

The Clinical Examination: Paediatric Dentistry

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Lecture Outcomes

Students should be able to:

- compare and contrast the differences between a clinical examination of a child and an adult
- construct a comprehensive history for a paediatric patient from consultation with their parent/guardian
- identify the fundamental elements that form part of an extra and intra-oral clinical examination of child
- interpret various tooth numbering systems used in dentistry
- make use of a history and examination in order to inform treatment planning in the context of paediatric dentistry
- Examinable content: *Chapter 1 (Handbook of Paediatric Dentistry, Cameron & Widmer)*

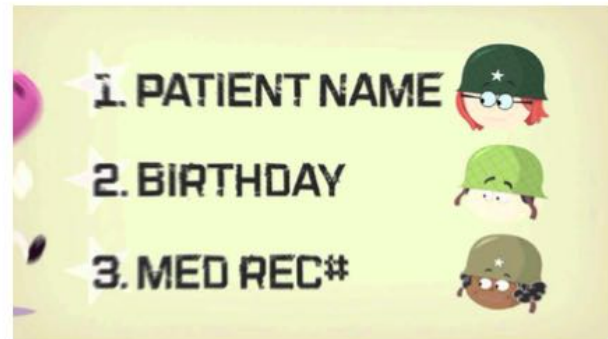
What is different in Children

- May not be confident with strangers
- Cannot sit still for long
- Have little experience of
 - noise
 - taste
 - smells
 - paresthesia
- Teeth are smaller
- Pulp are proportionally larger
- Access is more limited

Examining Children

Personal details

- Name
- Date of birth
- Date of examination
- Parent's name



History should be

- taken in a logical and systematic way
- updated regularly

Reason for visit

- Referred by
- Routine examination
- Recall- check what was done before
- Painful teeth

Current problem

- Pain
 - nature
 - onset or type of pain
 - relieving and exacerbating factors
- Not sleeping
- Not eating
- Irritable
- Loose tooth/ teeth
- Broken tooth/restoration
- No problem



History – Medical history

- It should be taken in a systematic fashion, covering all system areas of the body. The major areas include:
- Cardiovascular system (e.g. cardiac lesions, blood pressure, rheumatic fever)
- Central nervous system (e.g. seizures, cognitive delay)
- Endocrine system (e.g. diabetes)
- Gastrointestinal tract (e.g. hepatitis)
- Respiratory tract (e.g. asthma, bronchitis, upper respiratory tract infections)
- Bleeding tendencies (e.g. family history of bleeding problems)
- Urogenital system (renal disease, ureteric reflux)
- Allergies
- Past operations or hospital admissions

History – Medical history

Pregnancy history

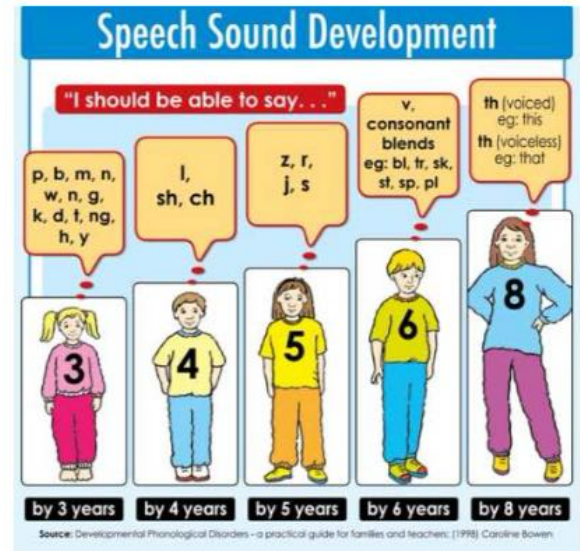
- Length of confinement
- Birth weight
- Apgar scores
- Type of delivery (any complications)
- Antenatal and perinatal problems, especially during delivery
- Prematurity and treatment in a special or neonatal intensive care nursery



History – Medical history

Growth and development

- Developmental milestones
- Speech and language development
- Motor skills
- Socialization



History – Medical history

Current medical treatment

- Medications, including complementary medications
- Current treatments
- Immunizations



Dental history

- Previous dental treatment
- What preventive treatment has been undertaken previously
- Methods of pain control used previously
- How the child coped with the treatment



Family and Social history

- Helps build a picture
- Family history of serious illness
- Family make up
- Place of birth
- No of siblings
- Schooling, performance in class
- Speech and language problems
- Likes, dislikes
- Other interests (pets, hobbies
- sports, television, books, movies, video games)



Parent's comment

- Record what the parent says
- Concerns may be different than reason for appointment



Extra oral examination

- General appraisal of the child's well-being
- General interaction with the parents or peers
- Child's gait
- Height and weight assessment



Extra oral examination

Frontal profile

- round / tapering / square / symmetrical / asymmetrical

Lateral profile

- straight / convex / concave

Skeletal pattern

- I / II / III



Normal



Convex



Concave



Class I



Class II



Class III

Extra oral examination

Lips

- Lips: competent / incompetent / lip trap



Eyes

- Appearance of the globe, sclera, pupils and conjunctiva
- Movements of the globe: indicate squints or palsy

Skin/Soft tissue

- Colour
- Appearance – lacerations, scars, vesicles



Extra oral examination

Temporomandibular joints

- movements
- sounds
- symptoms

Lymph nodes

- cervical
- submandibular
- occipital

Intra-Oral Examination

Soft tissues

- Lips
- Tongue
- Mucosa
- Gingiva
- Frenums
- Floor of mouth
- Palate
- Salivary glands
- Oropharynx
 - Tonsils
 - Uvula



Examination



Examination





Oral hygiene

- Plaque disclosing
- Record
 - Plaque location
 - Quantity



Periodontal status

- Healthy
- Unhealthy
- Developmental
- Why?



Dental hard tissues

Teeth

- Tooth identification
- Dental charting
- Dental caries / restorations
- Anomalies
- Abnormalities

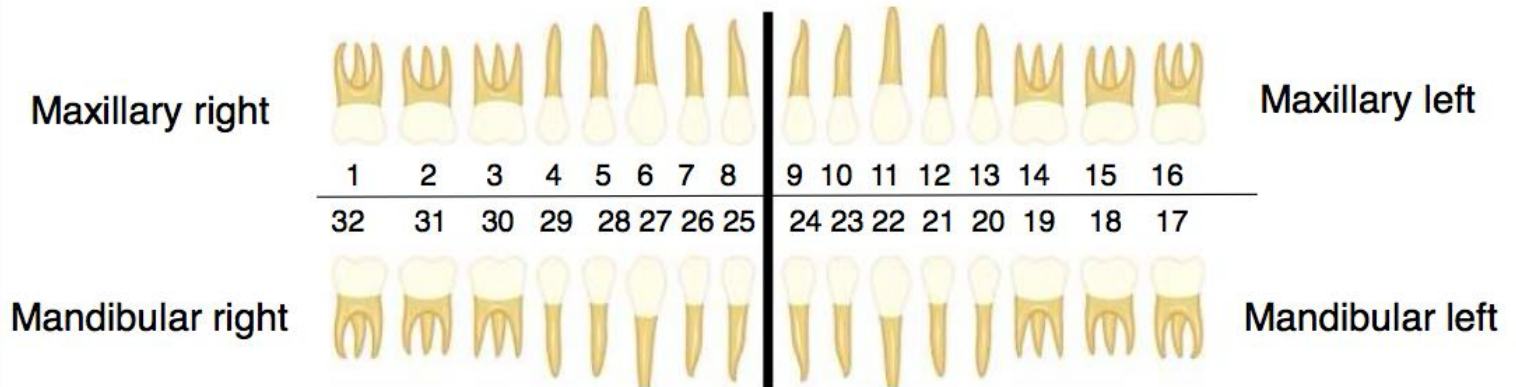
Dental hard tissues

Dental charting systems

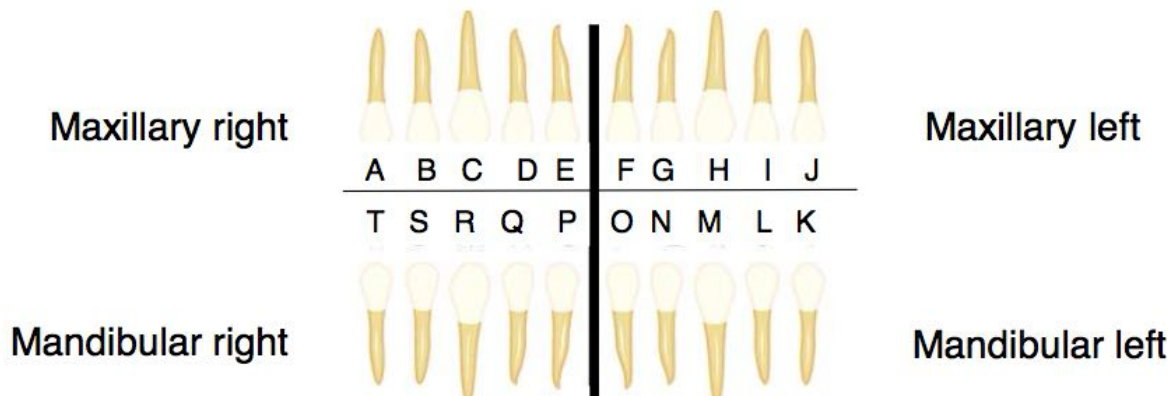
- Universal or ADA System
- Palmer notation system
- FDI or international system

Universal or ADA System

Permanent teeth



Primary teeth



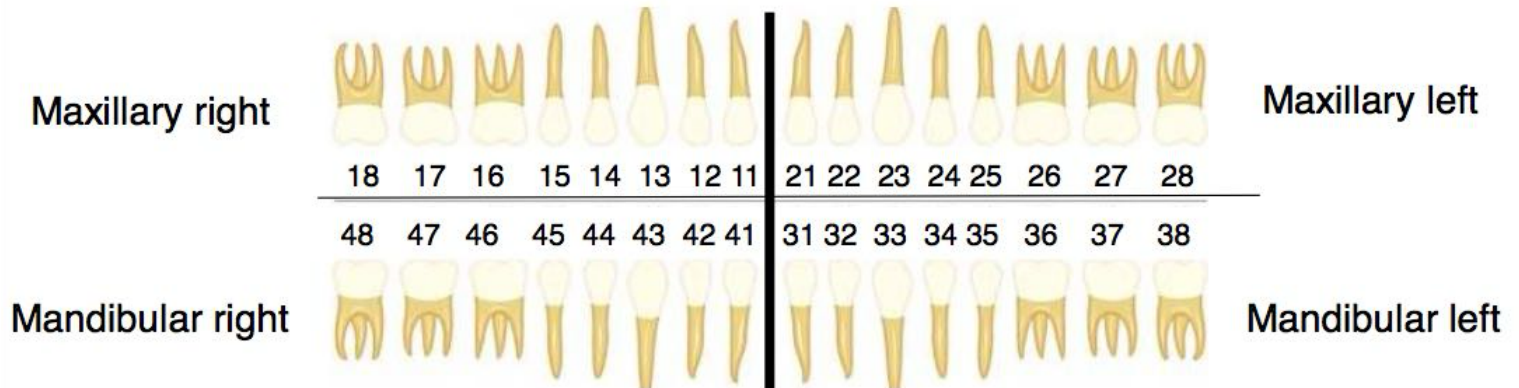
Palmer Notation System

Maxillary right								Permanent Teeth								Maxillary left							
8┐	7┐	6┐	5┐	4┐	3┐	2┐	1┐	L1	L2	L3	L4	L5	L6	L7	L8								
8┑	7┑	6┑	5┑	4┑	3┑	2┑	1┑	┐1	┐2	┐3	┐4	┐5	┐6	┐7	┐8								
Mandibular right																Mandibular left							

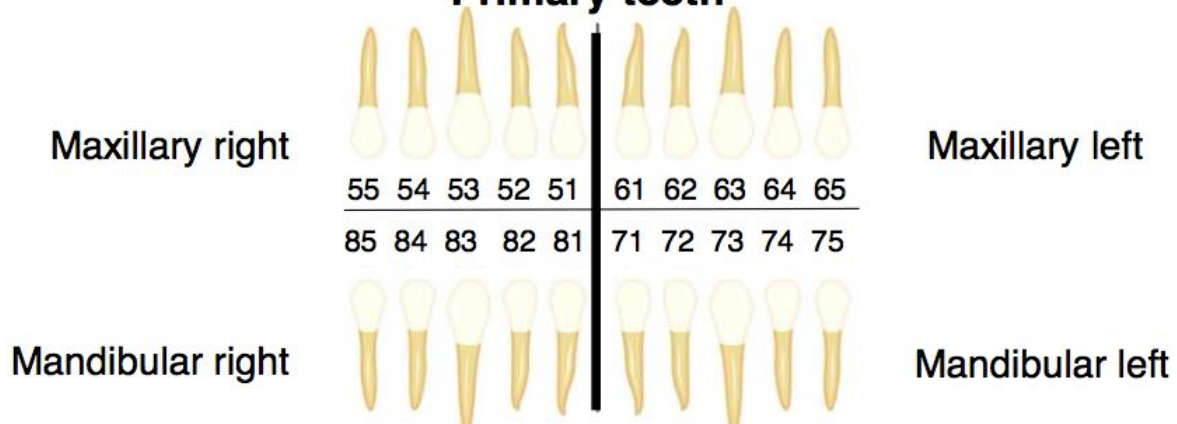
Maxillary right					Primary Teeth					Maxillary left				
E┐	D┐	C┐	B┐	A┐	L ^A	L ^B	L ^C	L ^D	L ^E					
E┑	D┑	C┑	B┑	A┑	┐ ^A	┐ ^B	┐ ^C	┐ ^D	┐ ^E					
Mandibular right										Mandibular left				

FDI or International System

Permanent teeth



Primary teeth



Examination

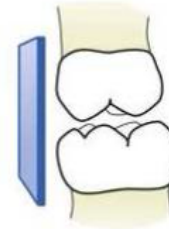


Examination

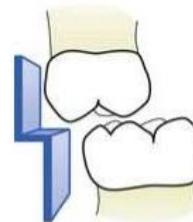


Occlusion and orthodontic relations

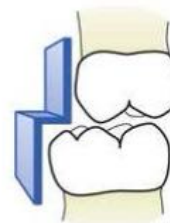
- Eruption
 - Normal
 - Abnormal
- Terminal plane



Flush terminal

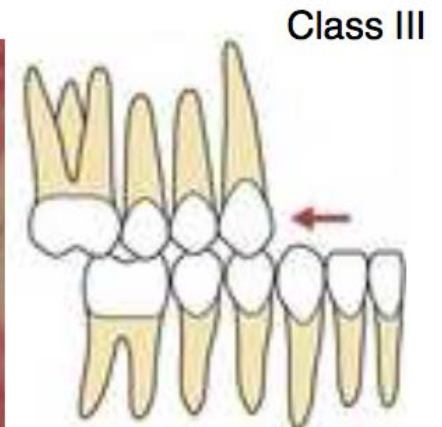
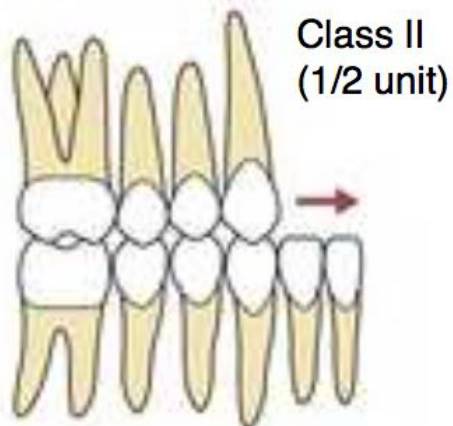
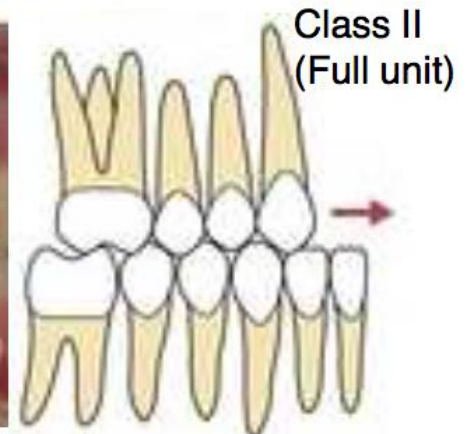
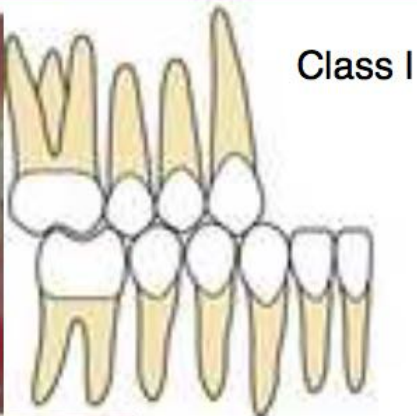


Mesial step



Distal step

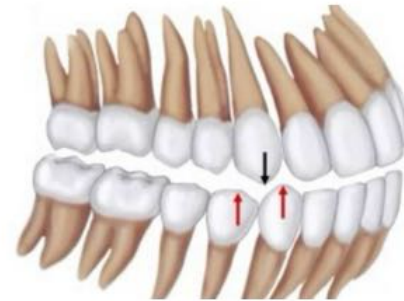
Molar Relationship



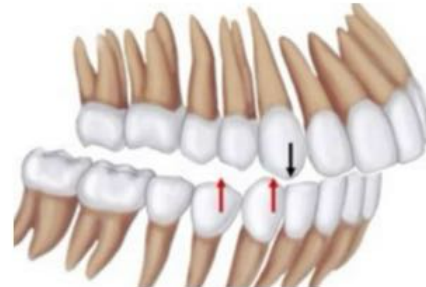
Canine Relationship

Occlusion and orthodontic relations

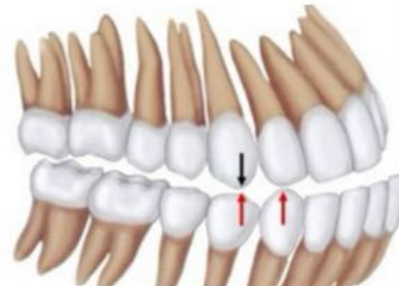
- Caine
- Canine relationship



Class I



Class II



Class III

Occlusion and orthodontic relations

- Overjet
- Overbite
- Crossbite
- Rotations



Occlusion and orthodontic relations

- Midline
- Dentition
 - spacing
 - crowding
 - arch deformity



Occlusion and orthodontic relations

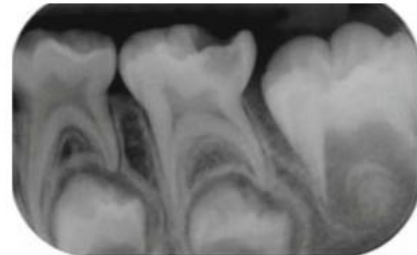
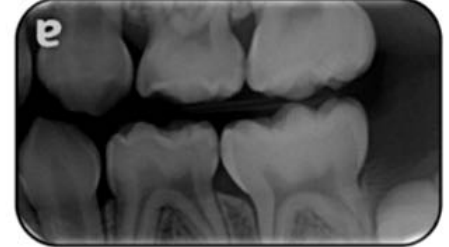
Habits

- Digit sucking
- Mouth breathing
- Tongue thrusting



Radiographs

- Bitewing radiographs
- Periapical radiographs
- Occlusal films
- Panoramic radiographs
- Extra-oral facial films
- Cone-beam CT



Intra oral Film Sizes

- 0, 1, 2 anterior occlusal

Show

- Dental caries - interproximal and occlusal
- Alveolar bone health
- Enamel defects
- Root health
- Developing teeth
- Pulp chamber
- Outline of restorations
- Sequential radiographs
- Disease progression

Radiographs



Panoramic

- Developing teeth
- TMJ
- Bone health
- Pathology

Special Tests

- Photographs
- Diagnostic cast
- Blood investigations
- Microbiology
- Salivary tests
- Caries activity tests
- Diet analysis
- Caries risk assessment

Photographs

- Clinical record
- Medico-legal record
- Before and after treatment
- Provides record of growing children



Diagnostic cast

- Essential in treatment planning
- Study Model Analysis
- Space measurement
- Space maintenance?
- Space regaining?
- Cross bite correction



Pulp sensibility (viability) test

- Thermal
- Electrical stimulation
- Percussion
- Mobility
- Transillumination



Special Tests

Blood investigations

- Full blood count with differential white cell count
- Clinical chemistry



Microbiological investigations

- Culture of microorganisms and antibiotic sensitivity
- Cytology
- Serology
- Direct and indirect immunofluorescence
- Plaque pH activity
- S mutans count



Special Tests

Quantity of saliva

- Salivary flow rate
 - unstimulated (resting)
 - Stimulated
- Salivary Buffering Capacity

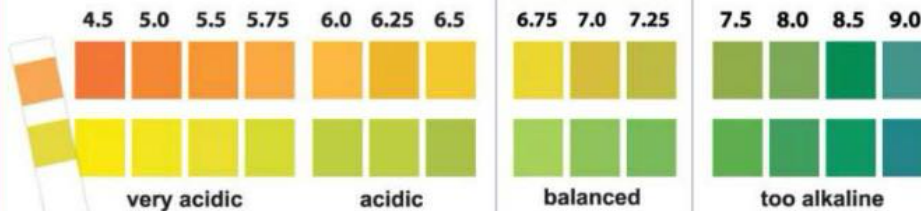
Quality of saliva

- Measuring resting salivary pH

Stimulated Saliva



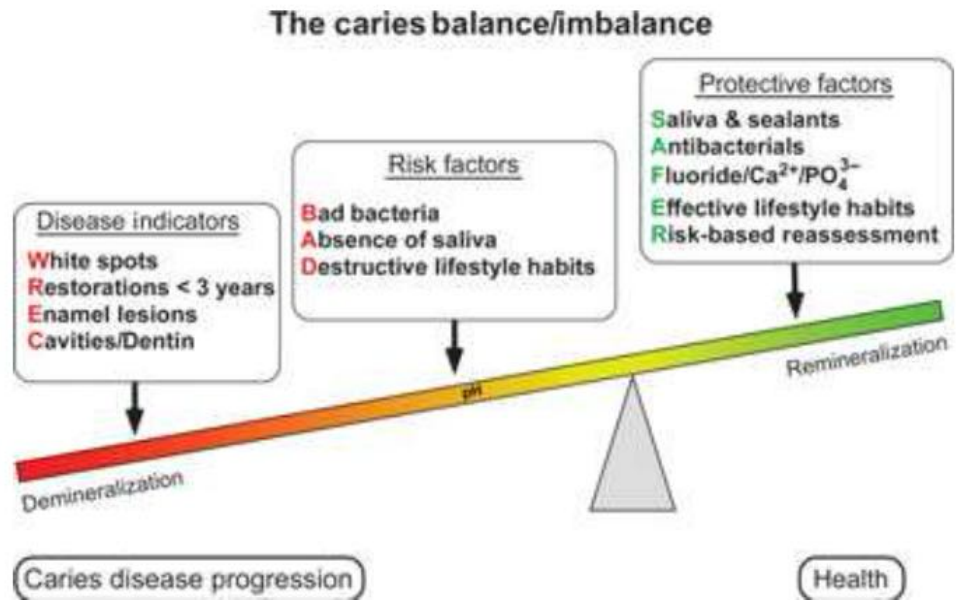
pH strips pH chart



Special Tests

Caries Risk Assessment

- Past disease experience
- Current dental status
- Family history and carer status
- Diet considerations
- Oral hygiene
- Concomitant medical conditions
- Future expectations of disease activity



CAMBRA

Low risk of disease

- No caries present
- Favourable family history (appropriate diet, dentally healthy siblings, motivated parents and caregivers)
- Good oral hygiene
- Access to community water fluoridation

Moderate risk

- One or two new lesions per year

High risk or future high risk

- Three or more new lesions per year
- Orthodontic treatment
- Chronic illness or hospitalization
- Medically compromised children
- Social risk factors

Diagnosis/problem List

- Acute
- Dental age
- Caries risk
- Periodontal status
- Oral hygiene
- Behaviour
- Occlusion
- Trauma
- Other

“...diagnostic skills cannot be learnt from textbooks alone, but require clinical training “ (Nyvad, 2004)

- Based on the assessed need of the child
- Addresses all oral conditions, dental diseases & injuries
- Establishes a preventive programme
- Allows for forward planning by all involved
- Know number of visits required
- Scheduling of these visits
- Time off school, time off work
- Baby sitters for siblings
- Appointments can be so treatment is completed in weeks rather than months
- Clinician prepared before child arrives
- Endpoint -Child to reach adulthood with a healthy mouth, positive attitude to dental care

What needs to be included ?

- Medical management
- Behaviour management
- Relief of pain/ emergency care
- Prevention
- Restorative needs
- Surgical treatment
- Orthodontic treatment
- Extensive restorative or further surgical management
- Growth & Development
- Aesthetic considerations
- Payment agreement
- Recall Timing
- Referral
- Consent - who is able to give consent?

Personalised

- All children are different
- Social needs
- Medical
- Dental
- Age
- Expectations –child's/ parents child's / parent's understanding management concerns
- Financial constraints
- Appointments

Holistic

- Treating a child not a tooth
- Not a list of procedures
- Behaviour shaping
- Prevention
- Growth and development
- Interceptive orthodontics?

Flexible

- Circumstances & dental status change

Sequenced

- Gradual introduction of new experiences
- Prophylaxis
- Small restorations before large
- Upper teeth before lower

Forward thinking

- Longer term picture
- Interventions –reduce complexity of future treatment

Realistic

- Remember you are treating a patient –a young patient
- Not able to keep still for hours

- It has been said that the ***major difference between adult and pediatric dental patients*** is that the latter *did not request the treatment* and frequently they *do not even understand why* they are at the dentist's office!