

# **COPP MODULE**

**COMMON OFFICE PRACTICE PEDIATRIC PROBLEMS**  
**[A MODULE OF IAP TAMILNADU STATE CHAPTER 2017]**

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# Dr. Manigandan Chandrasekaran,

MBBS,DCH, MRCPCH, CCT,FRCPCH, MD (Research)



- Consultant Neonatologist, Cloudnine Hospitals,
- Finished his Specialist training in Neonatology in London
- Has done Management Course in London Emperial College NHS Trust
- Faculty in
  - NEST – Neonatal Emergency Simulation Team training course
  - Neonatal Resuscitation, India advanced provider course for doctors and nurses
  - Cranial Ultrasound course
  - Neonatal Neurology examination and investigations course
  - MRCPCH clinical examination training course – Smart course
- He has 17 publications in Peer reviewed journals, authored in chapters in 2 textbooks and has 7 presentations to his credit





# Incessant Cry in Neonates and Infants

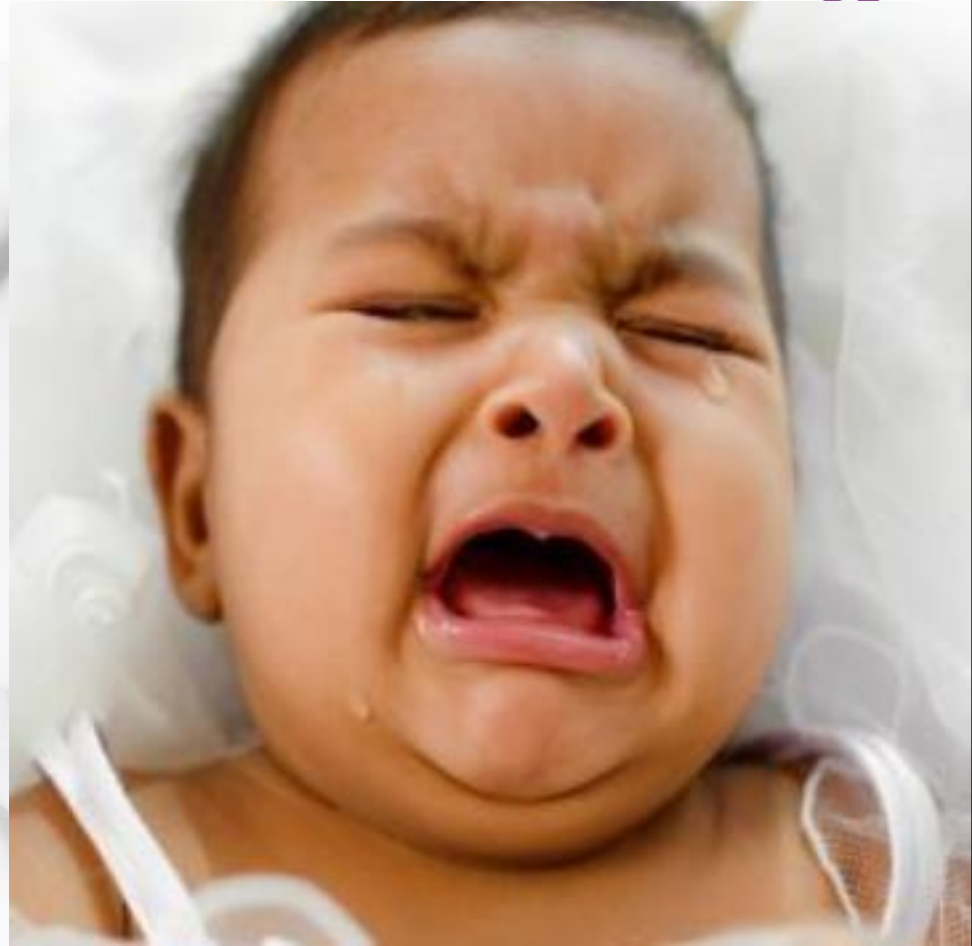
Dr C Manigandan

**Moderator**

Dr. Rema Chandramohan

# Overview

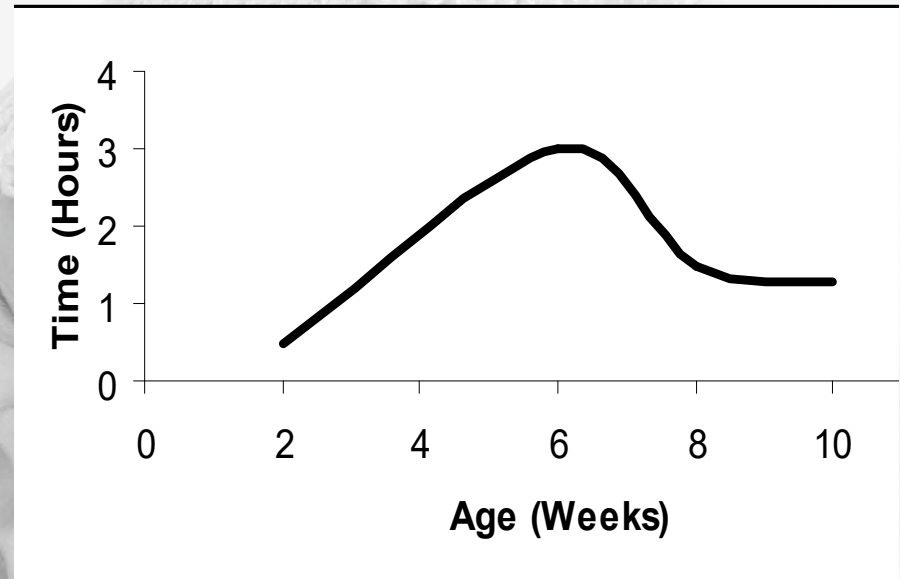
- Normal cry and sleep
- Definition
- Etiology
- Management



# Crying – Normal pattern



- Physiological behaviour
- 6 - 8 weeks – average  
2 – 3h/24h
- Worse in late afternoon or evening
- Disappears by 3 - 4 months



# Average Sleep

- Birth: 16 - 18 h
- 3 months: 14 -15h
- 6 week - tired after awake for 1.5 hours
- 3 month - tired after 2 hours





# Definition – No consensus

- Persistent cry, excessive cry and problem crying
- Excessive Crying – “**Rule of 3**”
  - >3 hours/day
  - >3 days/week
  - >3 week
- Paroxysmal, qualitatively different from normal cry, associated with hypertonia and inconsolability
- Incidence - 1.5% to 11.9%

# Etiology



# Common Causes of Crying

- Hunger/Thirst
- Soiled or wet diapers
- Too hot or too cold
- Flatus
- Loneliness
- A sudden or startling movement
- Excessive tiredness
- Wanting to be held



# System-wise Causes

<p>Head, eyes, ears, nose, throat</p>	<ul style="list-style-type: none"> <li>• *Trauma (skull fracture, hematoma)</li> <li>• *Palatal burns/trauma</li> <li>• Local trauma (tight hair braids/traction alopecia)</li> <li>• Corneal abrasions</li> <li>• Foreign body (ocular, nasal, aural)</li> <li>• Glaucoma</li> <li>• Otitis media/externa</li> <li>• Oral lesions (thrush, stomatitis, pharyngitis)</li> <li>• Teething</li> <li>• Nasal obstruction (congestion, foreign body, choanal atresia)</li> </ul>
<p>Cardiac</p>	<ul style="list-style-type: none"> <li>• *Dysrhythmias (supraventricular tachycardia)</li> <li>• *Congestive heart failure</li> <li>• *Endocarditis/myocarditis/pericarditis</li> <li>• *Congenital cardiac disease (coarctation of the aorta, Tetralogy of Fallot, coronary anomalies)</li> <li>• Kawasaki disease</li> </ul>
<p>Respiratory</p>	<ul style="list-style-type: none"> <li>• *Foreign body aspiration</li> <li>• *Pneumothorax</li> <li>• *Pneumonia</li> <li>• Upper/lower respiratory tract infection</li> </ul>

## Common and Important

- Corneal abrasion
- Foreign body
- Acute otitis media
- Nasal congestion
- Oral thrush
- Bronchiolitis

# System-wise Causes

Gastrointestinal	<ul style="list-style-type: none"> <li>• *Small/large bowel obstruction</li> <li>• *Intussusception</li> <li>• *Gastroenteritis</li> <li>• *Malrotation/midgut volvulus</li> <li>• *Appendicitis</li> <li>• *Incarcerated/strangulated hernia</li> <li>• Constipation</li> <li>• Anal fissure</li> <li>• Hemorrhoids</li> <li>• Gastroesophageal reflux disease</li> <li>• Hirschsprung disease</li> <li>• Milk-protein allergy</li> <li>• Esophagitis</li> </ul>
Genitourinary	<ul style="list-style-type: none"> <li>• *Testicular/ovarian torsion</li> <li>• *Urinary tract infection</li> <li>• Genital tourniquets</li> <li>• Balanitis/posthitis/balanoposthitis</li> <li>• Mastitis</li> </ul>

## Common and Important

- Intussusception
- GERD
- Colic
- Milk-protein allergy
- UTI
- Genital tourniquet

# System-wise Causes

Neurologic	<ul style="list-style-type: none"> <li>• *Meningitis</li> <li>• *Encephalitis</li> <li>• *Neonatal abstinence syndrome</li> <li>• *Increased intracranial pressure (hydrocephalus, mass lesions, intracranial hemorrhage, cerebral edema)</li> </ul>
Toxic/metabolic endocrinological	<ul style="list-style-type: none"> <li>• *Inborn errors of metabolism</li> <li>• *Hypoglycemia</li> <li>• *Hypo/hyponatremia</li> <li>• *Hypo/hyperthyroidism</li> <li>• *Toxic ingestion/exposure</li> <li>• *Carbon monoxide poisoning</li> <li>• *Dehydration</li> <li>• *Central/nephrogenic diabetes insipidus</li> </ul>

## Common and Important

- Early CP
- Meningitis
- Hypoglycemia
- Dehydration

# System-wise Causes



## Common and Important

### Musculoskeletal

- \*Vaso-occlusive crises/dactylitis (sickle cell disease)
- Digital hair/fiber tourniquet
- Fractures (accidental and nonaccidental)
- Dislocations
- Subluxations
- Osteomyelitis
- Myositis
- Arthritis (inflammatory, infectious, autoimmune)

### Dermatologic

- \*Burns
- \*Cellulitis
- Insect/other bites
- Pruritic eruptions (allergic, idiopathic, Gianotti-Crosti syndrome)
- Atopic dermatitis

- Digital tourniquet
- Fractures
- Septic arthritis
- Insect bites
- Diaper dermatitis
- Post - immunisation



# Approach to Diagnosis and Management





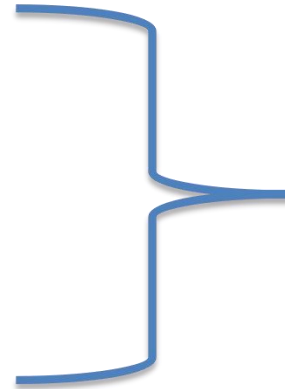
# Key aspects of Management

- Careful assessment to identify infants with a serious illness
- Treatment of benign causes
- Parental guidance and counseling

# Diagnosis



- History
- Physical examination
- Lab investigations



Key to  
diagnosis

# Observation FATT & DRIP



## **FREQUENCY**

From one to infinity

## **DURATION**

Elapsed time

## **AGE of the child**

Number of days, weeks, months, or years since birth

## **RHYTHM**

From waltz to hiphop

## **TIME of day**

Morning, afternoon, evening, or night

## **INTENSITY**

Relaxed to vigorous

## **TONE**

From whimper to wail

## **PITCH**

Low (purr) to high (screech)

# Physical Examination



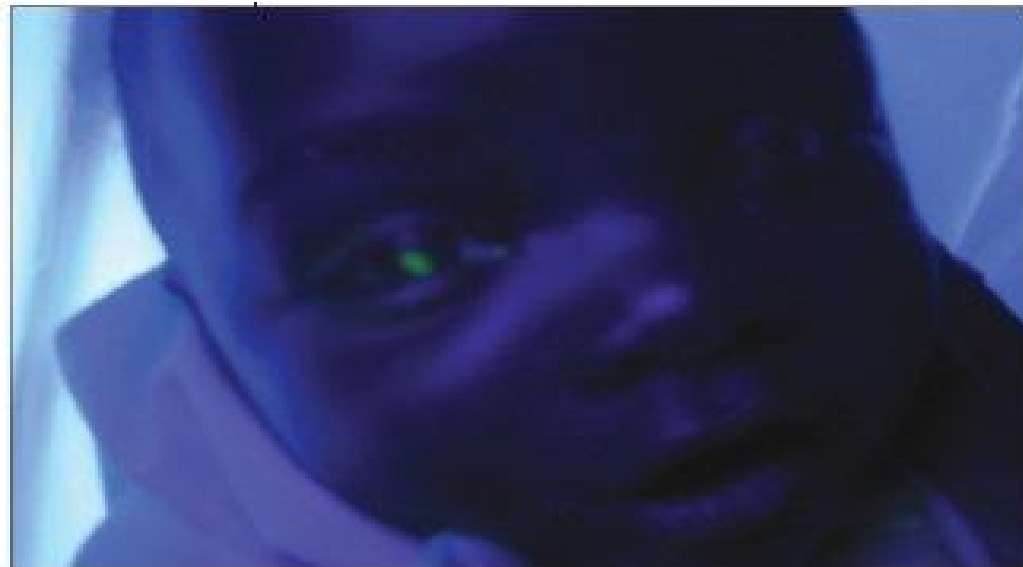
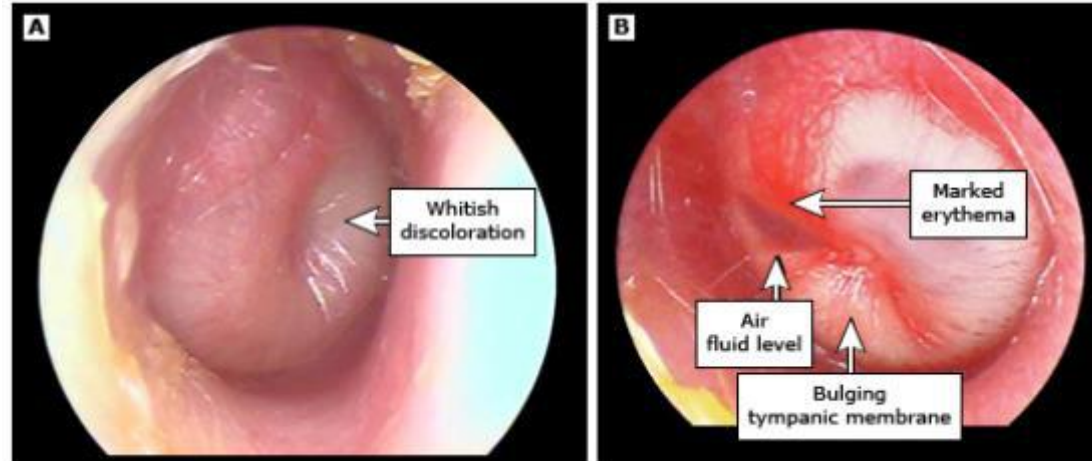
Obtain Vital Signs

Obtain growth (identify Failure to Thrive)

Fontanelle  
(Meningitis/Dehydration)

Eyes for foreign body (e.g. eye lash) or Corneal Abrasion,

Ears for Otitis Media



# Physical Examination

- Nose - obstruction
- Mouth for Stomatitis, Thrush or frenulum tear
- Lung Exam for respiratory disease
- Cardiovascular exam for perfusion and pulses (consider Heart Failure), Evaluate for SVT
- Abdominal exam for acute abdominal signs
- Examine for abdominal mass (e.g. Intussusception)
- Examine for blood in the stool (e.g. Anal Fissure)



# Physical Examination

- Genitourinary exam -  
Incarcerated Hernia, Testicular Torsion
- Neurologic Exam (early CP)
- Joint exam for Septic Arthritis, Osteomyelitis
- General exam for signs of Trauma or Fracture
- Decreased extremity use
- Skin Exam, Bruising or rashes
- Evaluate for Hair Tourniquet



# Lab investigations



- Limited value
- X-ray chest – Pneumonia / Bronchiolitis/fractures
- US Abdomen – Intussusception
- Urine analysis – UTI
- Rest – according to clinical findings

# Symptoms suggestive of organic causes



- Extreme, prolonged and high-pitched cry
- Lack of a diurnal rhythm in crying
- Presence of abnormal symptoms
- Positive physical examination
- Persistence of crying past 4 months of age



# Sudden onset – Consider



- Urinary tract infection
- Otitis media
- Raised intracranial pressure
- Hair tourniquet of fingers / toes
- Corneal foreign body / abrasion
- Incarcerated inguinal hernia

# Crying as a presenting symptom

- Supraventricular tachycardia
- Foreign body in airway
- Diaper rash
- Cow's milk allergy
- Sickle cell crisis
- DPT immunization
- Insect bites

## Painful medical conditions

- Insect bite
- Hair tourniquet
- Corneal abrasion
- Otitis media
- Diaper dermatitis

## Painful Surgical conditions

- Strangulated Hernia
- Torsion testes
- Intussusception
- Malrotation
- Mid-gut Volvulus



# Febrile conditions



- Viral illness
- UTI
- AOM
- Meningitis
- Septic arthritis
- Cellulitis
- Sepsis
- Gastroenteritis



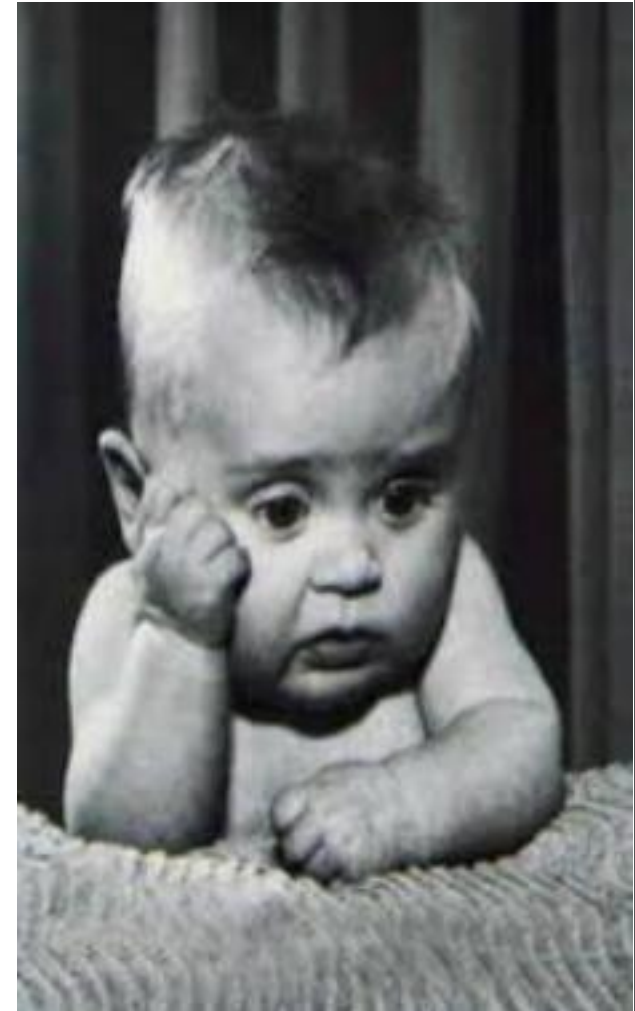
## Look for clues

- Corneal abrasion / ocular foreign body
- Megalocornea – glaucoma
- Retinal hemorrhage / detachment
- Bulging tympanic membrane
- Incarcerated hernia
- Anal fissure
- Hair tourniquet
- Rib fractures
- Open diaper pin injury

# Red Flags



- High-grade fever
- Refusal to feed / difficulty in feeding
- Lethargy
- Paroxysms of abnormal activity
- Unexplained bruising
- Sustained tachycardia  $> 180/\text{min}$
- Bilious vomiting
- Bloody stools
- Paradoxical irritability / full fontanel
- Not moving an extremity





# Treatment

# Medications – Commonly prescribed

Little role

- Pain relief – Paracetamol, ibuprofen
- Antipyretics – Paracetamol
- Saline nasal drops
- Antibiotics – according to the infection
- Anti-reflux medications





## Medications – No strong evidence

- Dicyclomine – contraindicated (<6months) - risk of serious adverse events
- Simethicone (Infacol Drops / Colic aid Drops) has no beneficial effect over placebo
- Fennel oil/Dill oil – no proven benefit
- Enzymes (neopeptine drops ) – no evidence
- Hypoallergenic formula – some benefit (2 SRs) – only after evidence



# Probiotics

- Lactobacillus reuteri
- Meta-analysis of 6 RCTs
  - Significant reduction in crying duration in BF infants in 3 week treatment
- Not available in India

# Home remedies ?

- Gripe water – could cause problems if sodium or sugar or alcohol present
- Vasambu, Omam, Uramarundu herb mixture, Asafetida in warm water, Garlic – Avoid (aspiration, infection, dangerous in surgical conditions)
- Calming procedures – Prone positioning, warm compresses and abdominal massages – may be beneficial
- Dietary modification - may benefit



# Parental Counseling

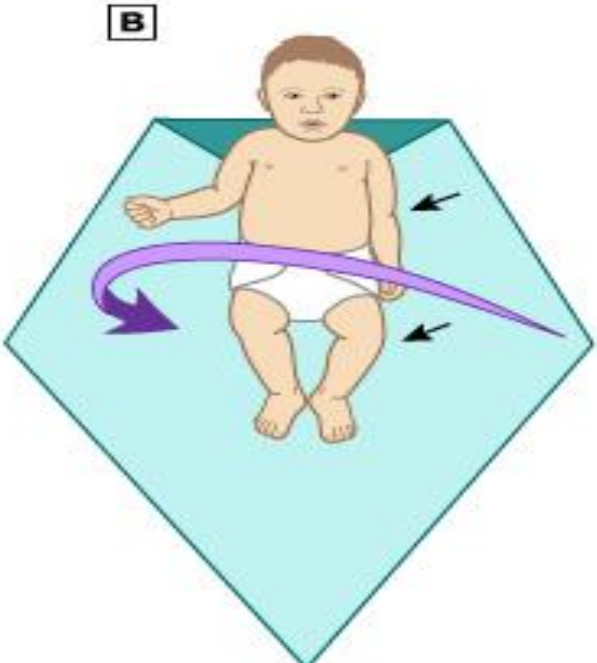
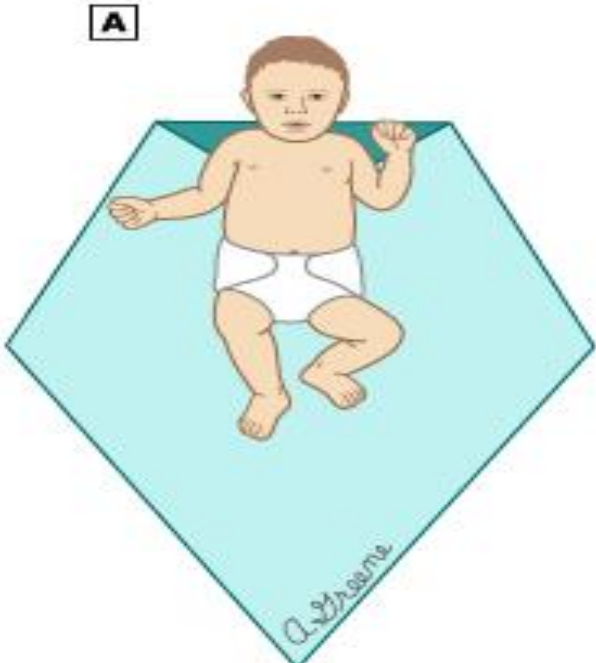
# Explain Normal Patterns

- Explain the infant's cry / sleep / feeding patterns
- Encourage parents to recognize signs of tiredness
- Avoid excessive stimulation - noise, light, handling
- Aim to settle the baby for all sleep in a predictable way
- Darken the bedroom for daytime sleeps
- Respond before baby is too worked up

# Soothing strategies

- Swing
- Blankets
- Music
- Teddy bears
- Holding
- Swaddling
- Infant massage
- Singing (to)





# Coping strategies

- Identify the cry
- Try the obvious
- Speak softly, bring the pitch and volume down
- Hold his arms and body to avoid startles
- Swaddle him
- Pick him up to cuddle
- Try massaging his back and limbs gently
- Sing to him and Walk with him
- Use white noise or motion



# REST intervention



## REST for infants

- Regulation
- Entrainment
- Structure
- Touch

## REST for mothers

- Reassurance
- Empathy
- Support
- Time out for the parents

# Conclusion

- Commonly benign
- Can be the only presentation of a serious illness
- Key - detailed history and physical exam (head to toe)
- Identify 'Red flags'
- Parental reassurance
- Avoid unnecessary investigations and medications



THANK YOU