Growth Concerns for Children with Congenital Hyperinsulinism

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Disclosure

Adda Grimberg, MD serves on the Steering Committee for the Pfizer International Growth Study database.











Pregnancy health, maternal health, placental sufficiency

Fetal growth

• Infant of a diabetic mother





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Pregnancy health, maternal health, placental sufficiency

Fetal growth

Infant of a diabetic mother
 Insulin

• First "diagnostic test": history

• LGA, AGA, SGA



Transition

• Fetal growth determinants to post-natal growth determinants

• Physiologic rechanneling

- Catch-up growth
- Catch-down growth

Normal growth (post-natal)

Follows pattern

- Fastest first 2 years of life
- Steady age 3 years until puberty
- Pubertal growth spurt
- Stop

Based on



- Family
- Gender





BMI*

101

AGE (YEARS)

9

10 11 12 13 14 15 16 17 18 19 20

NAME

AGE (YEARS)

12 13 14 15 16 17 18 19 20

RECORD #

cm in

190-

185

180-

75

170

165

160-

155

150-

105-230

100-220

95-210

90

85

80

·70·

65

-25

200

190

180

170

160

150-

140-

60-130

55-120

-50-110

45-100

40

35

30

25

20

15

10

kg lb

SAFER · HEALTHIER · PEOPLE

CDC

-90

-80

-70

-60

-50

-40

-30

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-75

-76

-74

70

-68

-66

-64

62

-60

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Plotting growth



Plotting growth







Abnormal growth

- Height < -2 SD for population
 Height < 2 SD below parental target height
- Height falling across major %iles
- Slow growth velocity
 - (< 2 inches or 5 cm per year)

Growth is the most sensitive physical sign of a child's overall health.

It is very nonspecific.

Processes that affect growth



Sequence of pubertal events.



Tanner JM. Growth at Adolescence. Oxford, Blackwell Scientific Pub,1962:30-36.



Tanner JM, et al. J Pediatr. 1985.

Evaluation of growth

- Objective: normal variant or disease?
- Pattern of growth (growth curves)
- Genetic expectation (midparental target height)
- Medical history
- Physical examination
- Laboratory/radiological analysis Treatment options





Male, 8 years





Parental advocacy

- Prepare for the measurements.
- Review the plotting.
- If questions, ask.
- Keep the data going!

Don't over-emphasize height.
 Poster self-esteem.