FAILURE TO THRIVE
Failure To Thrive
INTRODUCTION

Loosely Applied
Descriptive than Diagnostic
Usually no apparent etiology
Patho physiologically
Calorie Insufficiency
Growth Retardation
Risk Of
Physical Sequalae
Psychological Sequalae
Emotional Sequalae
DEFINITION

Failure to thrive is sustained weight loss, failure to gain weight or a persistent fall in weight from the child`s normal centile.

This excludes Constitutionally light child Transient weight loss Associated with acute illness.
DEFINITION

It is defined as a weight for age that falls below the 5th percentile on multiple occasions or weight deceleration that crosses two major percentile lines on a growth chart.
DEFINITION

ATTAINED GROWTH
- Wt < 3rd Centile
- Wt for Ht < 5th Centile
- Wt 20% or more below ideal Wt for Ht
- Triceps skin fold thickness < 5 mm

RATE OF GROWTH
- < 20gms / day from 0-3 months
- <15gms / day from 3-6 months
- Fall of from a previously established growth curve
- Downward crossing of > 2 major percentiles on growth chart
PITFALLS

- Single observation – avoid
- Observe growth – over a period
- Value of growth charts
- Usually children < 3 yrs
- Maximum up to 5 yrs
- Small size alone – not adequate
- Remember constitutional & genetic factors
ETIOLOGY - THEORETICAL

Organic
- G.I.
- Renal
- Cardio Pulmonary
- Endocrine
- CNS
- Infection
- Metabolic

Non Organic
- Maternal Deprivation
- Maternal Depression
- Crisis In The Family
- Neglect Regarding Nutrition
- Ignorance
- Child Rearing
- Feeding Technique
ETIOLOGY - PRACTICAL APPROACH

INADEQUATE INTAKE
- Nutritional ignorance, Mechanical Problems
- Child neglect/abuse, Chromosomal abnorm.
- Systemic disease, Prenatal insult

CALORIE WASTING
- Vomiting, Renal disorders,
- Diarrhea, Diabetes Mellitus

INCREASED REQUIREMENTS
- CHD, Hyperthyroidism,
- Recurrent Infection, Chr. Resp.disorders
ALTERED GROWTH POTENTIAL

- Prenatal insult
- Chromosomal abnormality
- Endocrinopathies
HISTORY - FTT

• Routine – antenatal, natal, perinatal
• Pregnancy – planned or unplanned
• Was it a preterm delivery?
• IUGR – worse prognosis
• History of TORCH
• Dietetic history – detailed
• Social & family history
PHYSICAL EXAMINATION - ORGANIC FTT

- Thorough general & systemic examination
- Neuro developmental assessment
- Assessment of nutrition
- Marasmus
- Kwashiorkor
- Vitamin deficiencies
- Nutritional Anthropometry
  - Weight, Height, Head Circumference
  - Skin fold thickness, Mid arm Circumference
Red Flag Signs and Symptoms Suggesting Medical causes of Failure to Thrive

- Cardiac findings suggesting congenital heart disease or heart failure (e.g., murmur, edema, jugular, venous distention)
- Developmental delay
- Dysmorphic features
- Failure to gain weight despite adequate caloric intake
- Organomegaly or lymphadenopathy
- Recurrent or severe respiratory, mucocutaneous, or urinary infection
- Recurrent vomiting, diarrhea or dehydration
Specific Behavioral Pattern
- Decreased Vocalization
- Lack of cuddliness
- Head banging & rocking movements
- Rumination

Features of Child Neglect or abuse
- Unwashed skin
- Untreated Impetigo
- Uncut finger nails
- Flattened occiput & alopecia
- Torn Frenulum
Approach To A Child With FTT Classification &
Etiological Diagnosis

Group 1
Malnourished –
Def. intake
or Malabsorption

Group 2
Constitutional
Dwarfism

Group 3
Primary CNS
Defect

Malnourished –
Def. intake
or Malabsorption

Normal or
Constitutional
Dwarfism

Normal HC
Wt > Ht reduced

Increased HC
Endocrinopathies

Wt mod. reduced
Dystrophies
in proportion to Ht

Subnormal HC
Wt decreased

IUGR

in proportion to Ht

in proportion to Ht
## Approach To A Child With FTT Classification & Etiological Diagnosis

<table>
<thead>
<tr>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
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<tbody>
<tr>
<td>Normal HC</td>
<td>Constitutional dwarfism</td>
<td>Primary CNS defect, IUGR</td>
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<tr>
<td>Wt &gt; Ht reduced</td>
<td>Endocrinopathies</td>
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<td>Structural dystrophies</td>
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<td>Malnourished – Def. intake or Malabsorption</td>
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PATTERN I - Intake adequate, Wt gain satisfactory

- Feeding technique at fault

- Poverty & Ignorance

- Disturbed Infant Mother relationship
APPROACH TO A CHILD WITH FTT
NUTRITIONAL REHABILITATION – RESPONSE

PATERN II    - Intake adequate, no weight gain

Malabsorption - GIARDIASIS, C.F, LACT. INTOL.

Renal        - R.T.A., D.I., CRF

Diabetes Mellitus

Hyperthyroidism
PATTERN III - Inadequate intake, No Wt Gain

Difficulty in sucking & swallowing (Mechanical or Primary Neurological)

Inability to take large quantities (Chr.Infection, Cardio Pulm. disease)

Vomiting (GERD, CHPS, Metabolic disorders, Increased ICT, Adrenal Insufficiency)
LABORATORY AIDS TO DIAGNOSIS

• Indicated only in organic FTT

• Avoid unnecessary investigations

• Start with simple & non invasive

• Proceed to complex & invasive
LABORATORY AIDS TO DIAGNOSIS

Initial Evaluation

• CBC & ESR

• Complete Urine Analysis

• Stool Examination

• Mantoux Test

• X Rays – To Rule Out PC, Child Abuse, Bone Age Estimation
LABORATORY AIDS TO DIAGNOSIS

Definitive Tests

• Pattern  I - No Further Test Except Maternal Psycho Evaluation

• Pattern  II - Evaluation of Malabsorption - Stool Fat, Chymotrypsin, Sweat Chloride, Small Bowel Biopsy, LFT

• Pattern  III
  A. With Vomiting - Electrolytes, pH, Glucose, BUN, Serum & Urine Aminoacids, Upper G.I. Contrast Studies
  B. Without Vomiting - Barium Enema, TFT, IVP, Sigmoidoscopy
INDICATIONS FOR ADMISSION

• Weight for height less than 70% of the median

• Detailed evaluation for suspected organic disorder

• Suspected child abuse or neglect

• Non response to out patient management
EVALUATION OF FTT

Trial of feeding (2 weeks)

Reassessment

Good intake
- Poor response
  - Abnormal stools
    - Malabsorption
      - Persistent diarrhea
      - Giardiasis
      - Celiac disease
      - Cystic fibrosis
  - Normal stools
    - Poor utilization
      - Thyrotoxicosis
- Good response
  - Caloric insufficiency
- Feeds well but regurgitates/vomits
- Sucking/Swallowing problems
  - CNS disorder
  - Neuromuscular disorder
  - Oral intake
- Feeding problems
  - GI abnormalities (GER) RTA, CRF
  - CNS problem

Schematic diagram showing evaluation of FTT
MANAGEMENT GOALS

• Nutritional rehabilitation

• Find and treat organic cause if any

• Address psycho social and developmental issues
PROGNOSIS

• FTT in first year of life regardless of etiology – prognosis is ominous

• Maximal brain growth occurs during the first six to twelve months of age.

• One third of children with Psycho social FTT have developmental delay, social & emotional problems

• Prognosis for organic FTT - variable - depends on the etiology
Thank You