

## Growth Assessment Module A worksheet

### Case study #1

Anthony is a 3 month old male, born at 34 weeks gestation. Anthony is exclusively formula fed on Enfamil NeuroPro Enfacare 22 calories per ounce (standard mixing of premature formula). Mom offers 3 ounces 6 times/day. Anthony drinks the full bottle about half the time, but often leaves about 1 ounce in the bottle for the remaining feeds.

Length: 58.5 cm

Weight: 4.40 kg

Last weight was 14 days ago at PMD's office: 4.25 kg

What is Anthony's corrected age?

6 weeks corrected age

- Plot growth parameters. At what percentile is Anthony's:
  - Weight-for-age? 10%
  - Length-for-age? 75%-85%
  - Weight-for-length? <2%
- What is Anthony's:
  - Ideal Body Weight (IBW)? 5.6 kg
  - Percent IBW? 79
- What is the expected rate of weight gain for someone this age? 23 g/d
  - What is Anthony's rate of weight gain? 10 g/d
  - How would you assess Anthony's weight gain compared to his goal?  
**Decelerated**
- Calculate estimated calorie needs for Anthony.  
 $REE \times 1.4-1.6 (77-88) = 340-390$   
 $EER = 89 \times 4.4 + 75 = 467$
- Calculate protein needs  
 $1.52 \text{ g/kg} = 7 \text{ grams/day}$
- Calculate fluid needs  
 $440 \text{ ml} (100 \text{ ml/kg})$

## Growth Assessment Module A worksheet

### Case Study #2

Lila is a 10 month old female, born full-term. She is breastfed every 3 hours. Mom had started to introduce some pureed baby food, but Lila doesn't seem to like it. She is currently getting mostly breast milk.

Length: 72 cm

Weight: 9.8 kg

Last weight was at 6 months: 7.4 kg

1. Plot growth parameters. At what percentile is Lila's:
  - a. Weight-for-age? 75-90
  - b. Length-for-age? 50-75
  - c. Weight-for-length? 90-95
  
2. What is Lila's:
  - d. Ideal Body Weight (IBW)? 8.6kg
  - e. Percent IBW? 114
  
3. What is the expected rate of weight gain for someone this age? 7-10 g/day
  - f. What is Lila's rate of weight gain? 20
  - g. How would you assess Lila's weight gain compared to her goal?  
**Accelerated**
  
4. Calculate estimated calorie needs for Lila.  
 $REE \times 1.2-1.4 (66-77) = 650-755 \text{ kcal/day}$   
 $EER = 89 \times 9.8 - 78 = 792 \text{ (ABW)}$   
 $EER = 89 \times 8.6 - 78 = 687 \text{ (IBW)}$
  
5. Calculate protein needs  
 $1.2 \text{ g/kg} = >11$
  
6. Calculate fluid needs  
**980 ml**

## Growth Assessment Module A worksheet

### Case Study #3

Joe is 7 year, 3 month old male. He presents with very picky eating behavior. He doesn't like any fruits, vegetables or dairy products. He eats chicken nuggets, hot dogs, plain noodles, Goldfish crackers and drinks juice pouches. He is not taking a multivitamin currently.

Height: 120 cm

Weight: 19.5 kg

Mom reports the last weight she knows for the patient is from a well-child check at 6 years, 3 months – he weighed 40# at that time.

1. Plot growth parameters. At what percentile is Joe's:
  - h. Weight-for-age? 3-10
  - i. Length-for-age? 25
  - j. BMI? 13.5 kg/m<sup>2</sup> (<3<sup>rd</sup>)
  
2. What is Joe's:
  - k. Ideal Body Weight (IBW)? 22.5 kg
  - l. Percent IBW? 87
  
3. What is the expected rate of weight gain for someone this age? 155-168 grams/mo
  - m. What is Joe's rate of weight gain? 108 grams/mo
  - n. How would you assess Joe's weight gain compared to his goal?

**Decelerated**

4. Calculate estimated calorie needs for Joe.  
 $REE \times 1.4-1.8$  (increased for catch up)  $56-75 \text{ g/kg} = 1090-1400$   
 $EER 26.7 \times 22.5$  (IBW) + (  $903 \times 1.2$ ) x PAL 1.12 - 324.8 = 1559 kcal  
 $EER 26.7 \times 19.5$  (ABW) + (  $903 \times 1.2$ ) x PAL 1.12 - 324.8 = 1470
5. Calculate protein needs  
 $0.95 \text{ g/kg} = 18.5 \text{ g/day}$  can round up to 19 g/day
6. Calculate fluid needs  
  
 $1475\text{ml/day}$

## Growth Assessment Module A worksheet

### Case study #4

Carolina is a 17 year, 4 month old female who presents with polycystic ovarian syndrome. She reports that she only eats two meals day, although she prefers to eat out of the house – McDonald's or Subway. When she eats at home, it is mostly rice and beans. She doesn't tolerate milk, but they do have rice milk at home.

Height: 155 cm

Weight: 91 kg

Last weight recorded from 6 months ago was 85 kg.

1. Plot growth parameters. At what percentile is Carolina's:
  - o. Weight-for-age? >97
  - p. Length-for-age? ~10%
  - q. BMI? 37.9 kg/m<sup>2</sup> >97%
  
2. What is Carolina's:
  - r. Ideal Body Weight (IBW)? 50.5 kg
  - s. Percent IBW? 180
  
3. What is the expected rate of weight gain for someone this age? 103-107
  - t. What is Carolina's rate of weight gain? 1000g/mo
  - u. How would you assess Carolina's weight gain compared to his goal?  
**Accelerated**
  
4. Calculate estimated calorie needs for Carolina.  
**REE x 1 minus 500 kcal for weight loss = ~1775**  
**TEE = 15 x 91 (ABW) + (701.6 x 1.55) x 1 (sedentary PAL) – 311.4= 2141 (may subtract and additional 500 to 1000 kcal for weight loss)**
  
5. Calculate protein needs  
**>77 grams/day (0.85 g/kg)**
  
6. Calculate fluid needs  
**30 ml/kg (2730 ml)**