

# Infant Diagnosis Case Studies

## Case Study 1



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# Case 1: Sam

- Grace is an 18 year-old woman HIV diagnosed during her first pregnancy
- She was enrolled in the pMTCT program
- She was not eligible for ART and took nevirapine at the onset of labor. Her baby, Sam received nevirapine at birth
- When Grace and Sam return for their first post-partum check at 4 weeks, both are doing well
- Sam is breastfeeding without difficulty and has gained weight as expected
- Grace wants to know if Sam has HIV



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# Case 1: Sam

- What do you tell her?
- What test should be used?
- What other interventions should be performed?
- When should Grace bring Sam back to clinic for his next appointment?



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# Case 1: Sam

- You tell Grace that you will do the first test to check for HIV today
- You weigh Sam, measure his length, and head circumference, and plot them on the growth chart
- You check his development- he has social smile
- Complete physical examination which is normal
- You prick his heel for blood for DNA PCR, prescribe cotrimoxazole and provide counseling about infant feeding (exclusive breast feeding for 6 months)



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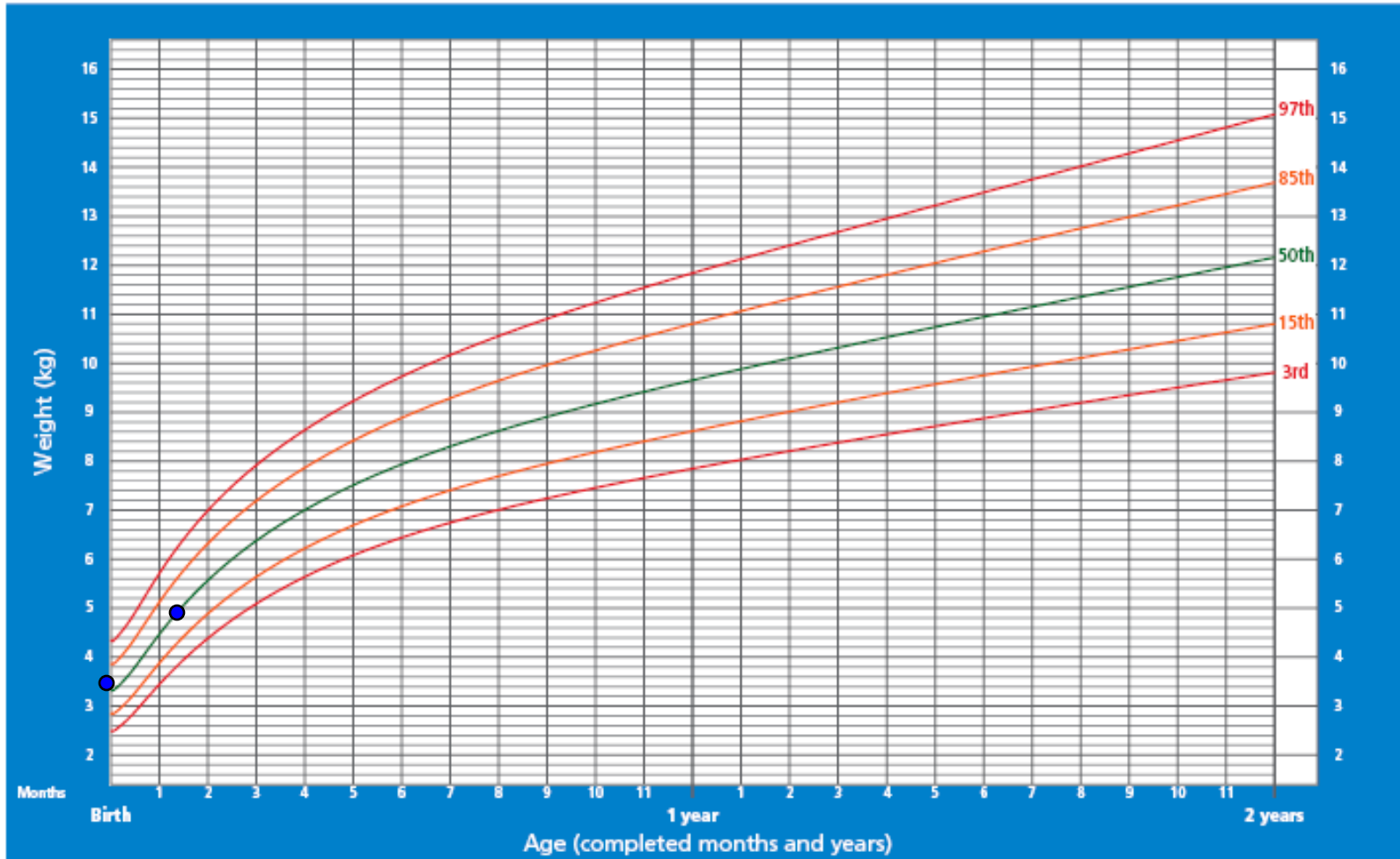
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# Sam's Growth Curve

## Weight-for-age BOYS

Birth to 2 years (percentiles)



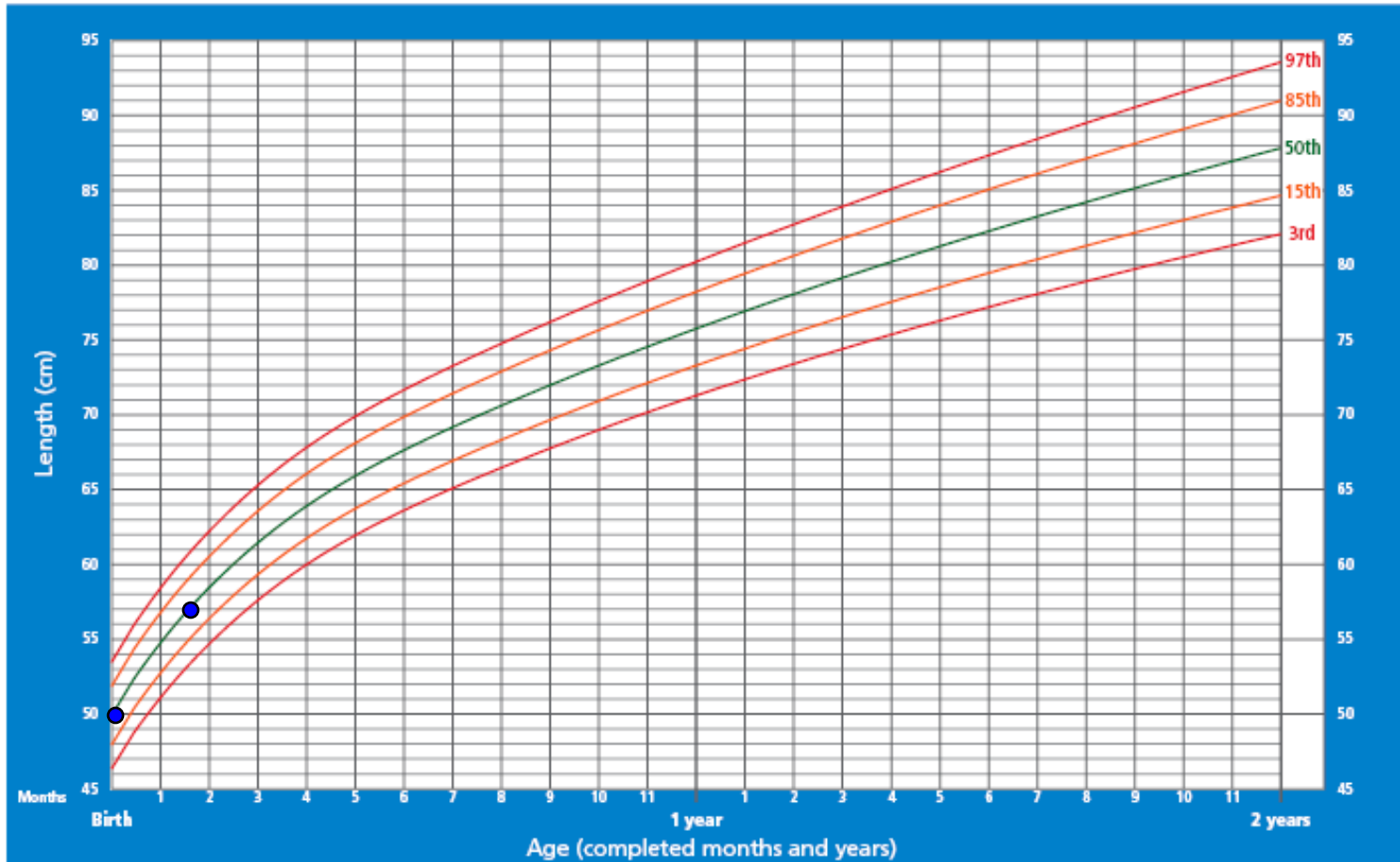
Birth wt- 3.5kg  
6 wks- 4.8kg

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# Sam's Growth Curve

## Length-for-age BOYS

Birth to 2 years (percentiles)



Length  
Birth- 50cm  
6 wks- 57cm

WHO Child Growth Standards



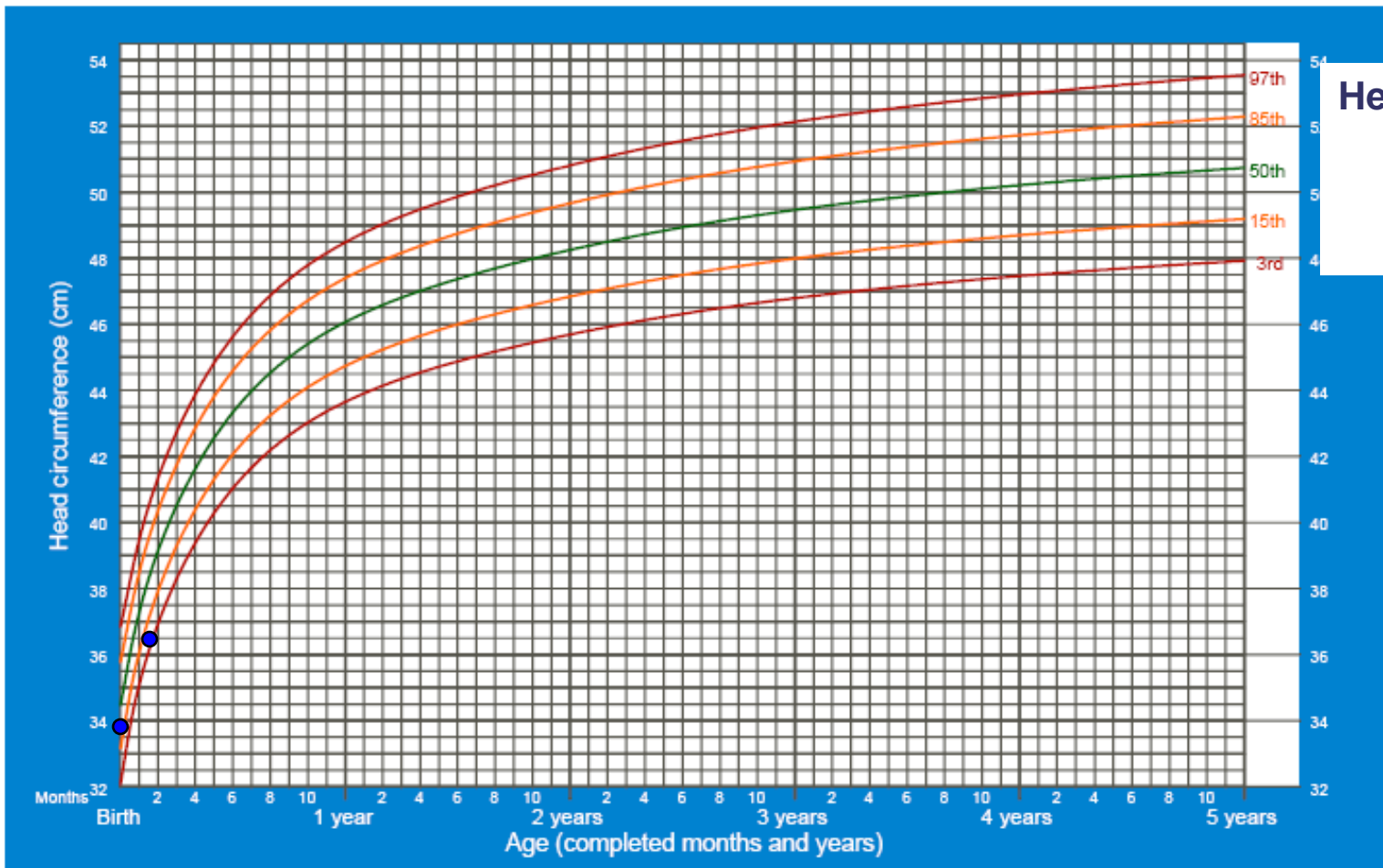
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# Sam's Growth Curve

## Head circumference-for-age BOYS

Birth to 5 years (percentiles)



Head Circumference  
Birth - 34cm  
6 wks- 36.5cm

WHO Child Growth Standards



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# Case 1: Sam

- When Sam returns at 8 weeks of age, his first virologic test is negative
- He is still breastfeeding and is doing well
- He is still taking cotrimoxazole
- His exam is normal
- You plot his growth curves and he continues to grow on the 50% percentile for weight and height. Head circumference is on the 3<sup>rd</sup> percentile
- His development is appropriate for age

# Case 1: Sam

- What will you tell Grace about this test?
- What else will you do for Sam
- When should Grace and Sam return for their next appointment?

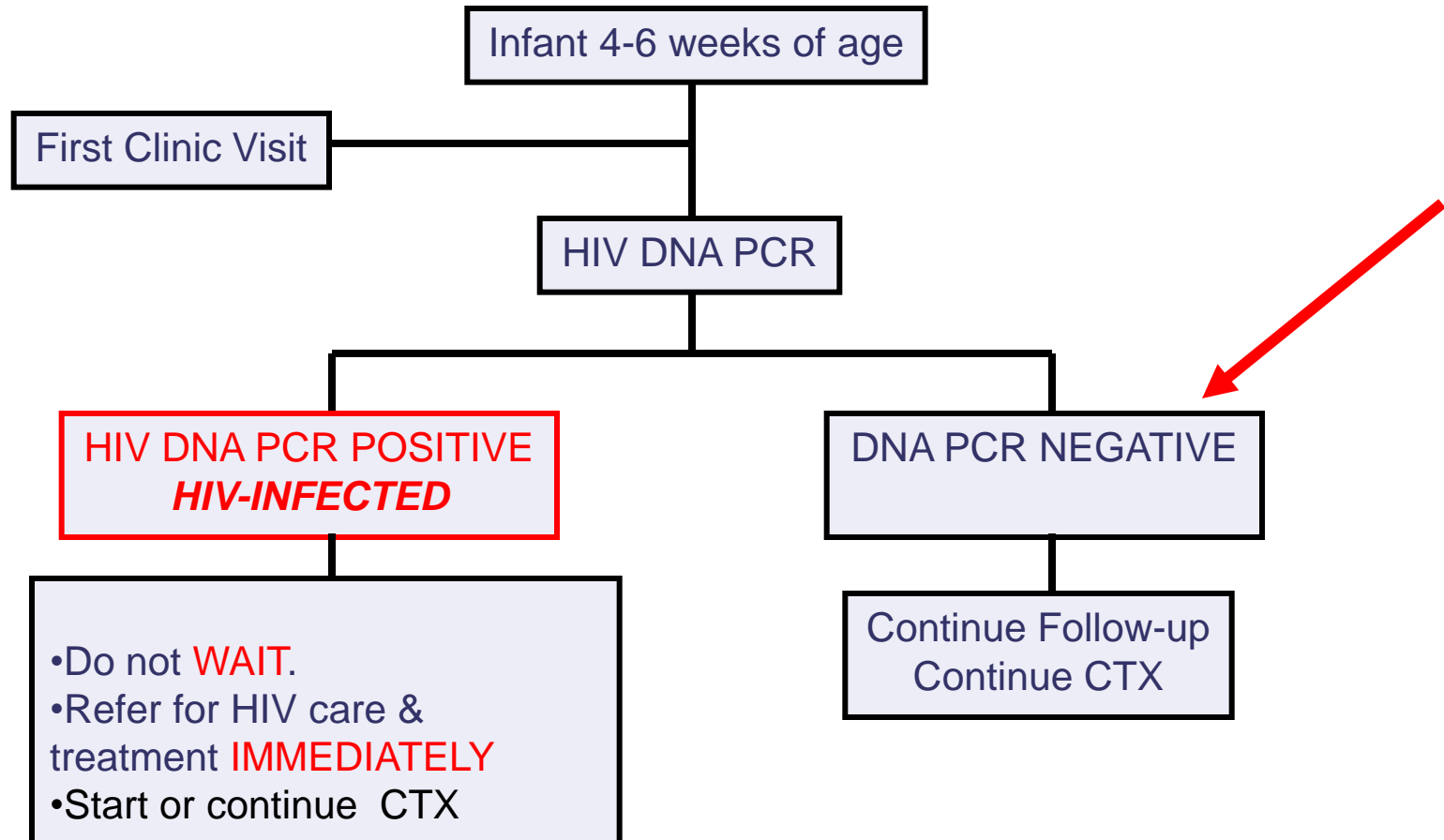


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# Diagnostic Algorithm for Infants < 18 months of age



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# Case 1: Sam

- You explain to Grace that since his first test was negative you cannot find any HIV in his blood
- However, since he is breastfeeding he may still get HIV so you will have to test him again after he stops breastfeeding completely
- You explain the importance of continued exclusive breastfeeding even with a negative initial PCR
- If Sam should fall sick you will repeat the virologic test
- Refill his cotrimoxazole prescription
- Schedule follow-up in a month
- Encourage Grace to go for follow-up CD4 testing at the CTC



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# Case 1: Sam

- Grace and Sam do not return for 3 months
- The social worker who visits the home says Grace was admitted with a severe case of shingles one month ago. She went to her mothers village to recuperate. Her mother is helping out with Sam.
- The social worker manages to convince Grace to bring Sam for a check up



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# Case 1: Sam

- Grace tells you Sam had two episodes of diarrhea while they were away
- Her mother fed Sam porridge while she was in hospital. She still breastfeeds whenever she feels well has energy
- Sam is now 6 months old.
- He has not gained any weight and is unable to sit unsupported
- He has some thrush when you examine him

# Case 1: Sam

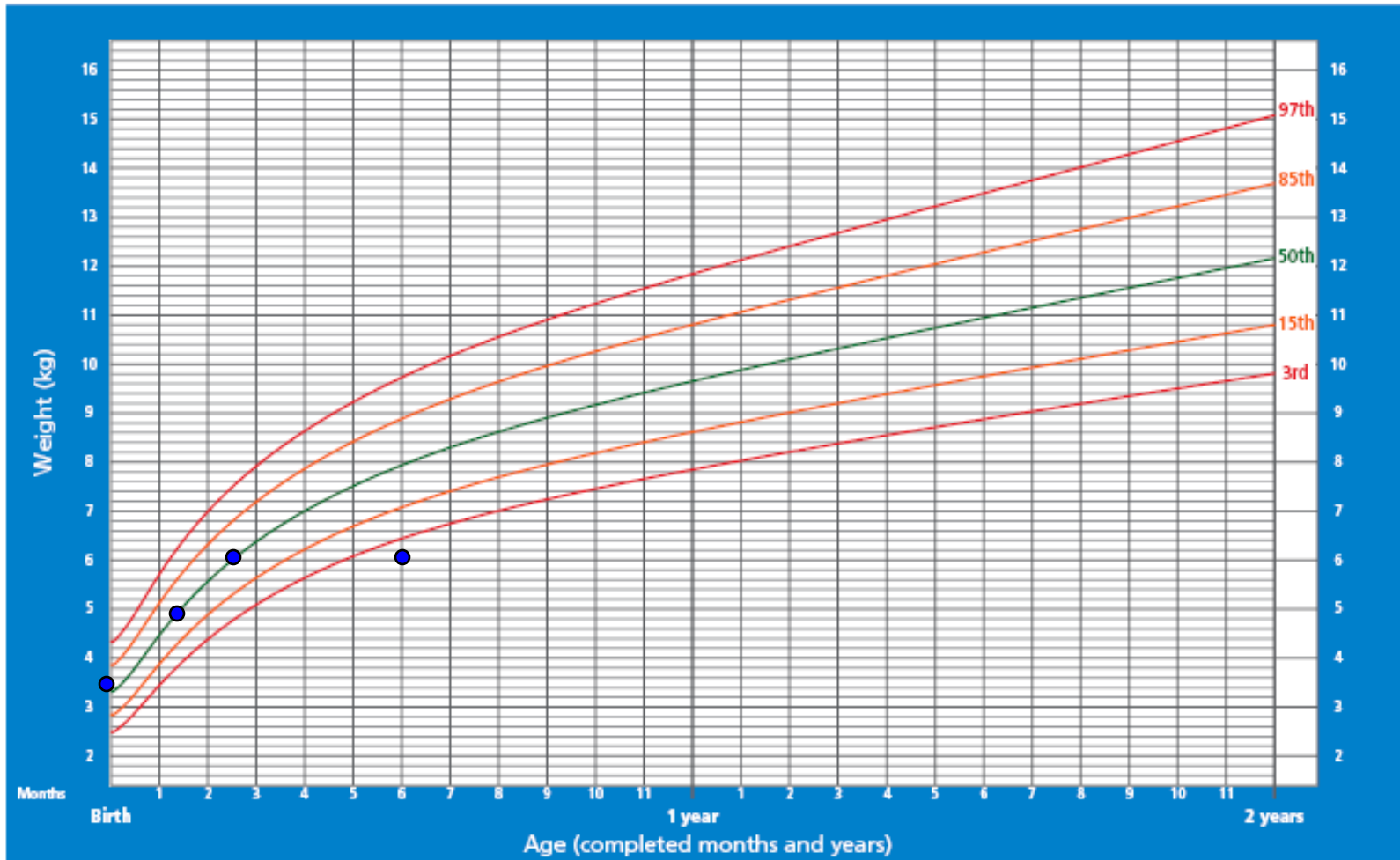
- Sam's growth parameters

Age	Weight	Length	Head circumference
Birth	3.5kg	50cm	34cm
6 weeks	4.8kg	57cm	36.5cm
10 weeks	6.2kg	60cm	38cm
6 months	6kg	68cm	39cm

# Sam's Growth Curve

## Weight-for-age BOYS

Birth to 2 years (percentiles)



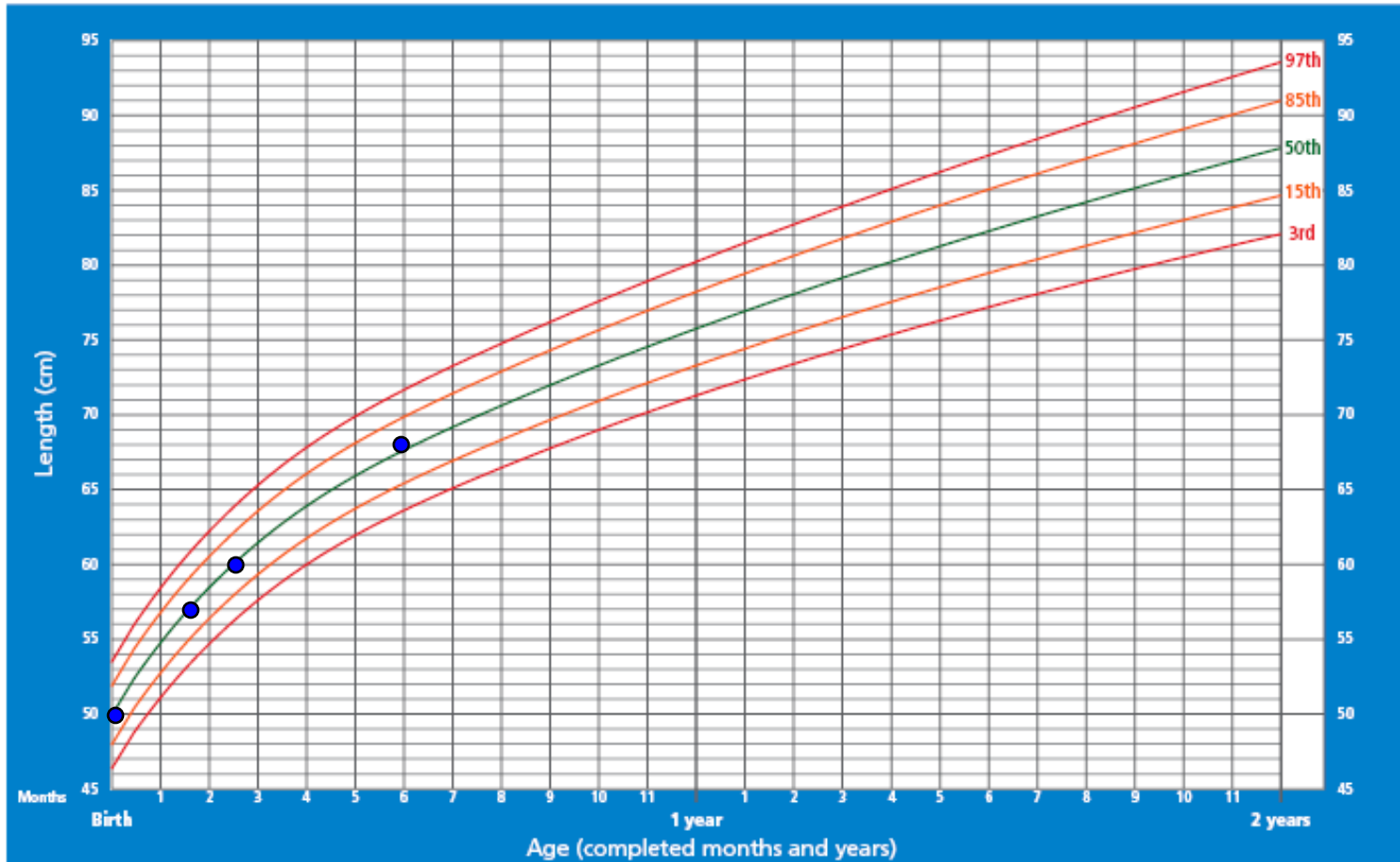
Birth wt- 3.5kg  
6 wks- 4.8kg  
10wks-6.2kg  
6mos-6kg

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# Sam's Growth Curve

## Length-for-age BOYS

Birth to 2 years (percentiles)



**Length**  
Birth- 50cm  
6 wks- 57cm  
10wks-60cm  
6mos-68cm

WHO Child Growth Standards



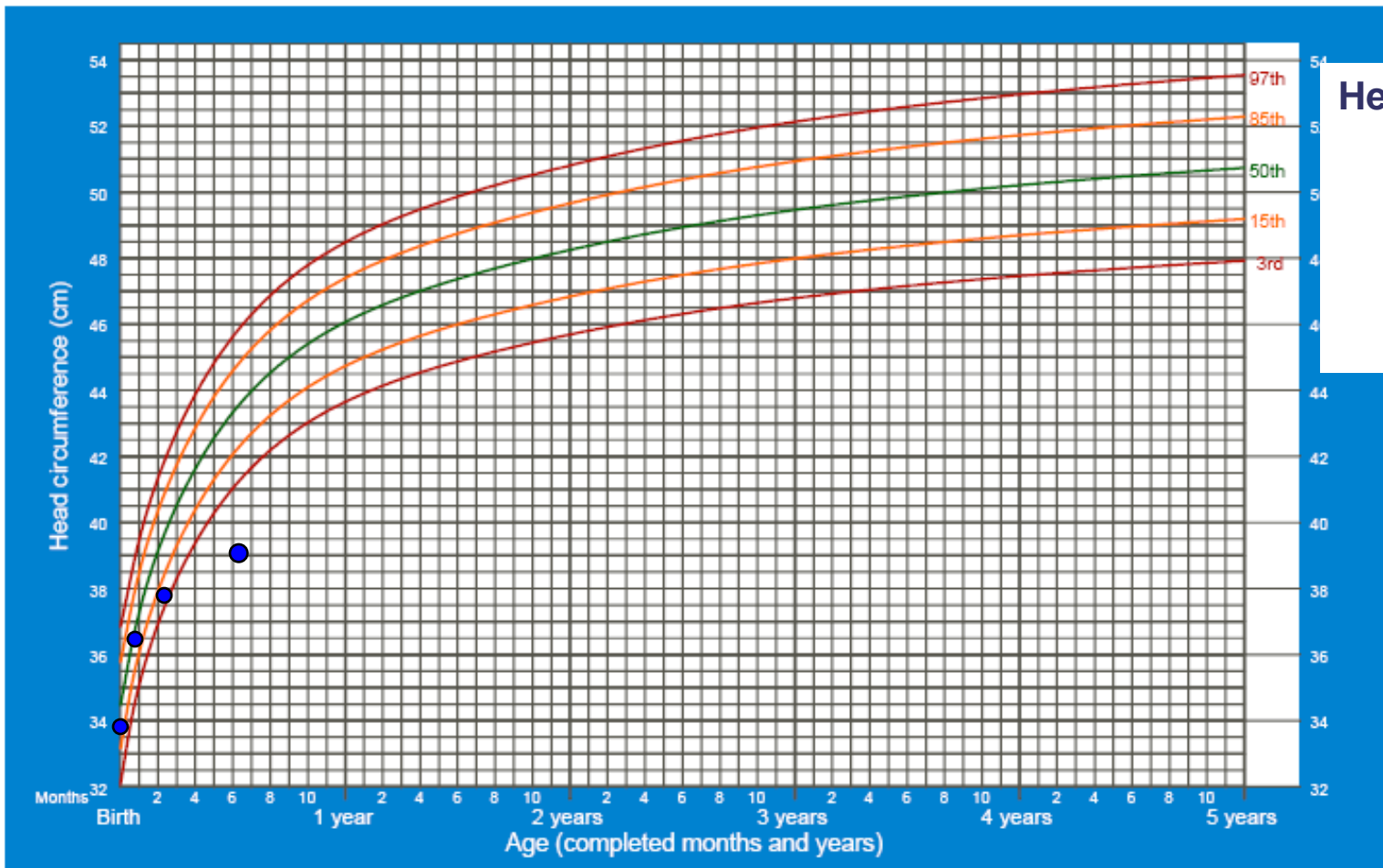
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# Sam's Growth Curve

## Head circumference-for-age BOYS

Birth to 5 years (percentiles)



**Head Circumference**  
Birth - 34cm  
6 wks- 36.5cm  
10wks-38cm  
6mos-39cm

WHO Child Growth Standards



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# Case 1: Sam

- Does Sam have HIV?
- What can you do to find out?
- What will you tell Grace?



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# Case 1: Sam

- Because Sam has symptoms that might be related to HIV infection (growth failure, oral thrush, developmental delay, and microcephaly), the team explains to Grace that Sam requires another blood test.
- Since Sam is sick, you prick him again and get blood for DNA PCR using DBS
- Continue CTX
- Send him to be evaluated by the physician
- Refer him for nutritional rehabilitation



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# Case 1: Sam

- The DNA PCR test is positive
- You explain to Grace that Sam has HIV infection.
- Although she is extremely upset, Grace finds hope in the fact that Sam will continue to receive care and treatment
- You reinforce the importance of continuing CTX and breastfeeding
- You refer Sam to the pediatric HIV clinic for evaluation and treatment



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# Infant Diagnosis Case Studies

## Case Study 2



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# Case 2: Hadija

- Akili just had her first child, Hadija
- Akili was diagnosed with HIV during the recent pregnancy and participated in the pMTCT program
- Her CD4 count was 180 so she started ART during the pregnancy
- She brings Hadija to clinic for the baby's first visit at 1 month of age
- She is breastfeeding Hadija
- She complains that Hadija is a poor feeder. She is always hungry and sucks at the breast continuously



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# Case 2: Hadija

- How will you assess if Hadija is getting enough breast milk?
- What will you do for Hadija at her first postnatal visit at 1 month?



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# Case 2: Hadija

- You obtain a complete history – prenatal, birth, and psychosocial history and intercurrent history-Hadija has been well since birth
- You ask about Akili's health, she is still taking her ARVs and feels well
- You obtain a feeding history- Hadija feeds on each breast for about 15 minutes, she does not empty each breast
- You inspect Akilis' breast to check for inverted nipples, cracks or evidence of mastitis. Her breasts are healthy
- You observe Akili breastfeeding Hadija and notice she does not latch on properly
- You plot Hadija's growth curve



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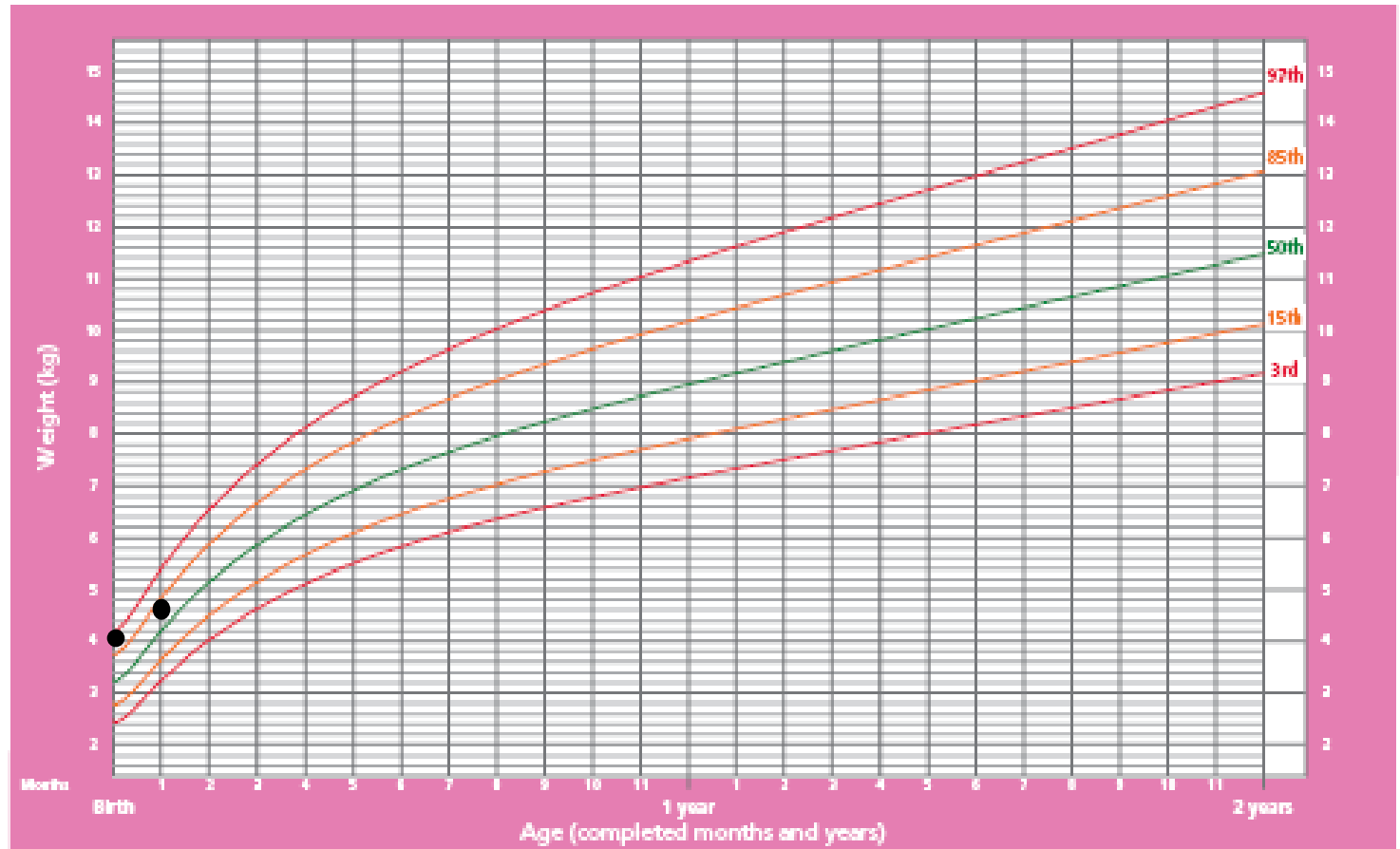
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# Hadija's growth curve

Birth: 4 kg  
1mo: 4.6 kg

## Weight-for-age GIRLS

Birth to 2 years (percentiles)



WHO Child Growth Standards

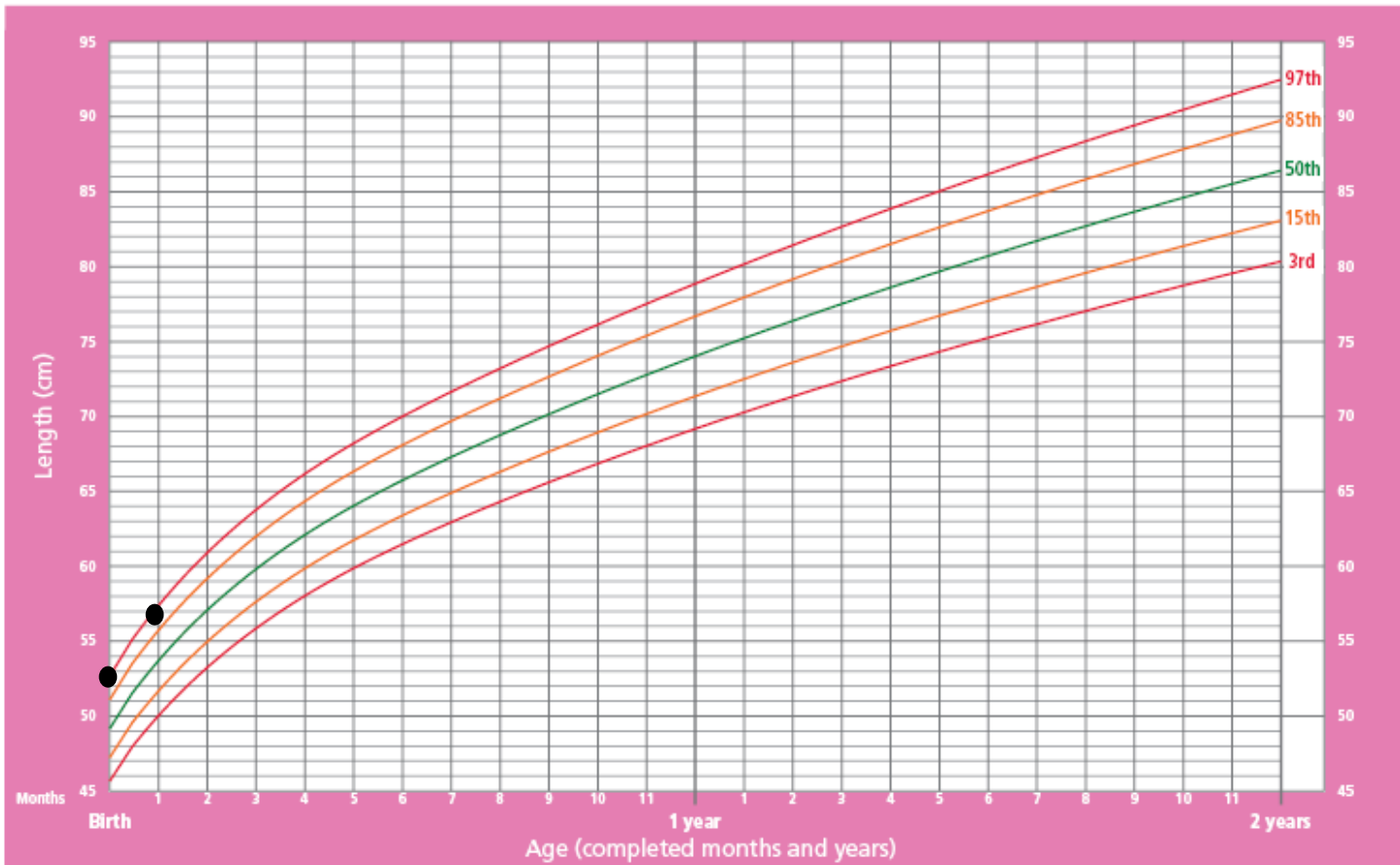


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# Hadija's growth curve

## Length-for-age GIRLS

Birth to 2 years (percentiles)



Height  
Birth-53cm  
1mo-57cm

WHO Child Growth Standards



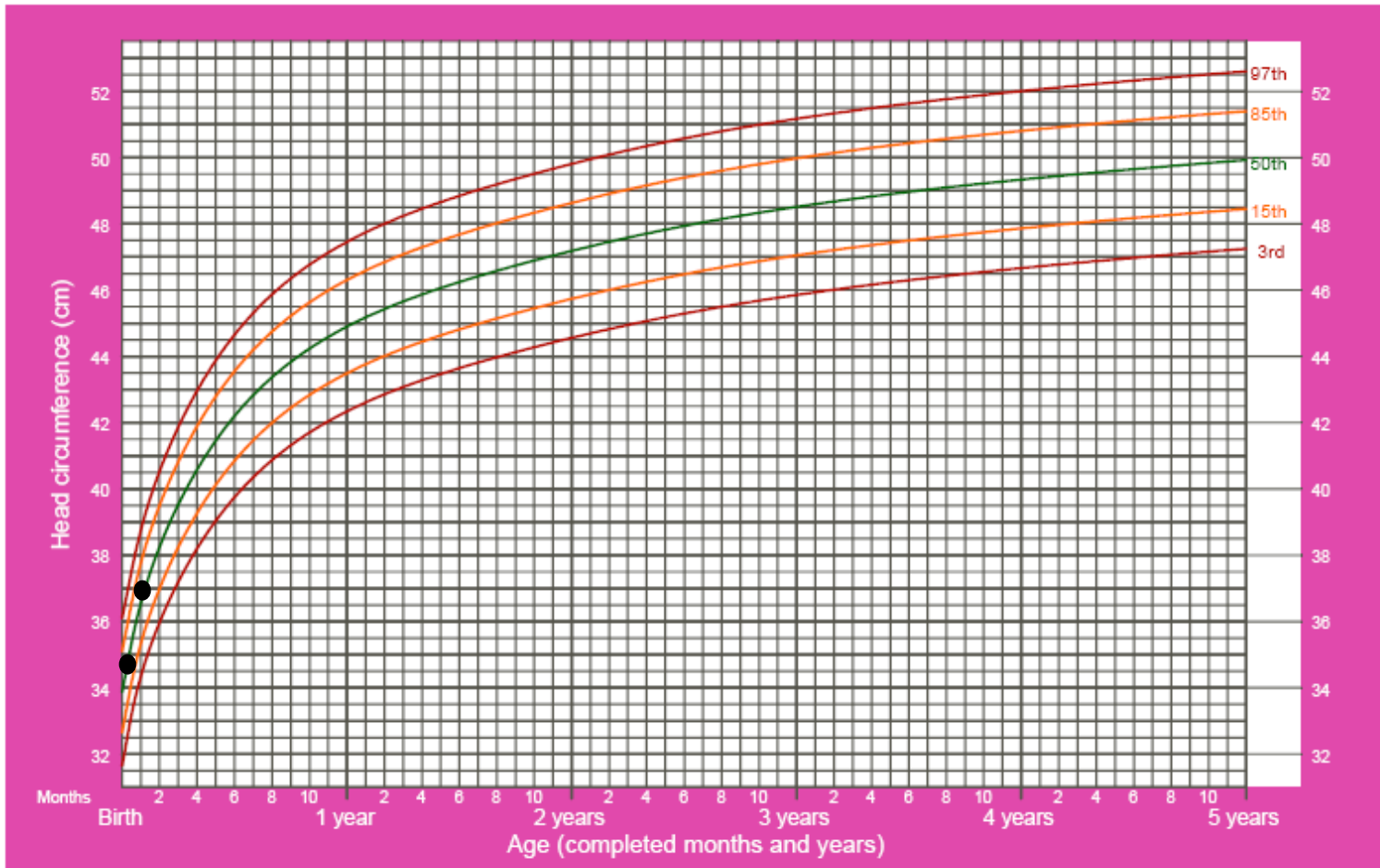
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# Hadija's growth curve

## Head circumference-for-age GIRLS

Birth to 5 years (percentiles)



**Head circumference**  
**Birth- 35cm**  
**1mo-37cm**



# Case 2: Hadija

- You teach Akili how to make sure Hadija has latched to the breast properly
- You educate Akili about the need for close growth monitoring (measure and plot weight, length, and head circumference), developmental assessment, and physical examination. You do all of these at the visit.
- You get blood for DBS DNA PCR
- You prescribe cotrimoxazole
- You counsel Akili about the benefits of exclusive breastfeeding



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# Case 2: Hadija

- Hadija returns to the clinic when she is 2 months old
- Her virologic HIV test is positive
- Her clinical status is unremarkable
- Her weight is 5.7kg, height-61cm and HC-38cm
- Her clinical exam is normal exam
- She is able to hold her head and lift her head of the table



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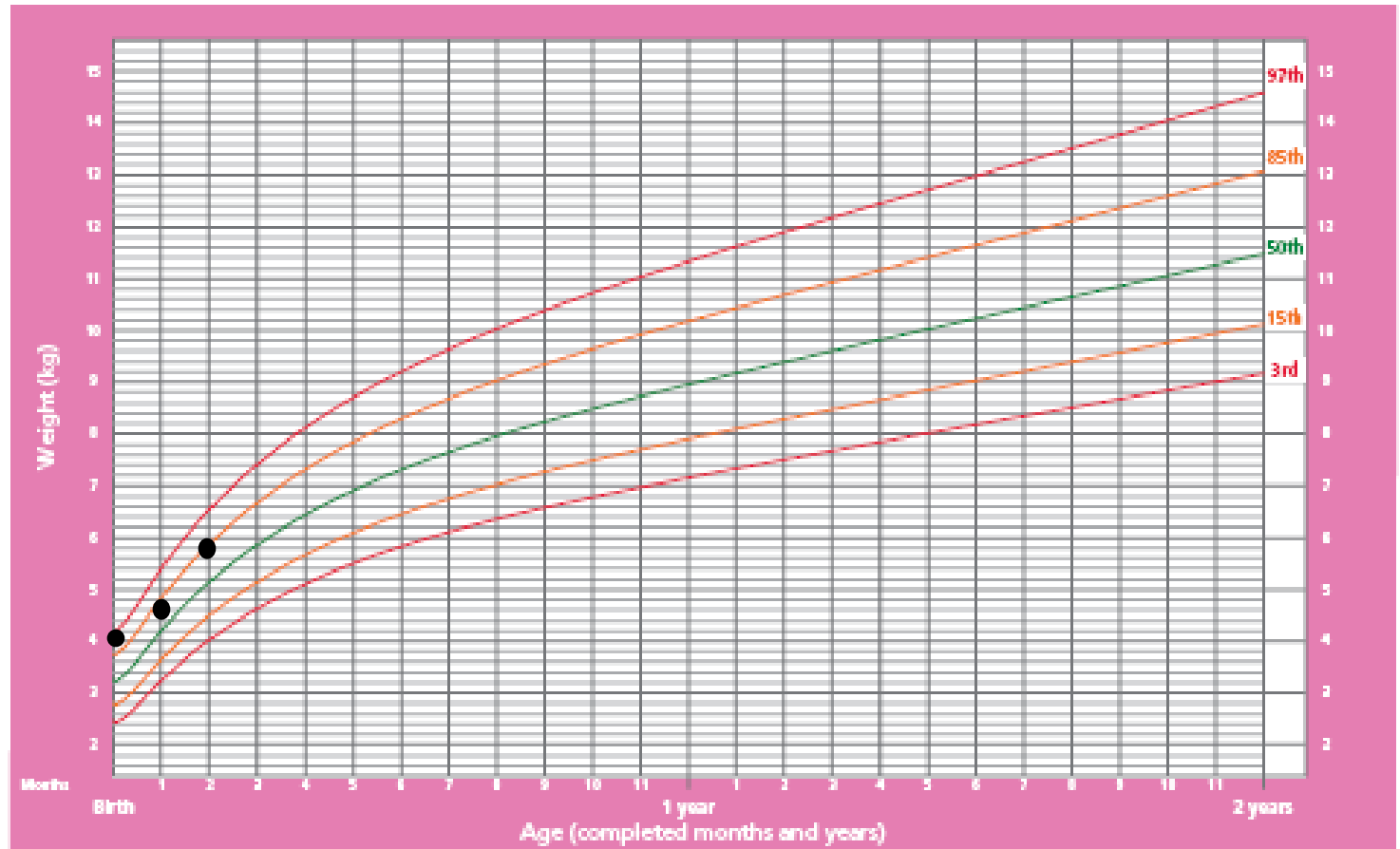
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# Hadija's growth curve

Birth: 4 kg  
1mo: 4.6 kg  
2mos: 5.7 kg

## Weight-for-age GIRLS

Birth to 2 years (percentiles)



WHO Child Growth Standards

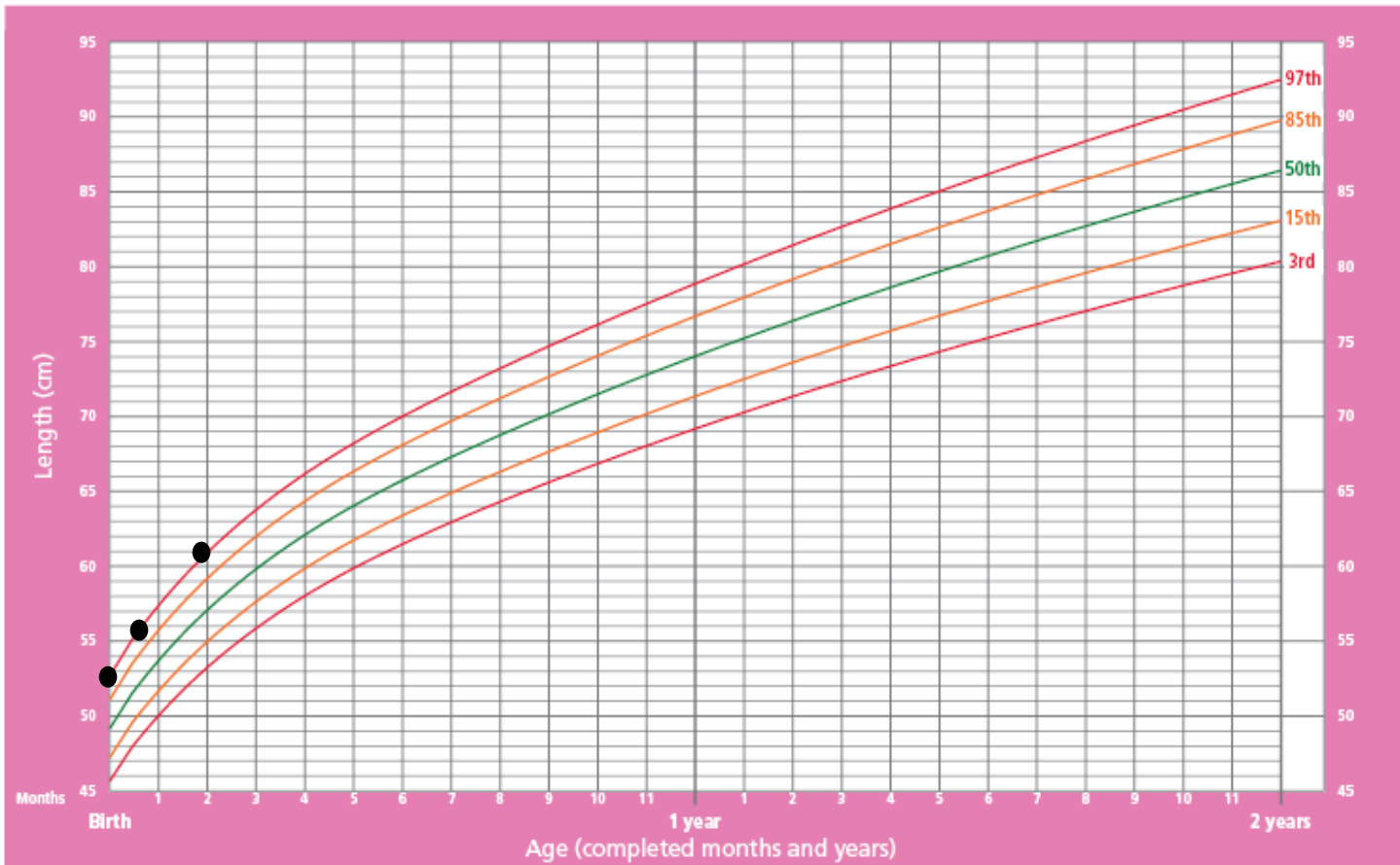


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# Hadija's growth curve

## Length-for-age GIRLS

Birth to 2 years (percentiles)



Height  
Birth-53cm  
1mo-57cm  
2mo-61cm

WHO Child Growth Standards



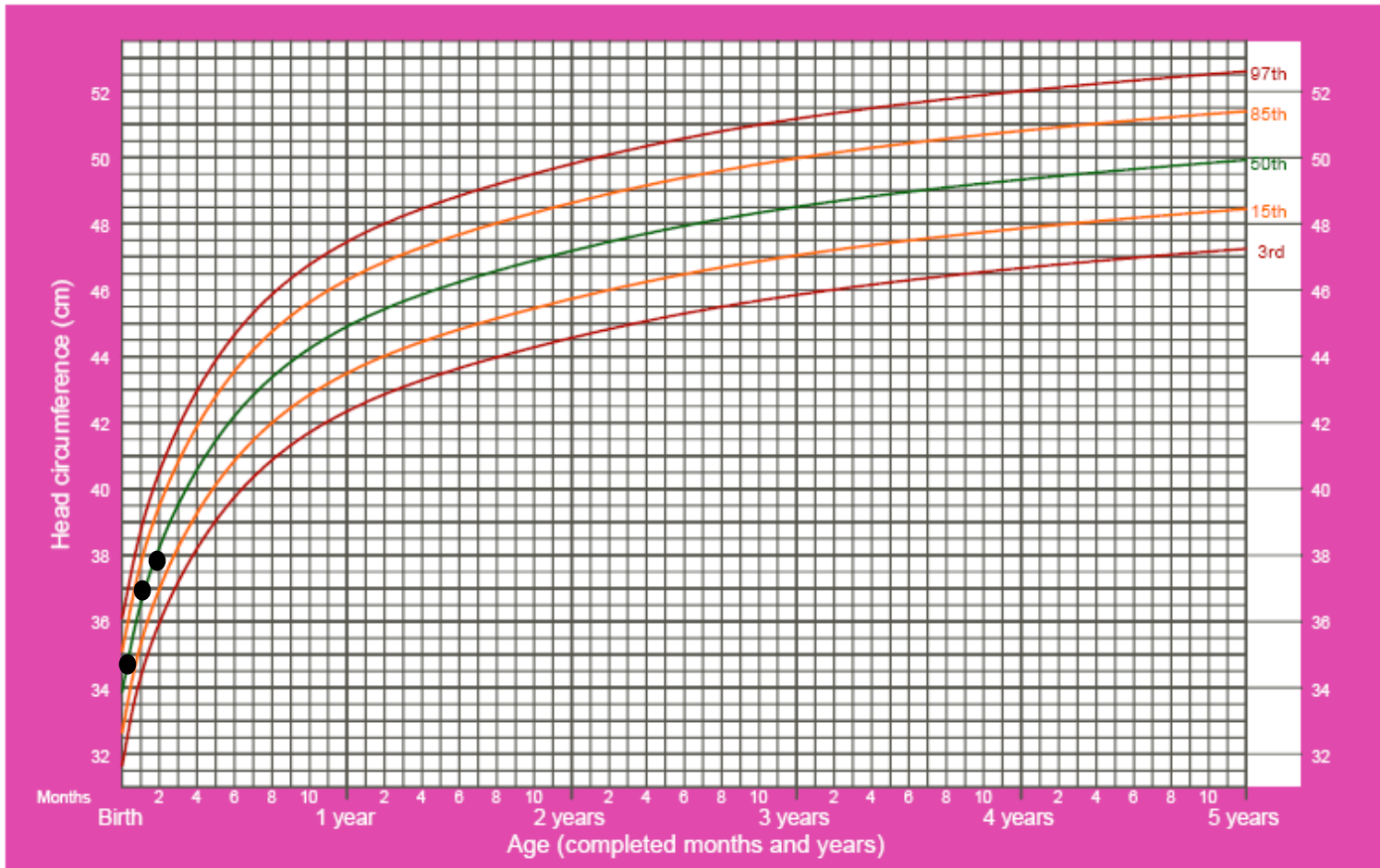
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# Hadija's growth curve

## Head circumference-for-age GIRLS

Birth to 5 years (percentiles)



**Head circumference**  
**Birth- 35cm**  
**1mo-37cm**  
**2mo-38cm**



# Case 2: Hadija

- Does Hadija have HIV?
- Does she require additional testing?
- If so which type of test should be performed and when should it be done?
- What should the team tell Akili?
- What other interventions should be performed?



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# Case 2: Hadija

- The team explains to Akili that Hadija's first test was positive and that this means that she has HIV-infection.
- Akili is referred to the District Hospital to the pediatric HIV program.
- Cotrimoxazole is continued
- You counsel Akili on the importance of continued EBF
- The team provides counseling, patient education, and psychosocial support to Akili and her husband

# Case 2: Hadija

- Akili did not come back for her next visit at the clinic. However, when the outreach worker went to her home they found that Hadija was already being seen to the district hospital.
- Mom reported that the baby may need medications to fight the HIV infection.



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