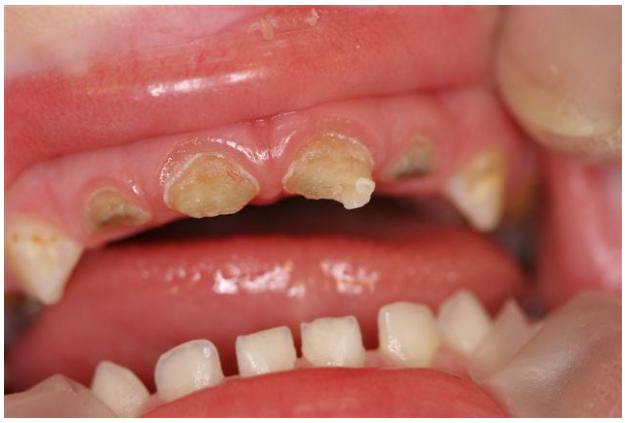
HIDDEN IN PLAIN SIGHT: THE MISSING VARIABLE

EARLY CHILDHOOD CARIES IS A PROGRESSIVE, INFECTIOUS DISEASE THAT IS ABOUT MORE THAN JUST "BABY" TEETH

Dr. Leonard Smith©



Early Childhood Caries (ECC), formerly called baby bottle decay, is the most common, chronic progressive, infectious disease in children 5 and younger in North America. [1]

It has been defined as "the presence of 1 or more decayed (non-cavitated or cavitated lesions), missing or filled tooth surfaces in any primary tooth in a child less than 6 years of age. In children younger than 3 years of age, any sign of smooth-surface caries is indicative of severe early childhood caries (SECC). [2]

Early childhood caries must be viewed as a **MAJOR PUBLIC HEALTH ISSUE**, rather than just an oral health issue. The National Center for Health Statistics[3] reports that the incidence of this infectious disease in children between 2 and 5 years of age involves 23% of them or approximately 5 million children in North America and that 23% of those or approximately 1.2 million **never receive any treatment!** [3]

That is 1.2 Million children suffering tooth ache, sleep deprivation and malnutrition for weeks, months or years! These children are truly neglected and/or abused. They are seriously emotionally and physiologically stressed.

These realities are truly sad and beg the question as to why this is happening. Dental caries is the easiest disease to prevent at nearly no expense to the family. The sad truth is that the general public does not hear, does not read or more importantly does not believe what we, as Professionals, are trying to teach: ECC is a disease that is about **more than just BABY teeth**.

The lesson we are teaching is that the mouth is the gateway to the body and if it is not healthy then the rest of the developing body in children will not be healthy either. The ramifications for the child, their family and the entire community are serious and long lasting!

There is an urgent need to integrate the ideals of both the Oral Health Profession and the Medical and affiliated health Professionals when dealing with the target of our ideals - the whole person, be they an infant, toddler, child, adolescent or adult.

It is imperative that all individuals who are involved with the developing child begin to recognize and accept the child as a whole being and that anything that impedes the healthy, normal development of that person impacts the whole, not just part of the whole.

The oral cavity is the beginning of the gastrointestinal tract and the anus is the end. All of the structures that are related to this anatomic part of the body have a connection to the systemic arterial and venous systems, to the central and peripheral nervous system and to the lymphatic system. All of these systems are interconnected and an acute or chronic, infectious disease in one can, potentially, impact all of these systems and their correlative or associated organs.

Many studies have examined the impact that race and socio-economic levels have on the incidence and severity of early childhood caries.[4+5] These parallel the results for socioeconomic and racial disparities in physical and neurologic disease. [6+7]

The Adverse Child Experience (ACE) study [8], by the Kaiser Permanente hospital and the CDC examined 17,500 adults, all of whom reported being neglected or abused as children. This study is one of the largest demonstrating links between childhood maltreatment and the serious negative ramifications experienced by these children in their adolescent and adult lives.

This study clearly demonstrates that early, negative childhood experiences, including chronic neglect chronic abuse, and residing in a dysfunctional home(including spousal abuse) were associated with statistically significant increases in obesity, diabetes type 2, cardiovascular disease, hypertension, anxiety disorders, addictive behaviors, and suicide.

The one anatomic variable that has rarely been included in this and other studies is the history of, or current health of, the primary dentition.

With the confluence of this and other newer studies that do include the oral health history showing the relationship of ECC or S-ECC to iron deficiency, iron deficiency anemia, [9,10] protein deficiencies (albumin), Vitamin D deficiency, [11,12,13] pain and infection, increased salivary cortisol levels, [14] children

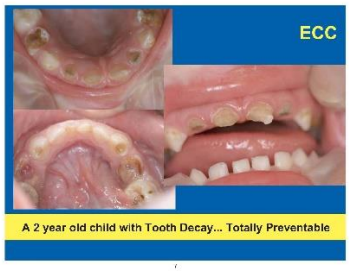
who have treatment delayed or those who never receive any treatment are seriously emotionally and physiologically stressed.

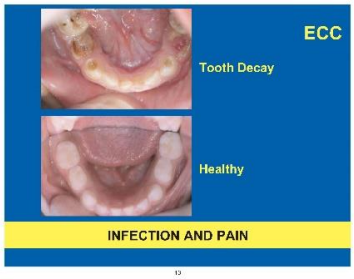
The Center for the Developing Child at Harvard University has defined toxic stress as [15,16]... "the extent to which stressful events have lasting adverse effects is determined in part by the individual's biologic response (mediated by both genetic predispositions and the availability of supportive relationships that help moderate the stress response) and in part by the duration, intensity, timing and context of the stressful experience."

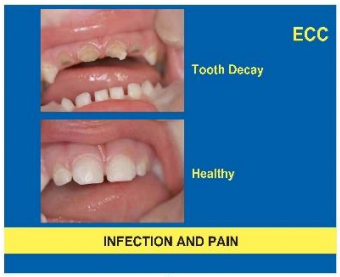
They further state," the most effective prevention is to reduce exposure of young children to extremely stressful conditions such as recurrent abuse, chronic neglect, care givers mental illness or substance abuse and/or violence or repeated conflict."

It is the author's opinion that these children who have oral care delayed for months, years or never receive treatment are suffering from recurrent abuse and chronic neglect. They are being tortured!

They have a high probability of developing the neurologic changes in the nuclei of the limbic system that impacts them negatively for their whole lives.[17]







RULES FOR PARENTS

Prevention of dental disease begins at birth. After your baby's first feeding, use a washcloth to wipe off the gum pads of all residual milk.

NEVER put a bottle that has been filled with formula, juice, or soda pop in the crib with the baby. If the baby needs to drink while in the crib, then only give water.

When the teeth begin to erupt around 6 months of age, wipe off all 5 surfaces of each tooth. If the teeth are touching each other, then those surfaces that are touching need to be flossed.

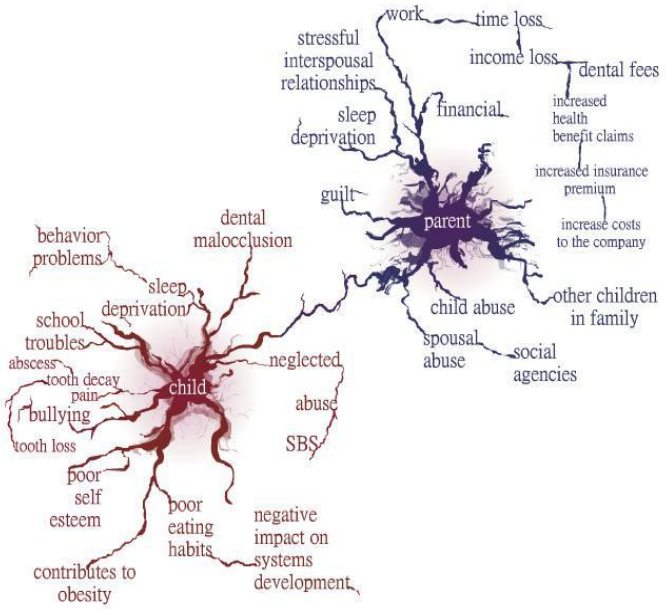
Have your pediatric dentist teach you how to do this. Have the baby lying on one parent's lap so their legs are wrapped around that parent's waist. The baby is face up and lays back into the lap of the other parent .That parent then has great access to see into the baby's mouth and all the teeth can be easily brushed and flossed - all the while the baby is being hugged by the other parent.

No age is too young to have your child seen by a pediatric dentist. The current recommendation of the Canadian and American Dental Associations, the Canadian Academy of Pediatric Dentists, the American Academy of Pediatric Dentistry and the Canadian and American Academies of Pediatrics is that all children should have their first dental visit at 6 months but no later than 12 months of age.

It is the obligation of all health professionals to ensure that all of the children they see in their respective offices be referred to an oral health provider or, alternatively, to learn how to do an oral health assessment as part of a well baby visit!

Prevention is the BEST treatment™

ECC IS ABOUT MORE THAN JUST "BABY" TEETH



©Dr.Leonard B Smith 2006

REFERENCE LIST

1. US Department of Health and Human Services. Healthy people 2010: Understanding and Improving Health. Washington ,DC :US Government Printing Office:2000
2. Reference Manual of the American Academy of Pediatric Dentistry VOL. 34/No6

3. Dye et al-NHANESIII 2007
4. Edelstein BL. The Dental Caries Pandemic and Disparities Problem .BMC Oral Health.2006;6
5. Hobdell MH, Oliveria ER ,Bautista R ,Myburgh NG, Lalloo R ,Narendran S,et al. Oral Diseases and Socio-Economic status. British Dental Journal.2003; 194(2):91-96
6. Commission on Social Determinants of Health Closing the Gap in a Generation: Health equity through action on the social determinants of health. World Health Organization;Geneva:2008
7. Irwin LG,Siddiqi A,Hertzman C. Early Child Development: A Powerful Equalizer. World Health Organization Commission on Social Determinants of Health; Vancouver,BC 2007
8. Centre For Disease Control and Prevention: CDC and ACE study Jan18 2013
9. Schroth RJ,Levi J,Kliewer E, Friel J,Moffatt M EK,; Association Between Iron Status, Iron Deficiency anaemia, and Severe Early Childhood Caries: a case–control study
10. Mobley C ,Marshall T.A, Milgrom P, Coldwell S E:The contribution of Dietary Factors to Dental Caries and Disparities in Caries: Acad Pediatr.2009;9(6):410-414
11. Taylor GF, Marshal Day CD; Dental Caries,Vitamin D,and Mineral Deficiencies: Br.Med J 1939 May 6;1(4087):919-921
12. Hujoel PP; Vitamin D and Dental Caries: Systemic Review and Meta analysis: Nutrition Reviews Vol.71Pp88-97 Feb. 2013
13. Schwalfenberg Gerry K-A review of the Critical Role of Vitamin D in The Functioning of the Immune System and The Clinical Implications of Vitamin D Deficiency-Mol.Nutr.Food Res 2011,55 96-108
14. Boyce WT et al - Social Inequalities in Childhood Dental Caries: The Convergent Roles of Stress, Bacteria and Disadvantage: Soc Sci Med 2010 November;71(9):1644-1652
15. Center on The Developing Child at Harvard University:Toxic Stress Response:The Facts 2011
16. Shonkoff Jack P, Garner Andrew S et al. The Lifelong Effects of Early Childhood Adversity and Toxic Stress-Pediatrics vol 129,Number 1,January 2012
17. Adriana Torres-Vega et al: Limbic system pathologies associated with deficiencies and excesses of the tract elements iron, zinc, copper and selenium: Nutrition Reviews Vol 70 Issue 12 Pp 179-192 Dec.2012