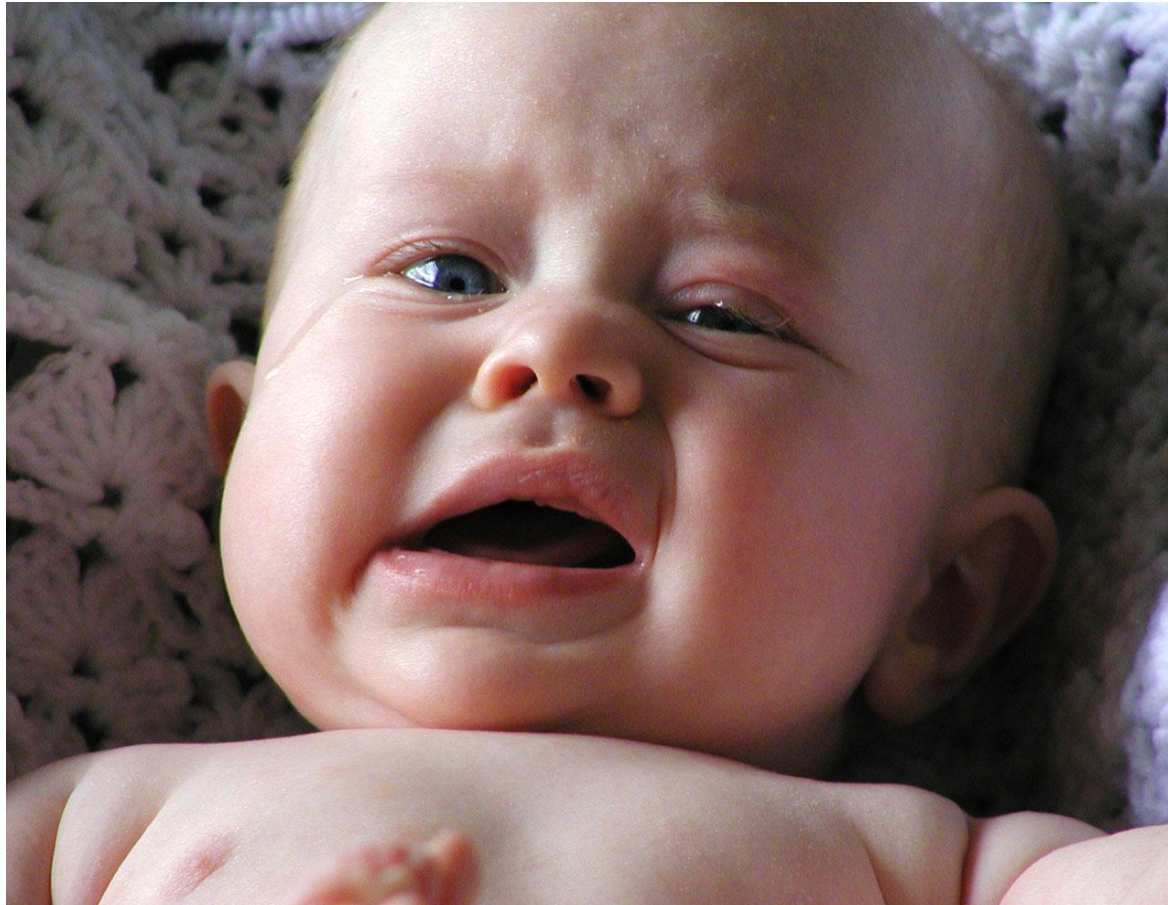


# CRYING BABIES

Rachna Verma

Consultant Paediatrician, Goulburn Valley Health



# Mums perspective

- STOP!JUST STOP CRYING!WHAT DO YOU WANT FROM ME!I'M TRYING!
- He is still fussy as usual. I just don't know how to deal with a baby who is crying all the time. I feel terrible because the difficulty I am having with him is causing me to resent him
- I love him so much yet I cant deal with him. I feel guilty even saying this but he is a very fussy baby. He is screaming now and I don't know how to stay sane...



# Mums perspective

- I cry everyday and lose my temper just as often. I am having a hard time even being happy.
- I got advice from everyone, friends, family and the doctors
- People said give her more baths, put peppermints in her bottle and take her for rides



# Protecting your infant-Beth Russell

- As humans, we are brought up to feel not just responsible for our children but also relate to their emotions and when they cry we get sucked in to the distress- Emotional Contagion!!
- It is hard to stay focused on caring for the baby when you can so closely feel for babies despair-It is hard when your heart rate is climbing, your stomach is turning and your mind is speeding through all the questions
  - 1) Are you hungry
  - 2) Are u hurt?
  - 3) Whats wrong?
  - 4) Why are you crying ?
  - 5) Why don't you stop?

## 2 main concerns of parents

- Infants who cry a lot
- Awake and fussy at night



# Crying Babies

- Often infant crying and sleeping problems have been lumped together but there is growing evidence that these are separate issues

# Crying v/s sleeping

- Infant crying peaks around 4-6 weeks with crying mostly occurring in the late afternoon and evening
- Infant sleeping problems usually involve babies waking up at night and usually don't occur until after 3 months of age.
- So sleeping problems occur at night and at an older age than crying problem.
- Recent studies have shown that infants who cry a lot in the first 4-6 weeks are not particularly likely to disturb their parents in the night at 3 months of age or have sleeping problems later

# Crying-Why is it important to us?

- Of all infant behaviour,excessive crying is one of the most frequent complaints brought to a GP/Paediatrician in the infants first 3 months
- It is associated with extreme anxiety in family
- It often causes premature weaning of breast feeding as often families attribute crying to insufficient milk.
- Often leads to multiple formula changes in the first 3 months of life
- It can be presenting complaint of any disease in infants
- It rarely but yet often triggers abuse in infants



# Excessive crying

Well	Unwell
Normal crying	Sepsis
? Colic	UTI
Gastro-oesophageal reflux disease(GORD)	Trauma-NAI-Clavicular fractures/Subdural Haemorrhages
Cows Milk protein allergy(CMPA)	Intussusception/Malrotation/volvulus
Neonatal abstinence syndrome(NAS)	Incarcerated hernia
	Hair tourniquet
	Corneal abrasion/FB

# Red flags

- Sudden/acute onset
- Maternal post natal depression
- Think of abusive head trauma

# Excessive crying-Period of Purple Crying

- Normal part of infants development
- Period of purple crying begins at 2 weeks and continues till 3-4 months of age
- During this phase of a baby's life they can cry for hours and still be healthy and normal.
- When these babies are going through this period they seem to resist soothing. Nothing helps

The Letters in **PURPLE** Stand for

**P U R P L E**

**PEAK OF  
CRYING**

Your baby may cry more each week, the most in month 2, then less in months 3-5

**UNEXPECTED**

Crying can come and go and you don't know why

**RESISTS  
SOOTHING**

Your baby may not stop crying no matter what you try

**PAIN-LIKE  
FACE**

A crying baby may look like they are in pain, even when they are not

**LONG  
LASTING**

Crying can last as much as 5 hours a day, or more

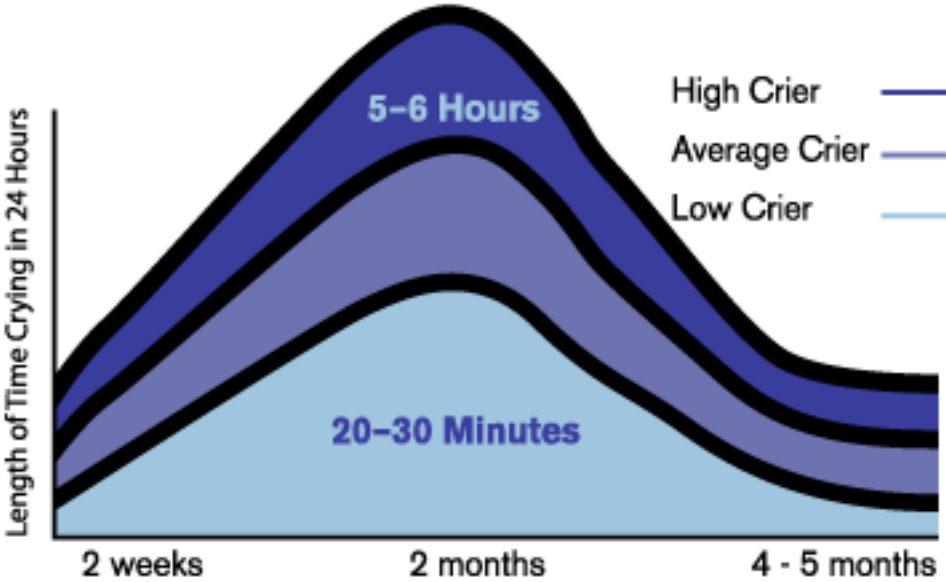
**EVENING**

Your baby may cry more in the late afternoon and evening

The word *Period* means that the crying has a beginning and an end.

# Curves of Early Infant Crying

2 Weeks to 4 - 5 Months



# Frustrations

- Gets worse before it gets better-Variable peaks for different babies
- Crying times stop and start for no apparent reason at all
- Unsoothable no matter what parents do-Some soothing techniques may work one time and doesn't work the other times even in the same babies
- Often babies look like they are in pain-Babies cry when they are in pain however they are not always in pain when they cry.
- Variable crying times for different babies-1 to 5 hours



# Purple crying v/s colic

- Evidence not very clear about the difference
- Both normal developmental phase?
- Colic defined by Wessel's "rule of threes." This rule states that if your infant cries more than three hours a day for more than three days a week for more than three weeks, then your infant has "colic"
- Some parents like when the diagnosis of colic is given because you are validating the frustrations of trying to calm their baby.
- Meanwhile, other parents might find the label "colicky" makes them worry something is wrong with their baby, and may lead them to turn to giving their baby unnecessary medication to treat these symptoms.

# Cause of Colic-Multifactorial

- Maternal - Stress/PND
- Paternal- Family violence
- Infantile-Infants temperament, infants sensory processing capacity
- Environmental-Smoking
- Gut microbiome



# Colic

- Parents of unsettled babies have a higher utilisation of health services
- Google “Infant colic”- 1.5 Million results-Much of the advise confusing and conflicting

# Treatment

Parental reassurance-Mainstay of treatment-Easily said than done..

Other Modalities that has been tried

- Probiotics
- Dicyclomine
- Simethicone
- Proton pump inhibitors
- Dietary Modifications

# Probiotics

- Two meta analyses and one systematic review found that administration of five drops of lactobacillus Reuteri(Strain DSM 17938)/day significantly reduced colic who are breastfed(Average of 60 minutes less crying/day at 21 days)
- One trial reported significant increase in crying or fussing in bottle fed infants hence recommendation only for breast fed infants

Systematic review Harb et al JPGN 2016



# Simethicone

- Although readily available and often tried by parents in desperation
- 2016 systematic review-3 RCT-No better than placebo
  - Systematic review Harb et al- 2016 JPGN
  - Savino et al Pediatrics 2007
  - Alves et al Crossover study Ecam 2012
  - Metcalf et al Pediatrics 1994

# Proton pump Inhibitors

- One study
- 4 week trial-30 Infants-Purely looking at crying
- Looking at crying or fussing time
- No better than placebo

*Am Fam Physician 2015*

# Other Modalities-Physical therapy

- Cochrane review found insufficient evidence to support chiropractic and osteopathic manipulation-Studies small, nonblinded and high likelihood of bias,
- Trials of acupuncture and infant massage-conflicting results



# Other Modalities-Herbal treatment

- Herbal supplements like peppermint, chamomile, licorice have decreased crying times in some studies
- Meta analysis –Some evidence for the effectiveness of preparations containing fennel
- Evidence have to be viewed with caution as studies of variable quality, methodological issues and medium or high risk of bias.

*Systematic review Harb et al- 2016 JPGN*

*Alexandroch et al Alter Ther Health Med 2003*



# Other modalities-Sucrose

- 2 small studies of 35 infants
- 2 ml of 12% sucrose at 5pm and 8pm-reported reduction in crying time
- Larger robust studies needed

*Systematic review Harb et al- 2016 JPGN*

*Markestad et al Arch disease Childhood 1997*

*Arikan D J clin Nurs 2008*



# Dietary modifications

- Cochrane review -Dietary modifications for infantile colic 2018
- Several RCT-showing improvement in crying with maternal low allergen intake and change to extensively hydrolysed formula.

**Authors' conclusions:** Currently, evidence of the effectiveness of dietary modifications for the treatment of infantile colic is sparse and at significant risk of bias. The few available studies had small sample sizes, and most had serious limitations. There were insufficient studies, thus limiting the use of meta-analysis. Benefits reported for hydrolysed formulas were inconsistent. Based on available evidence, we are unable to recommend any intervention..

# CMPA

- Normal crying v/s CMA



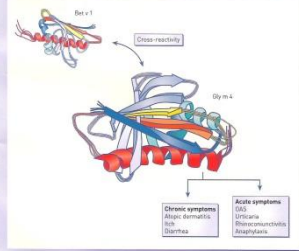
World Health Organization

**1980**

“Allergic diseases **represent a very serious problem** in developed countries ... and the incidence is increasing in these countries.”

**but in 2007 ...**

“Allergy is now the No.1 environmental **epidemic disease** facing **the children** of the developed world.”



# Food Allergy: 'Riding the second wave of the allergy epidemic'

Susan Prescott et al  
Pediatric Allergy and Clinical Immunology  
2011; **22** : 155-160

**'Food allergy is now looming as a new  
epidemic  
with vast and significant implications.'**

# Epidemiology



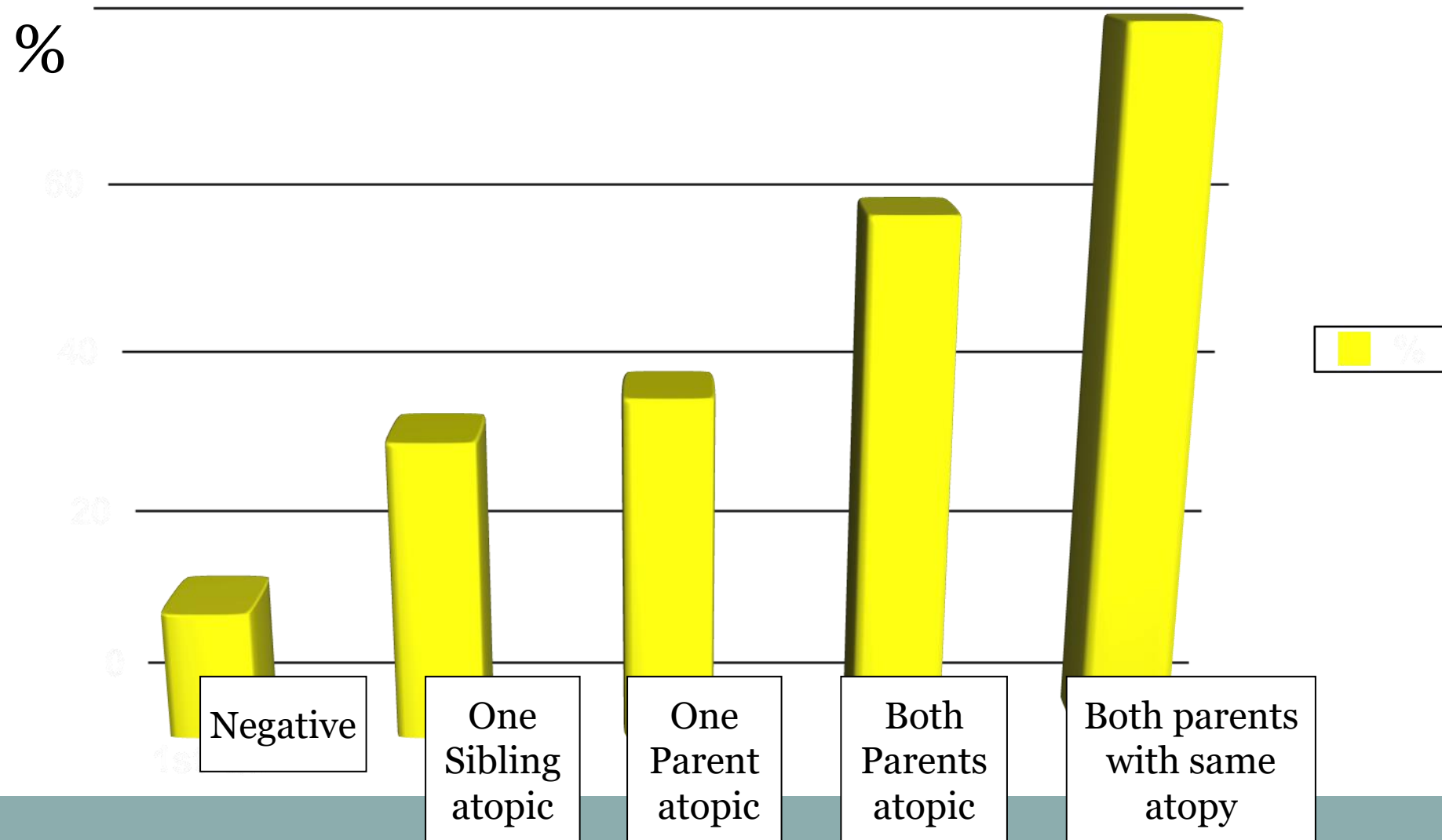
- In Australia 1 in 10 children have allergies
- Australia is no 1 in the world-“Food Allergy capital of the world”

Allergy-focused  
History

Elimination  
Diet

**Food  
Challenge**

# Predicting the onset of clinical atopy



# So, who are these likely CMA infants ?

atopic  
parents

especially  
atopic mum

atopic  
siblings

1<sup>st</sup> cousins  
with food allergy

first born

male

Caesarian  
section

season  
of birth



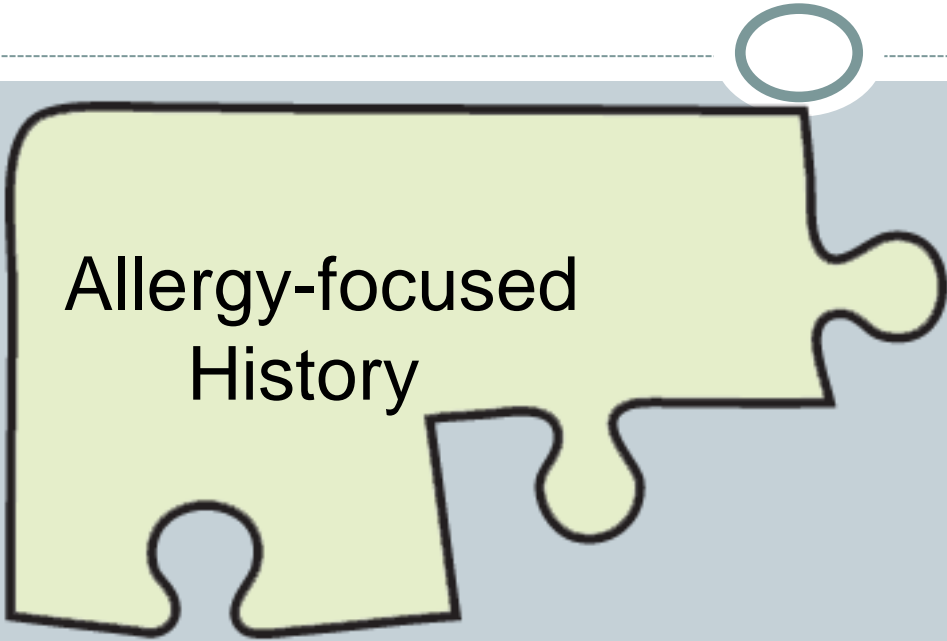
mum  
smokes

early lack of exposure  
to dogs and/or  
endotoxins

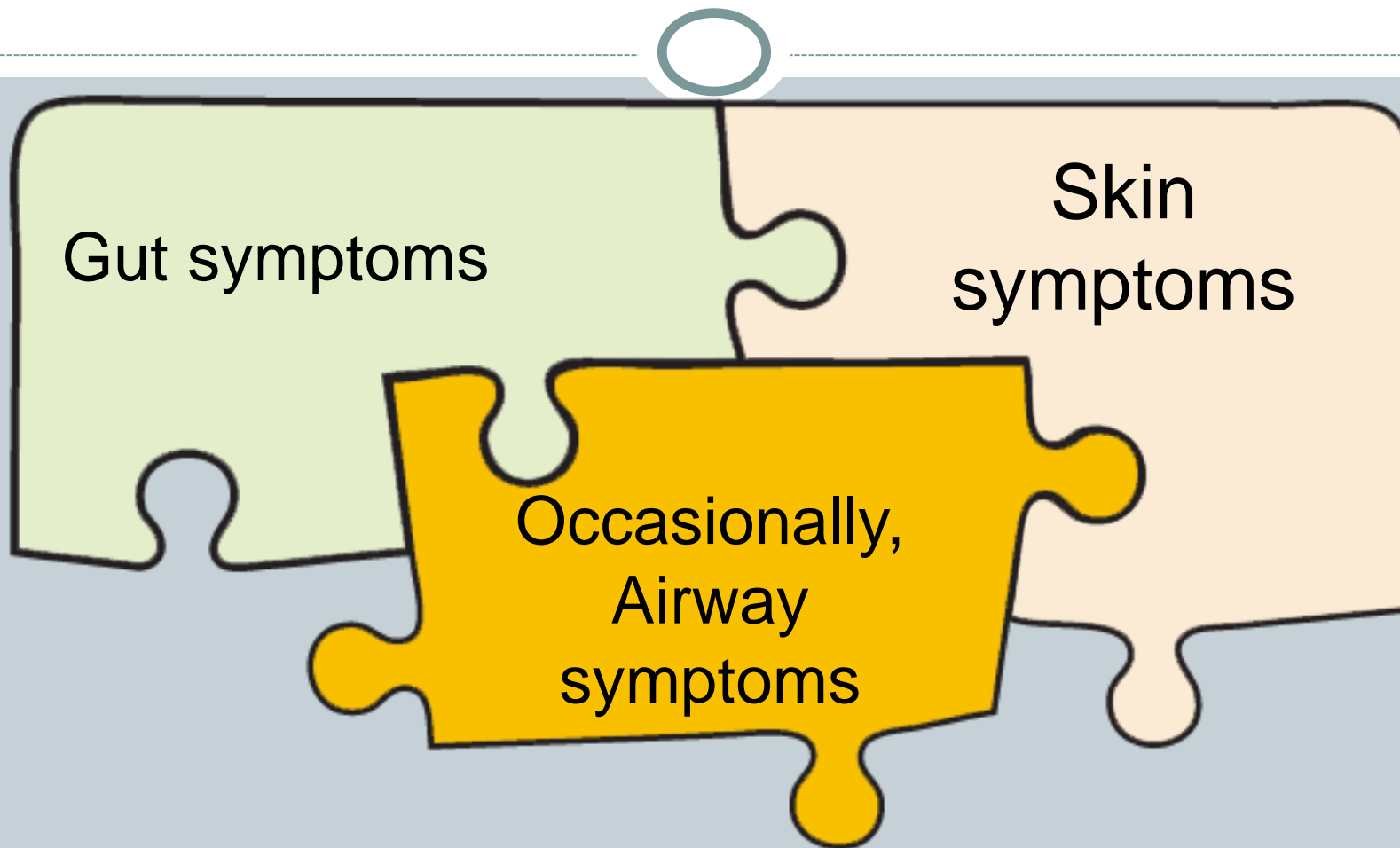
little contact with  
other young  
children

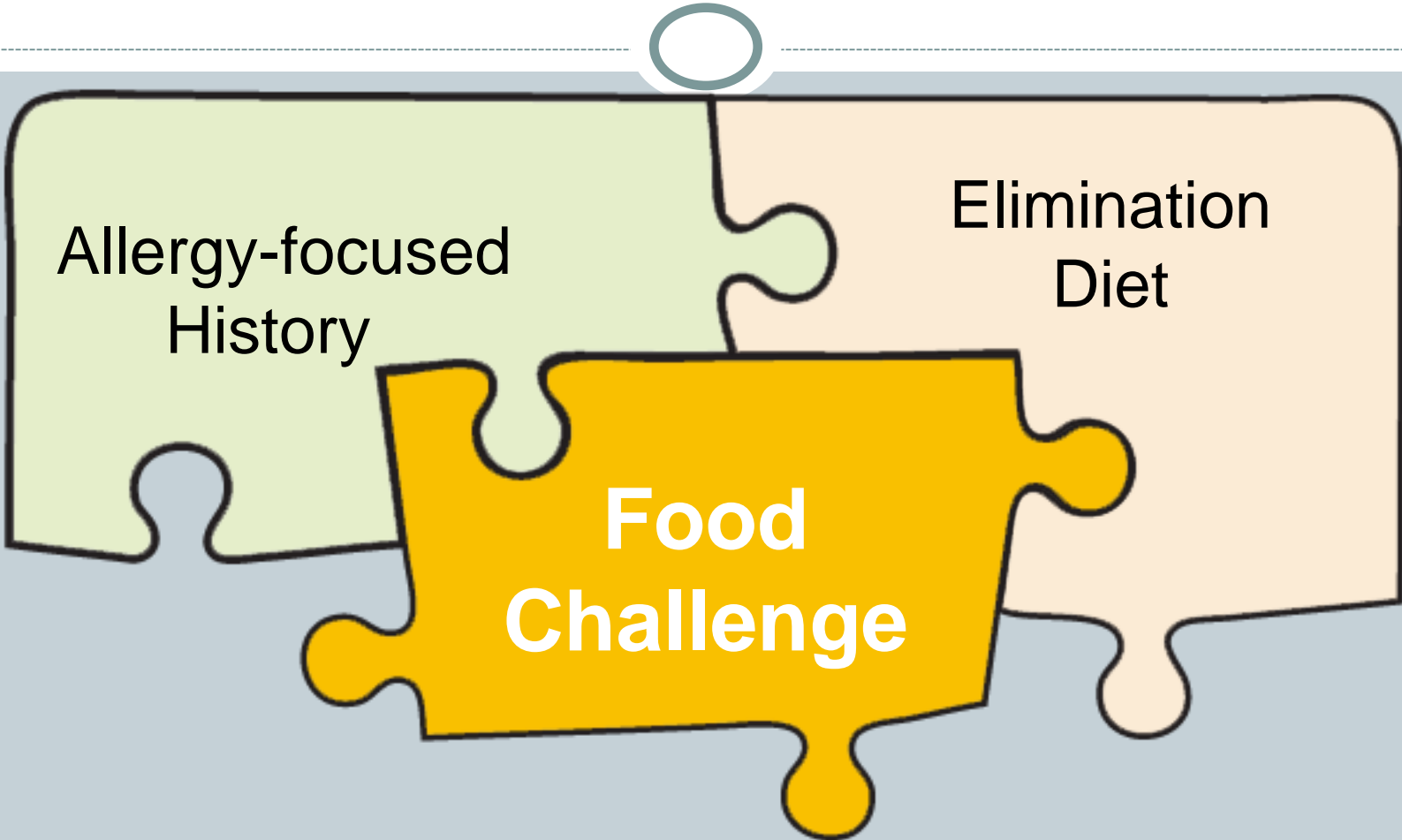
formula fed





Allergy-focused  
History





Allergy-focused  
History

Elimination  
Diet

**Food  
Challenge**

# Breast fed



- Exclude milk from mums diet
- Easier said than done
- Calcium + Vitamin D supplements
- Benefit seen 4 weeks

# Bottle fed



- Extensively hydrolysed formula- Peptijunior/Alfare
- Novolac Allergy-Rice based
- Severe- Neocate/Alfamino

# iMAP Guidelines

UK Adaptation of iMAP Guideline for  
Primary Care and 'First Contact' Clinicians

## Presentation of Suspected Cow's Milk Allergy (CMA) in the 1<sup>st</sup> Year of Life

Having taken an Allergy-focused Clinical History and Physically Examined

Oct 2018

Approx. 2% of UK infants have CMA – most children with the symptoms listed below will not have CMA & do not require an elimination diet but there should be an increased index of suspicion in infants with multiple, persistent, significant or treatment-resistant symptoms. Breast milk is the ideal nutrition for infants with CMA. iMAP primarily guides on early recognition of CMA, then confirmation or exclusion, followed by the optimal management of confirmed mild-to-moderate Non-IgE CMA.

### Mild to Moderate Non-IgE-mediated CMA

Mostly 2-72 hrs. after ingestion of  
Cow's Milk Protein (CMP)

Formula fed, exclusively breast fed  
or at onset of mixed feeding

Usually several of these symptoms  
will be present

Treatment resistance e.g. to atopic  
dermatitis or reflux, increase likelihood of allergy

#### Gastrointestinal

Irritability - 'Colic'  
Vomiting - 'Reflux' - GORD  
Food refusal or aversion  
Diarrhoea-like stools  
- loose and/or more frequent  
Constipation – especially soft stools,  
with excessive straining  
Abdominal discomfort, painful flatus  
Blood and/or mucus in stools in an  
otherwise well infant

#### Skin

Pruritus (itching), Erythema (flushing)  
Non-specific rashes  
Moderate persistent atopic dermatitis



### Cow's Milk Free Diet Exclusively breast feeding mother\*

Trial exclusion of all Cow's Milk Protein from her  
own diet and to take daily Calcium and Vit D

Formula fed or 'Mixed Feeding'\*

Trial of Extensively Hydrolysed Formula - eHF  
See Management Algorithm

### Severe Non-IgE-mediated CMA

Mostly 2-72 hrs. after ingestion of  
Cow's Milk Protein (CMP)

Formula fed, exclusively breast fed  
or at onset of mixed feeding

One or more of these Severe and Persisting symptoms:

#### Gastrointestinal

Diarrhoea, vomiting, abdominal pain, food refusal  
or food aversion, significant blood and/or mucus  
in stools, irregular or uncomfortable stools  
+/- Faltering growth

#### Skin

Severe atopic dermatitis +/- Faltering Growth



### Cow's Milk Free Diet

#### Exclusively breast feeding mother\*

If symptomatic, trial  
exclusion of all Cow's Milk  
Protein from her own diet  
and to take daily Calcium  
and Vit D

#### Formula fed or 'Mixed Feeding'\*

Trial replacement of Cow's  
Milk formula with Amino  
Acid Formula (AAF)

Ensure:

Urgent referral to local  
paediatric allergy service  
Urgent dietetic referral

### Severe IgE CMA

#### ANAPHYLAXIS

Immediate reaction  
with severe respiratory  
and/or CVS signs and  
symptoms.  
(Rarely a severe  
gastrointestinal  
presentation)

Emergency  
Treatment  
and  
Admission

### Mild to Moderate IgE-mediated CMA

Mostly within minutes (may be up to 2 hours) after  
ingestion of Cow's Milk Protein (CMP)  
Mostly occurs in formula fed or at onset of mixed feeding

One or more of these symptoms:

Skin – one or more usually present

Acute pruritus, erythema, urticaria, angioedema  
Acute 'flaring' of persisting atopic dermatitis

#### Gastrointestinal

Vomiting, diarrhoea, abdominal pain/colic

#### Respiratory

Acute rhinitis and/or conjunctivitis



### Cow's Milk Free Diet

Support continued breast feeding where possible.

If infant is symptomatic on breast feeding alone (rare),  
trial exclusion of all Cow's Milk Protein from maternal  
diet alongside daily maternal Calcium and Vit D as per  
local recommendations.

#### Formula fed or 'Mixed Feeding'\*

If mother unable to revert to fully breast feeding  
1st. Choice - Trial of Extensively Hydrolysed Formula – eHF  
Infant soy formula may be used over 6 months of age if  
not sensitised

Initial IgE testing needed

If diagnosis confirmed (which may require a Supervised  
Challenge in a minority of cases):

Follow-up with serial IgE testing and later Planned  
Challenge to test for acquired tolerance

Dietetic referral required

UK NICE Guidance - If competencies to arrange and  
interpret testing are not in place - early referral to local  
paediatric allergy service

**NIP ALLERGIES  
IN THE** *Bub*

**TO HELP PREVENT  
FOOD ALLERGY,  
GIVE YOUR BABY  
THE COMMON  
ALLERGY CAUSING  
FOODS**

*before they  
turn one*





# ASCIA



## Infant feeding and allergy prevention

### Key recommendations

- When your infant is ready, at around 6 months, but not before 4 months, start to introduce a variety of solid foods, starting with iron rich foods, while continuing breastfeeding.
- All infants should be given allergenic solid foods including peanut butter, cooked egg, dairy and wheat products in the first year of life. This includes infants at high risk of allergy.
- Hydrolysed (partially and extensively) infant formula are not recommended for prevention of allergic disease.



# Colic v/s NAS



# Introduction

- NAS is a complex withdrawal syndrome that is caused by abrupt discontinuation of foetal exposure to licit or illicit drugs consumed by the mother during pregnancy and transmitted to the foetus through the placenta

# NAS

- NAS is a generalised multisystem disorder which predominantly involves the central and autonomic nervous systems as well as gastrointestinal tract.
- Neonatal withdrawal due to maternal opioid use may be severe and intense, it's rarely fatal but can cause significant illness and often results in prolonged hospital stay

# History

- First reported case in a neonate who manifested signs of opioid withdrawal at birth was in 1875
- “Congenital Morphinism”
- Most of the involved infants reported died
- 1903-First case report of survival of a neonate after Morphine treatment
- Renamed NAS

Prevalence-Davies et al  
Arch Dis Child Fetal Neonatal 2015

Prevalence rates

- England 2.7/1000 Live Births
- Western Australia 2.7/1000
- USA 3.6/1000
- Ontario 5.1/1000
- Increasing Prevalence in USA –increasing trend

Of increased use of prescribed opioids

# Prevalence

- In utero Opiate exposure is associated with IUGR, Congenital anomalies, Prematurity, Low birth weight and NAS
- The average length of hospital stay for opiate exposed neonates is 17 days which increases to 27 days if pharmacological treatment is required

# Other agents

- Not limited to Opioids
- Methamphetamine
- Psychotropic agents
  - Benzodiazepines
  - SSRIs
  - SNRIs
  - Tricyclic antidepressants



# Other agents

- Cocaine may cause NAS but neonatal symptoms are related to toxic effects of the cocaine itself
- In utero exposure to cannabinoids does not cause a clinically evident NAS but may have long term neurodevelopmental effects



# Spectrum

- The spectrum of NAS has changed over time
- Before 1970 NAS was generally secondary to either Morphine or Heroin use
- Today NAS could be due to morphine,heroin,methadone,bupernorphine, prescription opoids,antidepressants,anxiolytics and /or other substances

# Clinical Features

- CNS Dysfunction
- Autonomic dysfunction
- GI dysfunction

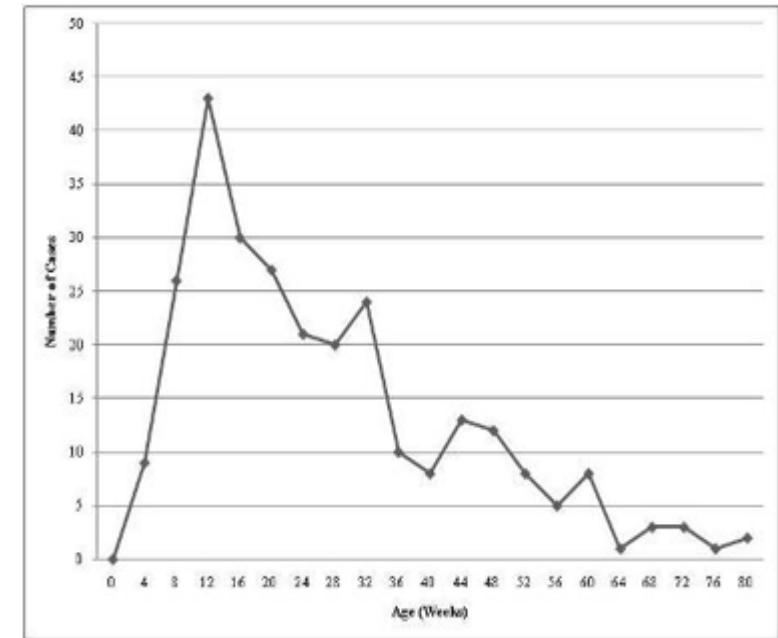
# Clinical Features

- Though common in first two weeks of life-  
Excessive crying can persists for longer-  
Literature suggest few months

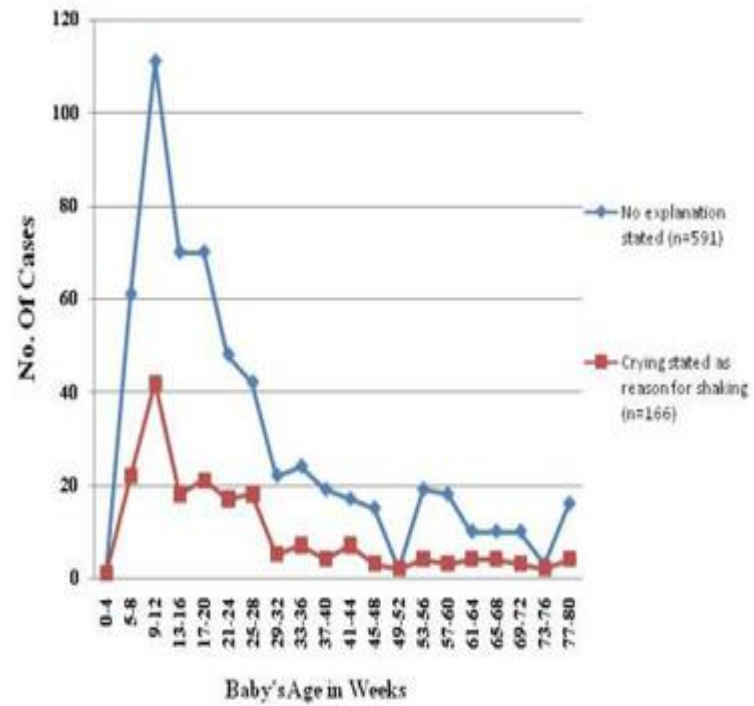
# Excessive crying

- Infant crying is a common stimulus for shaking
- Shaken baby syndrome or Acquired or Inflicted traumatic brain injury ,is the result of violent shaking with or without contact with hard surface.
- It results in head trauma including subdural haematomas,diffuse axonal injury and retinal haemorrhages.

# Shaken baby syndrome-Barr et al-273 Cases



# Barr et al



# Shaking

- Because it is unintentional and caregivers may lack awareness of the damage shaking causes, it may be preventable.
- Antenatal counselling in one RCT raised awareness and parents were more aware of Shaking and leaving baby and walking away if too distressing.
- No study to date about antenatal counselling and reduction in brain injury.



## How did you manage your colicky baby/excessive crying baby

- PMGUK group
- 11000 female mum doctors
- Mostly supportive group

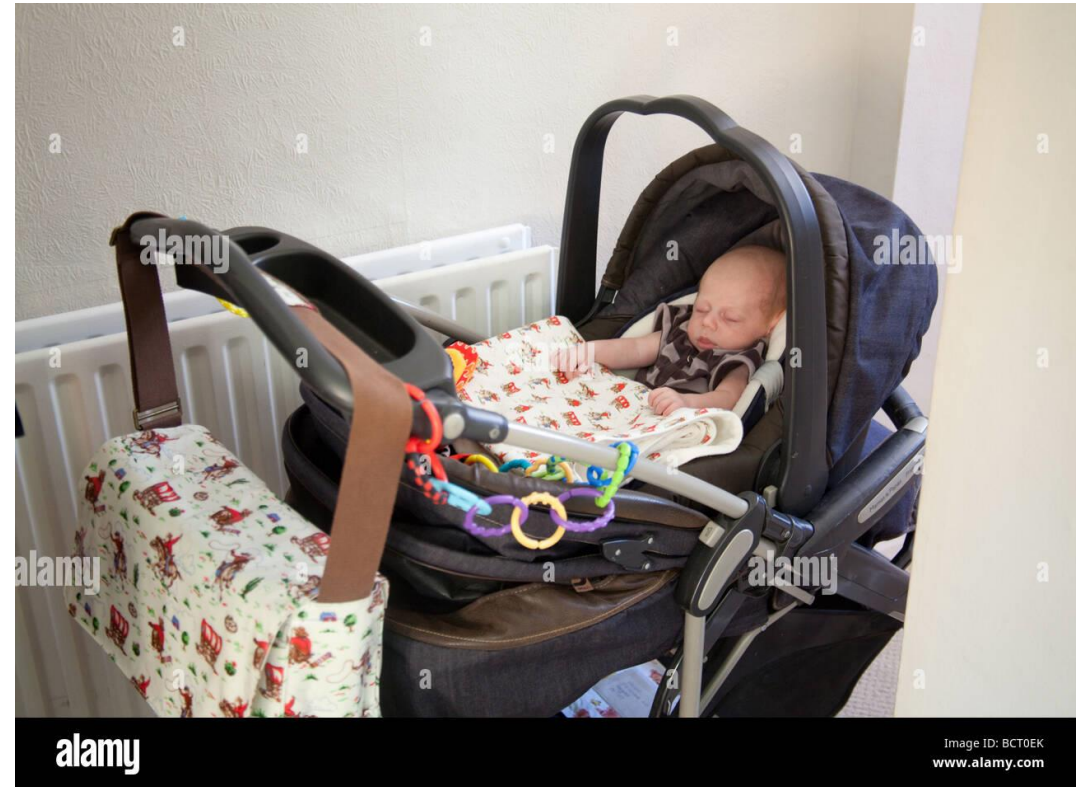


# PMGUK group response

- Sling -Majority
- Get someone else to take baby for few hours-get ear plugs -Get rest and Sanity
- Think whether baby has CMPA x 8
- Important to really listen and acknowledge that some babies are harder work than others but it does get easier-Time is best healer!!
- Omeprazole and neocate was the only thing that helped my son

# PMGUK response

- Going for a walk(Baby in Pram)- Somehow the crying seemed less loud and big walks helped my head



# PMGUK response

- Having a whatsapp/facebook group of mummies with babies of same age-It helps to appreciate that crying/fussiness/dyschezia is all normal-Nice to have others to commiserate over excessive crying-It can be such lonely time sometimes and being listened to is all that is needed.



# PMGUK response

- Change of scenery- Even if it is a different room in the house-Always gave us a few minutes respite
- Twin 1 had awful crying/reflux-Omeprazole helped a bit but going for a walk with a friendly face who accepts that babies cry and that you have tried everything you can think to help them!-Having a group of supportive mum friends saved my sanity

# PMGUK response

- Bath helped my baby
- Recognising 4th trimester is real and they want you all the time
- We had “No woman no cry” on repeat and bouncing him up and down
- Tiger in the tree hold for burping
- I put my baby down and go out of the room for 2 minutes rather than run the risk of losing tempers and doing the unthinkable



# PMGUK reponse

- Bouncing on an exercise ball-I could sit and bounce and watch films and wait for it to pass.
- Think about mums mental health- The toll of a non sleeping colicky baby can have on your mental health should not be underestimated. Someone saying it is normal and it will pass is reassuring but somewhat downplays the enormity of the uselessness you feel....

# PMGUK response

- Weekly mums group/breast feeding group
- CRY-SIS website for parents
- Possums organisation
- Purple crying

# Cry-SIS

- UK charity offering help and support.
- Help for younger and Older babies
- “Coping with Colic”
- To help your baby-you can try movement-rocking the baby from side to side or lying on their front along your arm
- Take your baby out for a walk-movement and fresh air often helps



# Cry-sis

- Humming/singing in a repetetive tune
- Background noise/music/White noise
- Low light helps
- Warm bath
- Massage
- Even if you are tired and stressed, try and handle your baby calmly
- Support each other-Get help-Look after yourself
- Seek help if overwhelming



# Cry-Sis

- Just remember this crying won't last and each bad day is nearer the good days when you can really enjoy your baby



# PURPLE CRYING

- When caring for a crying baby frustrates you, time to take a break
- The best thing you can do for your baby is put your baby down in a safe place and take some time to allow yourself to calm down
- Ask for help!

# PURPLE CRYING

- If parents and caretakers understand that this time in a baby's life is a completely normal phase in their development, we can provide steps to cope with this crying.
- Encourage caretakers and parents to walk away from the baby when they are very frustrated. And help them understand the dangers of shaking a baby when they become so frustrated with the baby's crying.

# Summary

- Looking after the parent is as important as looking after the baby
- Hopefully you are armed with some strategies
- Just remember this crying won't last and each bad day is nearer the good days when you can really enjoy your baby