BMJ Masterclass for GPs

General Update

Using the latest evidence to make better decisions

Nightmare clinic on Friday

Dr Warren Hyer FRCPCH
Consultant Paediatrician
Consultant Paediatric Gastroenterologist

Formerly from Royal Children's Hospital, Melbourne, Australia
Northwick Park and St Mark's Hospital, Harrow, UK
www.dr-hyer.co.uk

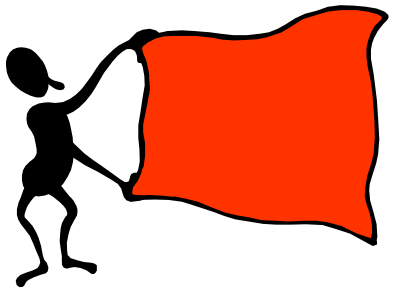
First patient

- Alex
- Age 4 years
- New onset limp
- Preceeding febrile illness 1 week ago

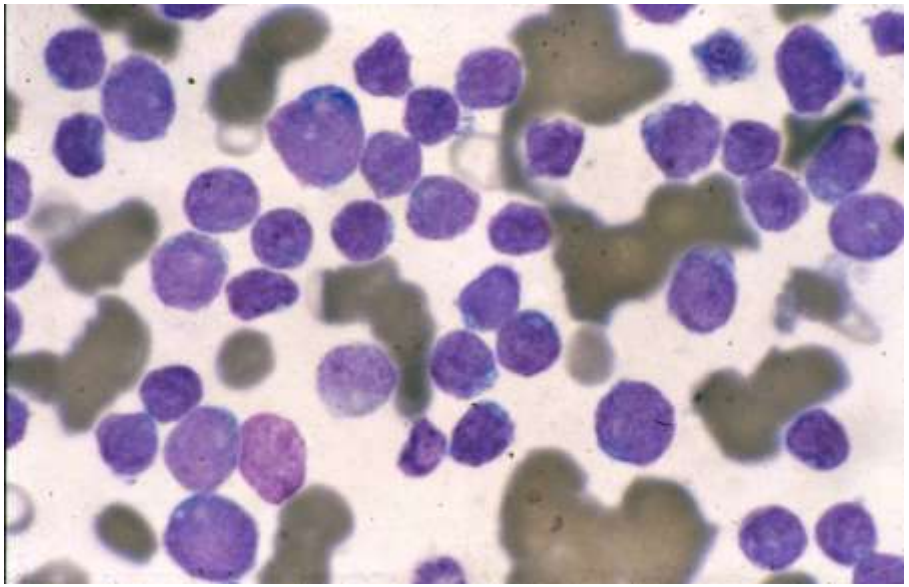
- The most discriminating clinical finding/investigation in a child with a new onset limp is:
  - Temperature
  - Ultrasound of the hip
  - Blood culture
  - Ability to weight bear

Limp

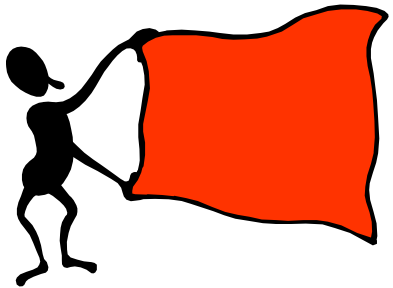
- Pick up rate for pathology is high
- Never dismiss a child with a limp
- Never stop until you've found a cause for a limp
- No joint swelling = no arthritis



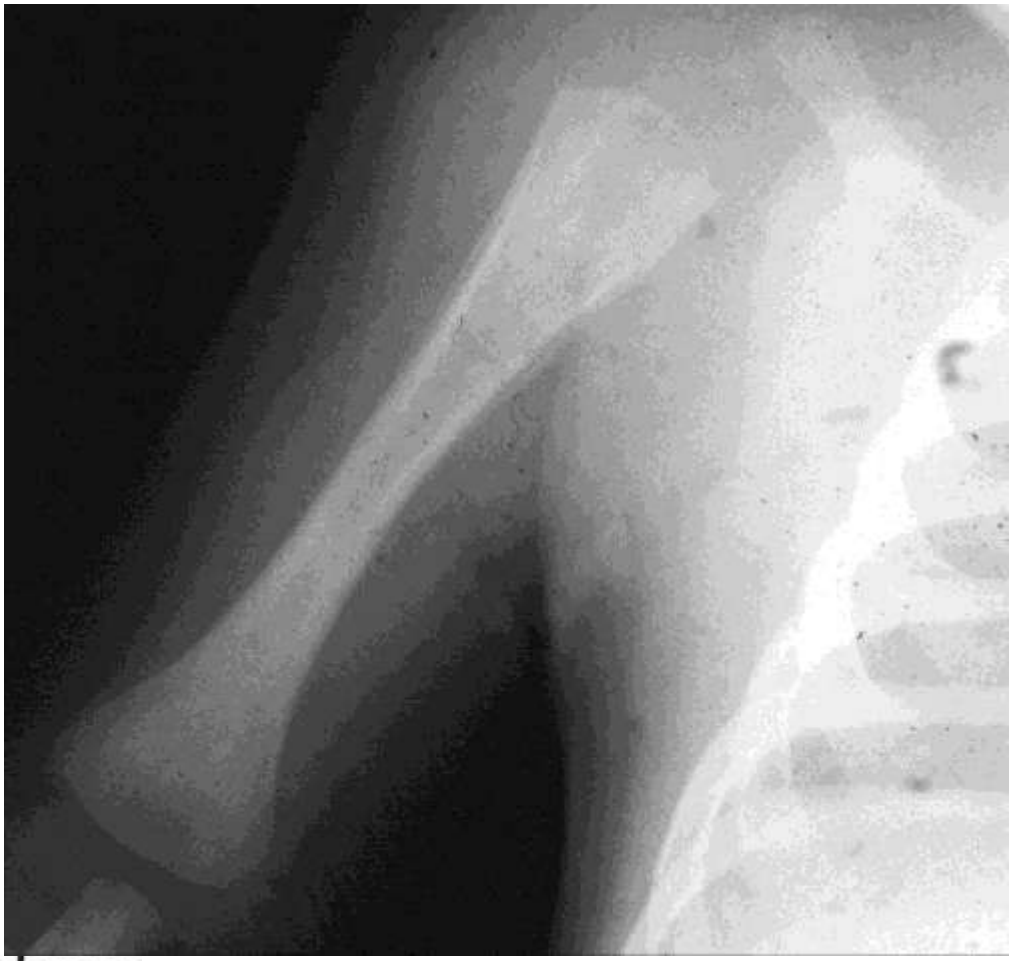
has leg pain and a new onset limp.



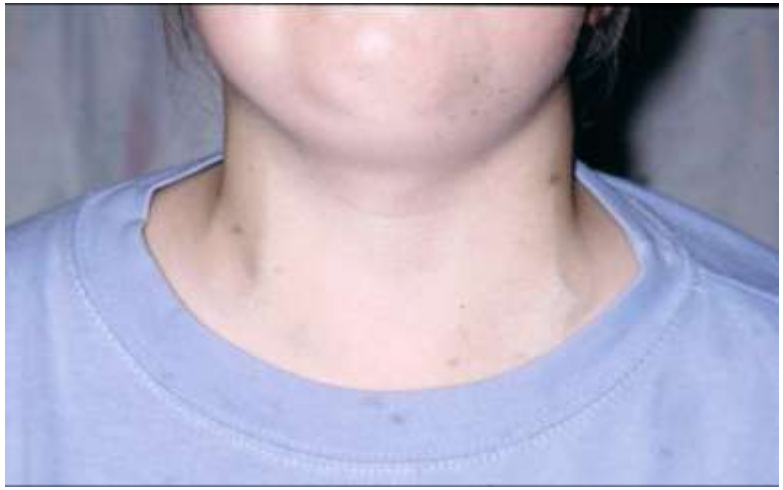
Always check the testes

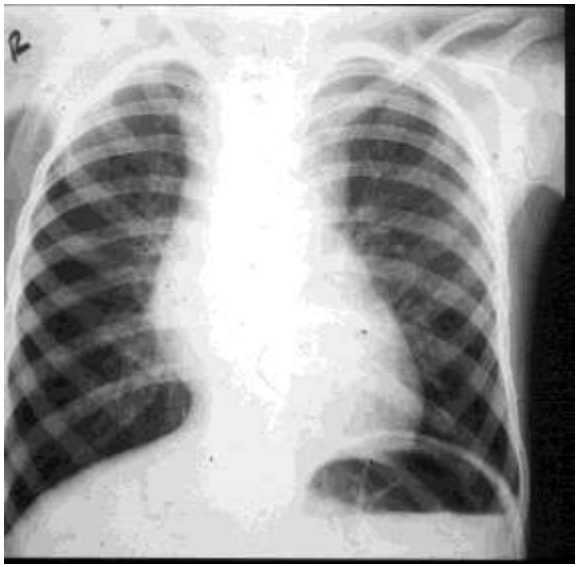


Infant Chloe has reduced movement in her arm at age 8 weeks

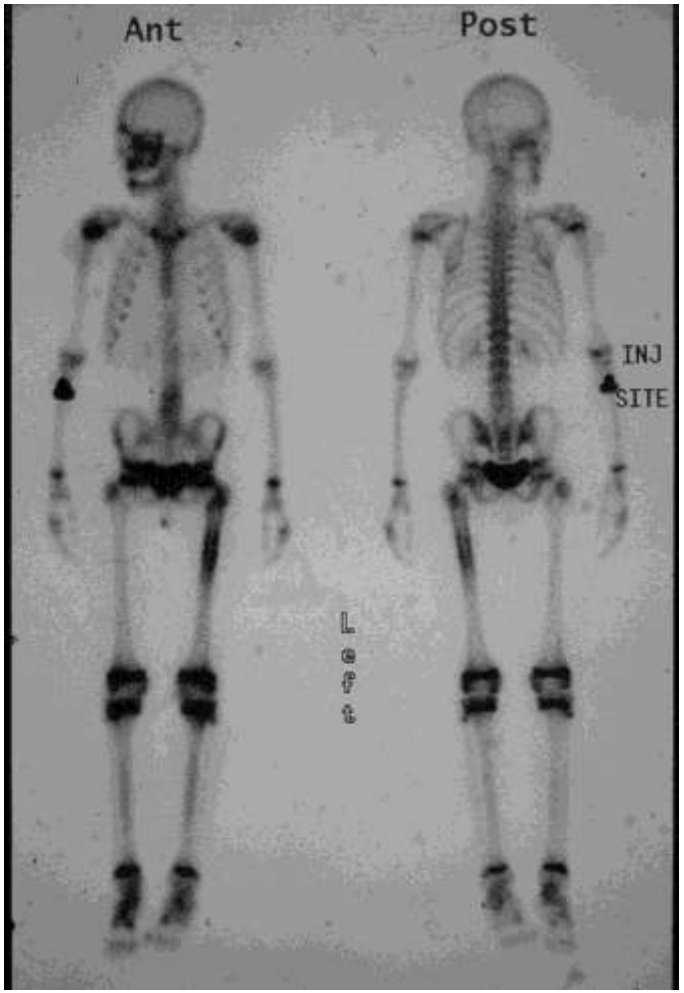


- Jamie, age 2 years new onset limp





- Do not give oral antibiotics to children with a limp



This may evolve into:

- A tumour
- Infection
- Orthopaedic
- An inflammatory disorder in evolution (6 weeks)
  - Most children with 6 weeks of joint pain get a bone marrow test before they have a course of steroids – with good reason
- It is only transient when it goes away

Septic arthritis vs transient synovitis

- To differentiate between septic arthritis and transient synovitis,
  - History of fever
  - Non weight bearing
  - ESR > 40mm/hr
  - Serum WBC > 12 x 10^9/l

- 3 of these, probability of septic arthritis is 93%
- 4 of these, probability of septic arthritis is 99%

Refer to Paeds any stage you think it is septic

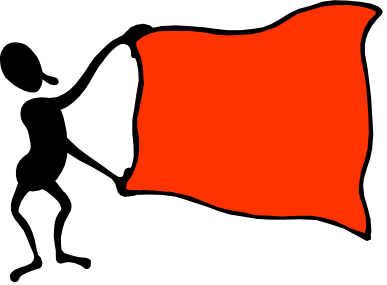
Assess, look for fever, pallor, and which joint involved

< 24 hrs if infected MS send in. Otherwise wait 24 hrs

> 24 hrs, FBC and film, CRP, think US but not essential

Persistent – go find pathology. Do not discharge

- Transient synovitis is only transient when it goes
- Document about pallor, and organomegaly
- Don’t discharge
- No antibiotics
- Only post strep when you know it was post strep



Learning points – acute Limp

Worry until you find a cause

Do not discharge

Diagnosing a malignancy is a possibility

Next please

- After the MMR fiasco, Gemma's mother wants to discuss the HPV vaccination programme, and her child's egg allergy.

- The UK is behind much of the Westernised health services in some of its childhood vaccination

Apart from the provision of clean water, vaccines have had a more profound effect on world health, especially of children, than any other public health measure.

E Richard Moxon, Action Research Professor of Child Health, University of Oxford, UK

Vaccination programme

When to immunise	Diseases protected against	Vaccine given
Two months old	Diphtheria, tetanus, pertussis (whooping cough), polio and *Haemophilus influenzae* type b (Hib) Pneumococcal infection	DTaP/IPV/Hib + Pneumococcal conjugate vaccine (PCV)
Three months old	Diphtheria, tetanus, pertussis, polio and *Haemophilus influenzae* type b (Hib) Meningitis C	DTaP/IPV/Hib + MenC
Four months old	Diphtheria, tetanus, pertussis, polio and *Haemophilus influenzae* type b (Hib) Meningitis C Pneumococcal infection	DTaP/IPV/Hib + MenC + PCV
Around 12 months	*Haemophilus influenza* type b (Hib) Meningitis C	Hib/MenC
Around 13 months	Measles, mumps and rubella Pneumococcal infection	MMR + PCV
Three years four months to five years old	Diphtheria, tetanus, pertussis and polio Measles, mumps and rubella	DTaP/IPV or dTaP/IPV + MMR
Thirteen to eighteen years old	Tetanus, diphtheria and polio	Td/IPV

Vaccines save our lives. But they come with an imperative. And that is that you have to keep using them. If immunization rates fade, vaccine preventable diseases will be back. And we will be able to experience first-hand what life must have been like in the early twentieth century.

Paul Offit, Chief, Division of Infectious Diseases, Children's Hospital of Philadelphia, USA

Role of HPV

- HPV DNA in 99.7% of cervical cancers
- Persistent infection is a prerequisite of neoplasia
- Highest risk within 6 months – where there is less protection from screening
- HPV may cause IEN in vulva, vagina and anus

Comparing the vaccines

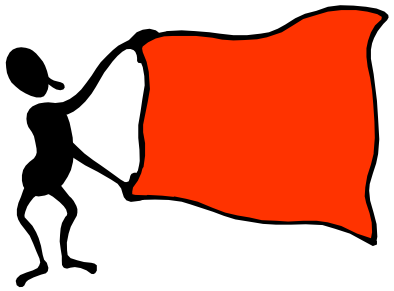
Cervarix

- Active against oncogenic HPV 16 and 18
- Efficacy = 100%
- Novel adjuvant

Gardasil

- Active against oncogenic HPV 16 and 18 and low risk group (6&11)
  - ? ↑ protection against genital warts
- Efficacy 100%
- Aluminium adjuvant

Contraindication = vaccine hypersensitivity



A particular difficulty in communicating the success of immunisation is that vaccines work so well. In countries with high vaccine coverage, there are too few cases of vaccine-preventable diseases for anyone to notice that the diseases are being prevented.

Commonly asked questions?

- Who benefits – HPV –ve women
- How long does it last = 5 years
- What about boys?
  - Little benefit if high coverage in women
  - ? Impact on Ca anus, penis or H&N
- Older women?
  - 95% protection if HPV neg,
  - 44% protection if 44% of all women
- Current vaccination protects for 70% only therefore continue cervical screening

In contrast to the pre-vaccine situation described in table 1, there were 141 child deaths in road traffic accidents in 2005 in the UK.[6] With regard to vaccine safety, 130 episodes of anaphylaxis were recorded from 1997 to 2003, but no deaths were reported.[7]

Egg allergy and MMR vaccination

Adam Fox and Gideon Lack

Extra precautions, including continuous observation for 20 minutes after vaccination, with further monitoring of cardiorespiratory parameters to a total of 2 hours, are needed if:

- there is a history of any cardiorespiratory symptoms or signs after egg ingestion

  or

- there is the presence of active, chronic asthma

Box 1. Guidelines for the administration of the MMR vaccine to children with egg allergy.[4]

Conclusions

With good evidence that MMR vaccination is safe in egg-allergic children, excluding or delaying vaccination in these children cannot be justified and places the child at risk of developing a potentially serious infection. Guidelines exist to select those children most at risk of any form of life-threatening hypersensitivity reaction and provide them with extra precautions.

CURRENT TOPIC

Varicella vaccination—a critical review of the evidence

S A Skull, E E L Wang

Table 3 Summary of recommendations for use of VZV vaccine

Manoeuvre	*Effectiveness*	*Level of evidence*	*Recommendation*
Immunisation of 12–15 mth old children with varicella vaccine	Effective in preventing varicella infection and secondary cases in household contacts	Randomised control trials/I[21 26–30] Prospective cohort studies/ II-2[31–33 35–41]	Good evidence to include in routine health care (A)*
Catch up immunisation of children to 12 years with varicella vaccine	Effective in preventing varicella infection and secondary cases in household contacts	Randomised control trials/I[21 26–29] Prospective cohort studies/ II-2[31–34 36–41 69]	Good evidence to include in routine health care (A)
Immunisation of susceptible adolescents with varicella vaccine	Effective in preventing varicella infection and secondary cases in household contacts	Prospective cohort studies/ II-2[36–38 46]	Fair evidence to include in routine health care (B)
Immunisation of susceptible adults with varicella vaccine	Effective in preventing varicella infection and secondary cases in household contacts	Controlled trials/II-1[43] Prospective cohort studies/II-2[44–46]	Fair evidence to include in routine health care (B)

*Good evidence also exists for simultaneous administration with MMR vaccine at separate sites.

The NEW ENGLAND JOURNAL of MEDICINE

Safety and Efficacy of an Attenuated Vaccine against Severe Rotavirus Gastroenteritis
***Guillermo M Ruiz-Palacios*, *Irene Pérez-Schael*, *F Raúl Velázquez*, *Hector Abate*, *et al*. Boston: Jan2006 Vol. 354, Iss. 1; pg. 11, 14 pgs**

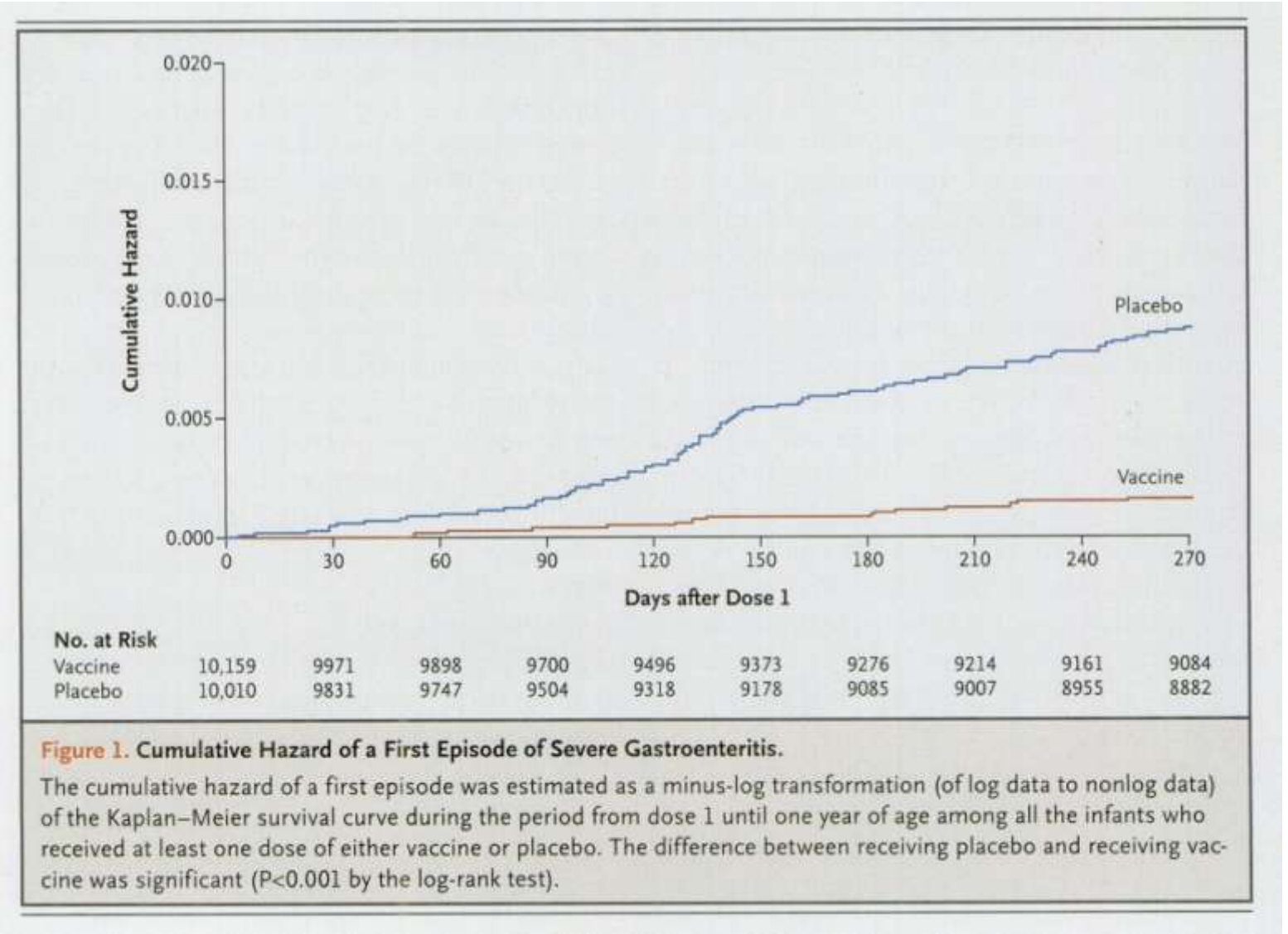


Figure 1. **Cumulative Hazard of a First Episode of Severe Gastroenteritis.**
The cumulative hazard of a first episode was estimated as a minus-log transformation (of log data to nonlog data) of the Kaplan–Meier survival curve during the period from dose 1 until one year of age among all the infants who received at least one dose of either vaccine or placebo. The difference between receiving placebo and receiving vaccine was significant ($P<0.001$ by the log-rank test).

Universal hepatitis B vaccine	Now	As a combination or stand-alone vaccine for infants or pre-adolescents	Prevention of hepatitis B transmission
Boosters of acellular pertussis vaccine	Now	As a teenage booster vaccine	To reduce disease and transmission of pertussis among young adults and from young parents to their infants
Varicella vaccine	Now	Combined with MMR or as a separate vaccine in toddlers, or as a catch-up for adolescents	Reduction of morbidity and mortality associated with varicella and complications of varicella (especially bacterial superinfection)
Hepatitis A vaccine	Now	Children over 12 months of age	Control of endemic and epidemic hepatitis A and as a travel vaccine
Influenza vaccine	Now	Highest disease rates in the those under 2 years of age	Reduction of influenza morbidity and mortality in early childhood
Higher valency pneumococcal conjugate vaccines (PnC10 and PnC13)	Expected within several years	Infant immunisation but has potential benefit for older children and adults	Prevention of bacteraemia, pneumonia and meningitis and reduction of death and disability caused by *Streptococcus pneumoniae*
Rotavirus vaccine	Available since mid-2006	Infants under 6 months of age	Prevention of rotavirus morbidity, hospitalisation and mortality (estimated 14 deaths per year in the UK)
Human papilloma virus vaccines	Available now in some regions	Pre-adolescent girls?	Prevention of cervical cancer and genital warts
Meningococcal ACYW vaccines and other various combinations	One vaccine available now and others in the pipeline	As a toddler vaccine for direct protection of children or a teenage vaccine to provide direct protection in this at-risk age group and herd immunity	Broader protection against meningococcal infection

Indeed, if implemented today these "new" vaccines can prevent most invasive pneumococcal infections, most hospitalisations from gastroenteritis, most influenza-related hospital admissions and the severe complications of varicella. With continued development of vaccines for serogroup B *N meningitidis* and respiratory syncytial virus, the spectrum of admissions to the paediatric ward could soon be redefined.

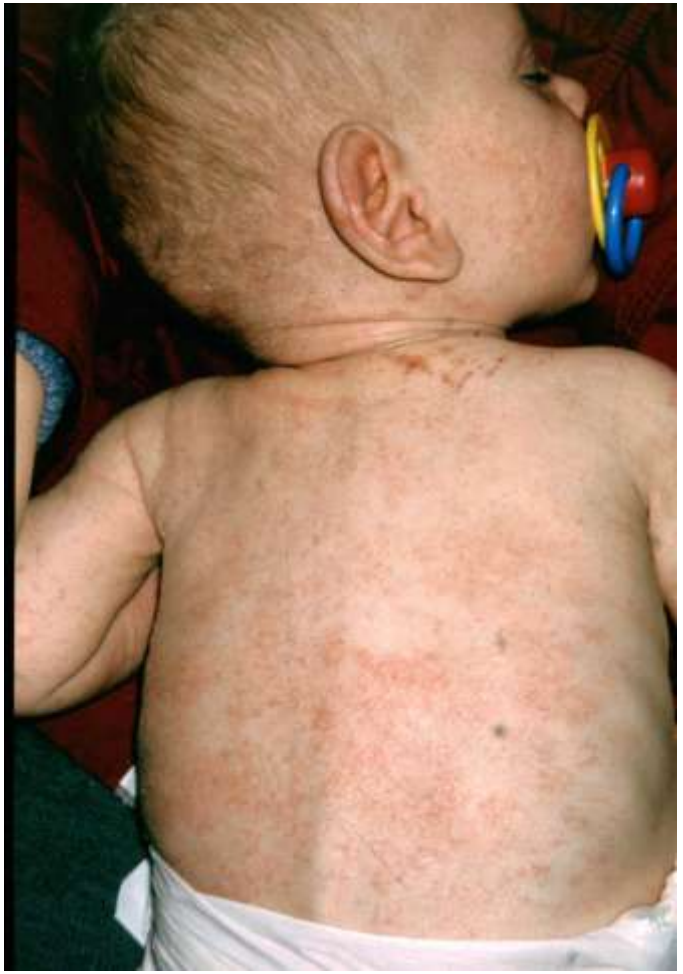
Learning points – vaccinations

- Vaccination is the single medical intervention to change the face of paediatric disease
- HPV vaccination – no brainer
- The UK vaccination programme is in the 20th century
- Very very few contraindications to vaccination


REMEMBER KIDS - THE TWO THINGS WE NEVER EAT ARE THE LIPS AND THE ARSEHOLES - THEY GET SENT TO THE FAST FOOD RESTAURANTS.

Next please…….

- Sophie age 6 months, has severe eczema and mother wants advice on weaning.



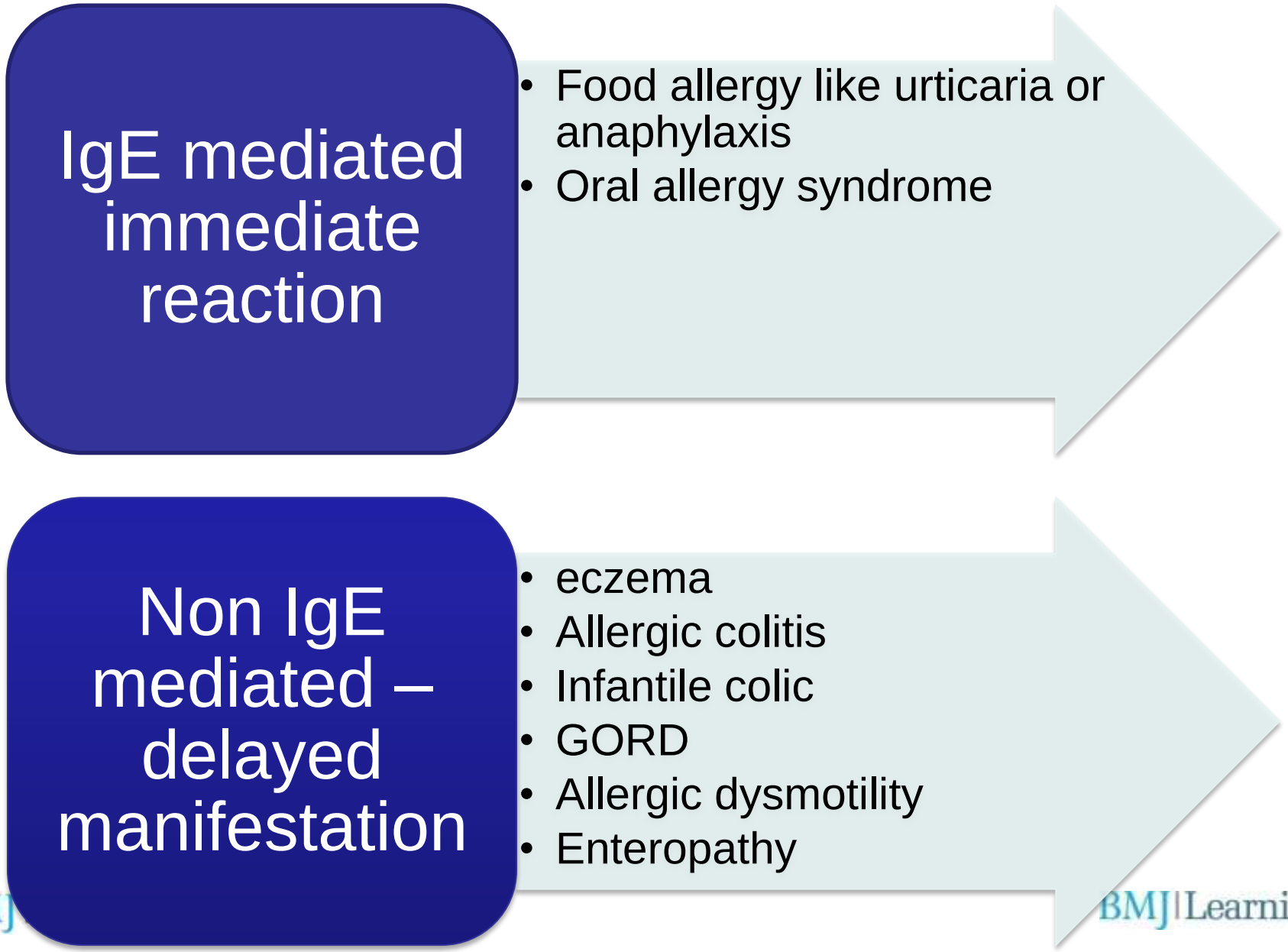

IgE mediated immediate reaction
• Food allergy like urticaria or anaphylaxis
• Oral allergy syndrome
Non IgE mediated – delayed manifestation
• eczema
• Allergic colitis
• Infantile colic
• GORD
• Allergic dysmotility
• Enteropathy

Table 5. Frequency of IgE-mediated food allergy in infants with and without atopic dermatitis (AD)

Number of food items subjects were allergic to[a]	6 months of age						12 months of age					
	MACS AD−[b]		MACS AD+[b]		severe AD[c]		MACS AD−[b]		MACS AD+[b]		severe AD[c]	
	n	%	n	%	n	%	n	%	n	%	n	%
0	382	95	97	78	7	17	350	89	77	64	10	35
1	16	4	24	19	13	32	31	8	31	26	10	34
2	4	1	3	2	13	32	13	3	11	9	5	17
3	0		1	1	8	20	0		2	2	4	2
Total	20	5	28	22	34	83	44	11	44	37	19	65
Cases in total	402		125		41		394		121		29	

Reproduced with permission from Hill et al. [2].

[a] IgE-mediated food allergy (SPT >3+) to 1, 2 or 3 foods.

[b] MACS = Melbourne Atopy Cohort Study subjects.

[c] This represents a separate group of infants with severe atopic dermatitis treated in a tertiary referral hospital outpatient clinic.

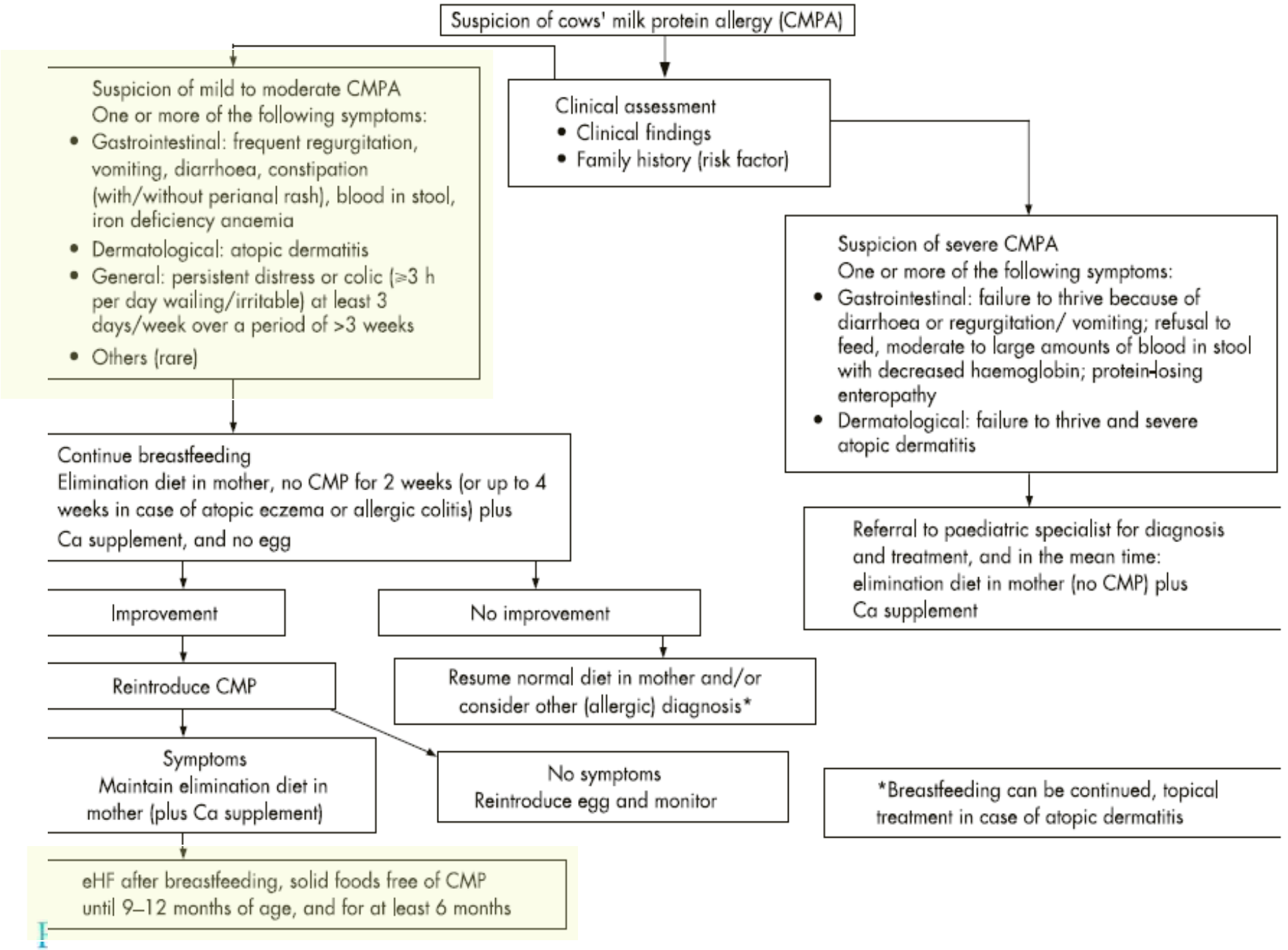
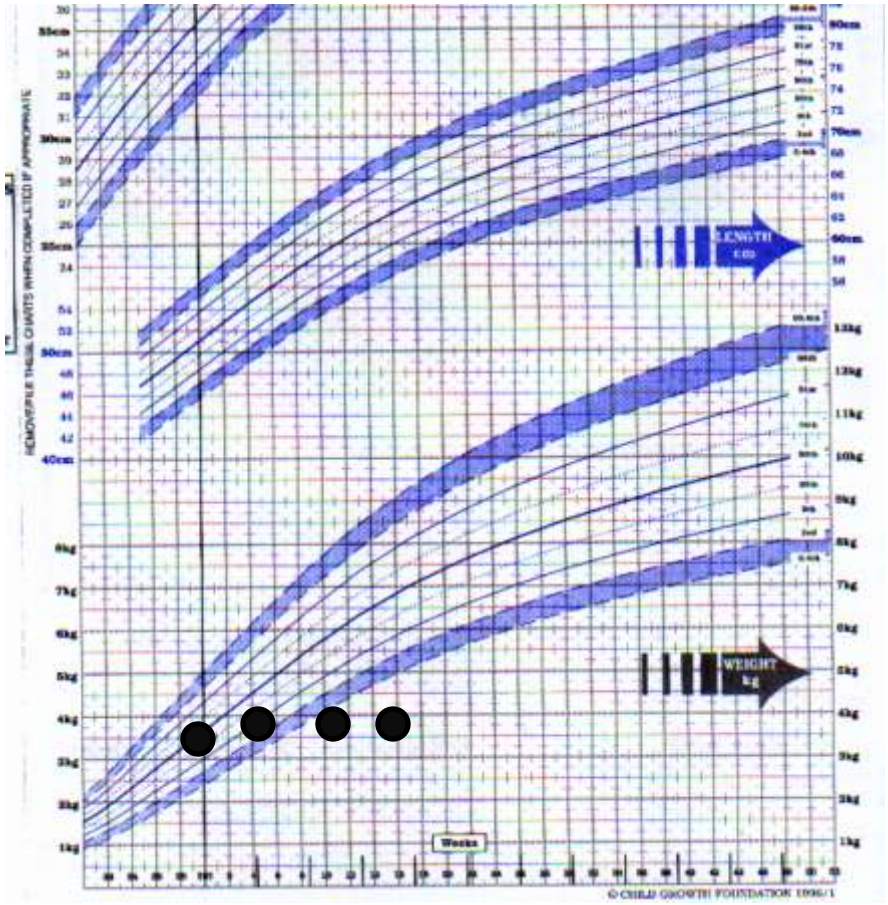
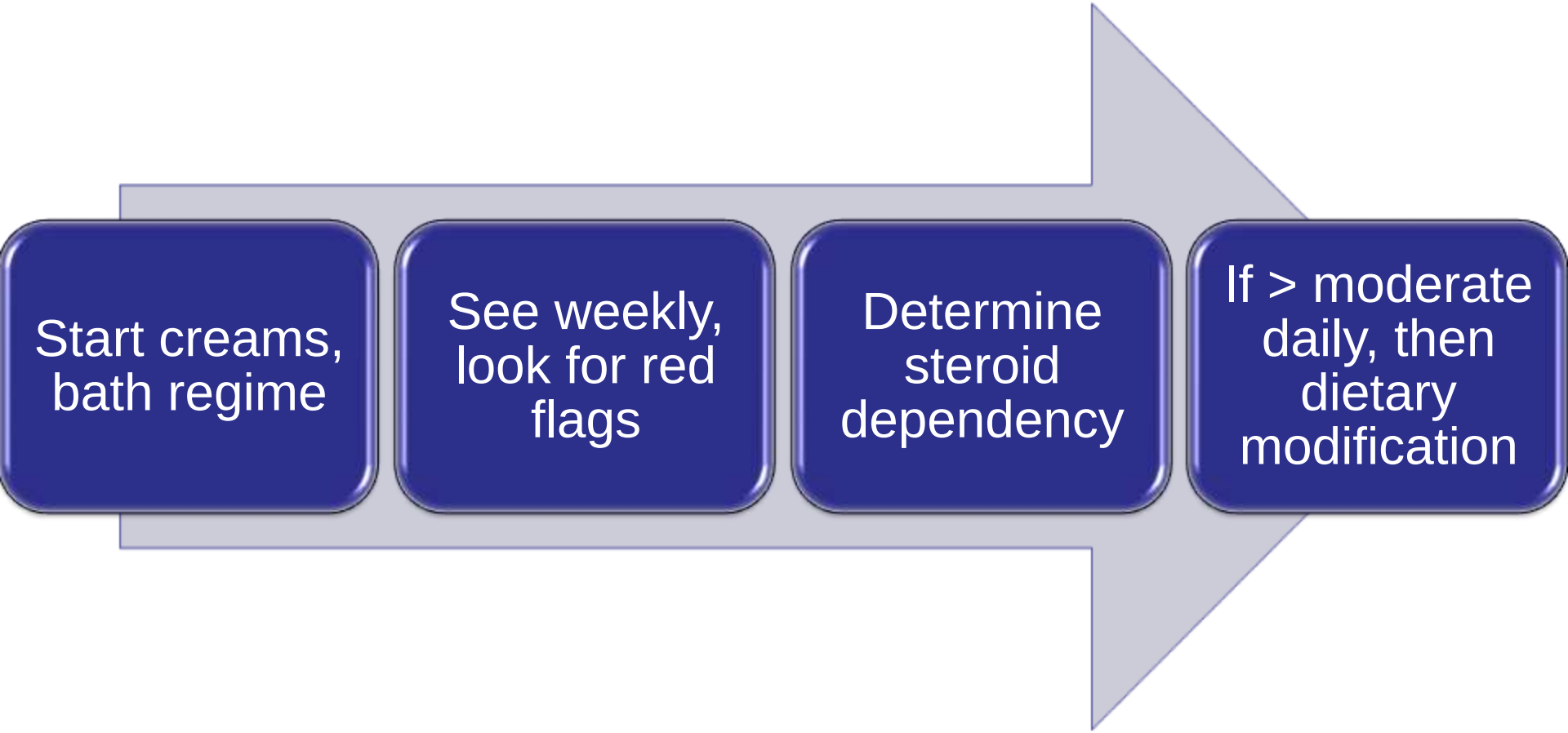


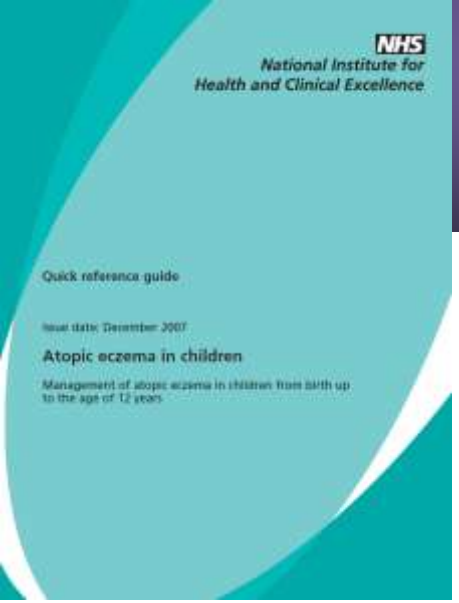
Figure 1 Algorithm for the diagnosis and management of cow's milk protein allergy (CMPA) in exclusively breast-fed infants. eHF, extensively hydrolysed formula.

Warning signs in severe infantile eczema



Severe eczema in child < 1 year





Diet

- Offer a 6–8 week trial of an extensively hydrolysed protein formula or amino acid formula in place of cow's milk formula for bottle-fed infants under 6 months with uncontrolled moderate or severe atopic eczema.
- Do not use diets based on unmodified proteins of other species' milk (for example, goat's or sheep's milk) or partially hydrolysed formulas for the treatment of suspected cow's milk allergy. Diets including soya protein can be offered to children over 6 months with specialist dietary advice.
- Refer for specialist dietary advice children who follow a cow's-milk-free diet for more than 8 weeks.
- Inform breastfeeding women that it is not known whether altering the mother's diet is effective in reducing the severity of the condition. Consider a trial of an allergen-specific exclusion diet under dietary supervision if you strongly suspect food allergy.

Steroid dependency ladder

Strong
- Elocon daily
- Elocon alt days

Mod
- Betnovate
- Synalar 1:4

Mild
- eumovate
- 1% hydrocortisone

For dietary modification

Cows milk formulae

- Allergic
- Cheap
- tastes nice

Partially hydrolysed

- Soy not an option
- Questionable effectiveness

Whey hydrolysate

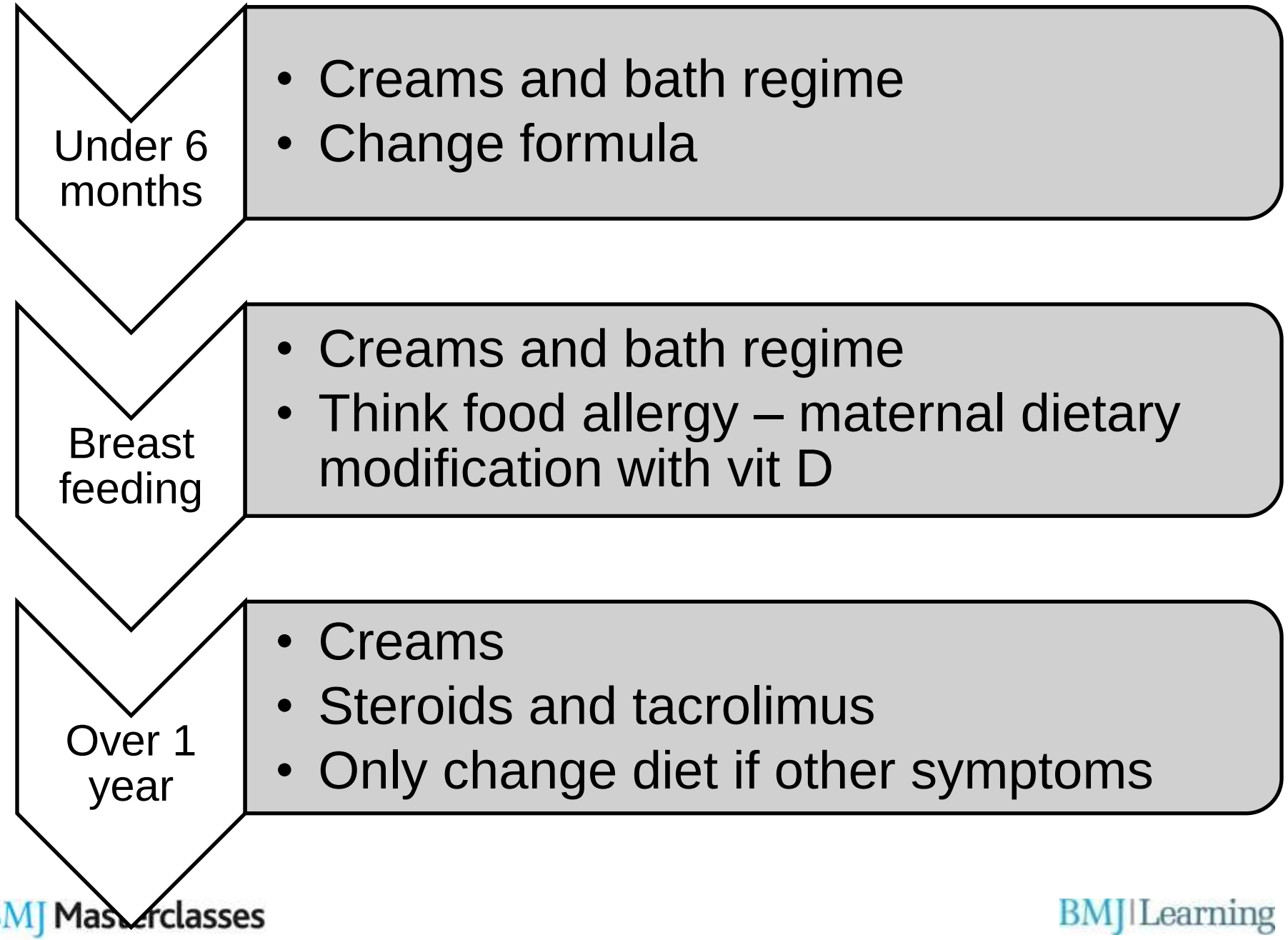
- Palatable but allergic
- e.g. Pepti

Caesin hydrolysate

- First line for food allergy
- e.g. nutramigen

Elemental

- Unpalatable
- Expensive
- First line if breast feeding
  - e.g.neocate
  - Nutramigen AA


Under 6 months
• Creams and bath regime
• Change formula
Breast feeding
• Creams and bath regime
• Think food allergy – maternal dietary modification with vit D
Over 1 year
• Creams
• Steroids and tacrolimus
• Only change diet if other symptoms

PHARMACY UPDATE

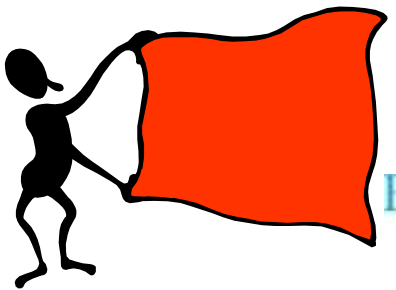
NEW PRODUCTS FOR ECZEMA

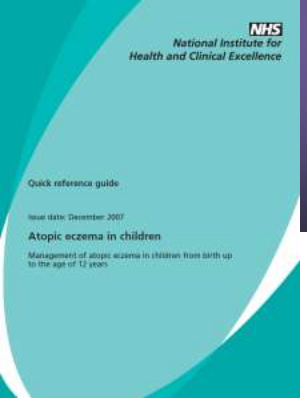
S Conroy

ep23

Arch Dis Child Educ Pract Ed 2004; **89**:ep23–ep26. doi: 10.1136/adc.2003.047423

- 1% not licensed
- Avoid sun exposure
- Avoid on infected skin





NICE made easy

1. • Emoillient
2. • Emoillient and 1% hydrocortisone
3. • Emoillient, moderate potency, tacrolimus, bandages
4. • Emoillient, potent, tacrolimus, phototherapy or systemic therapy

Steroid ladder

Strong
- Elocon daily
- Elocon alt days

Mod
- Betnovate
- Synalar 1:4

Tacrolimus
- Protopic
- Elidil

Mild
- eumovate
- 1% hydrocortisone

For dietary modification

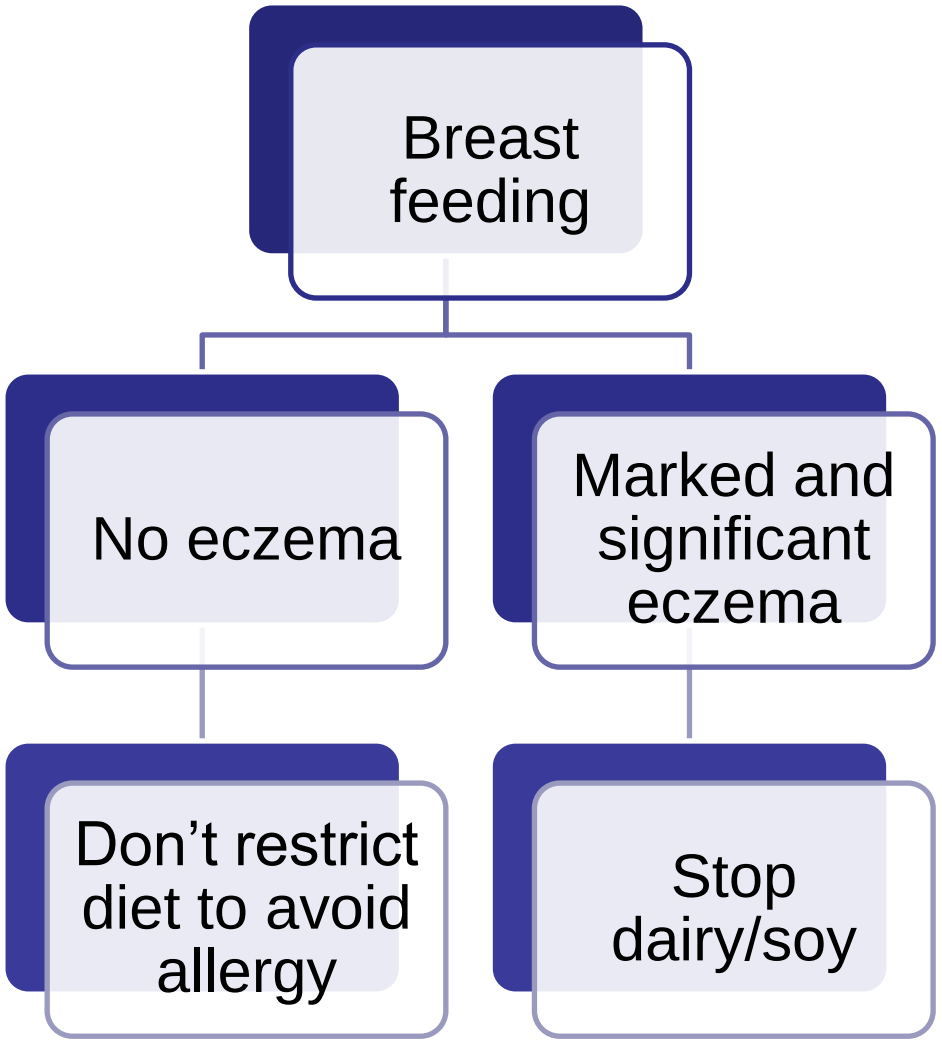
- “The evidence from this study supports neither a delayed introduction of solids beyond the fourth month nor a delayed introduction of the most potentially allergenic solids beyond the sixth month of life for the prevention of eczema. However, effects under more extreme conditions cannot be ruled out”

- Solid Food Introduction in Relation to Eczema: Results from a Four-Year Prospective Birth Cohort Study.
- Journal of Pediatrics. 151(4):352-358, October 2007
- FILIPIAK, BIRGIT, ZUTAVERN, ANNE, MD, MPH, KOLETZKO, SIBYLLE, VON BERG, ANDREA, BROCKOW, INKEN, MD, MPH, GRUBL, ARMIN, BERDEL, DIETRICH, REINHARDT, DIETRICH, BAUER, CARL, WICHMANN, H.-ERICH, MD, PHD, HEINRICH, JOACHIM

Food for Thought on Prevention and Treatment of Atopic Disease Through Diet

eczema that cleared on an egg-free diet. Although the role of food allergy in atopic dermatitis remains a matter of debate despite extensive data demonstrating a relationship[20,21] (and further supported by the present study), the Hill et al study also raises questions about sensitization to allergens through breast-feeding or during pregnancy. Reviews of available studies on atopy prevention generally conclude that there is no strong evidence indicating that avoidance of major allergens during pregnancy or lactation has a protective effect,[7,22] although reduction of atopic dermatitis cannot be ruled out.

If exclusively breast feeding



Should I avoid a dairy formula?

Cows milk formulae

- Allergic
- Cheap
- tastes nice

Partially hydrolysed

- Soy not an option
- Questionable effectiveness

Whey hydrolysate

- Palatable but allergic
- e.g. Pepti

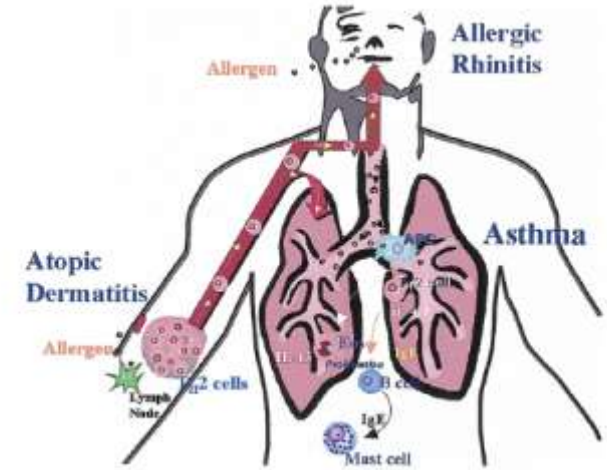
Caesin hydrolysate

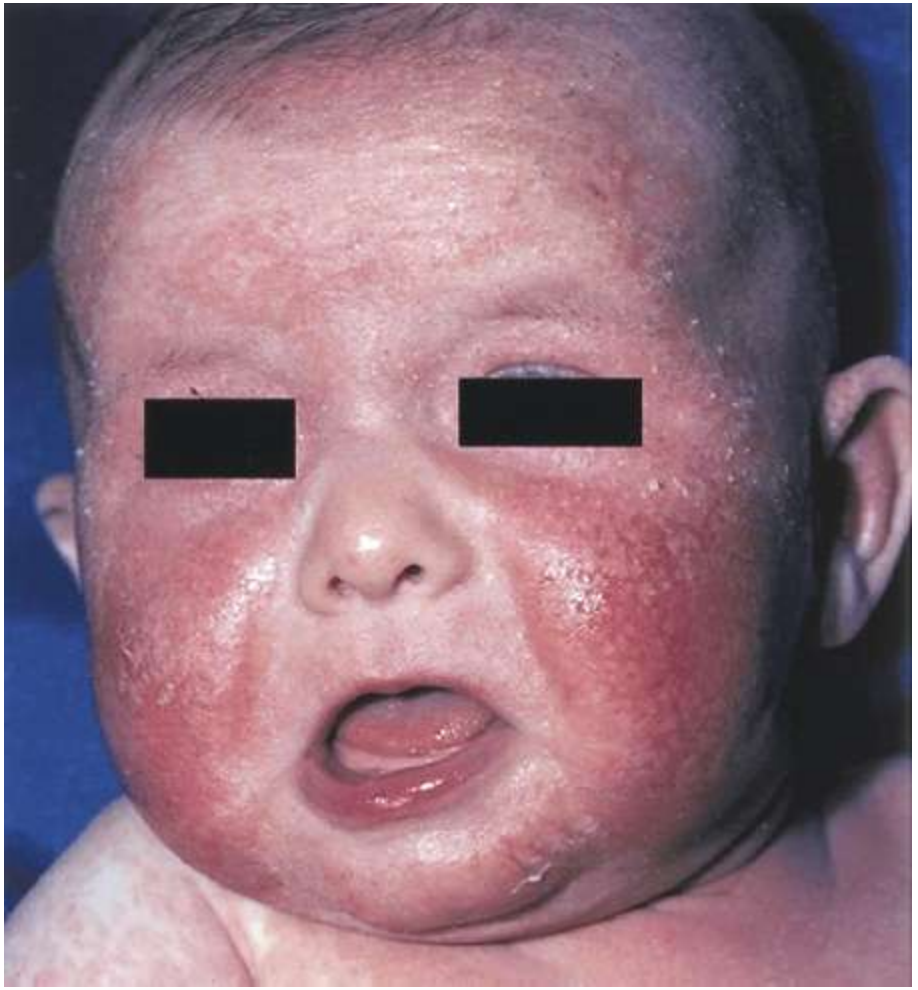
- First line for food allergy
- e.g. nutramigen

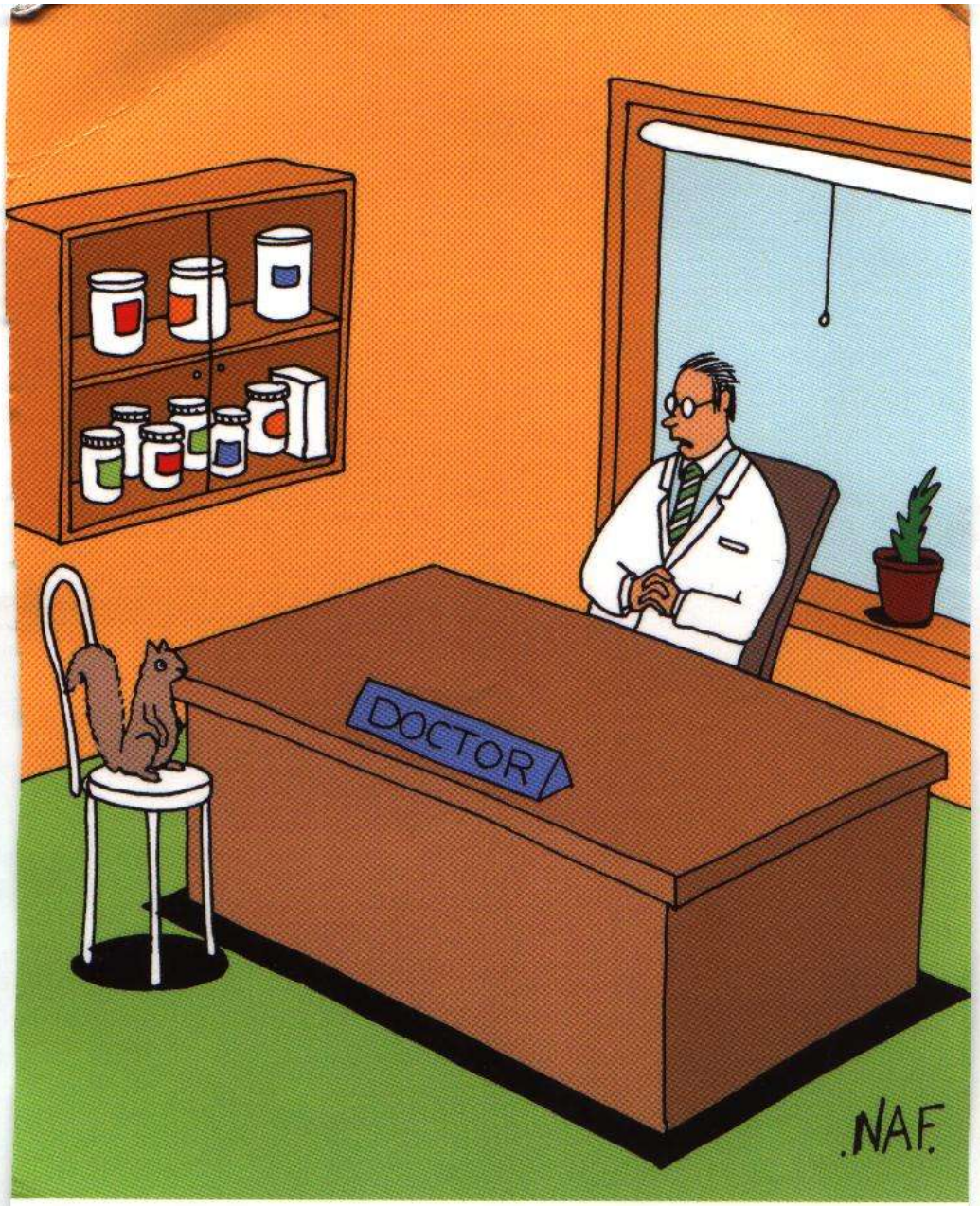
Elemental

- Unpalatable
- Expensive
- First line if breast feeding
  - e.g.neocate
  - Nutramigen AA

- This state increases sensitisation
- Can we prevent asthma?







"Bit of a bummer really,
you've got a nut allergy."

Learning points – Eczema

- Don’t ignore the role of food allergy in children < 1 year but only if extensive.
- Be wary about advice to breast feeding mothers
- Steroid ladders – start on upper rungs

Next please

- Jamie, age 18 months, attends wheezing yet again, 3rd time this month

- This is a prelude to inevitable asthma
- This condition responds to oral steroids
- There is benefit in treating gastro-oesophageal reflux
- Burst therapy with inhaled steroids for 3 days is acceptable

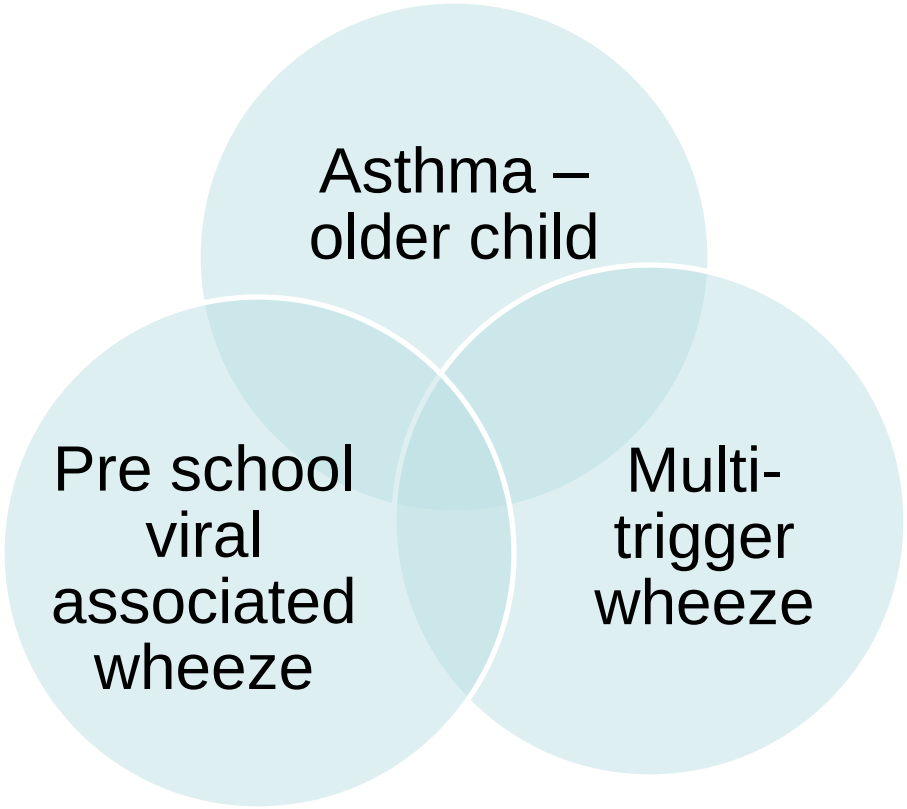
Regarding asthma therapies

- Inhaled steroids my reduce height velocity
- Inhaled steroids = montelukast in efficacy and response
- LABA can be used as monotherapy in moderate asthma
- Environmental modification e.g. HDM reduction may decrease steroid requirement

Viral induced wheeze

- Through the winter months, >90% of infants< 1year will wheeze
- Viral associated wheeze is not the same as bronchiolitis
- >20% of all children are atopic
- Viral associated wheeze is wheeze with viruses but no symptoms in between

Why so much inconsistency?



Does dexamethasone help in bronchiolitis?

The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 JULY 26, 2007 VOL. 357 NO. 4

A Multicenter, Randomized, Controlled Trial of Dexamethasone for Bronchiolitis

CONCLUSIONS

In infants with acute moderate-to-severe bronchiolitis who were treated in the emergency department, a single dose of 1 mg of oral dexamethasone per kilogram did not significantly alter the rate of hospital admission, the respiratory status after 4 hours of observation, or later outcomes. (ClinicalTrials.gov number, NCT00119002.)

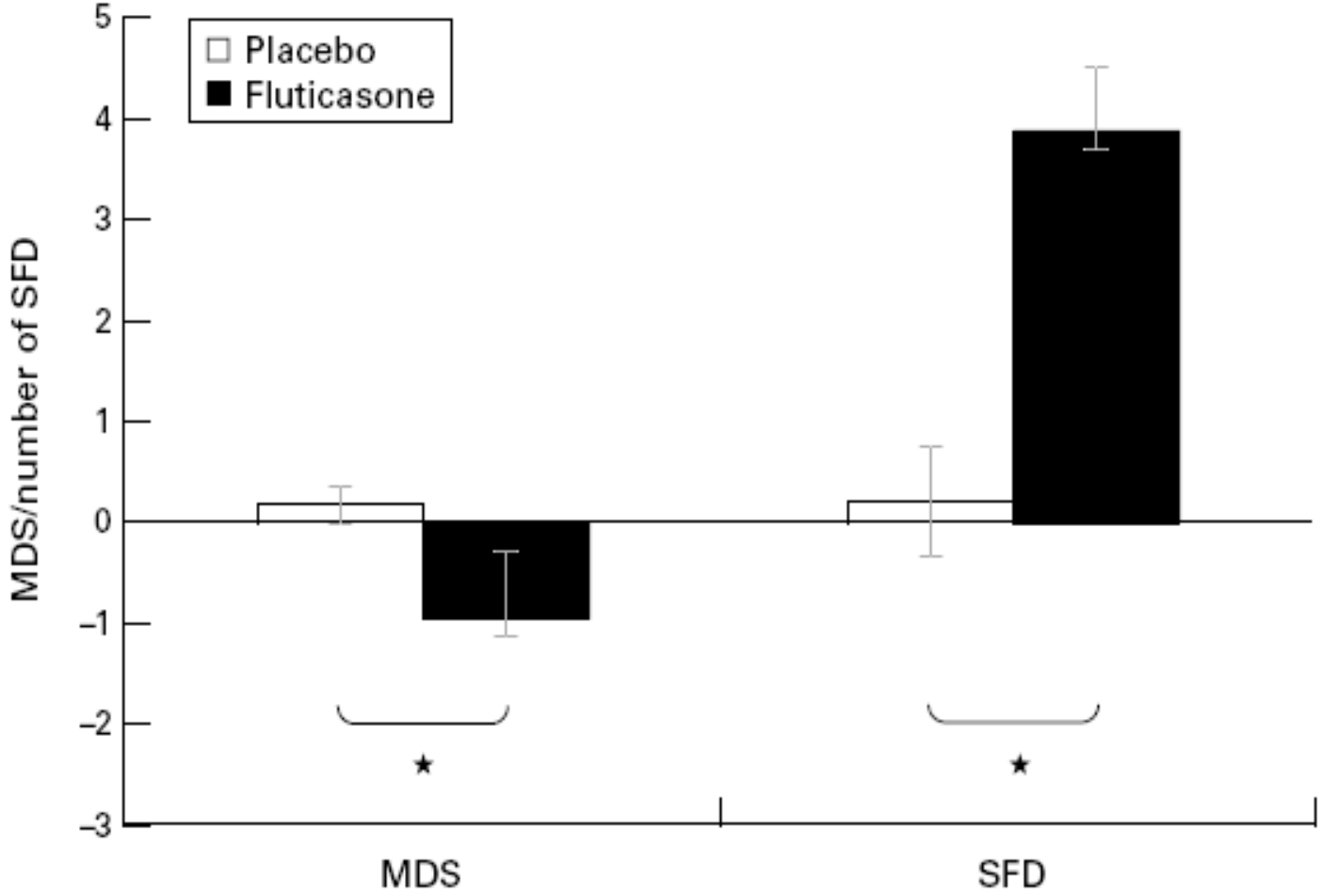
Oral Steroids probably won't work in infants < 1 year

- Is this viral induced?
- Is this bronchiolitis?
- Will it stop them getting asthma?
- What other options are there?
- What about episodic inhaled steroids?
- What about montelukast?
- Who needs admitting?

Arch Dis Child 2001;85:143–148

Persistent wheezing in infants with an atopic tendency responds to inhaled fluticasone

R J Chavasse, Y Bastian-Lee, H Richter, T Hilliard, P Seddon



Montelukast Reduces Asthma Exacerbations in 2- to 5-Year-Old Children with Intermittent Asthma

Hans Bisgaard, Stefen Zielen, María Luz Garcia-Garcia, Sebastian L. Johnston, Leen Gilles, Joris Menten, Carol A. Tozzi, and Peter Polos

TABLE 2. RATES OF EVENT PER YEAR, RELATIVE RATES AN
FOR ASTHMA EXACERBATIONS AND OVERALL CORTICOSTI

	Montelukast (*n* = 265) Rate/yr* (95% CI)	Placebo (*n* = 257) Rate/yr* (95% CI)
Asthma exacerbation		
Episodes	1.60 (1.35, 1.88)	2.34 (1.97, 2.79)
Corticosteroid courses	1.19 (0.94, 1.51)	1.74 (1.39, 2.18)
Inhaled	0.66 (0.46, 0.94)	1.10 (0.83, 1.45)
Oral	0.53 (0.40, 0.70)	0.64 (0.47, 0.88)

Treating the wheeze in viral associated wheeze

- Bronchodilators
  - 8 RCT's (total 313 children) – no overall benefit with bronchodilators – was this an issue of delivery
  - SR on ipratropium vs. beta$_2$ agonists showed no clear benefit
- Inhaled steroids
  - 3 CT (total 122 children, using budesonide at the start of the URTI, led to less symptoms but no effect on hospital admission
- Oral steroids
  - RCT, n=217, no benefit with prednisolone
- Leukotriene-receptor antagonist
  - RCT, n=220, start montelukast at start of wheeze – 30% less visits to the doctor, but this was group was age 2-14yrs

Bottom line – try salbutomol, deliver it well.

Preventing therapy for viral wheeze

- Regular inhaled steroids
  - Budesonide n=57, no clear benefit
- Nasal corticosteroids
  - RCT n=50, no effect on nighttimes cough
- Leukotriene-receptor antagonist
  - RCT n=549, those who took regular montelukast experienced fewer exacerbations – how many of these children had asthma

ORIGINAL ARTICLE

Preemptive Use of High-Dose Fluticasone for Virus-Induced Wheezing in Young Children

Over a median period of 40 weeks, 8% of upper respiratory tract infections in the fluticasone group led to treatment with rescue systemic corticosteroids, as compared with 18% in the placebo group (odds ratio, 0.49; 95% confidence interval [CI], 0.30 to

In preschool-age children with moderate-to-severe virus-induced wheezing, preemptive treatment with high-dose fluticasone as compared with placebo reduced the use of rescue oral corticosteroids. Treatment with fluticasone was associated with a smaller gain in height and weight. Given the potential for overuse, this preventive approach should not be adopted in clinical practice until long-term adverse effects are clarified. (ClinicalTrials.gov number, NCT00238927.)

What are the effects of treatments for acute wheezing in infants?

Asthma and wheeze

Beneficial

Beta$_2$ agonists (high dose nebulised)* . . . . . .

Corticosteroids (high dose inhaled) . . . . . .

Corticosteroids (systemic) . . . . . .

Metered dose inhaler plus spacer devices for delivery of beta$_2$ agonists (as effective as nebulisers) . . . . . .

Multiple dose ipratropium bromide (inhaled) added to beta$_2$ agonists for severe acute asthma (in emergency room) . . . . . .

Oxygen* . . . . . .

BMJ Clinical Evidence

Asthma and other wheezing disorders in children

Search date October 2005

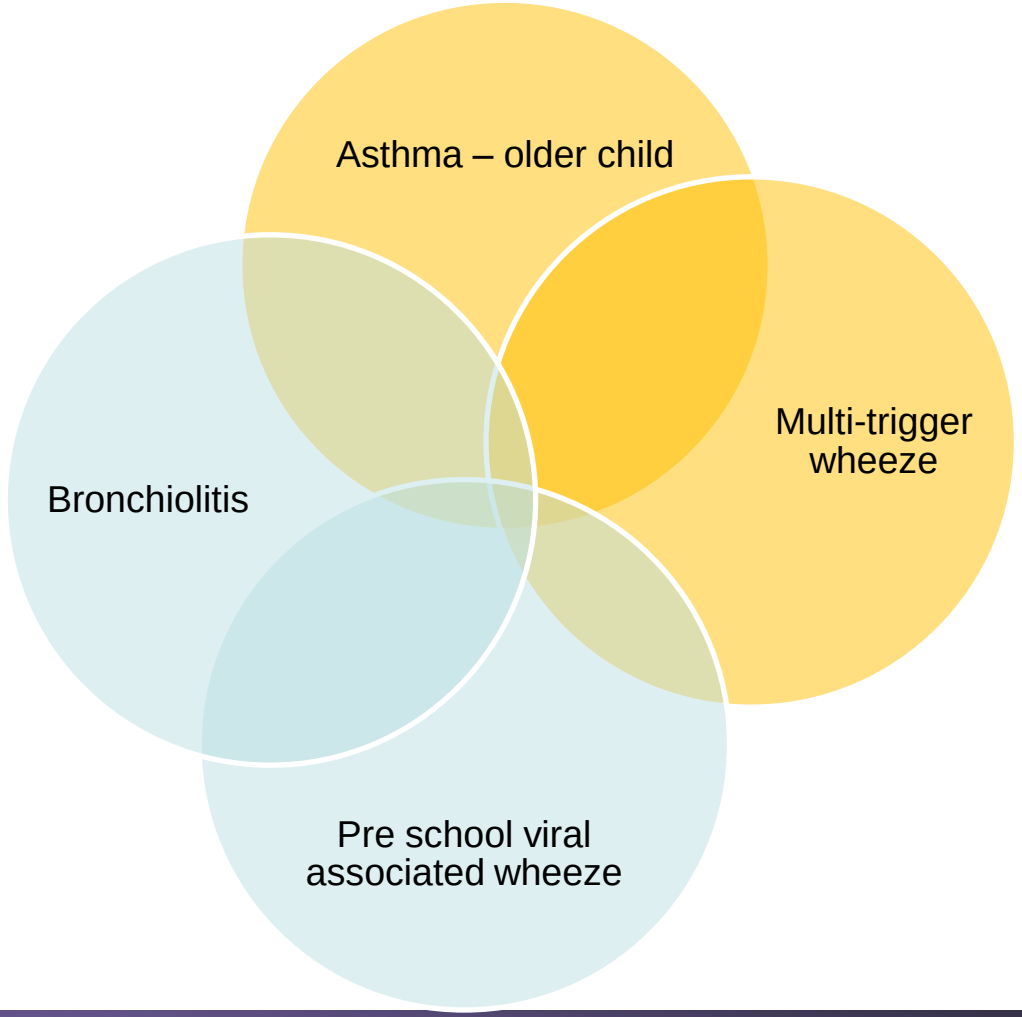
Spacer or nebuliser

OPTION SHORT ACTING BETA2 AGONISTS DELIVERED BY METERED DOSE INHALER/SPACER VERSUS NEBULISER

- Surprisingly no evidence that nebulisers are better.
- No difference in hospital admission

Role of atrovent/ipratropium

- Works better as an add on therapy
- Does not work as prophylaxis
- There is not good evidence to support it’s use as a single agent.



ASTHMA - ? A DIFFERENT DISEASE TYPE

Montelukast versus inhaled steroids

- 2 RCT's to answer this question:
  - Fluticasone 50mcg bd vs. montelukast 5mg od is marginally better – better FEV1 and less symptoms
  - High dose budesonide vs. low dose budesonide vs. montelukast

Montelukast added to budesonide in children with persistent asthma: A randomized, double-blind, crossover study

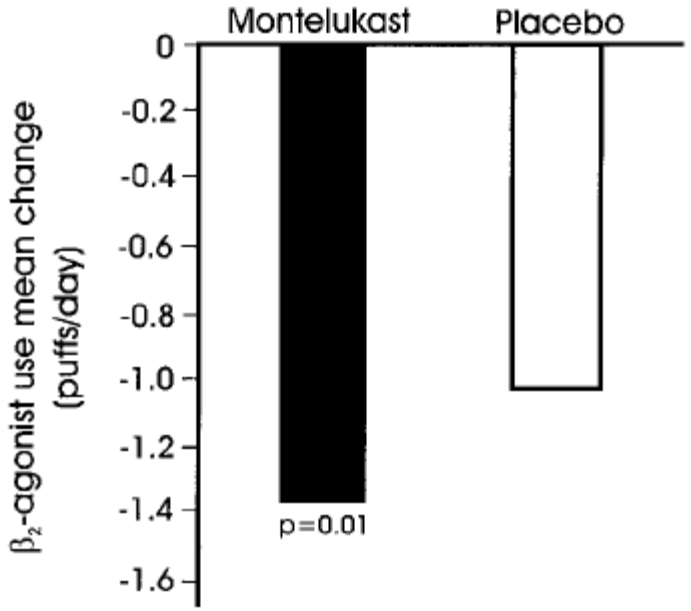


Fig 2. Mean change in β_2-adrenergic agonist use, expressed as puffs per day, in children treated with montelukast or placebo in addition to 200 µg of budesonide twice daily. During montelukast treatment, children had a greater mean decrease in β_2-adrenergic agonist use than during placebo treatment.

Inhaled steroids are definitely better than:

- Placebo
- Theophylline
- Sodium chromoglycate

QUESTION What are the effects of additional prophylactic treatments in childhood asthma inadequately controlled by standard dose inhaled corticosteroids?

- No benefit in increasing the dose of beclomethasone e.g.. Bd to tds
- Doubling dose can reduce height velocity
- LABAs improve symptoms and lung function but not as monotherapy

MedWatch. The FDA information and adverse event reporting program. http://www.fda.gov/medwatch/safety/2005/safety05.htm#LABA (last accessed 2 May 2006).

Does it make you shorter? Unclear.....

Calpin C, Macarthur C, Stephens D, et al. Effectiveness of prophylactic inhaled steroids in childhood asthma: a systematic review of the literature. *J AllergyClin Immunol 1997;100:452–457*

Systematic review – no implication on growth

1996 – budesonide group reduction by 1cms

RCT found that children receiving budesonide grew less than children receiving placebo over 3 years (1 RCT, 3195 children aged 5–17 years; mean difference in growth per year: –0.43 cm

Pauwels RA, Pedersen S, Busse WW, et al. Early intervention with budesonide in mild persistent asthma: a randomised, double-blind trial. Lancet 2003;361:1071–1076

Implication on height

Silent Acid Reflux and Asthma Control

Koichiro Asano, M.D., and Hidekazu Suzuki, M.D., Ph.D.

What Mastronarde and colleagues have shown is that neither esophageal pH monitoring nor the empirical treatment with proton-pump inhibitors identifies the patients in whom asthma is worse because of factors related to gastroesophageal reflux. We believe that a clinical trial should be

Inhaled corticosteroids do not prevent subsequent development of asthma

Guilbert TW, Morgan WJ, Zeiger RS, Mauger DT, Boehmer SJ, Szefler SJ, et al. Long-term inhaled corticosteroids in preschool children at high risk for asthma. N Engl J Med 2006;354:1985-97.

Realise that early regular inhaled steroids for viral associated wheeze has no effect on the natural history of asthma or wheeze in later childhood (IFWIN trial, Murray CS et al, Lancet 2006; 368:754-62)

Environmental and dietary interventions in the first 5 years of life did not reduce risk of asthma and allergic disease

Marks GB, Mihrshahi S, Kemp AS, *et al.* Prevention of asthma during the first 5 years of life: a randomized controlled trial. *J Allergy Clin Immunol* 2006;118:53–61.

Clinical impact ratings GP/FP/Primary care ★★★★★★☆ Allergy & immunology ★★★★★★☆ Paediatrics ★★★★★☆☆

ep126

Q **Does reduction in exposure to house dust mite (HDM) allergens and modification of dietary fatty acids in the first 5 years of life reduce the risk of asthma at 5 years of age?**

CONCLUSION

Reduction in exposure to house dust mite allergens and modification of dietary fatty acids in the first 5 years of life did not reduce the risk of asthma or allergic disease at 5 years of age in children at high risk.

Practical advice

- You must always use a spacer that fits
- Good spacer technique is superior than a home nebuliser

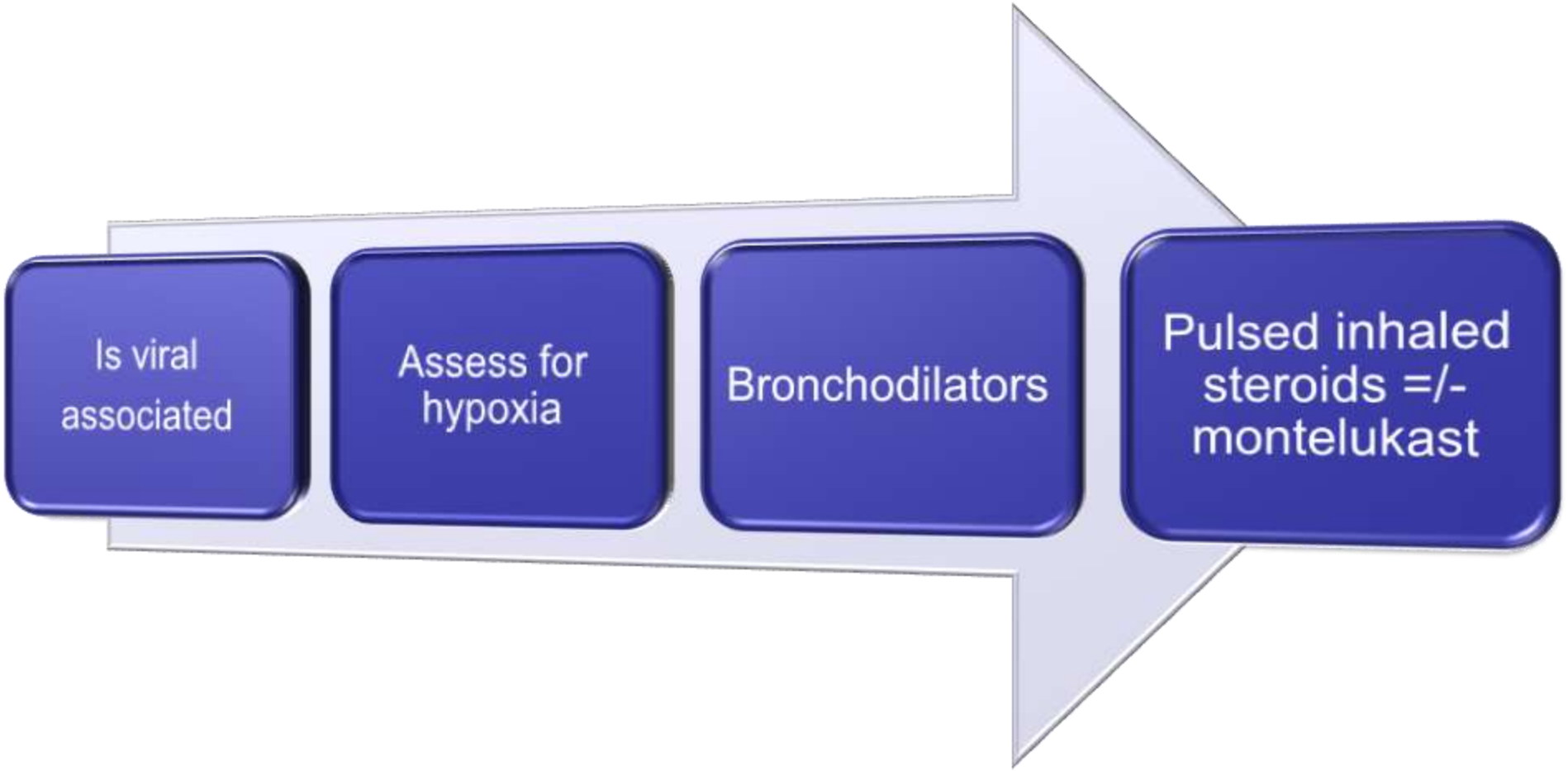
NHS

National Institute for Clinical Excellence

1. Guidance

1.1 For children under the age of 5 years with chronic stable asthma both corticosteroids and bronchodilator therapy should be routinely delivered by pressurised metered dose inhaler (pMDI) and spacer system, with a facemask where necessary.

Treatment plan for viral associated wheeze (pre-school)



Learning points – wheeze

- Preschool wheeze ≠ asthma
- Avoid oral steroids in viral induced wheeze in infants
- Uncertain benefit with montelukast; episodic IS?
- Inhaled steroids more efficacious than montelukast
- Initial effects on final height


MUMMY... ARE THESE MY BRAINS ?


NOT YET

Next please……

- Shane has been complaining of abdominal pain for months. He's been in pain now for 3 weeks and hasn't been to school.
- His trips to A+E resulted in a diagnosis of constipation

Evidence to date

- 13% of normal children have abdo pain
- 4% of all GP paediatric visits
- 8% of all children consult the GP for pain
- Lots of children have unnecessary investigations
- IBD presents late in childhood – mainly through lack of awareness

Should I take a urine sample

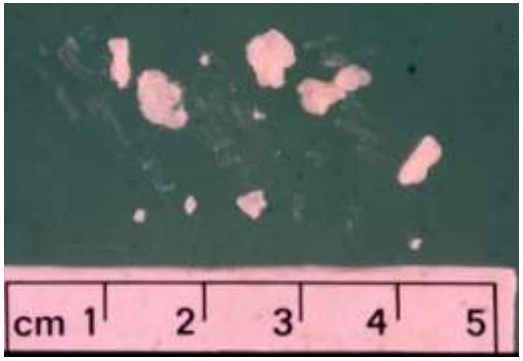
- Bottom line – NO!

JAMA®

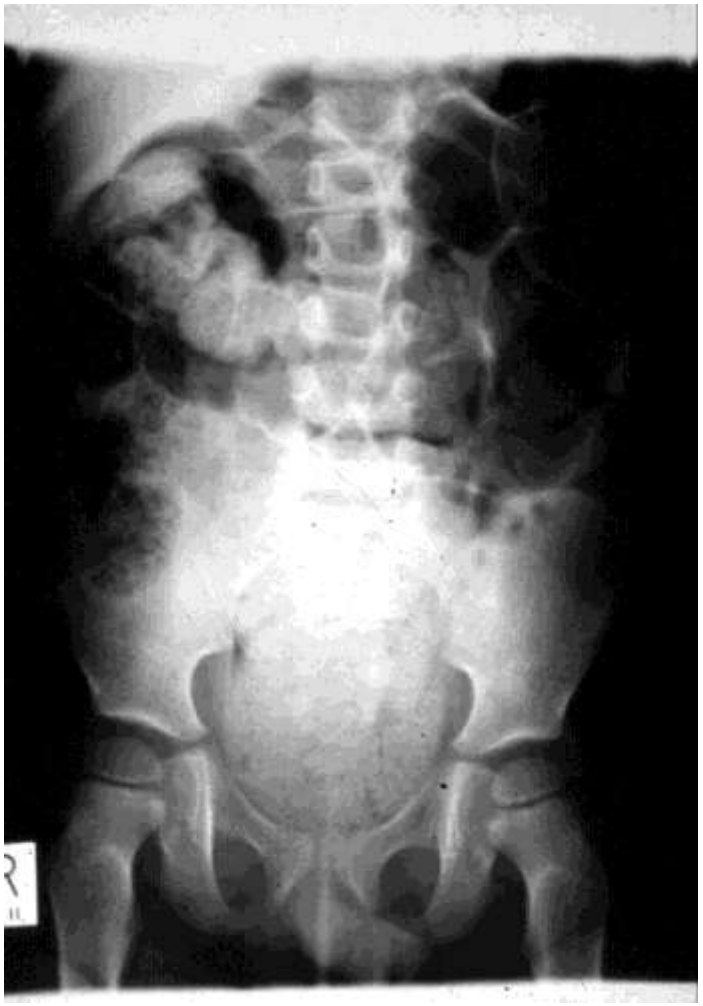
Does This Child Have a Urinary Tract Infection?

Nader Shaikh; Natalia E. Morone; John Lopez; et al.

JAMA. 2007;298(24):2895-2904 (doi:10.1001/jama.298.24.2895)



Should I consider constipation?

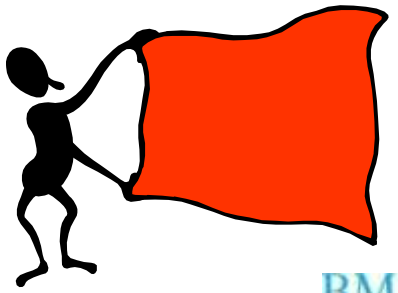


NO!

Constipation is painless
Children soil when they are impacted
Impaction is painless

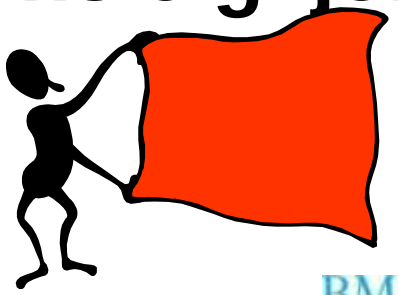
Red flags in history of RAP

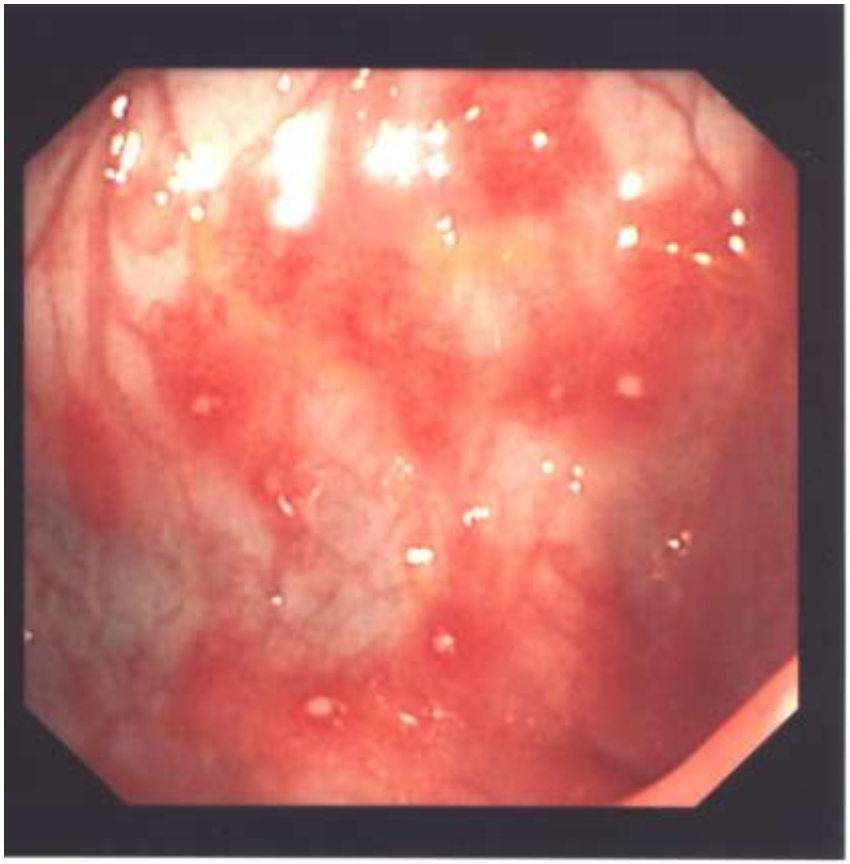
- Pain localised from umbilicus +/- radiation
- Changes in bowel habit
- Vomiting
- Awakens child at night????
- Dysuria
- Rectal bleeding
- Constitutional symptoms
- Age < 4, >15
- Relevant family history

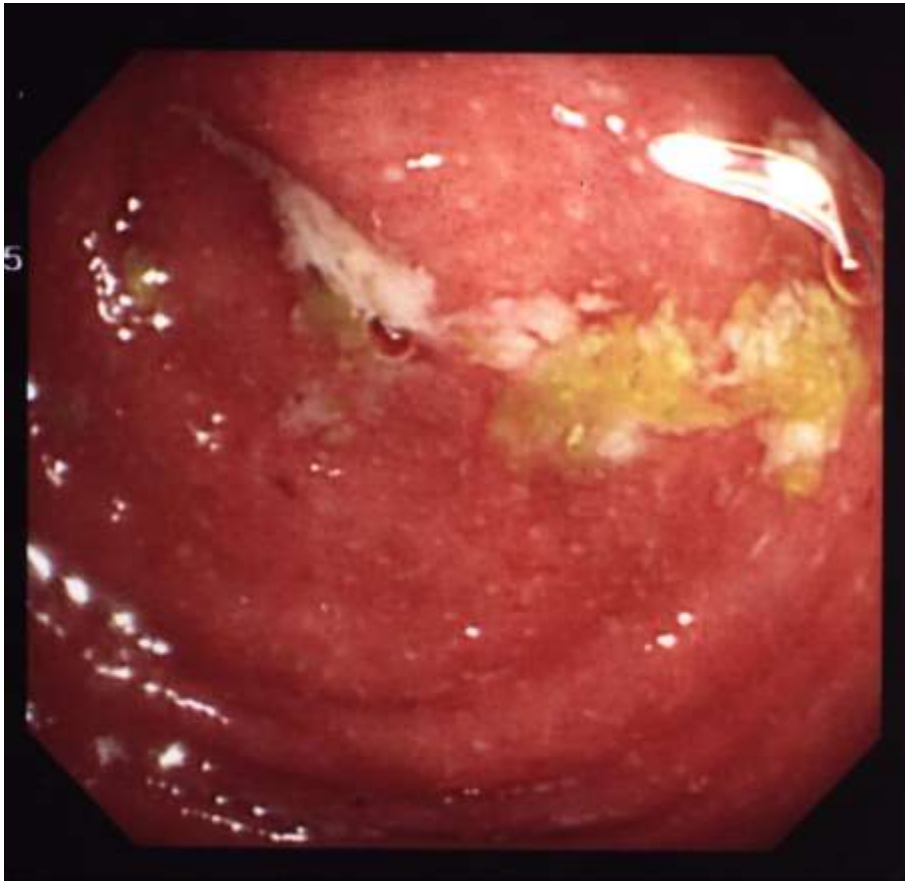


Red flags on physical examination of RAP

- Documented weight loss
- Faltering height
- Pubertal delay
- Anal fissure & perianal fissure
- Organomegaly
- Extra intestinal manifestations e.g. joints, eyes.

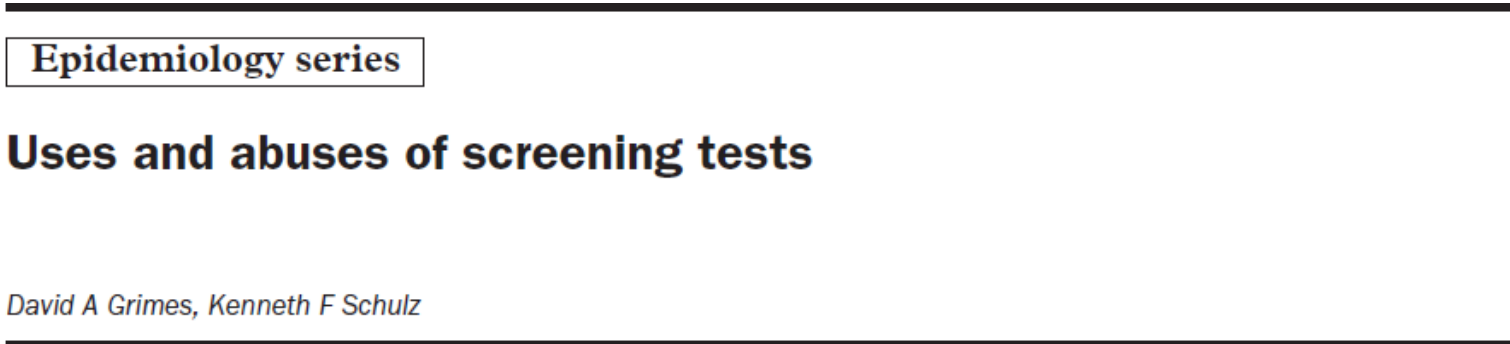


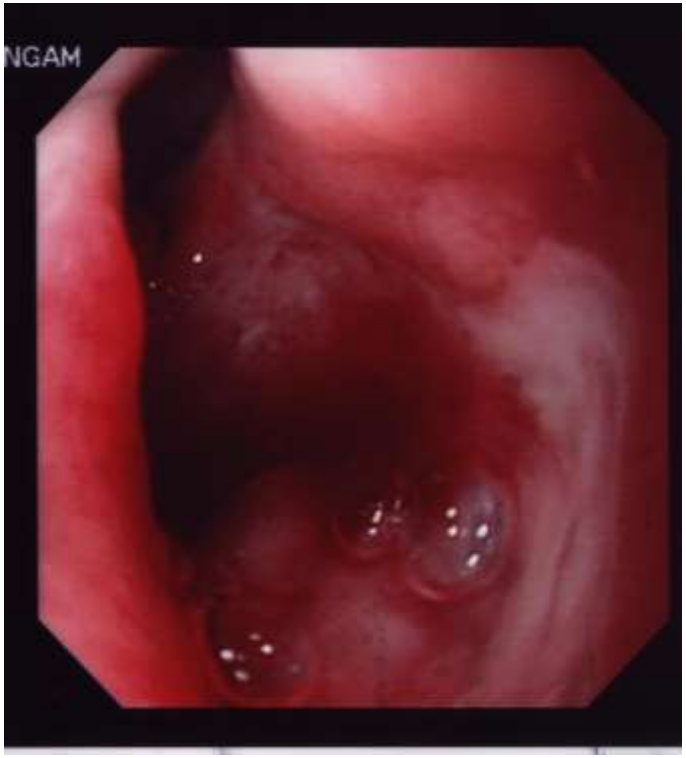




Helicobacter tests in paediatrics

- No role for them esp. for assessing abdominal pain.
- Only in combination with endoscopy
- Only the UBT has adequate accuracy
- Stool antigen – not predictive enough




NGAM


Detects the urease enzyme of
Helicobacter pylori
= Positive
= Negative
U.S. Patent No. 4,748,113
U.S. Distributor Tri-Med Specialties Inc.
9631 Alden, Lenexa KS 66215
CLOtest
Manufactured by
Delta West Pty Ltd
15 Brodie Hall Drive
Bentley 6102
Western Australia

If no red flags, you probably have….

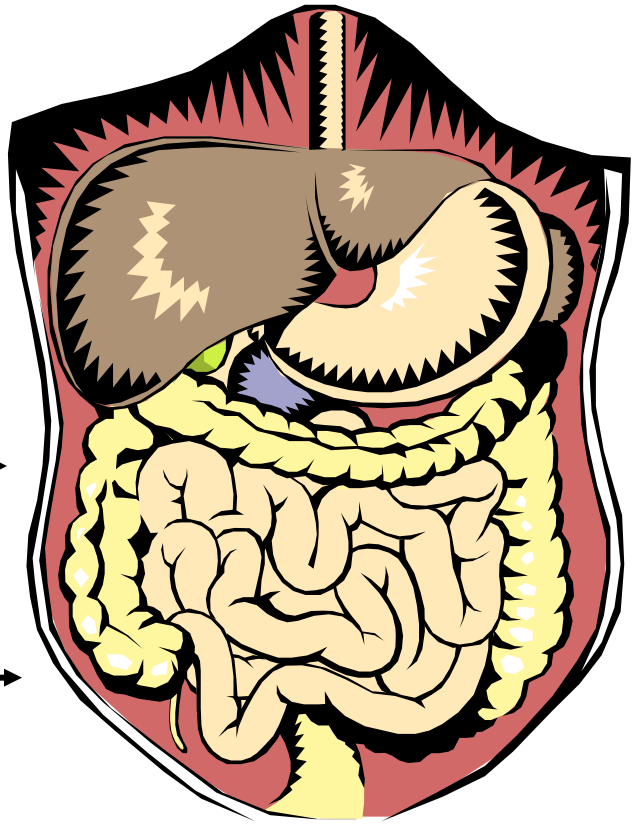
TABLE 1. *Currently Used Definitions to Describe Childhood Abdominal Pain*

Recurrent abdominal pain as defined by Apley	3 or more episodes of abdominal pain, over a period of 3 or more mo, severe enough to affect activities.
RAP	A common abbreviation for recurrent abdominal pain that has been used in the literature to depict recurrent abdominal pain as defined by Apley. Many physicians incorrectly use this term to imply functional abdominal pain.
Chronic abdominal pain	Abdominal pain with a minimum duration of 3 mo. Some clinicians believe that pain that lasts more than 1–2 mo is chronic.
Rome II criteria for abdominal pain	Abdominal pain for at least 12 wk, which need not be consecutive, in the preceding 12 mo. These criteria apply to IBS, functional dyspepsia, and functional abdominal pain.
Functional abdominal pain	Abdominal pain that occurs in the absence of anatomic abnormality, inflammation, or tissue damage.
Nonorganic abdominal pain	A term that is often used interchangeably with functional abdominal pain.
Psychogenic abdominal pain	A term that is often used interchangeably with functional abdominal pain.

Epigastric –
non ulcer dyspepsia

RAP

IBS pain



Journal of Pediatric Gastroenterology and Nutrition
40:249–261 © March 2005 Lippincott Williams & Wilkins, Philadelphia

Technical Report

Chronic Abdominal Pain In Children: A Technical Report of the American Academy of Pediatrics and the North American Society for Pediatric Gastroenterology, Hepatology and Nutrition

AAP Subcommittee and NASPGHAN Committee on Chronic Abdominal Pain

If you have functional abdo pain…

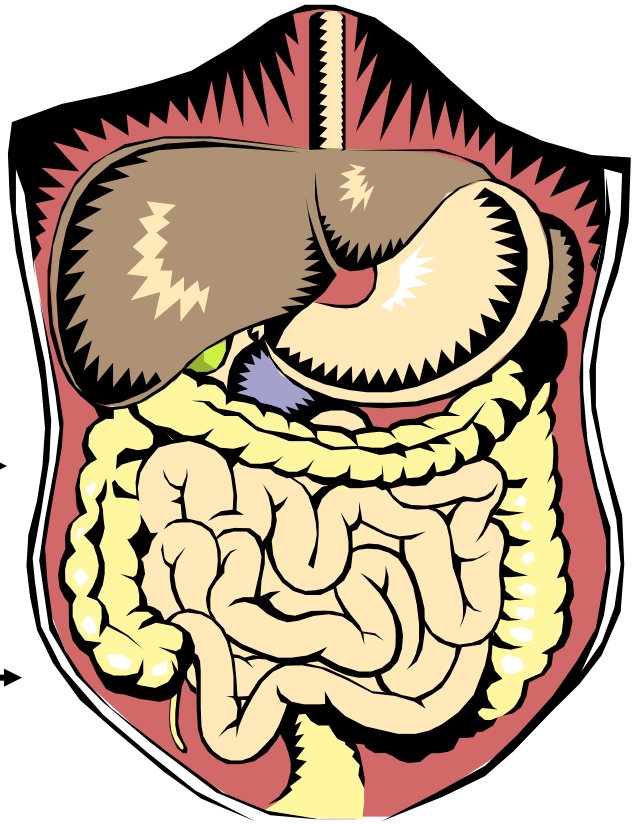
- What do we know:
  - No evidence to predict value of blood tests
  - No evidence to support use of ultrasound
  - Little evidence to support use of endscopy
  - Insufficient evidence to support pH monitoring
- Contribution of daily stressors
- These patients have more symptoms of anxiety and depression

Bottom line

Epigastric –
non ulcer dyspepsia → **Endoscopy plus PPI**

RAP → **Look for red flags**

IBS pain → **Red flags and bloods**



Learning points - Persistent abdominal pain

No red flags – consider functional pain

Reassess – it will become apparent

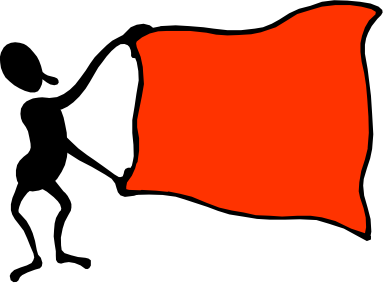
No medicines without a diagnosis

Learning points - appendicitis

No fever no appendicitis

Rebound and focal signs

Don’t offer antibiotics – beware adolescent boys with “UTIs”



Learning points – acute Limp

Worry until you find a cause

Do not discharge

Diagnosing a malignancy is a possibility

Learning points – vaccinations

- Vaccination is the single medical intervention that has changed the face of paediatric disease
- HPV vaccination – no brainer
- The UK vaccination programme is in the 20th century
- Very very few contraindications to vaccination

Learning points – Eczema

- Don’t ignore the role of food allergy in children < 1year but only if extensive.
- Be wary about advice to breast feeding mothers
- Steroid ladders – start on middle rungs

Learning points – wheeze

- Preschool wheeze ≠ asthma
- Avoid oral steroids in viral induced wheeze in infants
- Uncertain benefit with montelukast; episodic IS?
- Inhaled steroids more efficacious than montelukast
- Initial effects on final height

Learning points - Persistent abdominal pain

- No red flags – consider functional pain
- Ultrasound and urine test – unlikely to help
- Reassess – it will become apparent
- No medicines without a diagnosis

Learning points - appendicitis

No fever no appendicitis

Rebound and focal signs

Don’t offer antibiotics – beware adolescent boys with “UTIs”

Putting this into practice

Limp	Worry – don't discharge. Use the correct imaging modality
Vaccinations	New vaccines on their way. Introduce with confidence
Infantile eczema	Young Infants with severe extensive eczema may benefit from dietary change – refer on
Viral associated wheeze	Less oral steroids. ? Burst therapy. Role of montelukast. Don't change environment
Chronic Abdominal pain	Red flags. Avoid US and taking urine. Explain the role of functional pain

Putting this into practice

Limp	Ensure children with limps are not discharged
Vaccinations	Posters, patient information, look at vaccination up-take rates
Infantile eczema	Discussing diet in younger children Not discussing diet in older children!
Viral associated wheeze	Try not to use oral steroids in children <18 months
Chronic Abdominal pain	Assess your personal practice. Does investigation at parental request yield positive results

- Open a bottle of red wine after your Friday clinic, satisfied that you have delivered the best in evidence-based practice.
- Be happy with your own children (who probably limped into your home, wheezing and itching with abdominal pain all day)