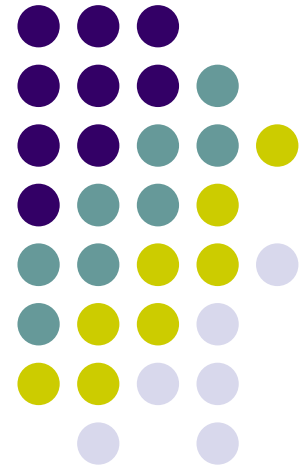


A History of Dental Erosion

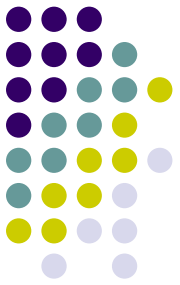
Moroccan Society of Perinatal Care



M. BAYARI, MD

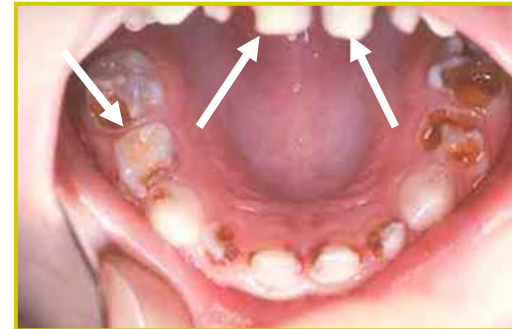
Centre de Pneumo-Allergologie Pédiatrique
Casablanca, Morocco

Clinical case



Ihab was first seen at 4 years

- Second infant of a second bed
- Spastic diplegia
- Strabism
- Hypotonia
- Dental anomalies (arrows)
- Failure to thrive



Clinical case (cont'd)



Personal & Familial history

- Fetal movements +/-
- Term, vaginal delivery; weight estimate: 3kg
- Apgar score "said normal"
- ALTE
- Neuromotor delay : set with help at 9mo, first steps at 24mo, no urinary control, rudimentary language...

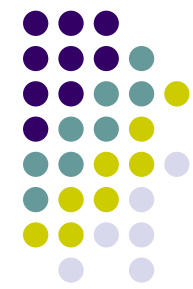
- Maternal dyslexia
- No consanguinity

Clinical case (cont'd)

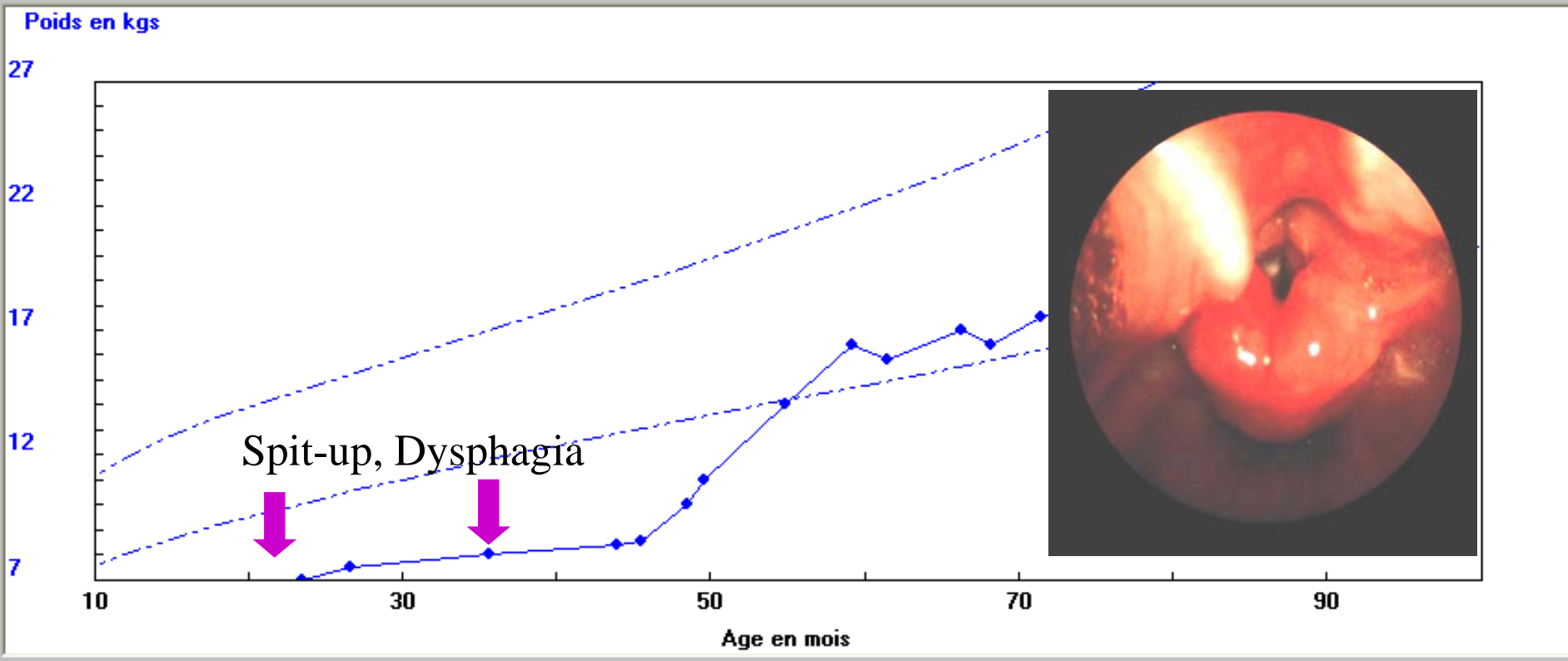


Screening

- CBC normal
- LDH (214) & CPK (133) normal
- EMG: motor conduction normal
- Auditive Evoked Potentials: normal
- Ophthalmologist: strabism,...
- Caryotype: 46, XY normal

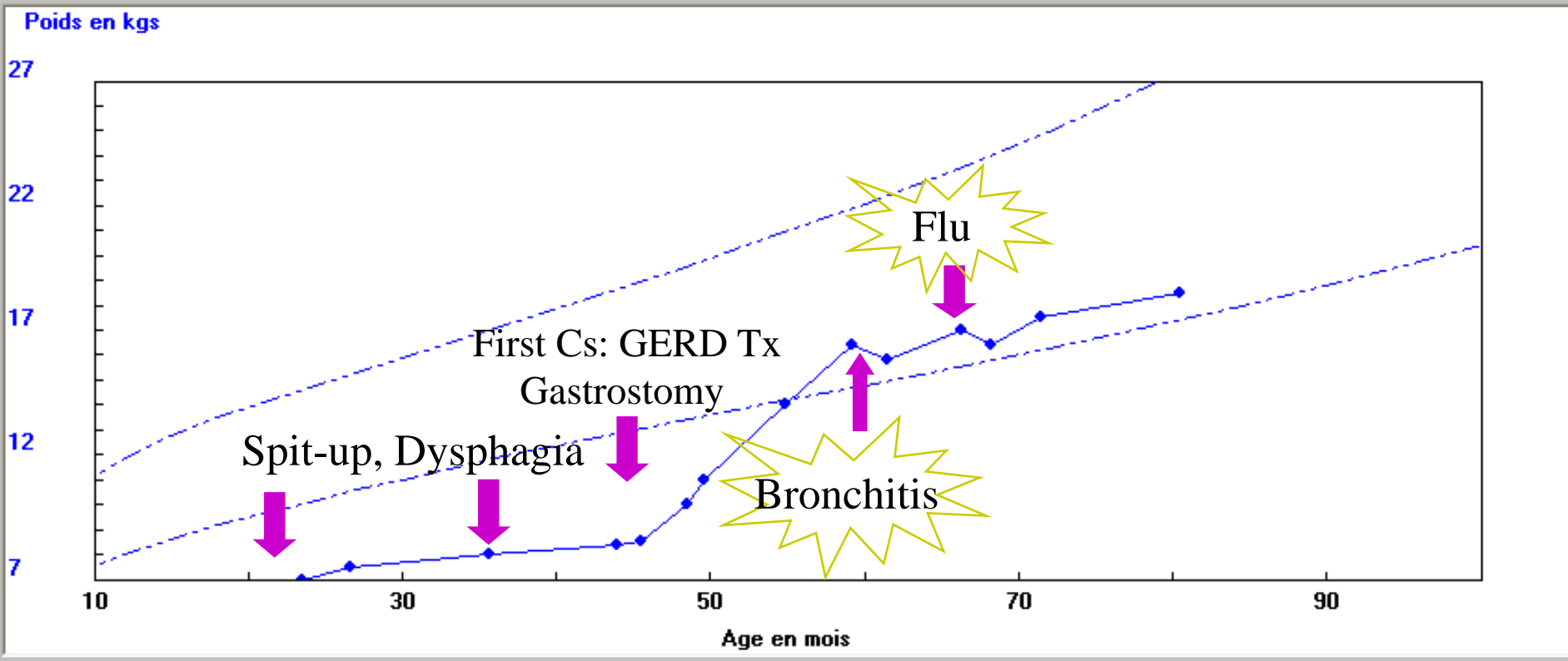


Poids des garçons

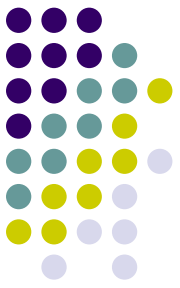




Poids des garçons



Dental erosion



- Irreversible loss of dental enamel hard tissue by a chemical process in the absence of bacteria
- Children: 71% at least grade1 on primary dentition & 26% grade2 [Ganss et al. 2001; 29(4)]
- Adolescents: 12% at least grade1 on permanent teeth [Ganss et al. 2001; 29(4)]



Dental erosion: pathphysiology



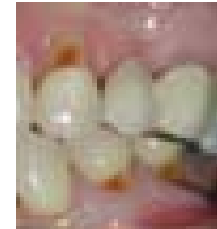
- Critical pH for dental enamel erosion is $<5,5$
- At lower pH values, agents have the potential to dissolve hydroxapatite crystals in enamel
- In vitro, tooth erosion pH $<2,0$
- Estimated pH of gastric reflux $<2,0$
- Protective mechanisms: saliva flow, buffering capacity of saliva...

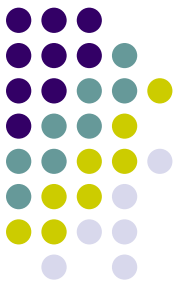


Erosion grading scale (Eccles & Jenkins)



Grade	Description
0	No erosion
1	Loss of surface details; change confined to enamel
2	Exposure of dentin affecting less than one-third of crown
3	Exposure of dentin affecting one-third or more of crown

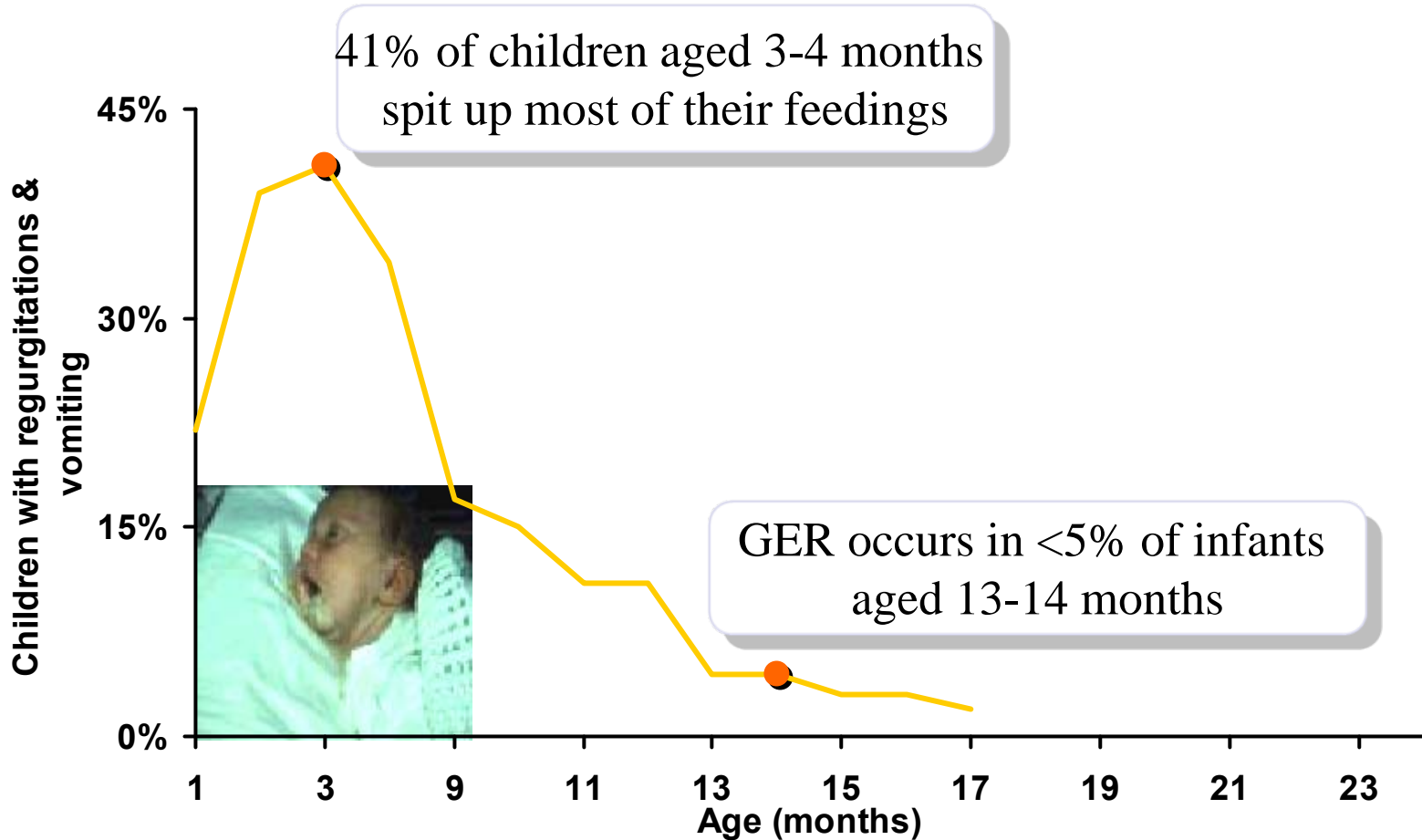


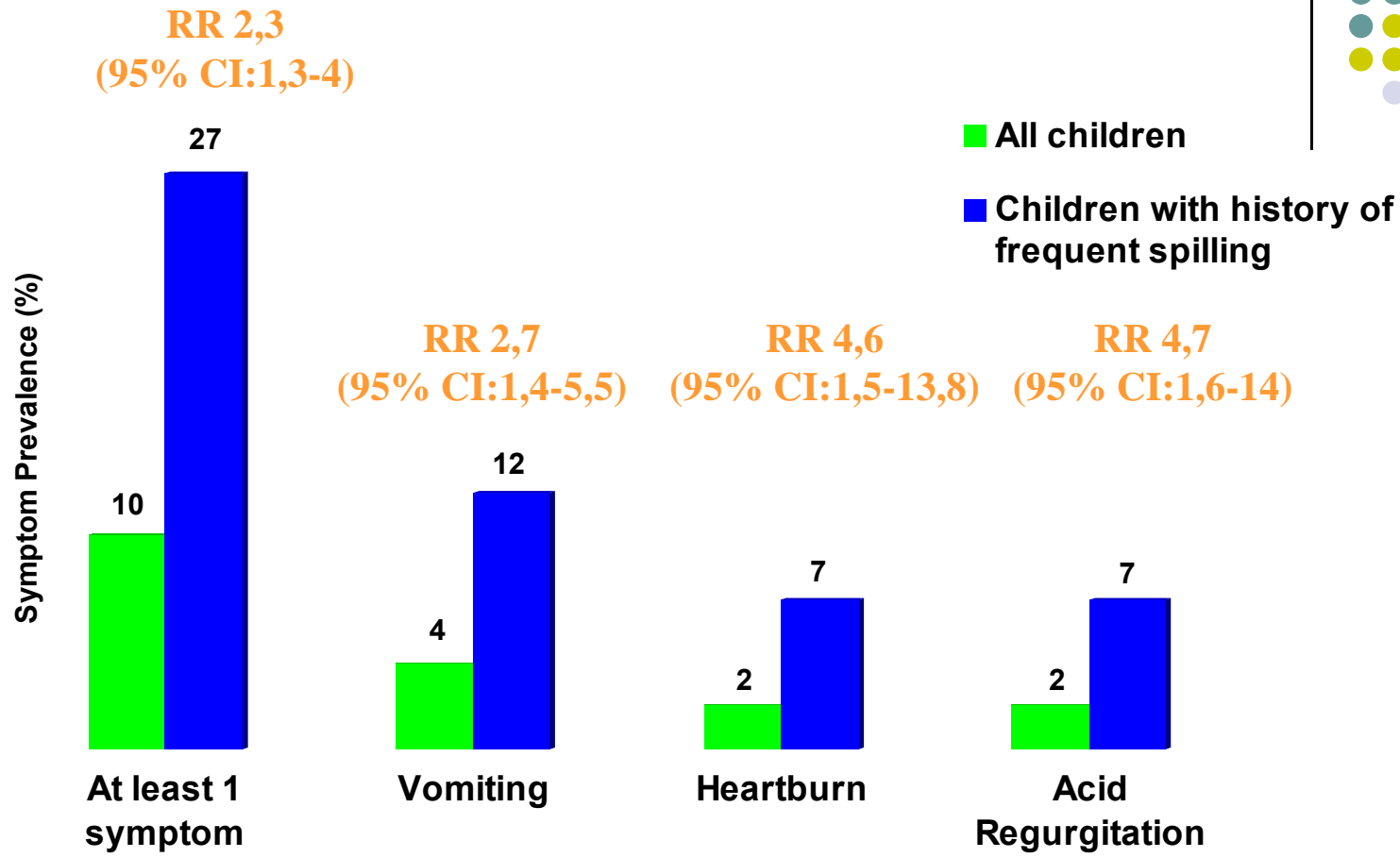
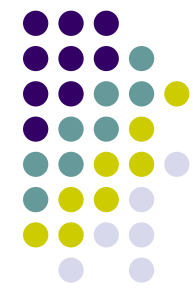


Four ways to maintain oral health

- **Diet**
 - Cut down on acidic foods & drinks
 - Drink quickly or use straw/ by-pass front teeth
- **Tooth cleansing**
 - Thoroughly twice daily/ fluoride toothpaste
- **Fluoridation**
 - Water fluoridation: highly effective public health measure
 - Fluoride supplements: high risk, no water fluoridation area
- **Visiting a dentist**

Natural History of GER until 2 years



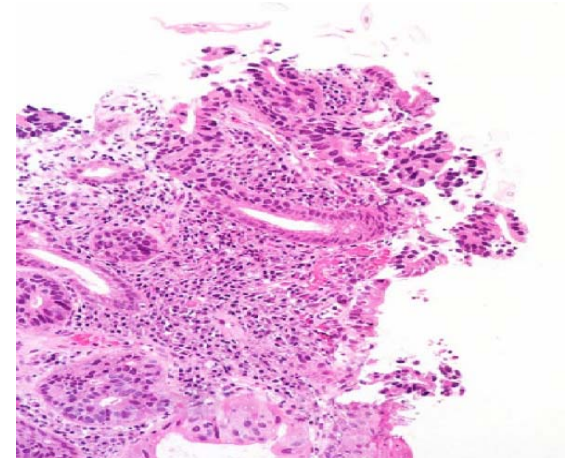
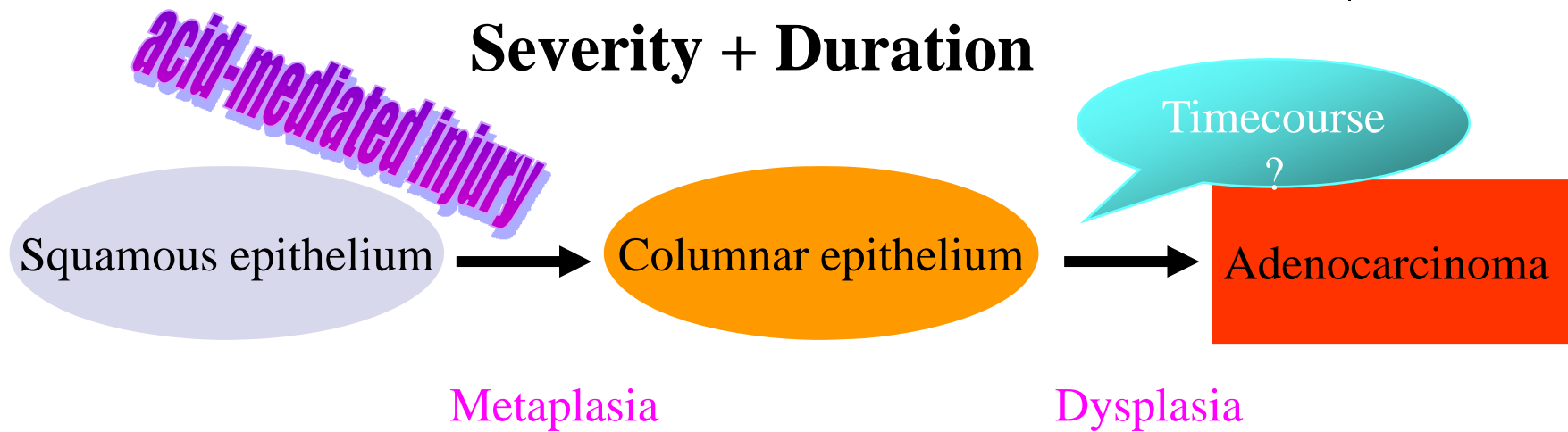


693 children

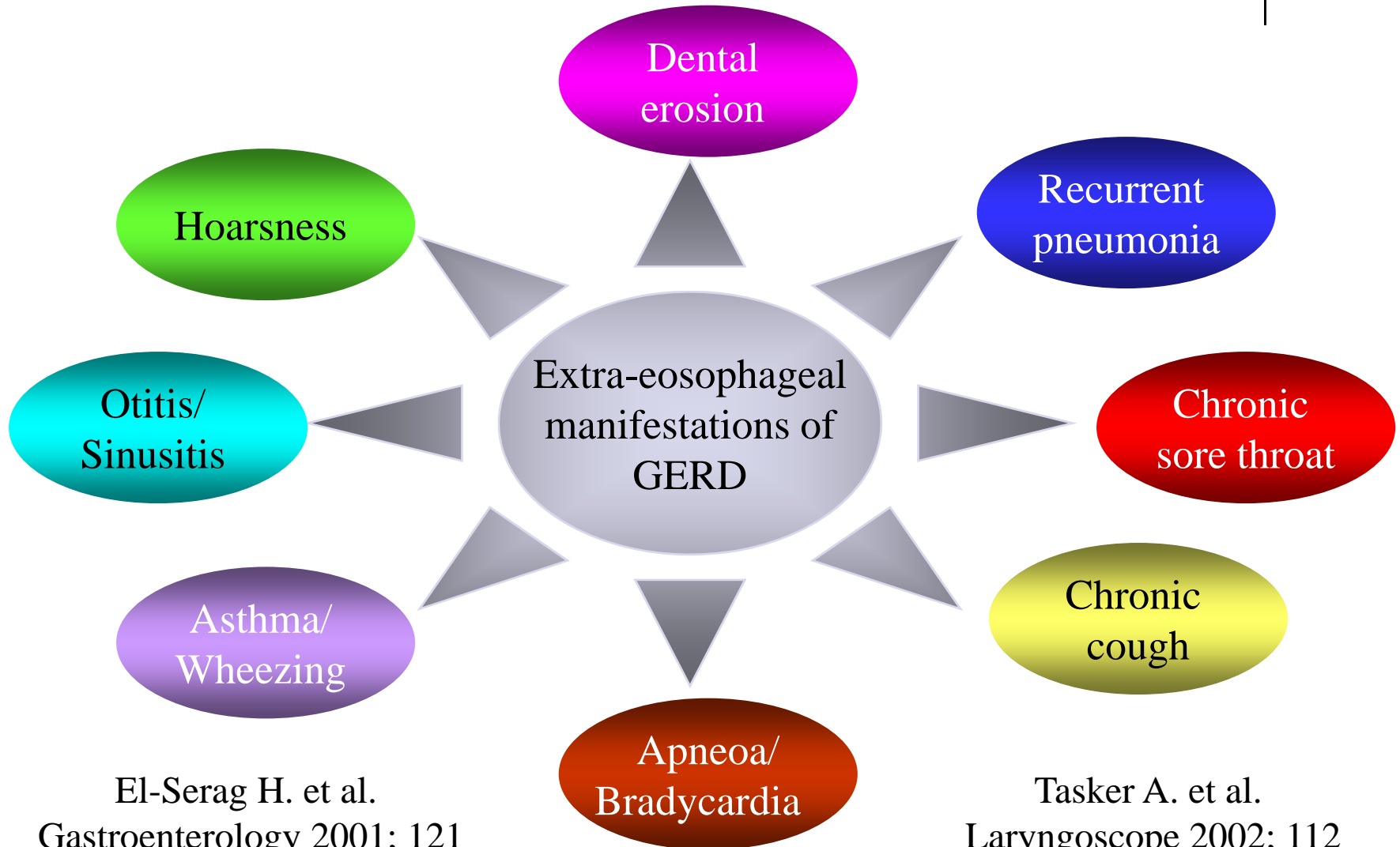
mean age: 9,7 years

frequent spillers: regurgitation/ vomiting ≥ 90 days during first 2 years

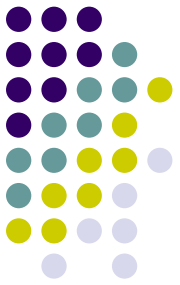
GERD is an evolving process



Extra-esophageal symptoms of GERD

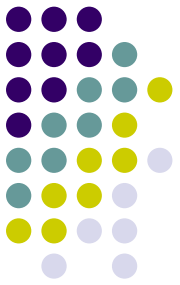


GERD Pathogenesis



- Inappropriate LES relaxation
- Impaired esophageal clearing
- Delayed gastric emptying
- Impaired esophageal mucosal defense
- Drugs
- Consequences~refluxate
amount/acidity/esophageal mucosa contact
time

Interventions for dental erosion



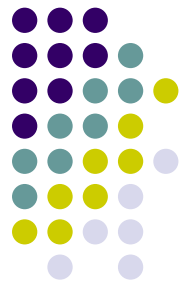
- Evaluation of GERD
 - 24 pH monitoring
 - Intra-luminal Impedance monitoring
- Periodic dental assessment
- Preventive measures
- Trial of PPI

Highly effective medical therapies



Treatment	Response
Life style modifications/ antacids	20%
H ₂ -receptor antagonists	50%
Single dose PPI	80-90%
Increased dose PPI	up to 100%

Pharmacotherapy: Prokinetics



Metoclopramide

- Questionable efficacy
 - 12 studies in children since 1985
 - 7/9 controlled trials: **NO** significant improvement in GER sx, even $\geq 0,1$ mg/kg/d
- Adverse effects
 - Extrapiramidal sx can occur even with low doses
 - Individual susceptibility
 - Tardive dyskinesia may be prolonged

Pharmacotherapy: PPI



- Symptoms relief in 71-96% within 2-5 days
- Heals esophagitis within 4 weeks
 - 67-92% grade 1-2 & 48-62% grade 4
- Superior to H₂ARs (>90% H₂AR refractory GERD healed)
- 4-12 weeks (24) for healing
- If refractory, take before breakfast **PLUS** 2nd dose before dinner or add H₂RA at bedtime (tachyphylaxis)

