FAILRE TO THRIVE
Stephen C. Elliott, D.O., Ph.D., FAAP
Blank Children’s Hospital
UnityPoint Health Des Moines

Far too much information to cover in one lecture.
Plan to discuss major causes, and more importantly, a plan on how to proceed.
Most important issue – evaluate earlier rather than later and reduce long-term complications.

WEIGHT GAIN

- Growth deficiency is usually defined as weight persistently below the 5th percentile for age.
- Early in life – gain 5-6 ounces/week.
- 6 months to year – gain 3-5 ounces/week.
- INFANTS SHOULD GAIN WEIGHT STEADILY – failure to do so calls for prompt investigation.

WEIGHT GAIN

- Please plot premature infants on charts that correct for this.
- No chart. Can subtract the number of weeks born prematurely.

WEIGHT GAIN

- General Rule
  - If an infant fails to gain on a formula that is qualitatively and quantitatively correct – Something is wrong with the infant and not the formula (changing formulas usually won’t correct).

WEIGHT GAIN

- Not all infants have the same calorie requirements
  - BMR
  - Rapidity of growth
  - Amount of nonutilized food lost in stools
  - Active (colic infant) Vs. placid and somnolent
**WEIGHT GAIN**

- Diarrhea (or impaired absorption) can result in loss of 30–40% of food intake
- Each degree of temperature elevation increases caloric needs by 7%

**WEIGHT GAIN**

- Newborn – 80 cal/Kg/day
- 1st year – 100–120 cal/Kg/day
- Each 3 year period after decreases 10 cal/Kg

  Are approximate and varies from infant to infant

**WEIGHT GAIN**

- Greater than 2–3 years of age
- Weight can remain constant for weeks (or months) when older and then growth spurts
- Now periodic rather than constant weight gain

**ETIOLOGIC CLASSIFICATION OF GROWTH DEFICIENCY OR LOSS OF WEIGHT**

- Quantitatively and qualitatively inadequacy of food intake
  - A. Economic privation; starvation
  - B. Chronic protein malnutrition
  - C. Anorexia
  - D. Feed difficulties due to organic factors
  - E. Child neglect

**ETIOLOGIC CLASSIFICATION OF GROWTH DEFICIENCY OR LOSS OF WEIGHT**

More Difficult Areas

- Breast Milk (not all the same)
- First Baby
- Discharged before milk came in
- Poor help in establishing successful breast feeding

**FAILURE TO THRIVE OUTLINE**

- Family History:
  - Genetic factors are among the most important factors in growth
  - Psychological factors
  - Daily pattern of care
FAI LURE TO THRIVE

- Pregnancy / Delivery History
- Term birth? Complications
- Screens
- Maternal problems:
  - Tobacco, drugs
  - Medications
  - Ultrasounds
  - Infections
- Birth weight, height, HC, Apgar Scores

FAI LURE TO THRIVE

- Protein – calorie malnutrition
- Three points to consider:
  - Intake
  - Excessive losses
  - Excessive utilization
- Losses may be diarrhea, regurgitation, emesis
- Excessive urine output, sweating

FAI LURE TO THRIVE

- Detailed Nutritional History
  - Breast or bottle (prepared properly)
  - Amount / frequency
  - Older – other food and quantity
  - Detailed daily food / liquid intake

FAI LURE TO THRIVE

- Physical Examination
  - Complete and thorough
  - Review all previous height/weight/HC
  - Does upper/lower body proportions appear normal
  - Bruises, dysmorphic features
  - Careful heart/lung/abdominal exam
  - BP
  - Older – motor, language, and social skills

PHYSICAL EXAM

- HT/WT/HC
  - All a must
  - Compare to previous values
- General appearance
  - Thin
  - Irritable
  - Interaction with caregiver
- Pulse/RR
- BP – R/O cardiac, renal, endocrine disorders
- Dysmorphic features
- Assess motor, language, social skills

TOTAL EXAM

- So Far
  - Family History
  - Pregnancy History
  - Delivery History
  - Early Childhood History
  - Family Dynamics
  - Growth Chart (age when change occurred)
  - Exam
  - Should be narrow differential diagnosis now
LABORATORY
1st Visit
- CBC
- Sed. Rate
- UA
- CMP

LABORATORY
Why so few tests?
Because poor nutrition and psychological factors are by far the most frequent cause of failure to thrive.

DIAGNOSTIC STUDIES
- When all the above have not given a specific diagnosis – then consider:
  - Bone age
  - Sweat chloride
  - Immunoglobulin's
  - HIV/viral studies
  - Chest X-ray
  - Renal ultrasound
  - Stool studies
  - Thyroid studies

GET HELP

FAILURE TO THRIVE
Unusual Stories
- FH cardiac/atherosclerosis
  - Gave baby only skim milk
- Family was Vegetarians
  - Gave diet low in protein
- Breast feeding
  - Giving breast milk to NICU also
- Older sister doing feedings
  - Mom worked evening shift/sister busy with boyfriend

Environmental Deprivation – Family–Maternal Profiles
Group I
- “Good family” with adequate resources
- Acute loss leading to maternal depression
- Individual counseling
- Good prognosis

Group II
- “Deprived family” with poor resources
- Chronic loss
- As many children as the age of the oldest child
- Domestic violence
- Substance abuse
- Acts of omission
- Fair prognosis
Environmental Deprivation – Family-Maternal Profiles

Group III
A. Seemingly “good family” with adequate resources
B. Overtly abusive to child
C. Acts of commission
D. Worst prognosis

Figure 5. The host protective immune deficiency of costantic, bantam, and non-specific mechanisms. Reduced host protective defects in many of these families.
Goat Milk Mama's

RAW & NATURAL

Infant Formula Kit

Just add raw goat milk
to make the freshest, most natural
baby formula on the planet

No Soy, No Corn Syrup, No Synthetics

Ingredients: Organic Coconut Oil, Organic Olive Oil, Organic
Sunflower Oil, Lemon, Nutrient Yeast, Kosher Calcium,
Probiotics.