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

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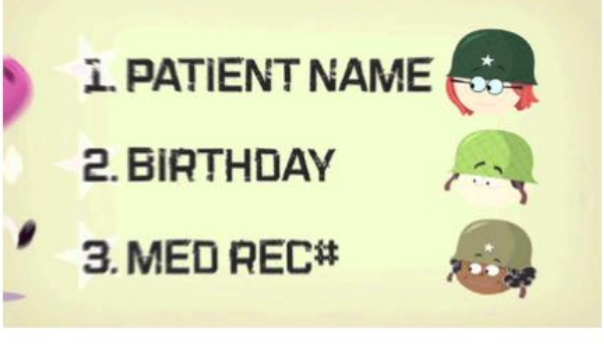
- May not be confident with strangers
- Cannot sit still for long
- Have little experience of
  - noise
  - taste
  - smells
  - paresthesia
- Teeth are smaller
- Pulp are proportionally larger
- Access is more limited

Examining Children

Personal details

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



History

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

History

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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

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- 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

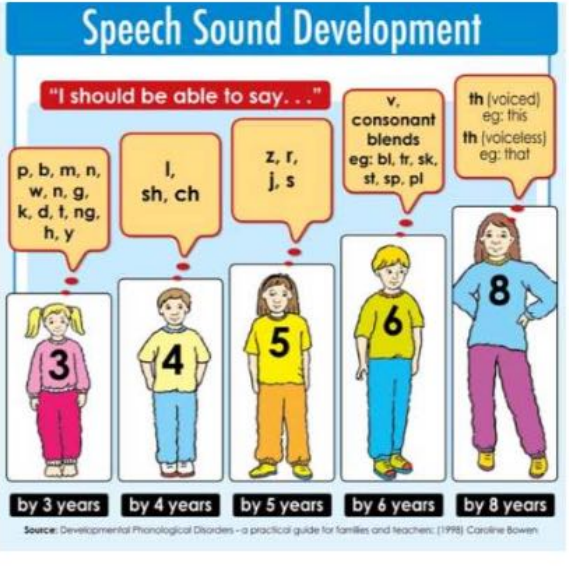
Pregnancy history

- 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

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Current medical treatment

- Medications, including complementary medications
- Current treatments
- Immunizations

History

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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

History

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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)

History

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Parent's comment

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

Examination

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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

Examination

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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

Examination

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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

Examination

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Extra oral examination

Temporomandibular joints

- movements
- sounds
- symptoms

Lymph nodes

- cervical
- submandibular
- occipital

Examination

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Intra-Oral Examination

Soft tissues

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

Examination

Examination

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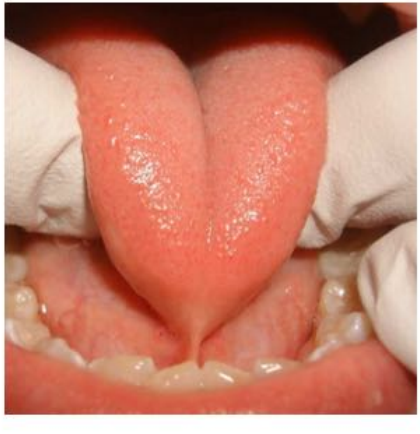

Examination

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Oral hygiene

- Plaque disclosing
- Record
  - Plaque location
  - Quantity

Periodontal status

- Healthy
- Unhealthy
- Developmental
- Why?

Examination

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Dental hard tissues

Teeth

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

Examination

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Dental hard tissues

Dental charting systems

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

Universal or ADA System

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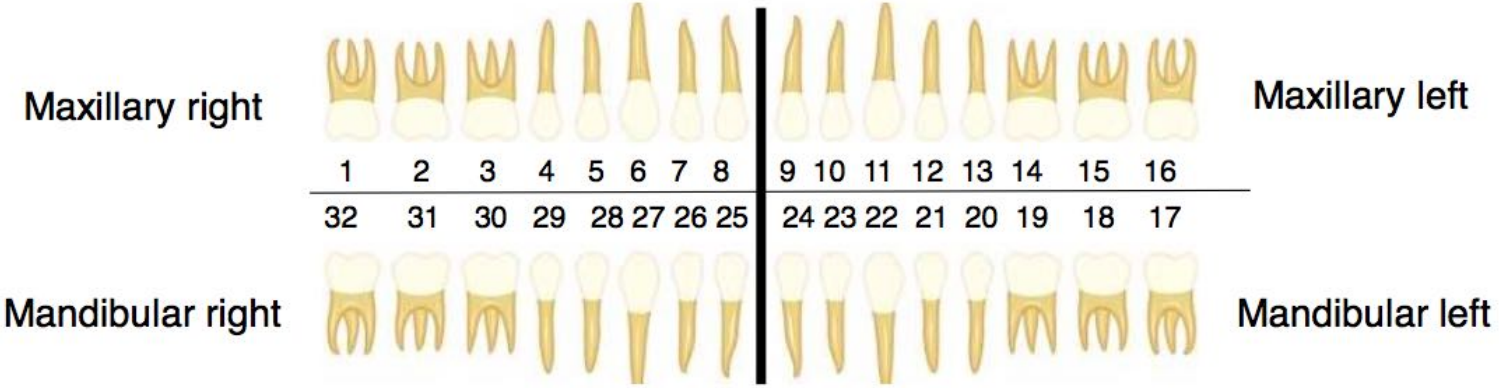
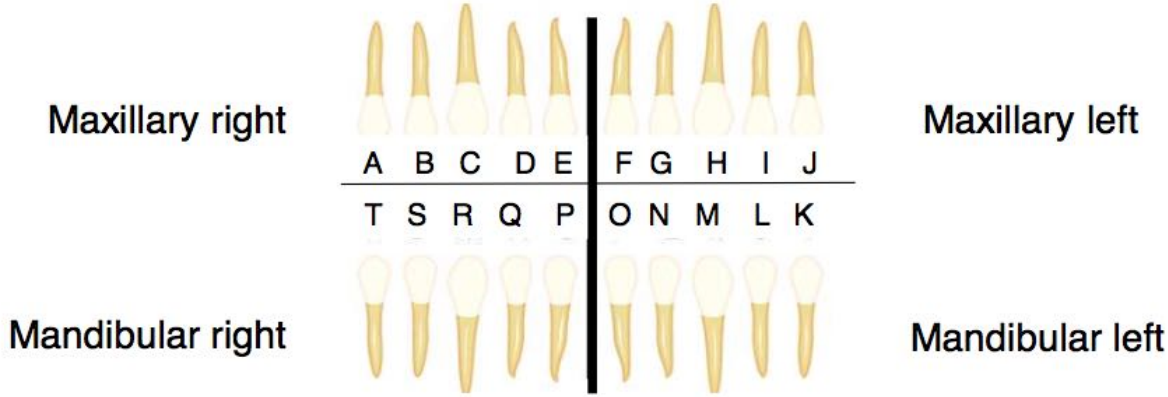
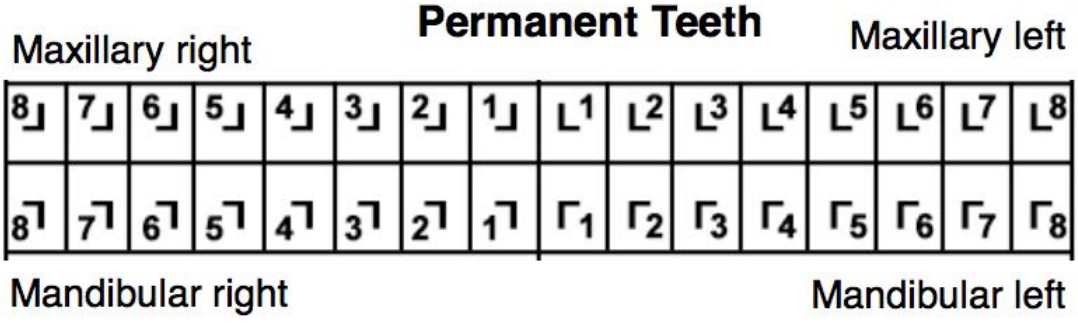
Permanent teeth

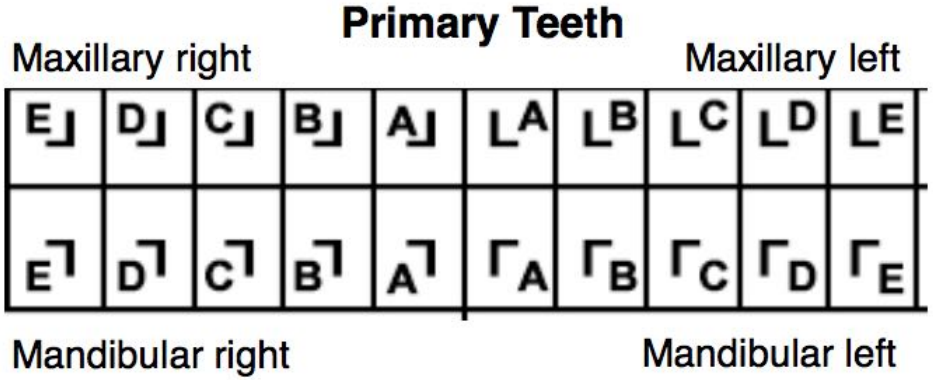


Primary teeth



Palmer Notation System





FDI or International System

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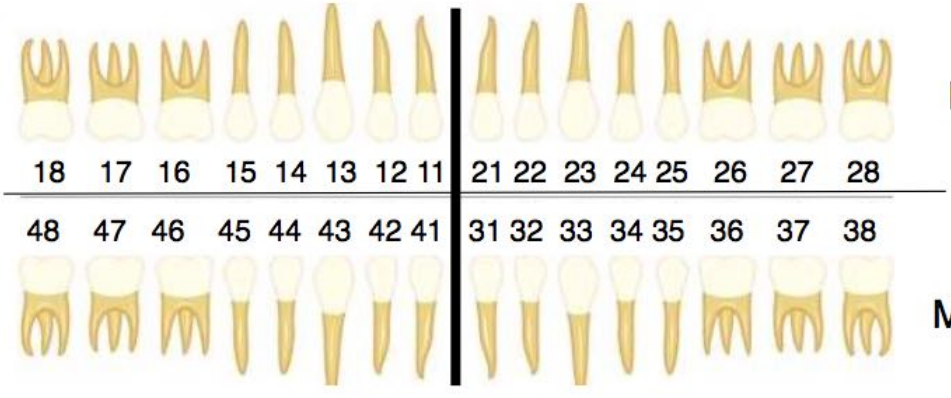
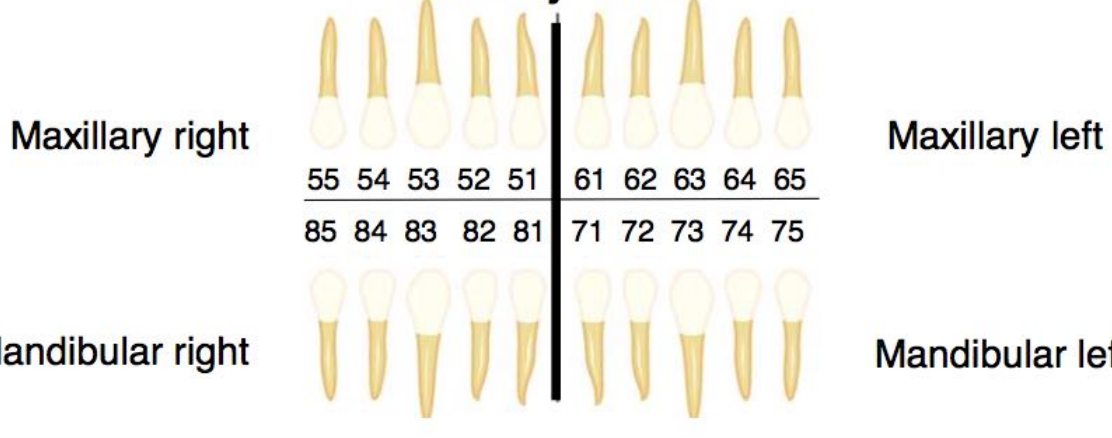
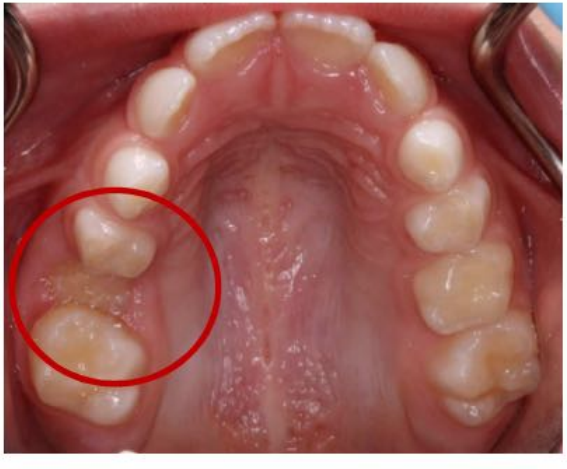
Permanent teeth



Primary teeth



Examination



Examination

Examination

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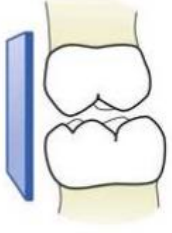
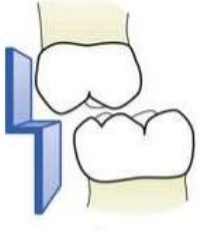
Occlusion and orthodontic relations

- Eruption
  - Normal
  - Abnormal

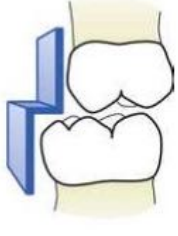
- Terminal plane



Flush terminal



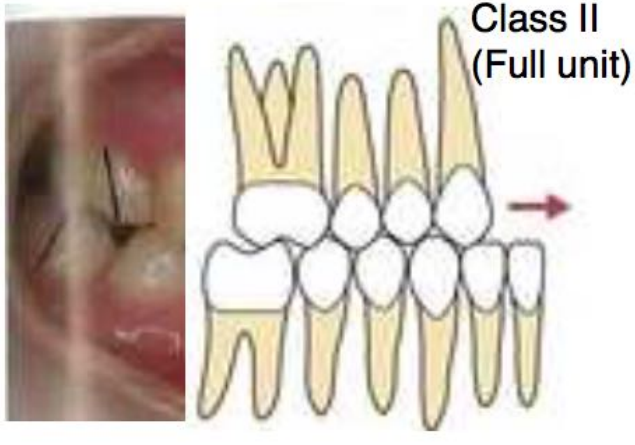
Mesial step



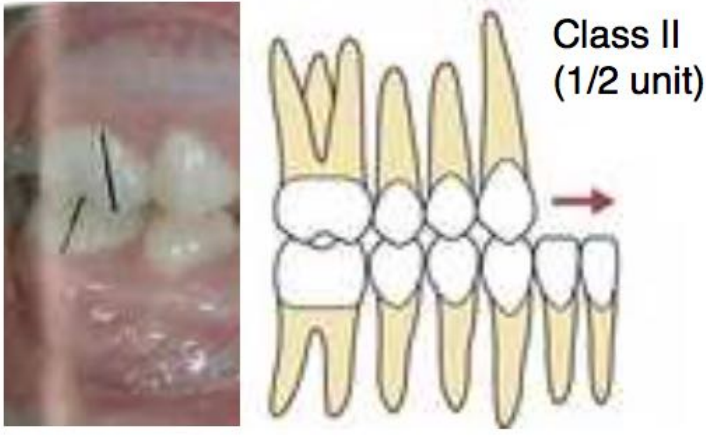
Distal step

Molar Relationship

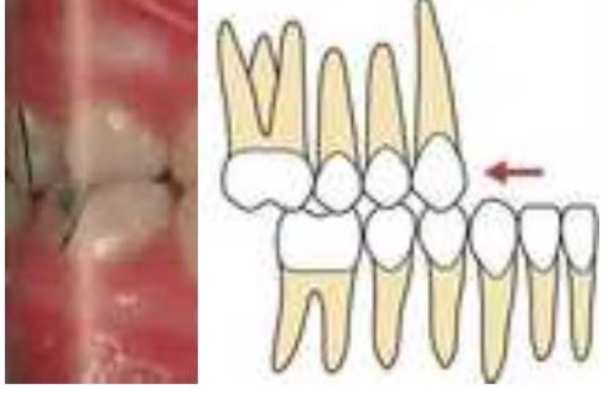
Class I



Class II
(Full unit)



Class II
(1/2 unit)



Class III

Canine Relationship

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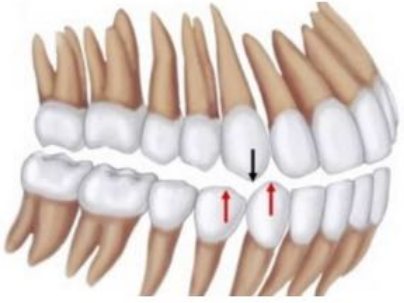
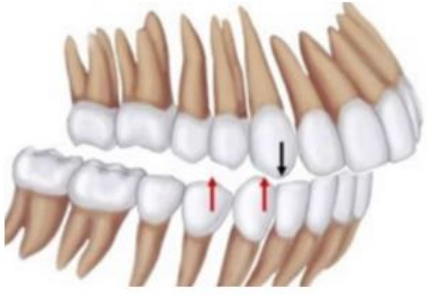
Occlusion and orthodontic relations

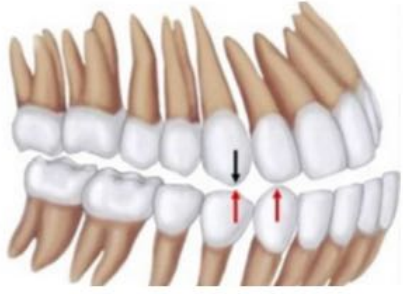
- Caine
- Canine relationship



Class I



Class II



Class III

Examination

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Occlusion and orthodontic relations

- Overjet
- Overbite
- Crossbite
- Rotations

Examination

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Occlusion and orthodontic relations

- Midline
- Dentition
  - spacing
  - crowding
  - arch deformity

Examination

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Occlusion and orthodontic relations

Habits

- Digit sucking
- Mouth breathing
- Tongue thrusting

Radiographs

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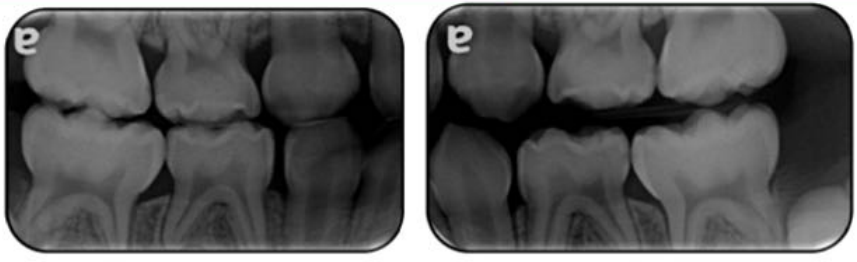
- Bitewing radiographs
- Periapical radiographs
- Occlusal films
- Panoramic radiographs
- Extra-oral facial films
- Cone-beam CT



Radiographs

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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

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

Special Tests

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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

Special Tests

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Pulp sensibility (viability) test

- Thermal
- Electrical stimulation
- Percussion
- Mobility
- Transillumination

Special Tests

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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

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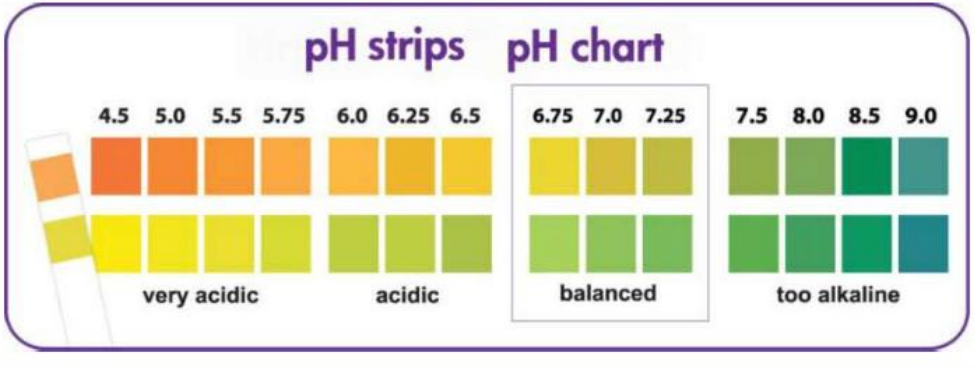
Quantity of saliva

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

Quality of saliva

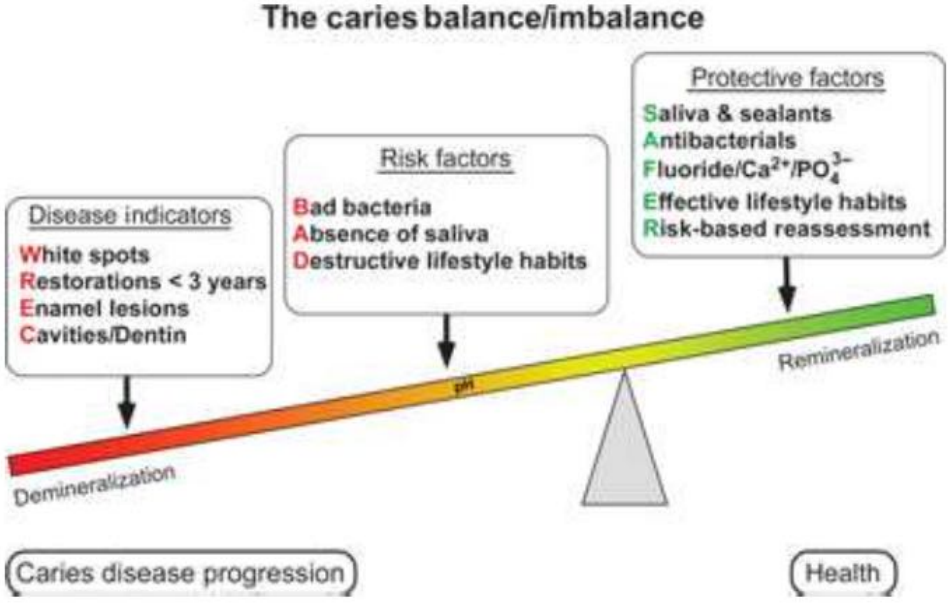
- Measuring resting salivary pH



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

Caries Risk Assessment

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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

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- 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)

Treatment plan

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- 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

Treatment Plan

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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?

Treatment plan

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Personalised

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

Treatment plan

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Holistic

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

Treatment plan

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Flexible

- Circumstances & dental status change

Sequenced

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

Treatment plan

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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!