

WEIGHT FALTERING AND FAILURE TO THRIVE

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**What causes weight
faltering?**

Non-organic Failure to Thrive

‘Hospitalism’

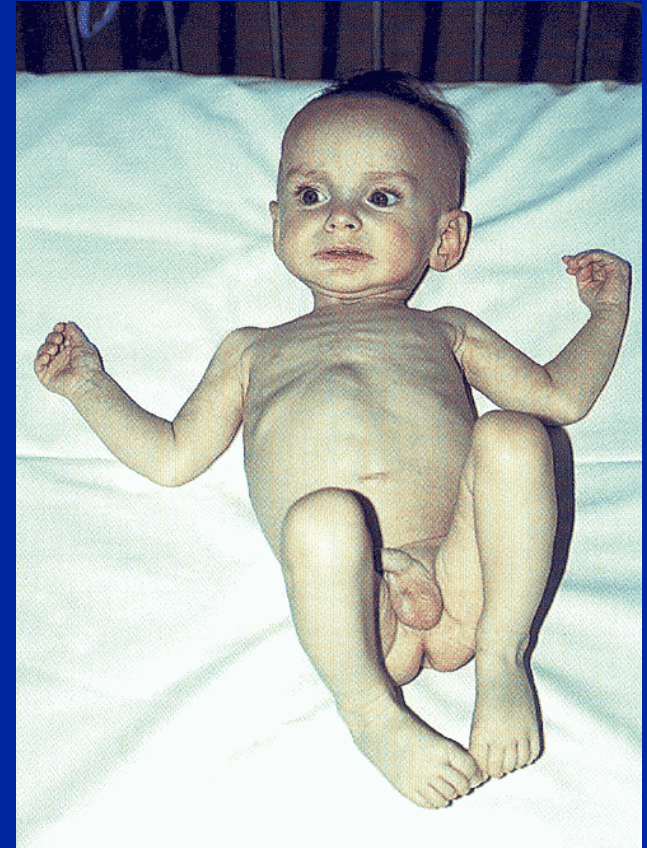
Chapin 1915

‘Maternal deprivation’

Bowlby 1973

At risk register category in
Scotland and in England
till 1989

Associated with 20 point
DQ deficit Dowdney 1987



How do we know what we know about weight faltering (failure to thrive)?

- British population based studies
 - Skuse and colleagues, London 1980s
 - Studies on Tyneside
 - Parkin Project
 - Growth and development study
 - Gateshead Millennium study
 - Avon Longitudinal Study of Parents and Children (ALSPAC)

The role of Organic disease in UK weight faltering

- Fully explains only 5-10% cases in UK population
- May contribute to poor intake in further 10%
- Those with significant organic disease present with symptoms or signs of underlying disease

Role of maternal deprivation and neglect in weight faltering

- Almost no relationship (in UK) between poverty and weight gain or failure to thrive
- Weak association with maternal depression
- Most weight faltering children (95%) have no evidence of abuse or neglect
- But abused or neglected children are 5 x more likely to weight falter

Young babies are all at risk of undernutrition

- Very high energy requirements
- Weight doubles by age 4m, trebles by age one year
- To grow normally, newborn infants must consume 15% of their weight in milk daily

Why do babies fail to thrive in 'normal' homes ?

Child factors:

- Poor appetite drive or feeding skills
- Minor illnesses
- Undemanding

Maternal factors:

- Distracted / depressed / avoiding food
- Dietary mis-match
- Over anxious /over persuading

Risk Factors for undernutrition in poorer communities

- Family size
- Non-exclusive breast feeding (<6m)
- Lack of, or low density weaning foods (>6m)
- Economic pressures to work outside home

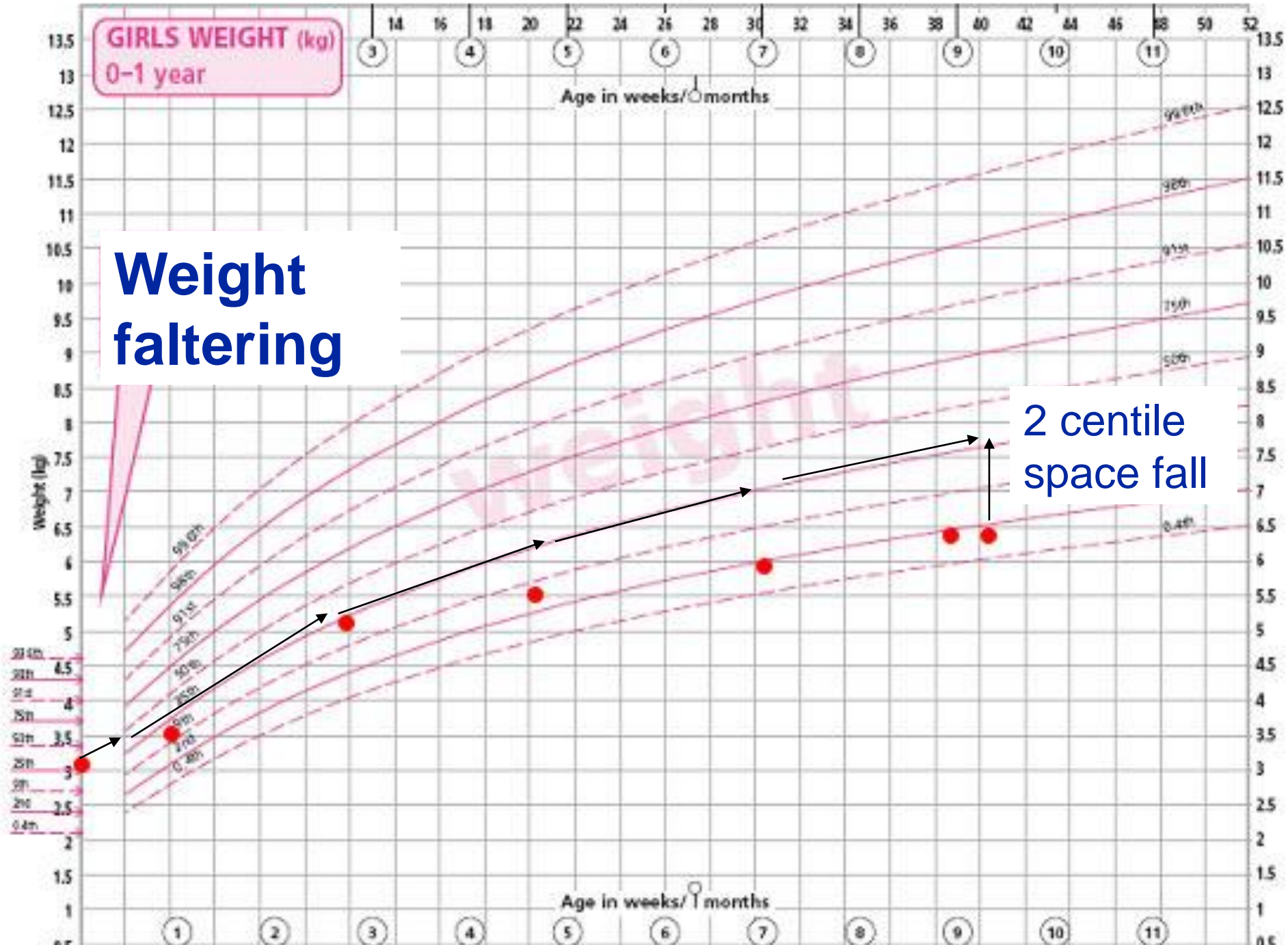
**How should weight faltering
be diagnosed?**

GIRLS WEIGHT (kg)
0-1 year

Age in weeks/○ months

Weight faltering

2 centile space fall



When does a down a centile chart become abnormal?

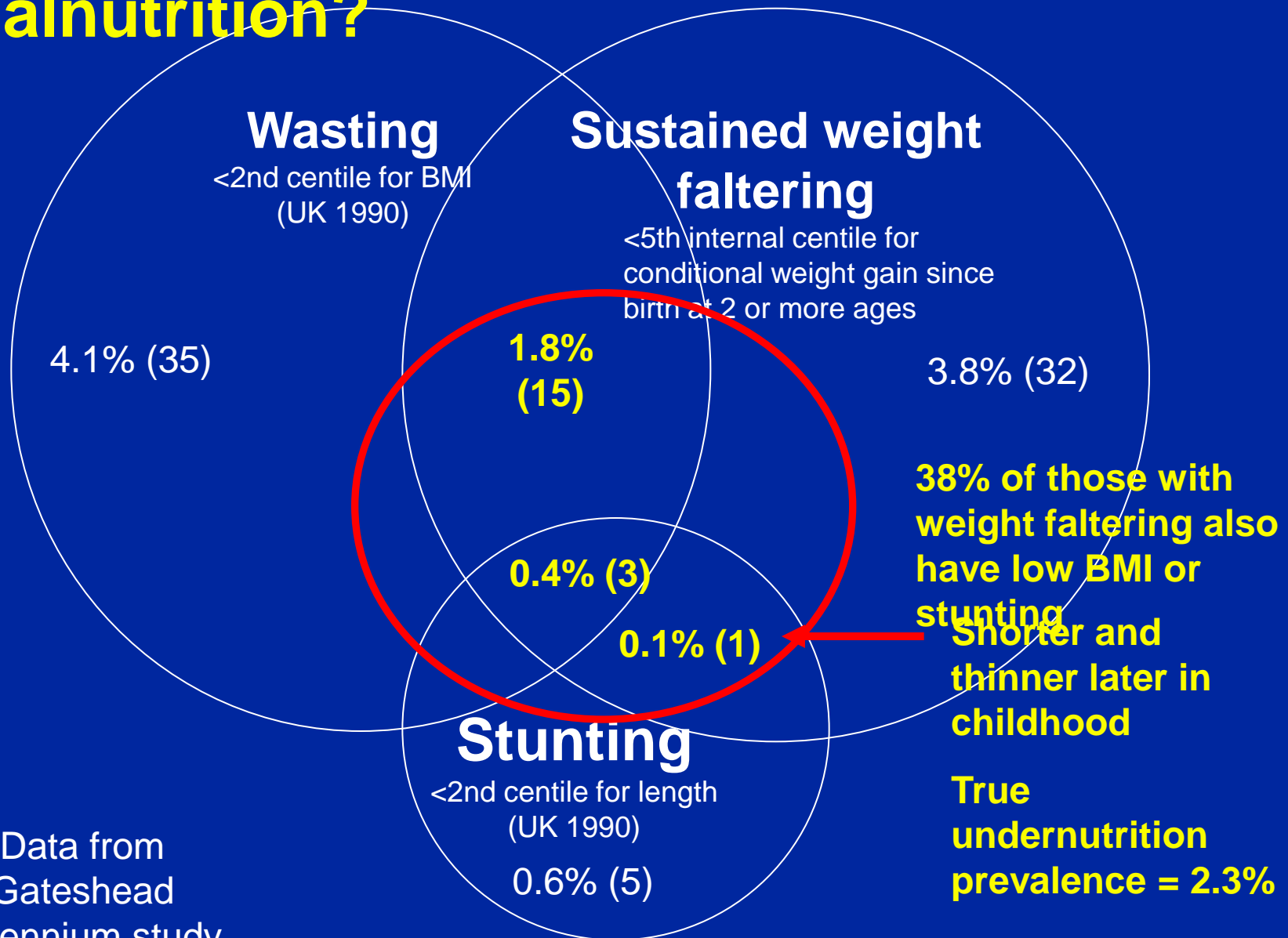
- Degree of variation depends upon standard used and initial centile
 - 5% fell through 2 centile spaces compared to previous reference (UK 1990)
 - <2% children fall through 2 centile spaces compared to WHO
- Centile falls are rarer and more significant in initially small children; common in large children
 - <9th only 2% children centile will fall one centile space
 - >91st 2% will fall three spaces

What threshold would work for Hong Kong?

- Will depends upon
 - What growth standard is used
 - How healthy children fit to that standard
 - Prevalence of real malnutrition
- Need to test any threshold using local population based data

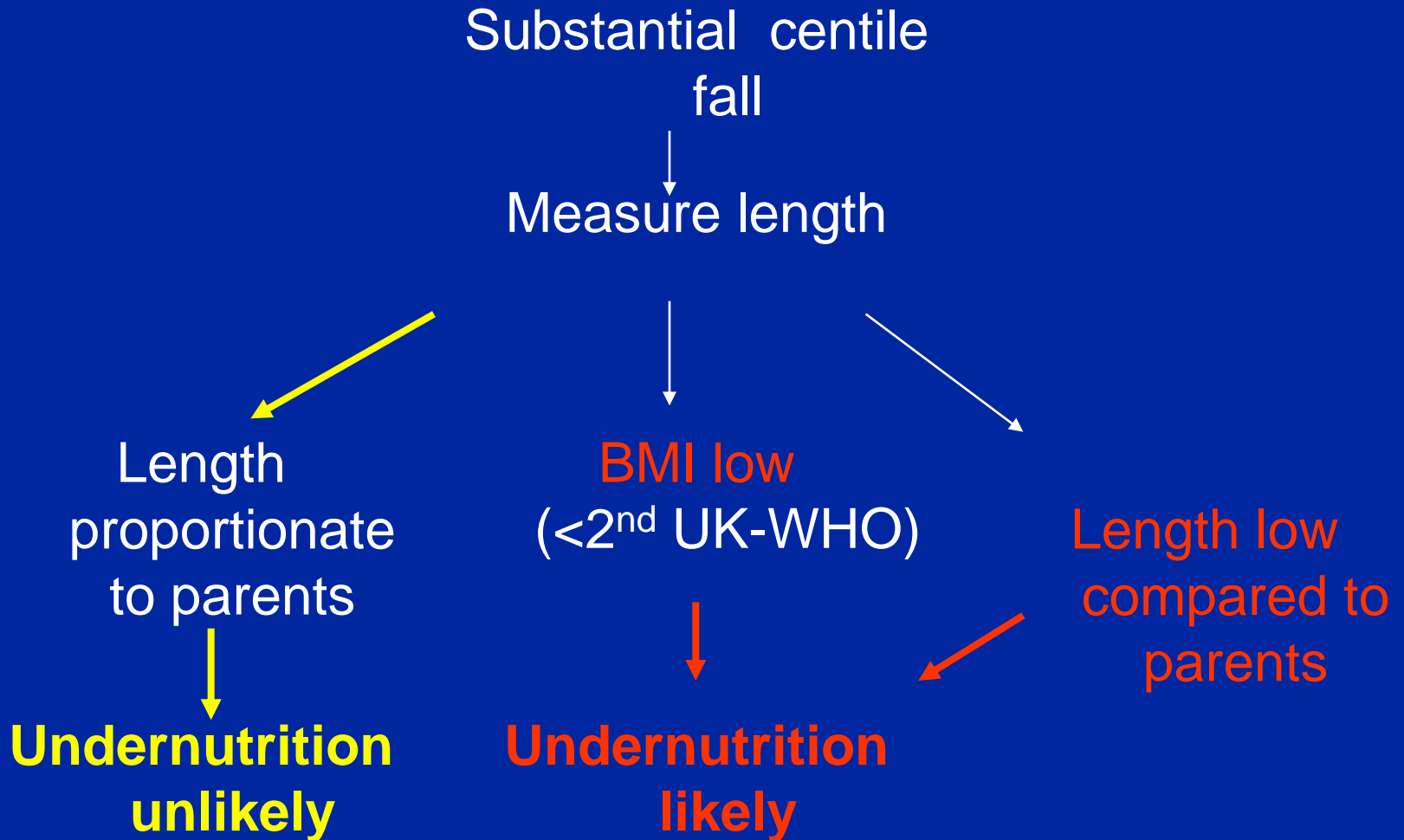
**Does a centile fall always
imply malnutrition?**

Does a centile fall always imply malnutrition?



Data from
Gateshead
Millennium study

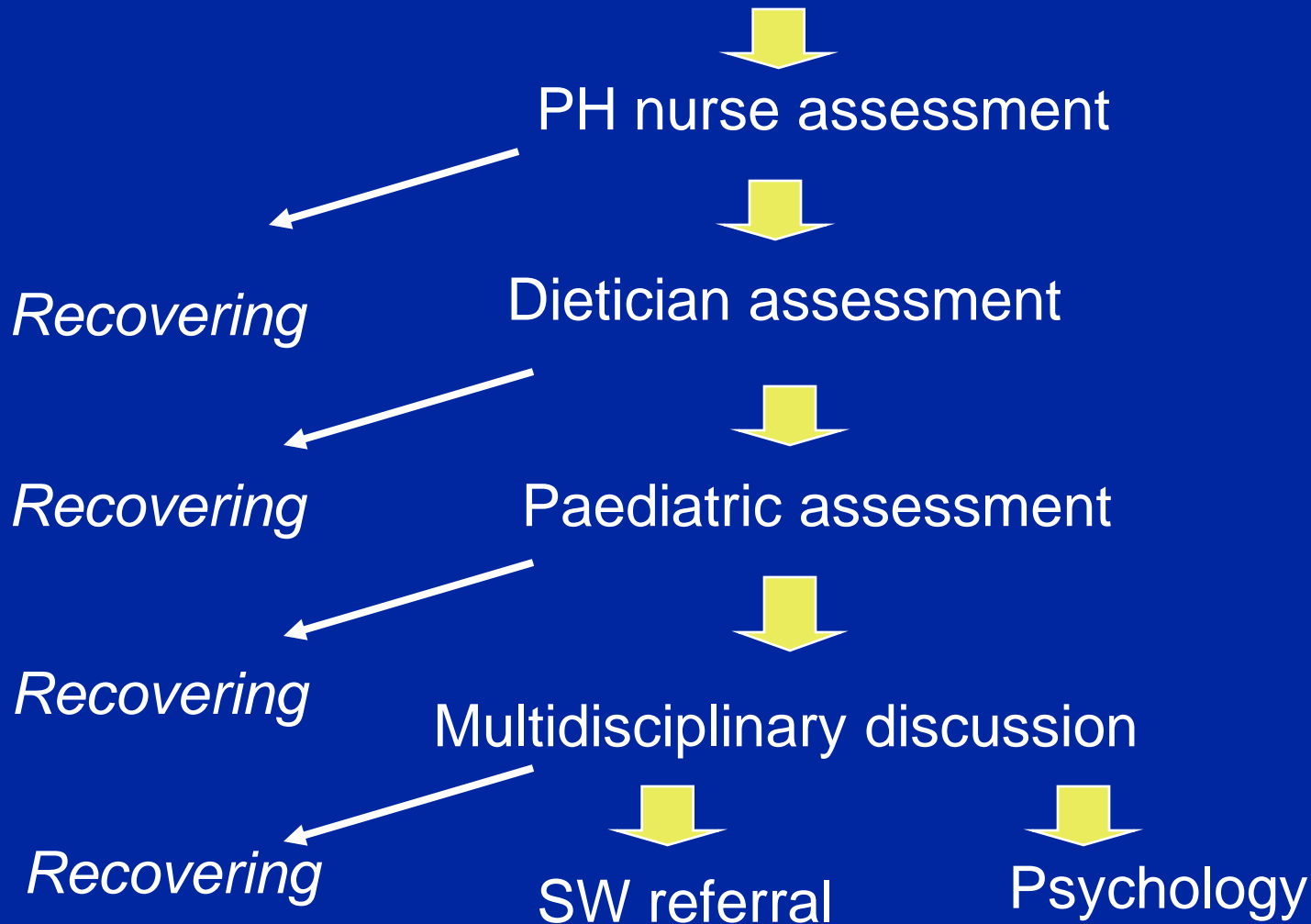
Algorithm for assessing weight faltering



**How should weight faltering
be assessed and managed?**

A staged, proportionate approach to managing Weight Faltering

Weight gain below screening threshold



Weight faltering assessment in primary care

- Family's concerns
- Medical History
- Feeding History
- Behaviour / Development
- Family History
- Growth Information

Dietary assessment in primary care

- **Don't offer advice without prior assessment of:**
 - Food Preparation and purchasing
 - Meal Times
 - Food Eaten / Drinks
- Food Diary: 3 days
- Witnessed Meal

Dietetic assessment

- Home visit may be more effective than clinic review
- Assess the adequacy of the current diet to supply essential nutrients
 - Offer targeted advice about enhancing the diet
- Advise on
 - Meal time routine
 - Management of basic feeding behavioural problems

General strategies for dietary improving intake

- Offer three meals and two snacks each day at regular times
- Increase variety of foods offered
- Increase energy density of usual foods
- Limit milk intake to 500 mls per day

Specialist paediatric assessment

- **Indications**
 - Features suggesting an associated illness
 - Significant weight faltering that has persisted despite community and dietetic interventions
- **Role**
 - Reassess the growth data
 - Exclude organic pathology
 - Reinforce dietary advice
- Inpatient monitoring not advisable

Investigations for sustained weight faltering

- All children (all at once)
 - Full blood count, Ferritin
 - Urea and electrolytes
 - Thyroid function tests
 - Mid stream urine
- When indicated
 - Chromosome analysis (short girls)
 - Chest radiograph (respiratory symptoms)
- UK but ? not Hong Kong
 - Coeliac disease screening
 - Sweat test
 - Vitamin D levels

Dangers of medical management of weight faltering

- Prolonged investigations ⇒ Appropriate Rx deferred
⇒ Irrelevant diagnoses
- Exclusion diets ⇒ Energy insufficiency
- Supplements ⇒ Weaning further delayed
- Tube feeding ⇒ Pain and distress, risk of long term dependence
- IV feeding ⇒ Decompensation and death

Interventions

- Targeted dietary advice
- Behaviour management
- Support for family
- Nursery placement
- Supplements / artificial feeding (very rarely)

Clinical psychology input

- **Indications**

- Pronounced food refusal
- Anxious, stressful mealtimes

- **Role**

- Meal time video observation
 - Watch with parents
 - Structured supportive feedback
- Working with the parents to control anxiety

Social work / Child protection input

- Indications
 - Direct evidence suggesting abuse or neglect
 - Persisting weight faltering despite advice plus
 - Major social problems
 - Drug or alcohol abuse
 - Weight faltering on its own does not require social work referral
- Role
 - Work with families to ensure have adequate resources
 - Enable families to access appropriate support
 - Legal measure / alternative care: only in extreme cases

The long term outcome of Weight Faltering depends upon severity, duration and cause

Severity of Undernutrition

<2 centile space fall
or transient fall

2-3 centile space fall

> 3 centile space fall

Fall though 5+ centile spaces
<70% Weight-for-height

Possible consequences

No consequences

Stunting

Developmental delay

Immune suppression
Permanent IQ loss

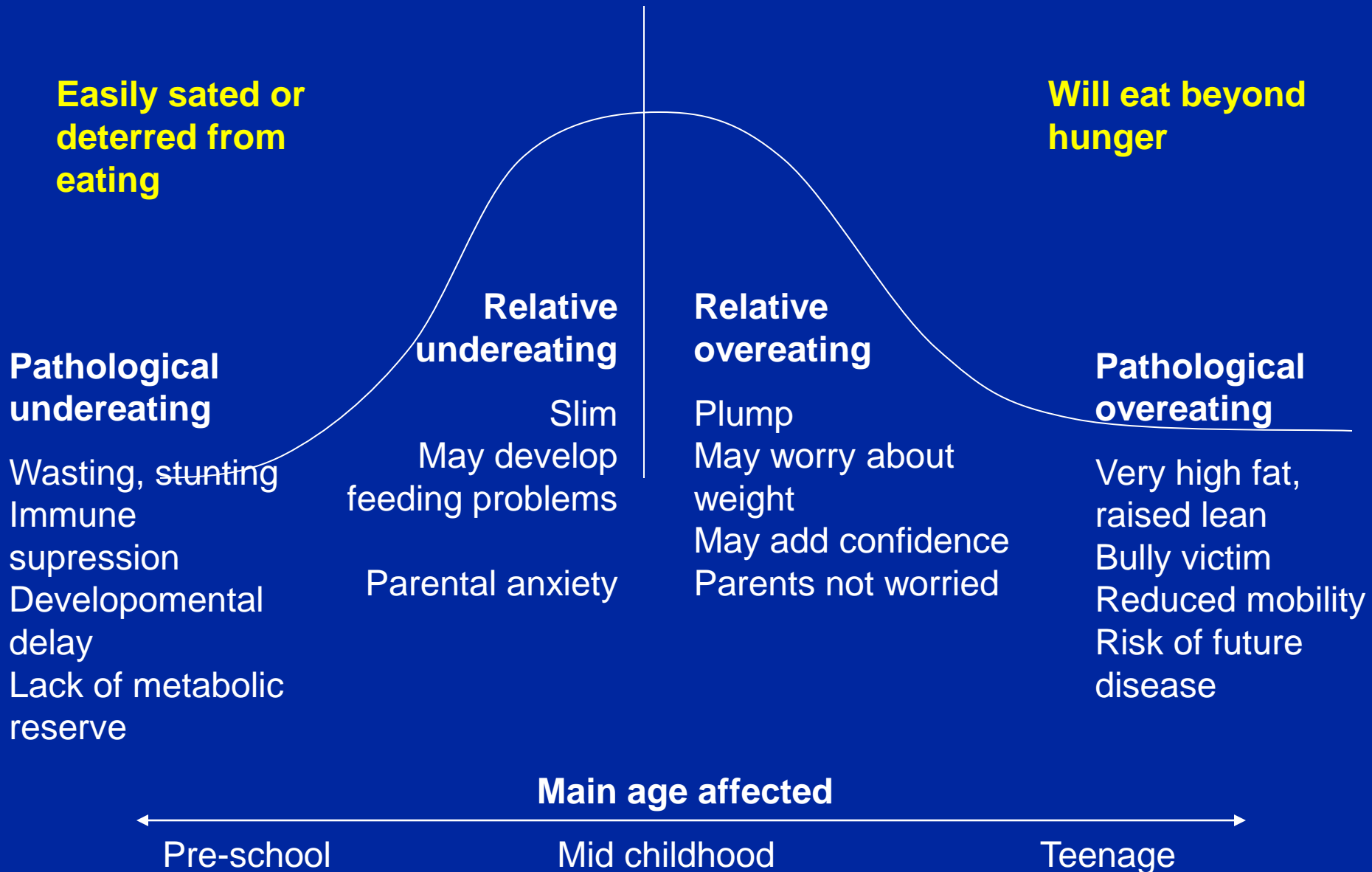
Death



Summary

- Weight faltering (failure to thrive) is common
- Weight faltering + thinness or stunting suggests under-nutrition
- The health visitor (public health nurse) is often best placed to assess and advise in the first instance.
- Organic disease is rare in otherwise asymptomatic children
- Usually responds to simple targeted dietary advice
- Severe, unresponsive cases may require SW or psychology input

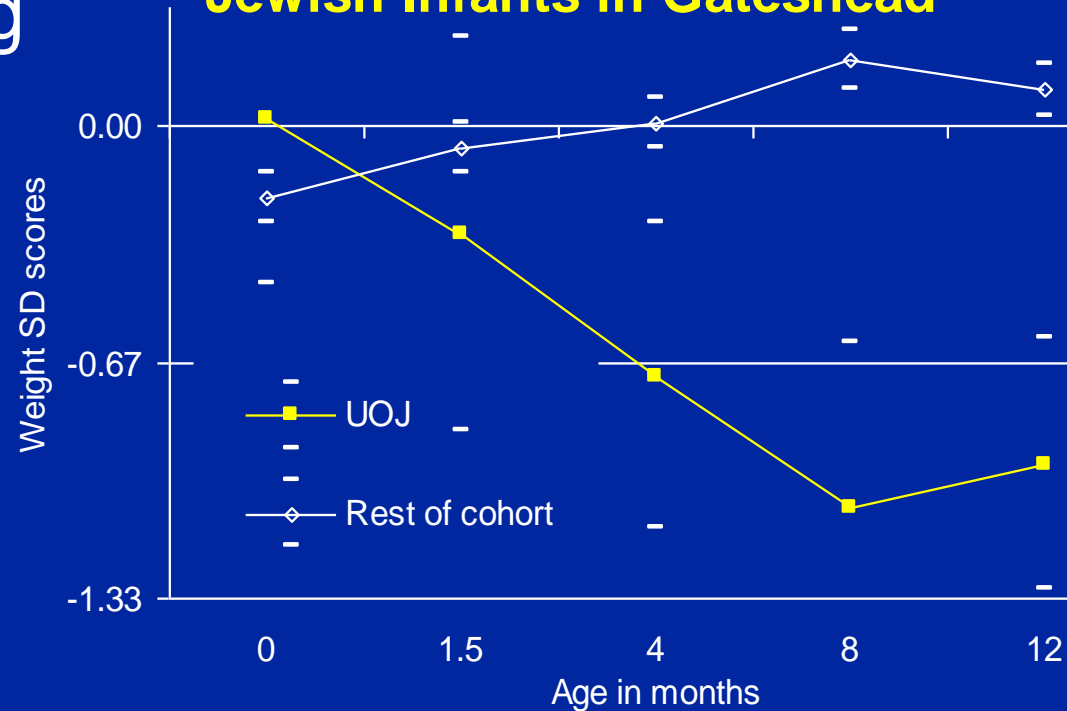
The Normal Curve for Drive to Eat

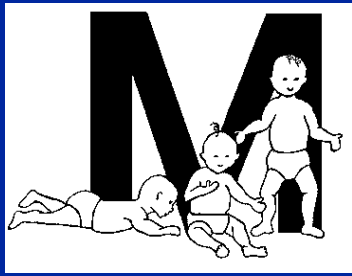


Gateshead's ultra orthodox Jewish community

- 3% births in district
- 15% weight faltering cases
 - Large families (54% 5+ children)
 - Prolonged breastfeeding (37% >12m)
 - Late weaning (73% > 4 months)

Weight gain in Ultra orthodox Jewish Infants in Gateshead





Gateshead

Millennium

Study



- Prospective population based study of feeding and growth
- Gateshead = urban borough in NE England
- 1029 subjects born to resident mothers
- Recruited shortly after birth June 1999 - May 2000
- 4 questionnaires in first year
- Health check aged 13 months
- Studied in school aged 7-8 (60%)