# FAILURE TO THRIVE

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# FAILURE TO THRIVE

- What is it?
- Why is it important?
- What causes it?
- How to assess?
- What does your Paediatrician need from you?
- What resources are available?
- Case study

# WHAT IS IT?

**Inadequate physical growth**

**Diagnosed by observation of growth over time**

**Reference to standardized growth charts**

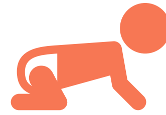
<3rd centile

Downward deviation by 2 or more centile lines after established pattern of growth

# WHAT ISN'T IT???

- Normal shift across centiles
  - 25% by 25%
    - Subsequently follow new centile
  - Reversion to the mean: "catch down" growth
- Specific populations
  - Down syndrome,  Turner syndrome, achondroplasia
  - Prematurity
  - IUGR

# WHY IS IT IMPORTANT?



**Growth is an important marker of a child's overall health and development**

**Risk of long-term effects on growth, learning and development**

?contribution vs causation

Effects of questionable clinical significance in systematic review of cohort studies

FTT (& IUGR) are risk factors for later development of childhood obesity and adult cardiovascular disease

# WHAT IS NORMAL?

- 0-3mo 150-200g/week
- 3-6mo 100-150g/week
- 6-12mo 70-80g/week
- 1-2yo 2-3kg/year
- 2-5yrs 2kg/year

- Height and weight within 2 centile lines of each other
- Movement around centile lines
- Which charts?

# WHAT FACTORS AFFECT GROWTH?

- Genetic
- Environmental
- Nutrition
- Biological
- Health and wellbeing

# WHAT CAUSES IT?

- Organic vs non-organic
- Insufficient usable nutrition:
  - Inadequate energy in
  - Inadequate utilization of energy
  - Excessive energy losses

# INADEQUATE INTAKE

NEONATAL

BEHAVIOURAL

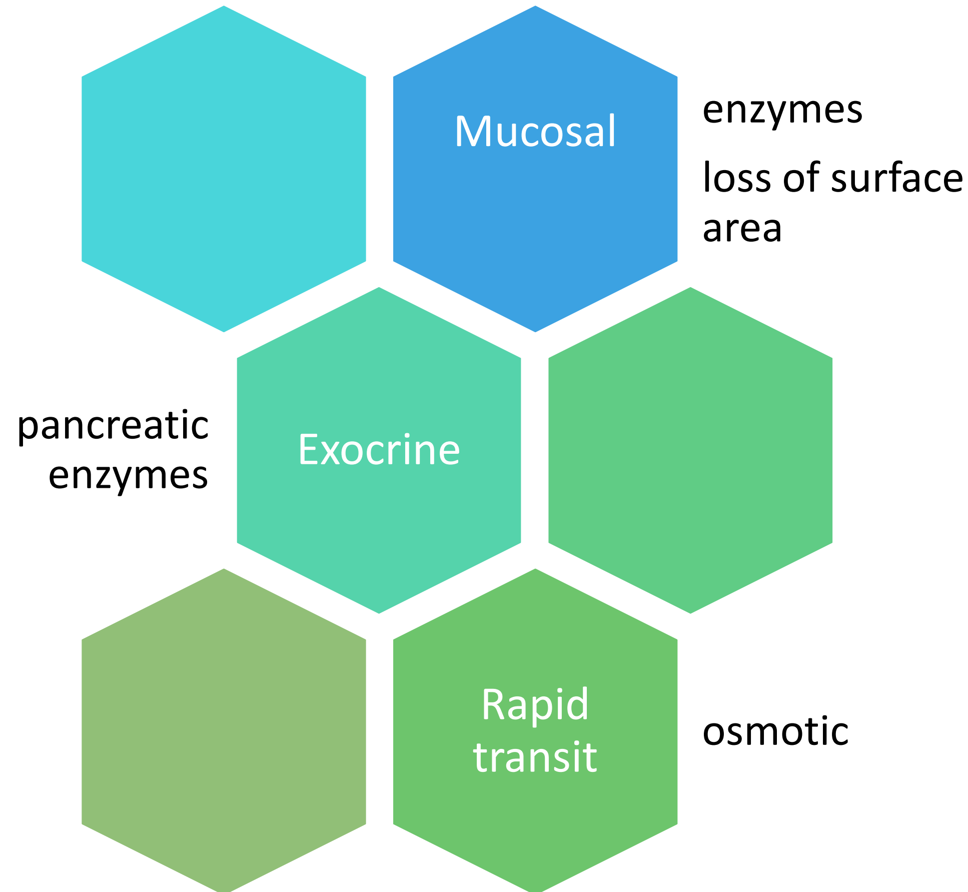
APPETITE SUPPRESSION

NAUSEA AND/OR VOMITING

STRUCTURAL

DEPRIVATION

# INADEQUATE UTILIZATION DESPITE ADEQUATE INTAKE



# INCREASED USE/LOSSES

| | |
|---|---|
| Inflammation | • Chronic infection<br>• Immune dysfunction |
| Chronic disease | • Cardiac<br>• Pulmonary |
| Endocrine disorders | • Hyperthyroidism<br>• GH abnormalities |
| Renal disease | • RTA, renal failure |
| Anaemia | |

- genetic disorders
- metabolic disorders
- Congenital infections

# HOW TO ASSESS?

- History
  - Antenatal/birth
  - Neonatal
  - Feeding and eating
  - General health
  - Psychosocial
  - Developmental
  - Family

- Examination
  - Growth – parameters; wasting?
  - Identification of an underlying disorder
  - Specific nutritional disorders
  - Interactions with carers, carer state of mind; observation of feeding

- Investigations
  - Rarely needed or useful in the absence of specific clinical features

# RED FLAGS

## History:

Recurrent infections/fevers

Weight loss

Persistent vomiting/diarrhea

Failure to gain weight despite adequate energy intake

Multi-system features

## Examination:

Dysmorphic features, developmental delay

Head circumference more affected than weight or length

Cardiac or respiratory abnormalities

Organomegaly, lymphadenopathy

# HOW TO TALK ABOUT IT WITH PARENTS?

**Growth and feeding can be a highly emotive topic**

**Normalise discussion of growth and feeding**

**Demonstrate growth parameters on charts**

Current measurements and trend

**Reinforce the positives**

# WHAT TO DO ABOUT IT?

Goal is "catch up" growth

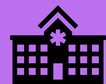
High calorie diet: fats, supplemental feeds/fat and calorie boosters

Most cases can be managed with feeding intervention +/- feeding behaviour modification

'division of responsibility'

Eating together, pleasant mealtimes without distractions

Encourage some variety and cover the basic food groups



Hospitalisation

Severe malnutrition

Safety concerns

Failure of outpatient management

# WHAT DOES YOUR PAEDIATRICIAN NEED FROM YOU?

## Details of your concerns

- why this child?

## Longitudinal growth data

- Take weight, length and head circumference at every visit

## Family insight

- Family function, medical/psychological history

## Investigations already undertaken

# WHAT RESOURCES ARE AVAILABLE?

## Infants:

Lactation consultants

QE2

Feeding clinic TCH

Dietitian

Paediatrician

## Older children

“munch and crunch” group

Speech therapy drop-in services

Dietitian

Paediatrician

# CASE STUDIES

- LG
- Female infant born at term
- Referred at 7 weeks for ‘dropping across centiles’
- Birth parameters W 4.7kg L54cm HC 35cm
- 7/52 W 5.27kg L56cm HC 36.3cm

- 9/52 W 5.57kg L 60cm HC 37cm
- 3/12 W 5.74kg L61.5cm HC 37.5cm
- 4/12 W 5.94kg L 64.5cm HC 38.5cm
- 5.5/12 W 6.385kg L 66cm HC 39cm
- 8/12 W 7.115 L 70cm HC 40.5cm