Infant Oral Health and the TOTs Program – Treating Our Toddlers

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Infant Oral Health & ECC
Changing Attitudes
Dental Caries

- The most prevalent infectious and chronic disease of children - associated with costly treatment.
- Rising among under-privileged groups – developing and developed countries.
- Affects > 1 in 4 US children aged 2-5 years.
- Caries in primary dentition can have life-long consequences:
  - Nutrition
  - Growth
  - Development
  - ECC predicts in permanent dentition.
Dental Caries

Urgent need for more effective strategies for caries risk assessment and cost-effective interventions that can be widely used in populations
Early Childhood Caries (ECC)

- A severe rapidly progressing form of tooth decay in infants and young children
- Affect teeth that erupts first: maxillary anterior
- Prevalence: 5% of all US children / 30% of low income children
ECC

- **Early Childhood Caries (ECC)** defined by:
  - Presence of $\geq 1$ cavitated or noncavitated lesions
  - Missing tooth due to caries
  - Filled surfaces in any primary tooth in child <6 years old

- **Severe ECC (S-ECC)** in children < 3 yrs. defined by any sign of smooth-surface caries

- ECC & S-ECC prevalent in underserved population and ethnic minorities

- 75% of ECC is found in children age 2–5 years
ECC

- Children ages 1–6 years
- Lesions can progress rapidly: enamel on primary teeth is thinner
- Advanced cases or involving very young children require GA or sedation to treat
- Advanced stages can cause systemic infection and even death
GOAL...

GET THESE PATIENTS A DENTAL HOME BEFORE THEY DEVELOP ECC
Keys to Preventing ECC

✓ Access to a dental home
✓ Early and adequate exposure to systemic and topical fluoride
✓ Decreased frequency of exposure to fermentable carbohydrates (i.e. sugar and starches)
✓ Good oral hygiene
Dental Home

- The ‘dental home’ concept derived from the AAP recommendation that every child should have a ‘medical home’
- The intention is to promote health care for infants, children and adolescents- continuous, comprehensive, family-centered, coordinated, compassionate and culturally appropriate.
Dental Home

- Medical – refer a child for oral examination and risk assessment – BEFORE 1 YEAR OLD – will establish the child’s dental home
- Provide an opportunity to monitor and implement preventive oral health habits (individual needs!)
- Maintain child’s cavity free status and prevent other oral diseases
Early Prevention

**EDUCATION**

- Diet and Nutrition
- Oral Hygiene
- No Tobacco Use

**PREVENTION SERVICES**

- Community water fluoridation
- Topical fluoride / Varnish
- Fissure Sealants
- Regular dental visits (starting before 1 y.o.)

- RESTORATIVE (most expensive)
Rationale for Early Prevention

Untreated Dental Caries may lead to:

- Pain and suffering
- Diminished psychosocial wellbeing
- Reduced quality of life
- Failure to thrive
- Systemic diseases
- Death
Rationale for Early Prevention

- Oral diseases and conditions can be prevented and controlled at reasonable cost through personal and population-based prevention.

- School nurses in Florida report that dental problems are one of the leading causes of missed school days.

- For every 1 dollar spent on prevention, save up to $50 in restorative and emergency dental care cost.
TECHNIQUES & STRATEGIES
This technique has been also defined as *Interim Therapeutic Restoration (ITR)* in the oral health policies of the AAPD.

World Health Organization recognized ART as means of restorative and preventive care in populations with little access to dental care

Indications

ITR has been shown to reduce levels of cariogenic bacteria in the oral cavity, “caries control”

Atraumatic Restorative Treatment

ART

- ART procedure is based on excavating and removing caries using hand instruments only and restoring the tooth with an adhesive filling material (glass ionomer)
- ART includes prevention and treatment of dental caries
Indications

When circumstances do not permit traditional cavity preparation, ART/ITR may be beneficial and is best used as part of comprehensive care plan.

Indications

Initially developed to treat low access population, as a temporary treatment until conventional treatment may be provided (caries control)
Indications

ITR may be used to restore and prevent further decalcification and caries in:

- young patients
- uncooperative patients
- patients with special health care needs
- when traditional dental restorations are not feasible and need to be postponed

For patients who suffer from fear and anxiety towards dental treatment
Indications

ITR may be used for step-wise excavation in children with multiple open carious lesions prior to definitive restoration of the teeth.

Fluoride releasing materials (GIC) reduce the development and progression of caries on adjacent proximal surfaces

Qvist et al. *Int Dent J* 2010; 60:156-60.
Silver Diamine Fluoride (SDF)
Bactericidal activity of silver ion has been known since ancient times (Matsumura et al. 2002)

First medicinal use for silver: around 1000 BCE for storing potable water

Research on SDF is as old as studies on dental caries

Silver salts can provide pronounced antimicrobial action: have a long history in medicine and dentistry
Silver Diamine Fluoride

- Antimicrobial use of silver compounds pivots on the 100-year-old application of silver nitrate, silver foil, and silver sutures for the prevention and treatment of ocular, surgical, and dental infections
- Ag+ kills pathogenic organisms at concentration <50 ppm
- Current/potential anti-infective applications include acute burn coverings, catheter linings, water purification systems, hospital gowns, and caries prevention”

Silver Diamine Fluoride (SDF)

Specific interest in SDF centers around its 5 presumed attributes:

1. Control of pain and infection
2. Ease and simplicity of use
3. Affordability (pennies per application)
4. Minimal personnel time and training (one minute, once per year)
5. Non-invasive

Silver Diamine Fluoride: Mechanisms Of Action ...
Silver Diamine Fluoride (SDF): Mechanisms of Action

- SDF is a clear liquid
- pH around 8.0
- Silver nitrate (AgNO₃) & sodium fluoride (NaF)
- Reacts with fluoride hydroxyapatite producing calcium fluoride (CaF₂) and silver phosphate (Ag₃PO₄)
  - CaF₂
    - reservoir of fluoride
    - neutralizes any imbalance in demineralization/mineralization process
  - Ag₃PO₄
    - Crystal of low solubility in the oral environment
    - Yellowish color – darkened by sunlight or reducing agents
SDF Mechanisms of Action

- The action of silver on proteins ensures **antibacterial** action of SDF
- The inactive protein clots enzymes of bacterial metabolism and
- Reduces microbiota involved the carious process, inhibiting bacterial growth and adhesion of the biofilm
Reports found no severe pulpal damage

Effective agent in preventing new caries

Effective in arresting caries in primary teeth

Can be used to arrest caries progression in very young children – ECC – less cooperative allowing definitive restoration when the child is older and more cooperative

Clinical Applications
Clinical Applications...

SDF as a dental caries preventive agent:

precipitation of phosphate (CaF$_2$) + phosphate of silver (AgPO$_4$)

Enamel more resistant to bacterial acids
Clinical Applications

Mechanism of action based on 2 main constituents:

- Silver nitrate (AgNO$_3$): potent on protein coagulation
- Sodium fluoride (NaF): reacts with enamel to form silver phosphate (AgPO$_4$) = resistance against dental caries
SDF: Advantages

- Arrest dental caries (many countries)
- Effective
- Inexpensive / affordable
- Simple application
- No costly equipment or infrastructure
- Non–invasive
- No known side effects
SDF: Disadvantages

- Stains carious teeth /tissue
- Turns the arrested caries black
- Unpleasant metallic taste
SDF: Protocol

- SDF is NOT an optimal clinical procedure BUT a palliative treatment

- When ART/IRT not possible: infants, toddlers

- Potential use in public health settings; allows treatment and prevention at the same time, easy to apply, noninvasive, requires minimal training, inexpensive

*(Rosenblatt et al, 2009)*
SDF: Protocol

- Prophylaxis
- Vaseline – soft tissues adjacents
- Relative isolation: cotton rolls / gauze
- Suction / Drying
- Application using a micro brush for ~ 2–3 min
- Wash with water
- No specification for the number of applications

Deep cavities: consider pulp effects
Complete Therapy

SDF stained lesions  Caries removal  Final restorations
SILVER DIAMINE FLUORIDE

INDICATIONS
- Control of Incipient/Advanced Caries Lesions
- Prevention of Recurrent Caries
- Dentin Desensitizing Agent

COMPOSITION
- Silver Diamine Fluoride 380 mg per 1 ml (38%)

APPLICATIONS
- Early application of SDF can effectively control multiple quickly progressing lesions in primary teeth
- SDF is also very effective in desensitizing hypersensitive dentin and treating pain associated with abrasions and temperature.
Application Technique

1. Prophylaxis or cleaning (wet gauze) to remove residual food and debris
2. Carious tissue DOES NOT need to be removed
3. Gently apply the SDF with a micro brush
4. Wipe off the excess with a wet gauze or water
5. Make sure the soft tissues are protected during application (Vaseline, cotton roll, gauze)
Silver Diamine Fluoride

“This study has comprehensively showed that SDF possess an antimicrobial activity against cariogenic biofilms of *S. mutans* or *A. naeslundii* formed on dentine surfaces. In addition, SDF slowed down demineralisation of dentine. This dual activity could be the reason behind clinical success of SDF.”

Clinical Prevention Strategies
Optimal Oral Health Supervision

- Pregnant Women & New Mothers
- Children age 0–3 years
- Special Attention
  - Infants with special needs
  - Infants or mothers with high caries risk
  - Infants with visible caries lesions and plaque accumulation
  - Infants who sleep with a bottle / sippy cup
  - Infants from underserved background
  - Late-order offspring
Anticipatory Guidance

Patient counseling that focuses on disease prevention, health promotion and health education
Anticipatory Guidance – TOPICS

- **Fluoride**
  - Topical – toothpaste, varnishes, rinses & saliva
  - Systemic – supplementation, water fluoridation

- **Diet & Nutrition**
  - Bottle issues – contents
  - Frequency of feeding – avoid ad lib or continuing bottle or breast feeding

- **Oral Hygiene**
  - Brushing as a supervised event
Educating Parents & Caregivers

- Teach and Demonstrate
- Practice with parents lifting the lip and brushing during examination
Family Oriented Oral Health Education

- Oral health of mothers /caregivers and children are closely entwined
- Family oriented intervention : focus on improving both maternal/caregiver & child oral health at all stages of development
- Preventive counseling : should begin during pre natal period and continue after birth of the child
- Utilize MOTIVATIONAL INTERVIEWING techniques
Pregnant Women & New Mothers

**GOALS**

- Have pregnant women & new moms under care of oral health professional
- Informed of preventive dentistry
- Informed of oral developmental issues
- Understanding and practicing good oral hygiene
- Understanding dietary behaviors
- Having no oral disease or injury
Babies

Oral health education continues after the baby is born ...

*Information for Mothers and Intimate Caregivers:*

- Changes in the teeth and in the mouth
- Oral hygiene practices:
  - Frequency
  - Problems: non-nutritive sucking (pacifier, thumb sucking, finger)
- Guidance for transition in dietary practices (e.g. breast feeding, sippy cup, puree food)
- Illnesses and infections
- Procedures for injuries to the teeth and mouth
Babies - Infants

- First oral examination around 6 months of age – no later than 12 months
- When oral examination by a dentist is not possible: the oral disease risk assessment should be performed by a pediatrician or other qualified health professional
- Integrated multidisciplinary approach important as referrals will be generated by the first care providers
Lift The Lip & Assess

- Presence of plaque
- Gingival bleeding
- White spots or active dental decay
- Tooth defects
- Fistulas, pus, ulceration, swelling of gum tissues/face
- Provide education on brushing and diet during examination
Myths & Misconceptions

Myth: Fluoride toothpaste is harmful to children.

Evidence shows that fluoride is actually extremely helpful for preventing cavities. A smear of toothpaste can be used for brushing or applied to the tooth surfaces after brushing.

Myth: Children don't have to go to the dentist until they start school.

It is actually recommended by most pediatric dentists that you bring a child in before they are 1 year old -- between 6 months and 1 year.

Myth: A mother’s dental health does not affect her child’s dental health.

Even before the baby’s birth, parents and other caregivers should make sure their own mouths are as healthy as possible to reduce transmission of caries-causing harmful bacteria from their saliva to the newborn baby’s mouth. Family members or caregivers should be counseled on ways to prevent the transmission.

The purpose of this pamphlet is to provide a resource for pediatricians to make timely referrals and give excellent consultation information to families and caregivers of infants.

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Lift the Lip & Look

Infant Oral Health
Prevention Guide for Pediatricians

UF UNIVERSITY OF FLORIDA
College of Dentistry
Motivational Interviewing – Health Belief Model

Main components

- Perceived Severity
- Perceived Susceptibility
- Perceived Benefits
- Perceived Barriers
- Cues to Action
STRATEGIES

- Understand patient’s preconceived notions about role of health behavior change in illness prevention

- Assess
  - Patient’s perceived susceptibility to ECC & severity of the outcome
  - Perceived barriers & discuss how to overcome them
  - Perceived benefits & message

- Motivate
  - Posters and educational information displayed and available
Strategies

Avoid making assumptions !!
Do NOT assume...

- that patients are ready to change
- that patients are ready to follow YOUR behavior change recommendations

- ASK & LISTEN
Treating Our Toddlers – TOTs
An Infant Oral Health Program
Prevention & Disease Control

Parental EDUCATION and TRAINING
Primary Objectives of TOTS Clinic

✓ EDUCATION
   Parents/ Caregivers
   Patients

✓ EARLY INTERVENTION

✓ COMMUNITY AWARENESS

✓ PROFESSIONAL TRAINING
   Students pre-doctoral / postgraduate levels
TOTS: Target Populations

✓ Babies – Infants

✓ Pregnant Women / New Mothers

✓ Pregnant Teenagers
TOTs: Strategic Plan & Action

- Multidisciplinary & Interdisciplinary
  Medical – Pediatric Wards
  Nurses
  Speech Therapy
- Referral Centers:
- UF WIC Preventive Dental Program
- ORs
Pregnant Teenagers

✓ Mothers and kids are part of Pediatric Dentistry
✓ Both mothers and babies are high risk groups
✓ Possibility of early intervention
✓ Possibility of early education
✓ Possibility of successful disease prevention
Caries Risk Assessment

- RA is an estimation of the likelihood that an event will occur in the future
- CRA guides the clinical decision-making process
- Featherstone: “balance between pathological and protective factors can be swung in the direction of early intervention and prevention”
- Caries in the primary dentition is a strong predictor of caries in the permanent dentition
Caries Risk Assessment:  
RISK FACTORS

**Biological factors:**

- Frequency of fermentable carbohydrates
- Sleep habits (food source for the bacteria)
- Medications (reduced salivary flow)
- Continual bottle use
RISK ASSESSMENT

PROTECTIVE FACTORS

- Child’s exposure to fluoride
- Child’s exposure to calcium phosphate paste
- Child’s exposure to xylitol-based products
- Mother or caregiver is free of active decay
- Child’s access to regular dental care – dental home
Simple Tips for Early Oral Health

- Before your baby has teeth, you should clean their gums after every feeding. Use a clean, damp washcloth or a toothbrush made for babies with soft bristles.
- Also, start brushing teeth as soon as they come in, with a small toothbrush for babies and a small dab of fluoride toothpaste.
- Start using a cup with your baby by the time they are 6 months old, and by 12 months, switch from bottles to cups.
- Always hold your baby when feeding and take the bottle away once they have had enough to drink.
- Do not put your baby to bed with a bottle. It can cause tooth decay, sometimes called “bottle rot.”
- After every feeding, wipe your baby’s mouth and teeth with a clean, soft cloth to remove any milk or food around their teeth.
- Check your baby’s front teeth by lifting the lip to look for signs of early tooth decay.

See your child’s dentist as soon as your baby’s first tooth appears.

If you don’t have a dentist, please contact us so we can help you find one.

TOT’s Oral Health Program

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Pediatric Dental Center: 352-273-7643

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Consejos simples para la salud oral

- Antes de que su bebé tenga dientes, debe limpiarle las encías después de cada comida. Utilice una toallita limpia y húmeda o un cepillo de dientes para bebés con cerdas suaves.

- También, empiece a cepillarle los dientes tan pronto como se vean en las encías, con un cepillo pequeño para bebés y una cantidad muy pequeña de pasta de diente con fluoruro.

- Comience a usar un vaso con su bebé cuando tenga 6 meses de edad, y a los 12 meses reemplace los biberones con vasos completamente.

- Siempre sostenga a su bebé mientras lo alimenta y quitele el biberón una vez que haya bebido lo suficiente.

- No acueste a su bebé a dormir con un biberón, pues puede causar caries en los dientes.

- Después de cada comida, limpiele la boca y los dientes a su bebé con un paño limpio y suave para eliminar residuos de leche o comida.

- Examinele los dientes del frente a su bebé levantándole los labios. Los dientes saludables tienen un color uniforme. Si ve manchas o puntos en los dientes, llève a su bebé al dentista.

Consulte al dentista tan pronto como aparezca el primer diente a su niño.

Si usted no tiene un dentista, por favor, póngase en contacto con nosotros para que podamos ayudarlos a encontrar uno.

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El Tratamiento de Nuestros Niños
Información importante de salud bucal para bebés y niños
Good oral health for pregnant women is important for you, and for the health of your baby.

Did you know?

- Your oral health can affect your baby.
- Pregnant women who have gum disease may be more likely to have a baby that is born too early and too small.
- During pregnancy, teeth and gums need special attention.
- Regular tooth brushing with a fluoride toothpaste and daily flossing will help reduce dental problems.

See your dentist as soon as you find out you are pregnant.

If you don’t have a dentist, please contact us so we can help you find one.

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TOT’s Oral Health Program

Treating Our Toddlers

Important oral health information for pregnant women

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La salud oral de la mujer embarazada es tan importante para ella como para el bebé.

¿sabía usted?

- Su salud oral puede afectar a su bebé.
- Las mujeres embarazadas que tienen enfermedad de las encías pueden ser más propensas a tener un bebé prematuro y de bajo peso al nacer.
- Durante el embarazo, los dientes y las encías necesitan atención especial.
- El cepillado regular con una pasta de dientes con fluor y el uso diario del hilo dental, reducen el riesgo de problemas dentales.

Visite a su dentista tan pronto sepa que está embarazada.

Si usted no tiene un dentista, por favor, póngase en contacto con nosotros para poder ayudarla a encontrar uno.

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El Tratamiento de Nuestros Niños
Información importante sobre la salud oral para las mujeres embarazadas
Important oral health information for

New and Expecting Moms

Pregnant women
- Your oral health can affect your baby.
- See your dentist as soon as you know you're pregnant. If you don't have a dentist, we can help you find one.
- Women with gum disease may be more likely to have a baby that is born early and small.
- Regular brushing with fluoride and daily flossing helps reduce dental problems.

Babies, toddlers and children
- Clean gums after every feeding with a clean, damp washcloth or a soft bristle toothbrush made for babies.
- Putting your baby to bed with a bottle can cause tooth decay or "bottle rot."
- Teeth can start coming in at 6 months old and continue until 3 years old. Take your baby to the dentist as soon as the first tooth arrives.
- Start brushing teeth right away with a small toothbrush and just a dab of toothpaste.
- Try a clean teething ring, cool spoon or a cold, wet washcloth for tender gums during teething.
- Start introducing a cup when your baby is 6 months old. By 1 year of age, switch from bottles to cups.
- Do not share forks, spoons, cups, etc. between family members. Dental decay bacteria can be passed on to all.
- Limit sugary drinks and food. Sugar makes it easier for decay to grow.
- Lift the lip to look for decay.

More resources:
Find a Dentist
www.aapd.org/findadentist
www.ada.org/adafindadentist/advancedsearch.aspx
www.knowyouroteeth.com/findadentist
Find Low-Cost Dental Care
www.nsrcra.gov/FindingDentalCare/ReduceCostFLCDC.htm
Find Health Insurance Coverage
www.coverageforall.org

For more information:
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Need help?
Call (352) 273-7643 and ask for the TOT’s Oral Health Program.

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Informe importante sobre la salud oral para las madres y embarazadas

Mujeres Embarazadas

- Su salud oral puede afectar la de su bebé.
- Visite a su dentista tan pronto sepa que está embarazada. Si no tiene un dentista, podemos ayudar a encontrarle uno.
- Las mujeres embarazadas que tienen enfermedad de las encías pueden ser más propensas a tener un bebé prematuro y de bajo peso al nacer.
- El cepillado regular, fluor y el uso diario del hilo dental, reducen el riesgo de problemas dentales.

Bebés y niños

- Limpie las encías después de cada comida con una toalla limpia y húmeda o un cepillo de dientes para bebés con cerdas suaves.
- No acueste a dormir a su bebé con un biberón, pues puede causar caries.
- Los dientes empiezan a salir a los 6 meses de edad, y siguen la "erupción" hasta los 3 años. Lleve a su niño a ver al dentista cuando los primeros dientes le salgan.
- Empiece a cepillar los dientes en cuanto estén en la boca, usando un cepillo de diente y un poquito de pasta dental.
- Use un anillo de dentición, una chuchara fría o paño húmedo para aliviar el dolor durante la dentición.
- Comience a usar un vaso cuando su bebé tenga 6 meses de edad. Al año reemplace los biberones con vasos completamente.
- La caries dentales pueden ser transmitidas entre las personas. No comparta los utensilios de comer entre familiares.
- Limite las bebidas y comidas azucaradas. El azúcar empeora las caries.
- Examine los dientes al levantarle los labios.

Necesita ayuda?
Llame a (352) 273-7643 y pregunte por el Programa de Bebés y Niños.

Más recursos:
Para encontrar un dentista
www.ada.org/ada/findadentist/advancedsearch.aspx
www.knowyouteeth.com/findadentist
Para encontrar cuidado dental de bajo costo
www.niddc.nih.gov/FindingDentalCare/ReducedCostCDC.htm
Para encontrar cobertura de seguro de salud
www.coveragotoral.org

Para más información:
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ANY OTHER QUESTIONS ...
COMMENTS ...
THANK YOU !!
OBRIGADA !!
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