

# Early Childhood Oral Health

## Community Water Fluoridation

My name is Jeffrey Richmond and I am a paediatric dentist. I have been in practice for almost 20 years. And, I believe the benefits of keeping fluoride in our water far outweigh the risks.

- Edelstein and Douglass, 1995
  - Dental caries remains the single most common disease of early childhood that is not self-limiting or amenable to a course of antibiotics
- Dental decay is 5X more common than asthma

In 1995 Edelstein and Douglass identified dental caries as the single most common disease of early childhood that is not self-limiting or amenable to a course of antibiotics.

We know that dental decay is 5X more common than asthma.

Like most paediatric dentists, I encourage parents to take their children to a dentist as soon as the first tooth erupts. So many of the problems that we see in the mouths of our children are preventable. Dental cavities are no different. I have lost track of the number of children I have treated under the age of three. Exposure to fluoride beginning at a young age is known to be beneficial.

## Tooth Decay

- 1999 –Early Childhood Caries (ECC)
  - Defined as:
    - The presence of one or more decayed noncavitated or cavitated, missing due to caries, or filled tooth surfaces in any primary tooth in children under 6 years of age



Many of you have heard of baby bottle decay or nursing bottle decay. In 1999 dentists began to use the term Early Childhood Caries.

The brown areas on these teeth are cavities that are in need of treatment and there is a good chance that some of these teeth cannot be saved.

- Extreme presentation – “Severe-Early Childhood Caries” (S-ECC)

- The child is younger than age 3 with evidence of disease on any smooth surface of any tooth
- The child is 3, 4, or 5 years of age with disease on a maxillary incisor smooth surface
- The total number of affected surfaces is = or > four surfaces at age 3, five surfaces at age 4, or six surfaces at age 5



Like my colleagues, I can show you dozens and dozens of photographs of children who have Severe-Early Childhood Caries.

This child received his treatment under general anaesthesia in the operating room and had 14 of his 20 teeth removed – most of his teeth were simply not fixable.

- ECC
  - Should extend to the earliest possible stage and therefore include noncavitated lesions that appear as demineralized white spots



The white chalky areas along the gum line are cavities. Treatment is not yet necessary but this is the time to ensure that the child is identified as being at high risk and it is essential that fluoride be applied to these teeth to decrease the chance that these cavities will progress.

Water fluoridation ensures that this child and his teeth have a fighting chance. It is known that water fluoridation exerts a topical effect on the teeth.

## How many children are affected?

- Centre for Disease Control (CDC) – 2007
  - 27.9% of all 2- to 6-year-old US children have experienced cavities and 73.4% have unrepaired teeth
  - The situation is worsening and the disease is heavily concentrated in socially disadvantaged children who are least likely to have access to dental services

The CDC in 2007 said that almost 30% of all 2 to 6 year old children in the US have had cavities and that almost 75% have unrepaired teeth.

As far as I can tell, our experience here in London is no different.

Paediatric dentists across the country are far busier than they want to be – there is not enough time in our days or weeks in the year to treat all of the children who have dental decay – we have waiting lists for months and months and it is not unheard of that children requiring treatment under general anaesthesia are often having to wait for more than a year to receive their care.

Removing the fluoride from our water will certainly make these problems even worse than they are now.

## Children most affected

- Caries **increases with age**
- Very high rates globally for native and aboriginal populations exposed to **western diets**
- Populations of **low-income children** have higher disease experience than high-income children
- Populations exposed to **water fluoridation** have lower rates than those without access to community water fluoridation
- Prevalence rates are highest in populations that most often engage in **inappropriate use of the baby bottle**

We know that the number of cavities that children experience increases with age.

We know that our children's diets are significant.

And we know that children of low income families have more cavities.

We also know that children who have access to water with fluoride have less decay than those children who do not.

## Consequences of ECC

- Numerous and significant
  - Growth
  - Function
  - Quality of life

The effects of decay can be devastating.

Parents are often overwhelmed to hear just how many cavities their children have.

Like many of my colleagues, I have seen how cavities can affect not only a child, but an entire family.



## Consequences of ECC

- To the dentition:
  - Abscess
  - Cellulitis
  - Pain
  - Tooth loss
  - Malocclusion



We see abscessed teeth – we see swollen faces.

We see children crying from painful teeth and we know that ultimately teeth will have to be lost.

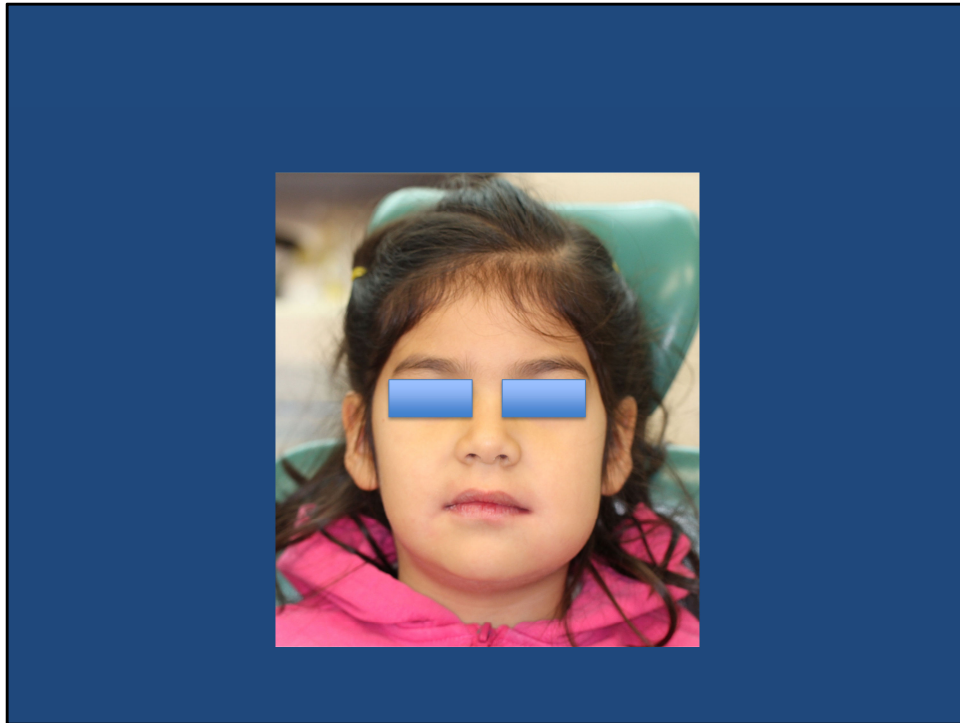
These are all very real problems associated with cavities in the young child.

We also know that Children do die from dental decay.

The child in this photograph has one visible abscess and all four of the upper front teeth had to be removed.



The child in this photograph has two abscessed teeth; the infected teeth had to be removed.



The child shown in this photograph has a dental infection that has caused a large amount of swelling of her left cheek.

She had to have the infected tooth removed and she has to be considered lucky; it is not unheard of that children with cellulitis need to be hospitalized and given intravenous antibiotics.

## Quality of Life

- Ability to eat
- Ability to speak
- Socialize with discomfort or embarrassment
- Chronic dental pain
  - Irritability
  - Disruption of normal sleep patterns
  - Impact on growth



Children who have lost teeth often have to cope with difficulties eating and speaking.

They have to deal with social issues that no child should ever have to deal with and they are often forced to live with chronic pain that prevents them from sleeping through the night and from getting adequate nutrition.

## Dental Caries

- **Multifactorial**
  - Genetics
  - Fluoride exposure
  - Oral hygiene
  - Parental involvement
  - SES
  - Access to care
  - Diet
  - Nursing habits

We know that fluoride alone is not the answer.

But we do know that fluoride, when it is in our water, reaches everyone.

## Fluoride

- Centre for Disease Control (CDC) – “the CDC has recognized the fluoridation of drinking water to prevent dental decay as **one of the 10 great public health achievements of the 20<sup>th</sup> century**”

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## Fluoride

- Community water fluoridation reaches everyone
- It is economical
- Dorval, Quebec – removed fluoride (2003 – 2006) from the water and decay rates doubled
- Primary action is topically, after the teeth erupt
- Optimally fluoridated water – not more

Community water fluoridation reaches everyone; it is economical.

Its removal from the water supply will lead to an increased amount of decay as we learned from Dorval, Quebec.

And no one is asking for fluoride in excess of what we already know is an optimal level.

## General Anaesthesia

- In 2011:
  - Approximately 110 days set aside to treat children under general anaesthesia (office and hospital setting)
  - 573 patients treated under GA
  - 343 (60%) Municipal or Provincial assistance

In my practice alone, we set aside 110 days to treat children under GA in 2011.

60% of those children receive some form of municipal or provincial assistance; the others either had federal assistance, private insurance, or no dental benefits of any kind.



- In addition to the cost of treatment there are other costs:
  - Pain, infection, suffering, nutritional concerns
  - Time away from school; decreased performance at school
  - Parents time away from work
  - Costs of hospital visits – ER / OR

The cost of the treatment is just the beginning – plans have to be made to look after brothers and sisters, parents have to travel, take time off work, and there are so many other financials costs – costs to the parents and to all of us through the various programs available to children.

Visiting the emergency room or taking a child to the operating room is very expensive.

- These are the teeth of a 5-year-old boy who grew up in a non-fluoridated community



I have no doubt that if we allow fluoride to be removed from our water we will see many more children who look like this.



RISKS VS. **BENEFITS**

As far as I can tell the Benefits far outweigh the risks.

I can't even begin to imagine .

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I can't even begin to imagine what the impact will be on the oral health of children if fluoride is removed from our water.

I can't even begin to imagine the increased costs as the amount of decay increases.

And, I can't even begin to imagine how we will ever treat all the children who will require our services.

Thank you for this opportunity to speak.