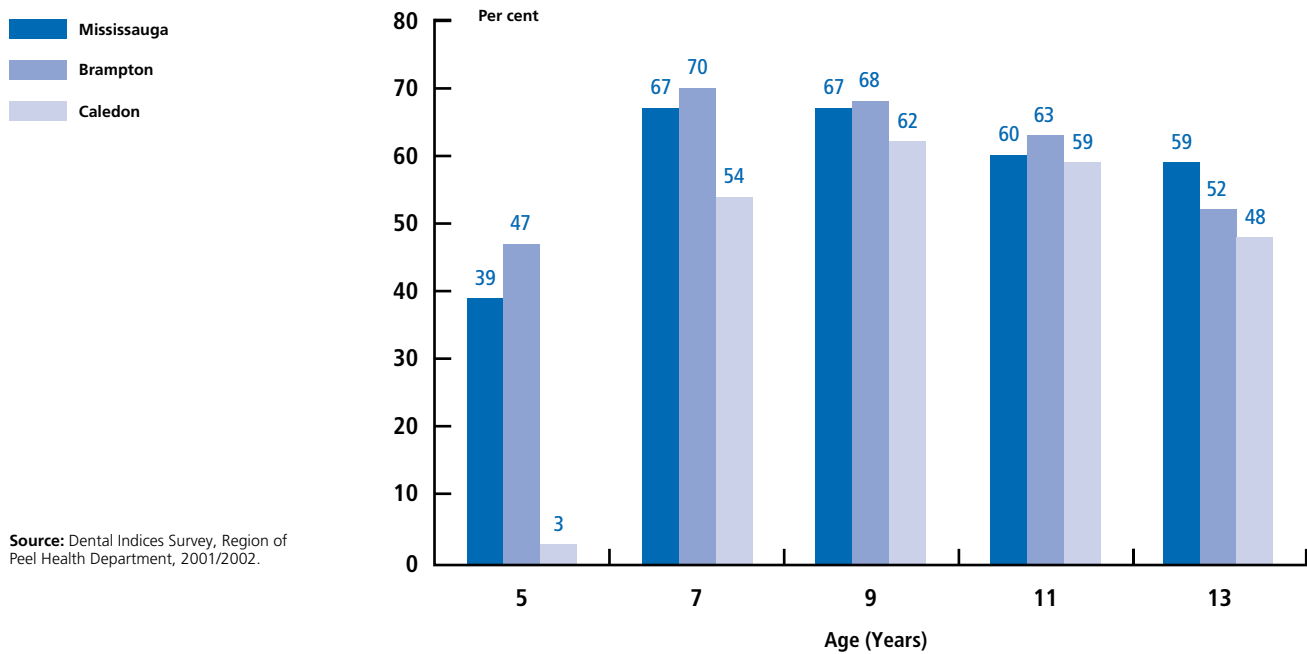
SOFT DEPOSITS—PLAQUE

Dental plaque is a soft, slimy deposit which builds up in the mouth in the absence of good oral hygiene practices. It is primarily made of bacteria and gelatinous materials including food debris. In its early stages of formation, it is unorganized and the deposit is easily removed by tooth brushing alone. In later stages when it is fully formed, plaque is well organized and requires the services of a dental professional to perform proper tooth cleaning using specialized instruments. The presence of plaque is seen as a predisposing factor to dental caries and gingivitis. The presence of plaque is also an indicator of the daily oral cleaning practices of children.

Overall, more than half of the children surveyed in Peel (59%) had plaque deposits on their teeth. Forty-one per cent of children aged five years had soft deposits. The presence of soft deposits increased to 67% among children aged seven and nine years, and then decreased to 61% and 56% among children aged 11 and 13 years, respectively (data not shown). This pattern was consistent across each municipality (*see Figure 2.1 on the following page*).

Across all ages, children in Caledon had lower levels of plaque compared to Brampton and Mississauga. Children aged five years in Caledon had particularly low levels of plaque; however, there is no clear explanation for this difference and future surveys will monitor this observation.

Figure 2.1: Proportion of Children with Plaque by Age and Municipality, Region of Peel, 2001/2002



Source: Dental Indices Survey, Region of Peel Health Department, 2001/2002.

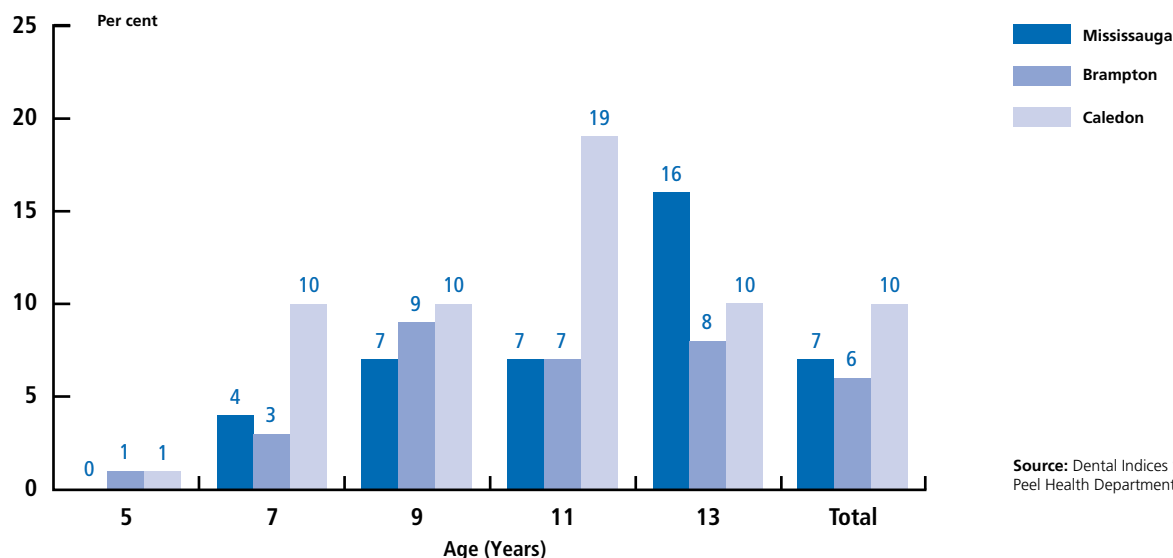
Although the presence of plaque does not itself constitute dental disease, it is an indicator of risk for dental disease. Good oral hygiene practices, including daily tooth brushing and flossing, are effective measures in controlling plaque accumulation. Plaque allowed to accumulate for 10 to 21 days without removal may lead to gingivitis.⁶

HARD DEPOSITS—CALCULUS

Dental calculus, also referred to as tartar, is a hard deposit on the tooth that may lie above and/or below the gum margin. This deposit results from calcification (hardening) of plaque. It is removable by professional scaling only. Whereas calculus deposits do not cause disease, their presence offers further surface for growth of plaque which also acts as mechanical interference in daily tooth cleaning activities. When it forms below gum margins, calculus may increase the risk of developing periodontal disease.

Overall, 7% of Peel children had evidence of calculus in 2001/2002. A higher percentage of Caledon children had calculus (10%) compared to Brampton (6%) and Mississauga (7%); however, this difference was not statistically significant. Calculus was more prevalent among children of older ages in Peel overall and by municipality (see Figure 2.2 on the following page). Although the data are not shown, the proportion of Peel children with calculus was less than 1% for those aged five years, 4% for those aged seven years, 8% for those aged nine years, 7% for those aged 11 years and 13% for children aged 13 years. Since these deposits are not removable by daily personal tooth cleaning, it is important to seek professional dental service for treatment.

Figure 2.2: Proportion of Children with Calculus by Age and Municipality, Region of Peel, 2001/2002



Source: Dental Indices Survey, Region of Peel Health Department, 2001/2002.

ORAL HEALTH OF CANADIAN-BORN AND FOREIGN-BORN CHILDREN

Children's oral health is generally good in Canada. High levels of education and standards of living, coupled with the availability of professional dental services, contribute in good measure to the oral health of Canadian children.

Table 2.1 describes the differences in oral health status between Canadian-born and foreign-born children. Thirty-five per cent of children born in Canada had experienced dental caries compared to 44% of children born outside of Canada. Nine per cent of children born in Canada had urgent conditions compared to 17% of children born outside Canada. This trend was observed for all indicators of oral health status assessed except for fluorosis. The prevalence of fluorosis among Canadian-born children was nearly twice that of children born outside Canada.

Table 2.1—Dental Health Indicators by Place of Birth, Region of Peel, 2001/2002

Health Indicator	Canadian-born	Foreign-born	Birth Place Not Known
Mean caries experience	1.1	1.4	1.3
% with dental caries	35	44	31
% with fluorosis	17	10	5
% with urgent conditions	9	17	17
% with all caries restored*	59	49	41
% with all caries active* (untreated)	23	32	37
% with gingivitis	14	21	9
% with calculus	5	13	4

* Applies only to children who have experienced caries.

Source: Dental Indices Survey, Region of Peel Health Department, 2001/2002.

SUMMARY

The most common dental diseases are infections resulting from plaque—soft bacterial accumulations—on tooth surfaces and gums. These bacterial accumulations may eventually become calcified and require removal by dental professionals. Overall, more than half of Peel children (59%) had soft deposits on their teeth while 7% had calculus or tartar. There were slight but non-significant differences in plaque and tartar accumulation among children in the three municipalities.

Overall, foreign-born children exhibited higher levels of dental disease than their Canadian-born equivalents. This trend was observed for all indicators of oral health status assessed except for fluorosis.