

## Pediatrics Summaries

### Common Medical Concerns/Special Needs for Kids and Teens

- We don't believe in injections
  - o Child may be infected by something not immunized against, or could have been immunized against
  - o Religious/other beliefs against fluoride and other treatments
- Lots of ear infections when kid was 1-2y/o
  - o May indicate hypoplasia for teeth (molars, anteriors, etc)
  - o May have antibiotic reactions with development
- Child grinding teeth lots
  - Need to determine if habitual or pathologic
  - Monitor transition of primary to permanent dentition
  - o Asthma/asthma inhalers (30% of bruxers)
  - o Seizures (medication related)
  - o ADHD (medication related)
  - o GI tract – GERD (constipation, etc)
  - o Caffeine – TMD and bruxism
- Special Needs – any physical, developmental, mental, sensory, behavioral, cognitive, or emotional impairment or limiting condition that requires medical
- Is asthma considered special needs? Consider level of control, last time inhaler was used, severity, etc
- Is ADHD special needs? Falls under behavioral category

<ul style="list-style-type: none"> <li>- Common physical/developmental concerns                             <ul style="list-style-type: none"> <li>o Fetal ^OH syndrome</li> <li>o Premature birth</li> <li>o Malnutrition</li> <li>o Thyroid disorders</li> <li>o Cerebral palsy</li> <li>o Seizure disorders</li> <li>o Hydrocephalus</li> <li>o Muscular dystrophy</li> <li>o Down syndrome</li> <li>o Craniofacial conditions</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>- Mental, emotional, behavioral concerns                             <ul style="list-style-type: none"> <li>o Anxiety disorders</li> <li>o Depression</li> <li>o Bipolar</li> <li>o ADHD</li> <li>o Learning disorders</li> <li>o Conduct disorders</li> <li>o Eating disorders</li> <li>o Autism</li> <li>o Schizophrenia</li> </ul> </li> </ul>
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- How to deal with specific cases
  - o Lice (pediculosis) – cover up patients hair, cover up your own hair, inform parent, reschedule appointment if possible
  - o Ringworm (tinea capitis) – treat only when patient is on medication, cover up ringworm
  - o Acute conjunctivitis (pink eye) – reschedule if eye drainage is present
  - o Tonsillitis (strep pharyngitis) – okay to see 24h after they've started antibiotics
  - o Impetigo – okay to see 48h after they've started antibiotics
  - o Measles – okay to see 5 days after they've started antibiotics
  - o Chicken pox – okay to see 7 days after they've started antibiotics
  - o Exema – can be seen immediately, ask parents if they use cream daily
  - o Erosion (acid in or out) – pop, lime aid, juices, sour candies, GERD (sour burps)
  - o Runny nose – no nitrous sedation, seat upright, use mask and eyewear

- Sensory concerns (ADHD, autism, PDD, etc) – ask if certain sensory stimulations trigger anxiety
  - o Tactile – brushing, diet, contact
  - o Auditory – high speed, music, single chair
  - o Visual – movement, light
  - o Taste – places things in mouth, diet, fluoride/prophy, paste,
  - o Olfactory – gagging
  - o Vestibular – chair position, balance, space
  - o Proprioceptive – fine motor, trauma
- Common medical history Citings
  - o Asthma (Albuterol, pulmocort, nebulizer)
  - o Allergies (Claritin, Allegra, Zyrtec, Benadryl) – patient should also take asthma meds, causes xerostomia
  - o ADHD (Adderall, Ritalin) – parents may not have given drug to kid before appointment, kid may have sold drug onto friends
  - o Seizures (depatoke, Topamax, tegretol, Dilantin, valproic acid) – high sugar content in medication, may cause hyperplasia
  - o Depression (Prozac, Zoloft, Wellbutrin, celexa, paxil) – causes xerostomia, 2month recall indicated
  - o Ear infections
  - o GERD (antiacids, Pepcid, zantac, prevacid)
- Common concerns
  - o Child snoring at night – sleep apnea, bruxism, behavioral concerns
    - Monitor as patient grows older and transitions into permanent dentition
  - o Kid with ADHD comes in hyperactive – send home, have parent dose patient before next appointment
- Special considerations for older kids
  - o Substance abuse
  - o Eating disorders
  - o Child abuse/neglect
  - o Pregnancy – risk begins at age 12
  - o Parental considerations
- Other considerations
  - o **Premature birth – hypoplastic molars, delayed development**
  - o Malnutrition – enamel hypoplasia
  - o Fetal alcohol syndrome – growth retardation, cardiac concerns, neurological disorders, cleft palate, malocclusion
  - o Child substance abuse – multiple office history (office hopping), irregular care, xerostomia, effects on sedation, seizures, inappropriate behavior
  - o Self-image eating disorders – bulimia, decalcification, callus on soft palate, low blood pressure, bradycardia, tooth brush abrasion, gingival recession
  - o Overweight – diabetes, cardiac concerns, mental health, pulmonary concerns, orthopedic concerns
    - Need to check if it is a disorder or a dietary thing
    - 16% 6-9y/o are overweight
  - o Seizures – etiology, stability, seizure meds, gingival hypertrophy, interactions with sedatives, dental care needs and tooth trauma
  - o Cerebral palsy – maxillary protrusion (class II), caries/perio concerns due to care, neuromuscular concerns, seizures, bruxism

- Clinical implications
  - o Expectations for dental visit
  - o Radiographic prescriptions
  - o Risk assessment
  - o Treatment plan
  - o Prognosis of treatment
  - o Appropriate referrals
- MD and DDS collaboration
  - o Systemic disease oral manifestation – treatment affects oral status
  - o Dental implications during prevention/treatment
  - o Comprehensive care
  - o Patient pool referrals from source to source

## Informed Consent

- Informed consent = process of providing the patient (custodial parent or legal guardian) with relevant information regarding diagnosis and treatment needs so that an educated decision regarding treatment can be made
- The adult may not be legal guardian allowed to consent to health care decisions
  - o Consent by proxy, power of attorney, divorced parents
  - o Notarized consent – legal document (not just a note) with specifics of what is allowed (specific, like a checkup)
  - o Phone call consent – phone calls must be witnessed
- Other considerations
  - o Written consent (even when not mandated) may decrease liability from miscommunication
  - o Discussions of materials, procedures, etc takes time, signing should not preclude thorough discussion
  - o Provide informational booklets or videos
- Oral discussion is more important than written info
  - o Use simple terms, format understandable to a lay person
  - o Check name and birthday (from chart) to ensure no mixups
  - o Include name of guardian and relationship to patient
  - o List alternative treatments, adverse sequelae, and space to indicate all patient concerns have been answered
- Key sources of legal authority
  - o Statutes
  - o Court decisions
  - o Regulations
- Terminology
  - o Minor
    - Emancipated minor – living separated from parents/guardians, making his/her own financial decisions, married, or borne a child
    - Mature minor – must be judged capable of giving informed consent, applies only where no other options are possible and getting parental/guardian consent is problematic/impractical
      - Must be  $\geq 15$ , treatment is for minor's benefit and deemed NECESSARY, procedure does NOT involve high risk
        - o Emergency care, pregnancy related care, STDs, contraceptive care, abortion, ^OH/drug abuse related care
        - o Routine care MUST go through parent
  - o Consent – mature minor assumes financial responsibility when he/she consents to treatment
  - o Parental consent
  - o Confidentiality
    - Obligated to provide confidentiality to minors who give consent for their own care. ONLY that minor can authorize release of medical/mental health information where the minor has given consent.
    - Consent may be given only by  $\geq 15$ y/o
    - Confidentiality begins at 13y/o
  - o Parental notification – only in case where, by the professional's judgment, failure to inform parent/guardian would jeopardize minor's health

## Infant Oral Exam

- The Dental Home – where primary health care is best delivered where comprehensive, continuously accessible, family oriented, coordinated compassionate, and culturally effective care is available and delivered or supervised by qualified health specialists. Begins no later than 1y/o
  - o Comprehensive (acute, routine, preventative), continuously accessible, coordinated, family-centered, compassionate, culturally-effective
  - o Begins at 6months old, or 6months after first tooth erupts (no later than 12 months)
  - o Strong clinical evidence that early professional dental care complemented with caries risk assessment, anticipatory guidance and periodic supervision provides critical opportunities to implement preventative health practices
- Infant oral exam (code D0145 for first infant oral exam insurance purposes)
  - o Oral exam for kid  $\leq 3y/o$ , preferably within first 6months of first tooth eruption
  - o Recording oral and systemic health, caries evaluation, susceptibility
  - o Counseling parents/guardians on preventative care and communication
- Early Childhood Caries
  - o  $\geq 1$  decayed lesions, missing or filled tooth surfaces in any primary teeth in a preschool aged kid
    - Birth – 71months old
- Severe ECC
  - o Kids  $< 3y/o$  with any sign of smooth surface caries
  - o Kids 3-5y/o with 1 or more cavitated or missing (from caries) surfaces in primary maxillary anteriors
    - dmf (decayed, missing, filled) score #, followed by patient age in brackets
    - Lower case dmf = primary teeth
    - Capitalized dmf = permanent teeth
- Newborns don't have streptococci in oral cavity when born
  - o Mother (saliva) is a strep reservoir, and the earlier the baby is colonized the worse off the baby is
- Consequences of ECC
  - o Increased caries risk
  - o Hospital emergency visits
  - o Increased treatment costs and time
  - o Altered physical development, diminished quality of life
  - o Diminished ability to learn, decreased school days
- Interventions for ECC
  - o Perinatal parental education, establishment of early dental home
  - o Risk ID, anticipatory guidance, preventative services, intensive disease management
- Significant changes have increased older children's oral healthy
  - o Kids 2-5y/o still at increasing caries risk – more needs to be done
    - These kids are not seen nearly as often by dentists
- Caries risk assessment – essential element of contemporary clinical care for infants, kids, adolescents
  - o The determination of likelihood of the incidence of caries during a certain time period
    - Number of new cavitated or incipient lesions
  - o Also includes likelihood of change in size or activity of lesions already present
- Risk assessment – includes social, behavioral, microbiological, environmental, and clinical variables
  - o Health history, diet/nutrition, fluoride, oral habits
  - o How often does child brush, number of snacks between meals, family caries history, fluoride history, circumstances that may impact home care

- Caries risk indicators – help determine if additional diagnostic procedures are required
  - o ID patients who needs caries control measures
  - o Assess impact of caries control measures
  - o Guide in treatment planning decisions
  - o Determine timing of recall appointments
- Caries risk indicators in primary dentition
  - o Previous caries experience
  - o Level of parental education
  - o Socioeconomic status
- Recommendations
  - o Preventative
    - Oral hygiene
    - Diet
    - Fluoride, other antibacterials
    - Recalls
    - Treatment
  - o Anticipatory
    - Home care/fluoride – kids start brushing their own teeth 6-8y/o (parents help before then)
      - The earlier the kid starts brushing him/herself, the better!
      - There are very few fluoride supplements
    - Teething – “pain” – parents need to figure out if another source is the problem
      - Pain could be an ear ache, diarrhea could be from a dietary change
    - Pacifier/digital sucking habits
      - o Nutritive seeking = eats food
      - o Non-nutritive seeking = doesn't eat food
      - Can change tooth alignment
        - o Check for tooth marks on the thumb (thumb sucker)
        - o Pacifier is better than thumb sucking – easier to change pacifier habit
    - Emergency treatment
    - Diet – analyze frequency of meals/snacks
      - Bottle caries – upper caries, tongue blocks from lower caries
      - Kids should never go to bed with a sippy cup – should go to bed with water only
      - Bottle feeding – unrestricted (at will) intake of sugary liquids during daytime or bedtime should be discouraged – should finish bedtime/naptime food before going to sleep
      - Breast feeding – if unrestricted, can have same problems as bottle feeding
        - o HOW breast feeding is done is what matters
      - Combination of breast feeding with bottle feeding can cause problems
      - Kids should be encouraged to use a cup by their first birthday
        - o Frequent use of a training cup (unrestricted) should be discouraged
      - Very little nutritional value in juice
        - o Increased intake of high sugar foods linked to:
          - Type 2 diabetes
          - Cardiovascular disease – HTN, hypercholesteremia, dyslipidemia
          - Psychological stress – depression, low self esteem
    - Referral (if needed)

## Pain and Anxiety Management

- Options for Kids
  - o Verbal/behavior management
  - o Hold and go/restraint (protective stabilization)
  - o Nitrous oxide
  - o Oral sedation – healthy kids only
  - o General anesthesia (<5y/o usually insurance covered)
    - Health and those with medical conditions
- Criteria for Procedure Choice
  - o Temperament/behavior of kid – if parent can't brush kid's teeth, kid will be difficult
  - o Age of child
  - o Length of procedure
  - o Finances
  - o Child's medical/physical status
  - o Parenting style and choices
- Common Local Anesthetics
  - o 2% Lidocaine w/ 1:100,000 epi
  - o 2% lidocaine plain
  - o 3% mepivacaine – good for post-op pain control in pediatrics
    - Used w/o epi for patients with cardiac problems
- Considerations
  - o Health of patient
  - o Weight
  - o Maximum dosage
  - o Concentration/amount in carpal
- Drug Dosages
  - o Lidocaine – 2.0mg/lb, 4.4mg/kg, absolute max = 300mg
  - o 2% lidocaine = 20mg/ml
  - o Carpal with 1.8ml = 36mg lidocaine in a carpal!
- Local Toxicity
  - o LA's easily cross BBB and depress inhibitory pathways; kids with immature liver at higher risk
    - Drowsiness, tachycardia, talkativeness, nausea and vomiting, tremors of seizures
  - o Weigh patient on scale, calculate maximum dosage, check LA solution flow
- Lidocaine onset
  - o Infiltration = 2-4 minutes
  - o Block = 4-8minutes
- Behaviour Management
  - o Tell-show-do
  - o Positive reinforcement
  - o Distraction
  - o N<sub>2</sub>O
  - o Use kid friendly words and descriptions

- Injection Technique
  - o Dry area, apply topical to dry area for 1min (keep area dry), have assistant pass needle and uncap, stabilize patient’s head, inject
    - Use positive reinforcement, distraction, N<sub>2</sub>O – bad injection can scare away patient
  - o For infiltrations, blanching of tissue is good
  - o For IAN, use topical for 2min, kid’s ramus is shorter vertically and narrower anterior posteriorly
    - Mandibular foramen is lower in kids than in adults
  - o Use blue, 27 gauge needle
- Post-op instructions
  - o Kid will be numb for 2h – discomfort and tingling as LA wears off
  - o Tylenol and motrin as needed
  - o Be aware of cheek chewing, thumb sucking, tongue biting
  - o Do NOT give kid gauze – choking worse than cheek chewing
- Nitrous Oxide
  - Anxiolytic, amnesia, analgesic
  - Does NOT eliminate pain (require LA) or reduce defiant behavior

<p><b>Indications</b></p> <ul style="list-style-type: none"> <li>- Anxiety</li> <li>- Gagging</li> <li>- Bronchial asthma – bad for uncontrolled asthma</li> <li>- Epilepsy and seizures</li> <li>- Sickle cell anemia</li> </ul>	<p><b>Advantages</b></p> <ul style="list-style-type: none"> <li>- Rapid onset (min)</li> <li>- Rapid peak clinical action</li> <li>- Titration possible</li> <li>- Only minor alteration of resp and cardio physiol</li> <li>- Degree of amnesia</li> </ul>
<p><b>Contraindications</b></p> <ul style="list-style-type: none"> <li>- Psychiatric disorders</li> <li>- Claustrophobic patients</li> <li>- Severe behavior problems</li> <li>- Upper resp infection/obstruction</li> <li>- COPD</li> <li>- Otitis media (N<sub>2</sub>O may absorb through ear membrane)</li> <li>- Chronic mouth breathers</li> </ul>	<p><b>Disadvantages</b></p> <ul style="list-style-type: none"> <li>- High cost of equipment</li> <li>- Potentiation with other sedatives</li> <li>- Staff training</li> <li>- Long term overexposure</li> <li>- Pregnancy risk</li> </ul>

- Pre-Op
  - o Talk to parents
  - o Emphasize safety
  - o Have child eat a LIGHT meal 2h beforehand
- Stages of N<sub>2</sub>O
  - Intro – 100% oxygen for 1-2min
  - Induction – 20% N<sub>2</sub>O with 5% incremental increase for 3-5min
  - Injection – 50/50 N<sub>2</sub>O/O<sub>2</sub>
  - Maintenance – 30-50% N<sub>2</sub>O, adjusted by kid’s response for duration of treatment
  - Withdrawal – 100% O<sub>2</sub> for 3-5min
  - o Total flow of 4.5-6L adequate (3L O<sub>2</sub>) – ADA requires minimum 20% O<sub>2</sub> admin
  - o Look at reservoir bag
  - o Patient has glazed eyes, nose piece can hide needle
  - o Tell show do – tell patient you’re using elephant nose, demonstrate on yourself, have kid help put mask on and tell kid to breathe through nose, use hypnotic voice

- Terminology
  - Ask patient
    - Do you feel like a butterfly is walking on your hand?
    - Does your tummy feel warm?
    - Is my voice far away?
    - Do you feel like you're flying?
  - Stages and Onset of N<sub>2</sub>O
    - 10-20% - warm tingly feeling
    - 20-30% - numbness of extremities
    - 35-40% - enhanced sedation, some analgesia, feeling heavy, trance-like eyes, hearing things distantly but still distinctly, numbness in hands, feet, thighs
    - 50% - all subjective states intensified EXCEPT analgesia
    - >50% - deep sedation – dangerous state for dentists unfamiliar with this state
- Complications
  - Throwing up
    - Tell patient every weird feeling is okay EXCEPT tummy feeling bad
    - Take off mask, turn patient towards you, have suction ready
    - 100% O<sub>2</sub>
  - Termination
    - Not metabolized by body, diffuses out of blood to alveoli easily
      - 3-5min for kids, 5-10min for adults
  - Diffusion hypoxia
    - Rapid N<sub>2</sub>O diffusion out of blood into lungs blocks O<sub>2</sub> diffusion into blood
      - Headache, nausea, lethargy
    - This is why 3-5min 100% O<sub>2</sub> at end is needed
- Concerns
  - N<sub>2</sub>O abuse
  - Sexual awareness – have 3<sup>rd</sup> person in the room
  - Case selection is important
  - Must check patient responsiveness periodically

## Pediatric Radiographs

- When needed, parents CANNOT release provider from liability for subsequent damaged which radiograph may have prevented
  - o NEEDED for proper diagnosis
- CANNOT take X-rays until AFTER clinical exam
  - o Only when diagnostic yield will affect patient care
- Taken for these 3 reasons
  - o Initial/periodic exam
  - o Post-op evaluation
  - o Specific clinical indications
    - Suspected/visible caries
    - Suspected pulpal/periapical pathology
    - Trauma
    - Eruption problems
    - Developmental anomalies
    - Unexplained tooth discoloration
    - Orthodontic eval
    - Evidence of swelling/fistula
    - Unexplained tooth mobility
- To view the upper lip (soft tissue), expose at 25% normal PA exposure time
- Digital Radiography

<ul style="list-style-type: none"> <li>o Advantages           <ul style="list-style-type: none"> <li>▪ Time efficient</li> <li>▪ Can manipulate images</li> <li>▪ Easy to save and retrieve</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>o Disadvantages           <ul style="list-style-type: none"> <li>▪ High replacement costs</li> <li>▪ Initial setup costs</li> <li>▪ Size/rigidity of sensors</li> </ul> </li> </ul>
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### - Types of dental radiographs

- o Bitewing – interproximal caries, occlusal caries into dentin, caries under restorations
  - Surfaces involved, depth of lesion vs pulp, presence/absence of some permanent teeth
  - Sizes “2” (31mm high), “1”, “0” (22mm high)
    - If patient has 6year molars, good to try size “2”
    - #2 films to visualize erupting permanent teeth
- o Periapical – normal or pathologic condition of tooth roots and supporting structure
  - Furcation of apical involvement, calcified tissues, external root or bone resorption, internal root resorption, anomalies of supporting bone/associated structures (cysts, supernumary teeth, ectopically erupting teeth, etc)
    - Good for showing external resorption
    - Good for tracking pre-op, post-op, follow up for pulpectomy
- o Occlusal – less common than PA, but useful to view:
  - Supernumary teeth, impacted canines, trauma to anterior teeth
- o Panoramic – provide baseline data for growth/development, evaluate changes over time
  - Presence/absence of permanent teeth, relative position of permanent teeth vs primaries, evaluation of boney lesions, TMJ
  - Requires for orthodontic evaluation

- Radiation safety
  - o Use lead shielding, including thyroid
  - o Use minimum needed # of films
  - o Use correct film size
  - o Use high speeds (E, F speed – similar to digital)
  - o Direct beam to exact location (film holders)
  - o Keep darkroom supplies up to date
- Introducing child to intraoral radiography
  - o Use tell-show-do with camera analog (Dry run)
  - o Match film size to comfort
  - o Obtain least difficult radiograph first (acquaint kid to radiography, anteriors usually easiest)
  - o Have x-ray machine ready to go – some kids can only hold film in mouth for short time period
- Methods for control
  - o Tell-show-do – introduces procedure to kid, usually non-threatening and guides behavior to desired outcome
  - o Medical immobilization – SELECTIVELY used on uncompliant/special needs kids who are suspected of having caries or other oral pathology
    - Radiographs for noncompliant/special needs kids usually taken under general anesthesia (in hospital) or immobilized for a restorative procedure

**Radiographic views**

- o Maxillary periapical – beam at right angles to film, vertical angle 30-35°
  - Size “0” film for kids ≤6y/o, face of cone parallel to facial surfaces of teeth
- o Maxillary occlusal – kid bites lightly on film, 2mm of film extends past incisors. Vertical angle 60-65°
  - Size “2” film, bisecting angle technique
- o Mandibular PA – beam at right angles to film, vertical angle 5°
  - Size “0” film for kids ≤6y/o, face of cone parallel to facial surfaces of teeth
- o Mn occlusal – kid bites lightly on film, beam directed along midsagittal plane
  - Size “2” film, bisecting angle technique
- o Lateral jaw technique (buccal bitewings) – used when cooperation substantially limited
  - Use an occlusal film or rigid cassette
  - Beam enters below angle of Mn, vertical angle -20°
- o Posterior bitewing – face of cone parallel to film packet, beam directed through open embrasures
  - Vertical angulation 10°
    - Size “0” before first permanent molars are in occlusion
    - Size “1” <10y/o AND after first permanent molars are in occlusion

**Guidelines for taking radiographs**

	Primary (before eruption of 1 <sup>st</sup> molars)	Transitional (after eruption of first molars)
New patient	Bitewings if proximal surfaces or primary molars cannot be visualized/probed	Individualized radiographic exam consisting of bitewings, PAs, and/or panoramic
Recall @ high risk	Bitewings every 6months Panoramic age 8/9	Bitewings every 6months
Low risk	Bitewings every 12-24months Panoramic age 8/9	Bitewings every 12-24 months

## Caries Risk Assessment

- Easier to get caries if oral flora is colonized by cariogenic bacteria before other bacteria
- Best predictor of future caries is past caries experience
  - Challenge to predict future caries without past caries experience
- Oral biofilm composed of at least 40-60 different strains, difficult to isolate and “find” a single strain
- Different protocols/forms
  - ADA
  - AAPD
  - CAMBRA (academic institutions)
  - Other forms
- The caries balance

<ul style="list-style-type: none"> <li>○ Pathological factors (leading to caries)                             <ul style="list-style-type: none"> <li>▪ Acid producing bacteria</li> <li>▪ Subnormal saliva</li> <li>▪ Carbohydrate frequency</li> <li>▪ Poor health literacy</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>○ Protective factors (leading to no caries)                             <ul style="list-style-type: none"> <li>▪ Saliva</li> <li>▪ Fluoride</li> <li>▪ Antibacterials</li> <li>▪ Oral hygiene</li> </ul> </li> </ul>
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- This is a balance between demineralization and remineralization
  - Similar to a bank, use bank account analogy
  - Saliva = best form of protection against caries
- CAMBRA – caries management by risk assessment
  - Interview and clinical exam to assess risk of caries in the future
  - Works to alter balance between pathology and protective factors
    - White spot lesion considered an acute lesion on a kid = high risk
  - Strength – evolving with more evidence based recommendations
  - Weakness – sibling risk not included in factors
  - Will be adopted either by patient/client driven, or via lawsuit
    - Not enough to replace a filling – standard of care is caries control, not just intervention
- Planning for the future
  - CAMBRA – better to be patient/client driven
    - Addressing diagnostic vs surgical compensation
    - Time/effort/expertise need to be compensated
  - Clinical photographs can be useful to show improvement from baseline
  - Disease indicators – when were these last checked?
    - Restorations
    - Decalcification
      - Stark white – water is leaving lesion rapidly
      - If it’s shiny, probably remineralized. If NOT shiny, less mineralized
    - Cavitated lesions
      - It is almost impossible to clear the disease once it’s started
      - For very young kids, takes 2years for subclinical to manifest clinically
      - For >6y/o, takes 3years for subclinical to manifest clinically

<p><b>Risk Factors</b></p> <ul style="list-style-type: none"> <li>- Caregiver caries/bacterial count             <ul style="list-style-type: none"> <li>o Caregiver with active decay 3x more likely to have a kid with active decay</li> </ul> </li> <li>- Diet/habits</li> <li>- Medical condition</li> <li>- Health literacy</li> </ul>	<p><b>Protective factors</b></p> <ul style="list-style-type: none"> <li>- Oral hygiene</li> <li>- Fluoride exposure</li> <li>- Dental home             <ul style="list-style-type: none"> <li>o Psychologically, info isn't easily transferred by a stranger. Better if patient is familiar with you and your office before you educate them</li> </ul> </li> <li>- Saliva flow</li> </ul>
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- Caries risk assessment ages

<p><b>&lt;6y/o</b></p> <ul style="list-style-type: none"> <li>o Caregiver caries status             <ul style="list-style-type: none"> <li>▪ Exact genetic strain of oral bacteria is familial, but not understood how it is transferred</li> </ul> </li> <li>o S. mutans transmission caregiver to child</li> <li>o Child bottle use (ex:// night time feeding)</li> </ul>	<p><b>&gt;6y/o</b></p> <ul style="list-style-type: none"> <li>o Caries history</li> <li>o Frequency of snacking</li> <li>o Ortho appliances</li> <li>o Recreational drugs/methamphetamines</li> </ul>
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<p><b>Caries risk factors</b></p> <ul style="list-style-type: none"> <li>▪ Nighttime feedings, parental education, sugar snack, lack of fluoridated toothpaste, tooth brush cooperation</li> <li>o Caregiver caries status</li> <li>o Child's recent restorations</li> <li>o Nighttime use (sippy bottle, etc)</li> <li>o &gt;3x snacking/day</li> <li>o Reduced salivary flow</li> <li>o Developmental problems</li> <li>o Low social economic status, health literacy</li> <li>- Who is the primary caregiver?</li> <li>- Has pediatrician discussed nighttime feeding use?</li> <li>- A parent who has discovered their kid is autistic will NOT be worried about dental management</li> </ul>	<p><b>Protective Factors</b></p> <ul style="list-style-type: none"> <li>- Caregiver caries free for 2 years</li> <li>- Fluoridated water/supplements</li> <li>- Adequate salivary flow (most important!)</li> <li>- Fluoride varnish within 6months</li> <li>- Caregiver taking xylitol 2-4x daily</li> </ul>
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<p><b>Caries indicators</b></p> <ul style="list-style-type: none"> <li>o Decalcification/white spots</li> <li>o Restorations</li> <li>o Visibly high plaque</li> </ul>	<p><b>Risk assessment</b></p> <ul style="list-style-type: none"> <li>o Low risk</li> <li>o Moderate risk</li> <li>o High risk – bacterial test for S. mutans and lactobacillus</li> <li>o Extreme high risk – high risk &amp; xerostomia issues (ex:// asthma inhalers)</li> <li>- For both high and extreme high risk, requires a baseline to measure improvement</li> </ul>
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- Bacteria transferred mainly from mother to child

- o Mother with active decay 3x more likely to have a kid with ECC
- o Mutans strep = combo of Streptococcus mutans and streptococcus sobrinus

- Bacterial testing
  - Patient spits (infant/child can be swabbed) into sterile solution
  - Assistant squirts into growth medium, left for 48-72h
  - Testing is not insurance billable, but is a good diagnostic test
  - Some testing can be done to test for bacterial ATP (real time testing, no wait needed)
- Oral Flora
  - Kid ~100 species
  - Caries is a process (mutans strep)
    - Initiated by biofilm that MAY include mutans strep
    - Lots of acid producing bacteria cannot be plate grown (discovered via PCR)
  - Family dentist and first visit are NOT significant for reducing caries

## Behavior Management

- Continuum of interaction with kid/parent directed to communication/education to allay fear/anxiety and promote understanding of good dental health and how it is achieved
- Triangle of kid, dentist, and parent with society in the middle
  - o Society
    - Ethical considerations – best to do what is in patient’s best interest under the circumstances
      - Urgency of treatment/effect of delay
      - Child’s decision making capability
      - Potential harm of intervention
      - Informed consent by parent
    - Legal considerations
      - Standard of care is not static – research reimbursement patterns, parent expectations, consensus among practitioners
    - Informed consent
  - o Society – high healthcare expectations, questioning of professionals (tendency to sue), communication with parents is critical, what is acceptable is very fluid (constantly changing)

<ul style="list-style-type: none"> <li>- Anxiety and fear – common in kids experiencing new things                     <ul style="list-style-type: none"> <li>▪ Abandonment</li> <li>▪ Strangers</li> <li>▪ Sudden movements</li> <li>▪ Falling</li> <li>▪ Bright lights</li> <li>▪ Unexplained noises</li> <li>▪ Injury</li> <li>▪ The unknown</li> </ul> </li> <li>o Dental fears are acquired, not innate</li> </ul>	<ul style="list-style-type: none"> <li>- Factors affecting child behavior (may contribute to dental anxiety)                     <ul style="list-style-type: none"> <li>o Child’s development</li> <li>o Innate personality traits</li> <li>o Parent’s rearing style</li> <li>o Parental anxiety</li> <li>o Prior hospitalizations/surgery</li> <li>o Pain or emergency</li> <li>o Pre-appointment preparation</li> <li>o Office environment</li> <li>o Time/length of appointment</li> <li>o Parent in treatment area</li> <li>o Dentist/axillary behavior</li> </ul> </li> </ul>
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- Fear management
  - Objective fear – based on child’s experience
  - Subjective fear – suggested to child by other people

<ul style="list-style-type: none"> <li>o Good techniques                     <ul style="list-style-type: none"> <li>▪ Reassurance</li> <li>▪ Reinforcement</li> <li>▪ Honesty</li> <li>▪ Undivided attention</li> <li>▪ Distraction</li> <li>▪ Examples</li> <li>▪ Parental cooperation</li> <li>▪ Pharmacologic adjuncts</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>o Poor techniques                     <ul style="list-style-type: none"> <li>▪ Ignoring fear</li> <li>▪ Forcing contact with feared object</li> <li>▪ Shaming or bribing</li> <li>▪ Threats</li> <li>▪ Dishonesty</li> <li>▪ Parental promises</li> <li>▪ Pharmacologic adjuncts</li> </ul> </li> </ul>
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- Temperament/personality – emotional quality that varies, is at least moderately stable over time/situations, under some genetic influence, and appears early on in life
  - o Shy – slow to warm up to unfamiliar persons, fearful rather than curious in novel situations
  - o Negative emotionality – general tendency to be upset easily and intensely

- Practitioner behavior
  - Rapport – likely to result in cooperative behavior
  - Non-rapport – do nothing to help child cope
    - 92% of dentists use non-rapport techniques, focused too much on child’s age
      - Be flexible with each kid
  - Dependent on dentist’s training and experience with techniques, personal philosophy, comfort level/confidence, practice demographics (cultural/ethnic considerations)
    - Routine – in office, non-pharmacologic, N<sub>2</sub>O, local anesthesia
    - Conscious sedation
    - General anesthesia

<ul style="list-style-type: none"> <li>- Goals                             <ul style="list-style-type: none"> <li>○ Establish communication</li> <li>○ Alleviate pain/anxiety</li> <li>○ Deliver quality care</li> <li>○ Build trusting relationship between kid and dentist</li> <li>○ Promote kid’s positive attitude towards oral health</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>- Techniques                             <ul style="list-style-type: none"> <li>○ Tell-show-do</li> <li>○ Voice control</li> <li>○ Non-verbal communication</li> <li>○ Positive reinforcement</li> <li>○ Distraction</li> <li>○ Parental presence/absence</li> <li>○ N<sub>2</sub>O/O<sub>2</sub> sedation</li> </ul> </li> </ul>
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- Communication
  - Getting your point across
  - Making yourself understood
  - Using expressions that mean the same thing to both of you

<p>Verbal - What you say less important than how you say it</p> <ul style="list-style-type: none"> <li>○ Message</li> <li>○ Words</li> <li>○ Tone</li> </ul> <ul style="list-style-type: none"> <li>- Speak at the child’s level                             <ul style="list-style-type: none"> <li>○ Intended message vs understood message                                     <ul style="list-style-type: none"> <li>▪ Air blast = wind</li> <li>▪ Alginate = pudding</li> <li>▪ Explorer = tooth counter</li> <li>▪ Rubber dam = raincoat</li> </ul> </li> </ul> </li> </ul>	<p>Non-verbal</p> <ul style="list-style-type: none"> <li>○ Physical contact</li> <li>○ Facial expressions</li> <li>○ Eyes</li> <li>○ Posture</li> </ul> <ul style="list-style-type: none"> <li>- Child can sense a lack of confidence – you need to act with confidence (Even fake it)</li> </ul>
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- Linguistic approach
  - Permissive – information, reasons, procedures that will be done, what child will feel, coping strategies
  - Empathic – words/gestures that show DDS cares, understands, okay for child to have feelings
  - Personal – makes kid feel that, as an individual, he/she has been acknowledged
    - Approach correlated with anxiety, cooperation, success of Tx, mood at end of Tx
    - Although empathy is correlated best with cooperation, rarely used
      - 54% used once or twice
      - 25% used not at all
    - Personal approach most popular – used with all kids most frequently
    - Permissive approach most frequently used – procedure info, sensory info, Tell-show-do

- Voice control
  - Sudden, firm, loud commands
  - Highly effective in reducing disruptive behavior during treatment
  - Quickly reduced unwanted behavior without increasing negative effect
    - Limited choice vs free choice
    - Questions vs commands
    - When-then vs if-then
    - Honesty
- Desensitization – gradual presentation of feared object
  - Tell-show-do
- Distraction – diverting attention from what may be perceived as unpleasant
- Modeling – having patient watch another patient during an operation
  - Be careful with model selection
- Positive reinforcement – rewarding desired behaviors, strengthening likelihood of these behaviors recurring
  - Social reinforcers – positive voice modulation, facial expression, verbal praise, physical touch
  - Non-social reinforcers – tokens, toys
  - More effective if offered immediately
  - Be specific, complement child of behavior
  - Most effective in immediately reducing child’s fear
- Avoiding problems
  - Plan ahead – equipment/supplies, instrument setups, procedures, mental readiness
  - Make your expectations clear – foreshadowing what will take place, what child is expected to do, what child may feel like
  - Clarify feelings – empathy (verbal and nonverbal)
  - Follow through with your decisions
- Behavior management summary
  - Each child is individualistic – customize approach per kid
  - Assess kid’s development and comprehension
  - Communicate at that kid’s level
  - Maintain teacher-student attitude
  - Be honest
  - Demonstrate empathy
  - Have many techniques in your bag of tricks
  - Know yourself and when to refer

## Parent Management

- Helicopter parent – added to dictionary this year
- In pediatrics, parent is often contributor to difficult patient encounter rather than patient
  - o PDD – parent discipline deficiency
- Management styles
  - o Most allow parents in room
  - o Most use N<sub>2</sub>O
  - o Most do NOT use hand-over-mouth technique
  - o Pediatric dentists use less aversive techniques than 5 years ago
  - o Use of conscious sedation decreased, use of general anesthesia increased
  - o Parental and legal/ethical concerns major driving influence driving these changes
- Changing parenting styles – 88% dentists think parenting styles have changed since they started practicing

<ul style="list-style-type: none"> <li>o 20% - much worse</li> <li>o 65% - somewhat worse</li> <li>o 11% no change</li> <li>o 3% somewhat better</li> <li>o 1% better</li> </ul>	<ul style="list-style-type: none"> <li>o 64% increase in parents in operatory</li> <li>o 82% decrease hand-over-mouth technique</li> <li>o 56% decrease in use of restraints</li> </ul>
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- Pre-appointment communication
  - o Practice brochure
    - First visit between 6-12months
    - Don't tell kid scary stories of the dentist
    - Schedule morning appointments
    - Don't relay any anxiety YOU as the parent feel
    - Don't bribe your kid
    - Never use the visit as punishment or a threat
    - Try to make you kid's first visit an enjoyable outing
  - o Communication starts at the front desk
    - May be good to have a practice website
- Informed Consent – educated decision regarding treatment can be made by parent/guardian
  - o Standards by which information conveyed is judged
    - Reasonable patient
    - Reasonable professional
  - o Elements of informed consent
    - Information – video vs written vs oral – 95% parents felt oral made them best informed
      - Diagnosis/nature of problem
      - Proposed treatment
      - Alternative options/no treatment
      - Benefits/risks of alternative treatments
      - Likely medical/major psychological results of treatment alternatives
    - Competence
    - Consent documentation
      - Oral aspect most important
      - Affirmation that all questions are answered
      - Signatures – dentist, guardian, witness

- Special issues
  - o Kid cannot give consent
  - o Foster parent may not have legal authority to give consent
  - o Accompanying adult may not have legal authority to give consent
  - o Divorced parents and custody issues
- Communication
  - Reduced patient anxiety
  - Increased satisfaction
  - Motivation and adherence to healthy behaviors
  - Better oral health outcomes
  - o Present 2-3 concepts per time
  - o Ask if patient wants a family member involved in the discussion
  - o Draw pictures/use illustrations
  - o Speak slowly, use simple language
  - o Teach-back method
    - Ask patient to repeat information back to you
    - Ask patient to explain homecare instructions
  - o Strong interpersonal relationships (good communication) is as important to patients as the technical aspects, if not moreso
- Behavior management techniques acceptable to parents
  - o Acceptable – tell-show-do, positive reinforcement, voice control, mouth prop
  - o Less acceptable – restraint (assist/DDS), sedation, hand-over-mouth, general anesthesia, papoose board
    - Less aggressive techniques more accepted
    - Sedation is becoming more accepted (2005 – TSD, nitrous, GA, other techniques)
- Parent/Child correlation
  - o Child's dental anxiety related to maternal assessment of kid's anxiety level of prediction of kid's behavior
  - o Kid's anxiety significantly related to mother's anxiety level
  - o Mother's attempt to discuss visit increases kid's anxiety level
- Frankl Behavior Rating Scale
  - o 1 – definitely negative – refusal of treatment, crying forcefully, fearful, any overt evidence of extreme navigation
  - o 2 – negative – reluctant to accept treatment, uncooperative, some evidence of negative attitude but not pronounced (sullen, withdrawn, etc)
  - o 3 – positive – acceptance of treatment, at times cautious, willingness to comply with dentist, at times some reservation but patient follows dentist's directions cooperatively
  - o 4 – definitely positive – good rapport with dentist, interested in dental procedures, laughs and enjoys the situation
- Stats
  - o 72% of kids react positively on first visit regardless of parent presence/absence
  - o Preschoolers 41-49months benefit most from parent presence
  - o Parents are best as a quiet observer – kick them out of room if they start freaking out
    - If you think a kid will do better with parental absence, discuss and get parents approval

- Parents
  - Have definite preferences for behavior management techniques used by pediatric dentists
  - Prefer least aggressive techniques – may limit procedures they allow a dentist to use
  - Parents want to be/expect to be/demand to be in the operatory
    - If you think a kid will do better with parental absence, discuss and get parents approval
- Referrals
  - You don't enjoy working with the kid
  - Requires treatment you're not comfortable giving
  - Difficulty completing preventative treatment
  - Pediatric dentist would prefer you not attempt treatment you're not comfortable/familiar with what needs to be done
- Some communication challenges
  - "I'm scared" - It's okay to be scared; can you tell me what you're scared about?
  - "I want my mom" - set up the circumstances where that's okay, or tell them mom can't fix his/her tooth
  - "I don't like you" - I'm sorry you feel that way, but my job is to fix your tooth
  - Child says "ow" or "that hurts" when you place explorer in his mouth - now wait a minute, I'm telling you everything we're doing/explaining everything, but what you just told me isn't true. I'm being honest and straight from you, I expect the same from you
  - "Are you going to give me a shot?" - I'll show you what we're going to do, and I'll explain everything. I'll tell you what's gonna be tough and we'll work through it together
  - "Can I see the needle?" - you know what, when we're all done fixing your tooth, you remind me and then I'll show you