

Plotting Preterm Infants



This fact sheet covers all aspects of measuring and plotting healthy preterm infants from birth to age two.

Topics in this fact sheet include,

- ✓ Plotting birth and early measurements on the preterm section
- ✓ When and how to gestationally correct measurements
- ✓ Growth in preterm infants

Background

A baby is premature if born before 37 completed weeks gestation. The WHO standard does not include data for preterm babies born and so the preterm section to the left of the A4 chart and the preterm PCHR chart have been compiled using UK 1990 reference data for size at birth from 32 to 42 weeks gestation. These are designed for plotting healthy infants born from 32 weeks and before 37 weeks until they reach 42 weeks gestation. For preterm infants of less than 32 weeks gestation there is a specialist "low birth weight" chart which should also be used for other infants requiring special care in the early weeks.

Plotting birth and preterm measurements

For infants born from 32 weeks and before 36 weeks 6 days, plot weight and head circumference at birth in the **preterm** section to the left of the A4 chart or the preterm PCHR chart at exact gestation, worked out using the expected date of delivery (EDD). All further measurement should be plotted in this section until 2 weeks after the expected date of delivery.

The preterm section and PCHR chart does not include length. This is to maximise plotting space for weight and head circumference which are widely collected, while few healthy infants have length measured at birth. If there is concern about length at birth all the measurements should be plotted on the Low Birthweight chart.

The red dots on the chart section to the right show how Tim's measurements on the table below would be plotted in the preterm chart section.

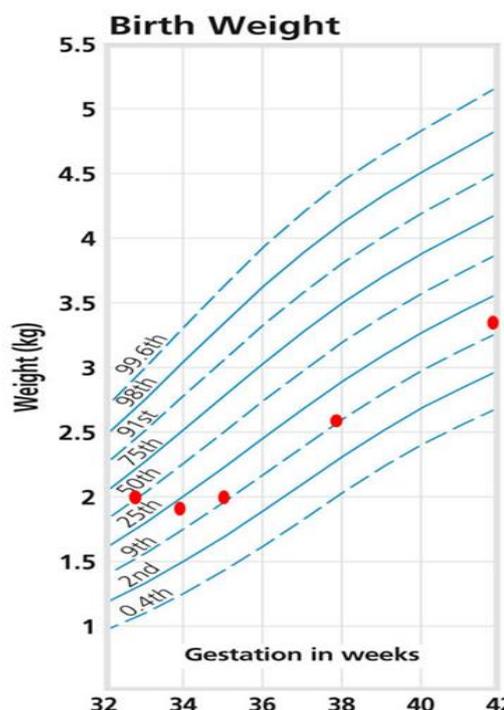
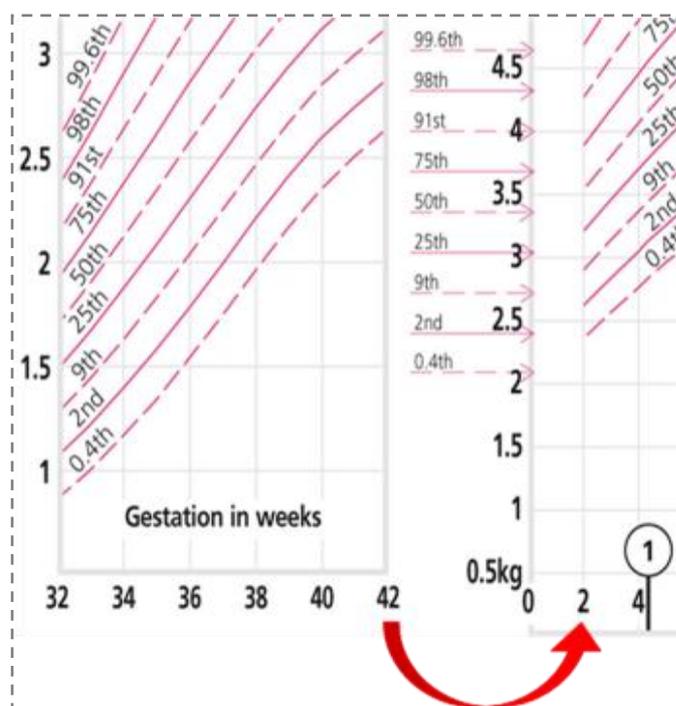
Tim's Age	Gestation	Weight (kg)
Birth	33	2
1 week	34	1.85
2 weeks	35	2
5 weeks	38	2.6
9 weeks	42	3.4



Plotting preterm baby measurements after EDD plus two weeks

Transition from the "preterm" section to the 0-1 chart

Once a preterm baby has reached an age of EDD plus two weeks measurements can no longer be plotted on the "preterm" section of the chart. Any subsequent measurements must be plotted on the 0-1 chart, using gestationally corrected age.



Plotting with gestational correction

Gestational correction simply adjusts the plot for the number of weeks a baby was born early.

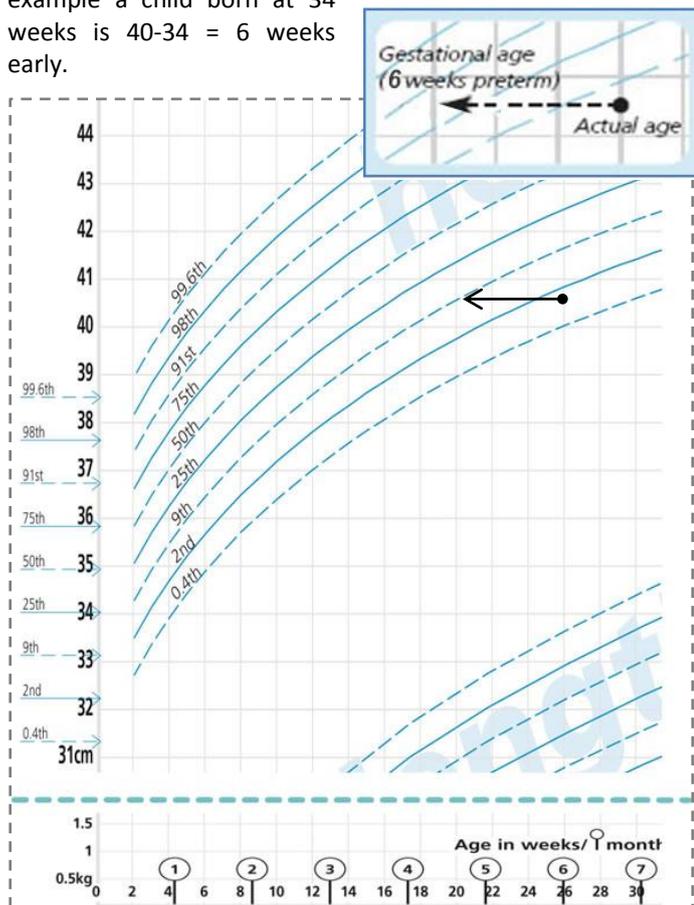
- *Number of weeks early = 40 weeks minus gestational age at birth*

You should never gestationally correct for babies born after 36 weeks and 6 days. All such babies are considered "term".

Gestational correction should be continued until:

- 1 year for infants born 32-36 weeks
- 2 years for infants born before 32 weeks

The figure below shows how weight for a baby born at 34 weeks would be plotted. First work out how many weeks early this infant was, which is 40 minus the gestation at birth. For example a child born at 34 weeks is $40 - 34 = 6$ weeks early.



Then work out the actual (calendar) age the child is now and plot this. Draw a line back the number of weeks the baby was early (in this case 6 weeks). Mark this with an arrow.

The point of the arrow shows the baby's centile with adjustment for preterm birth.

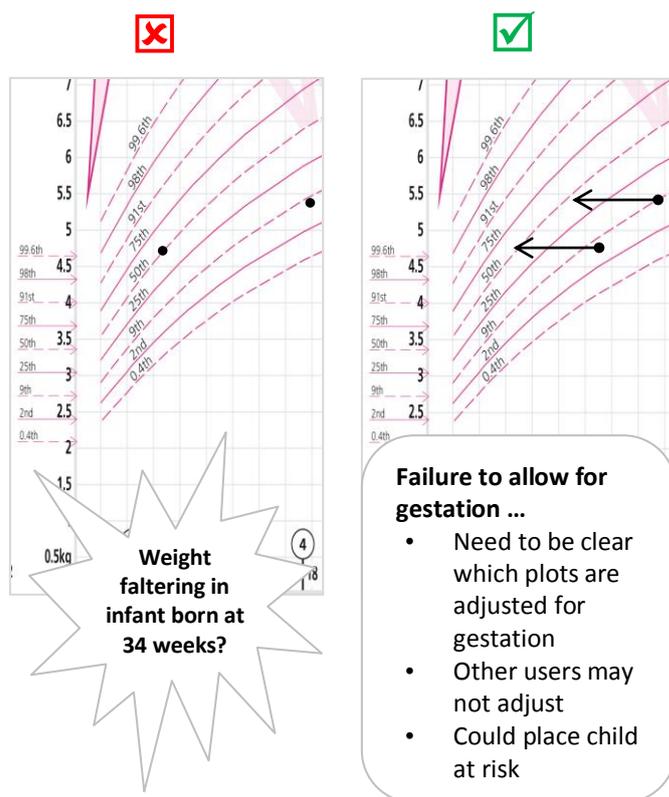
The tip of the arrow shows that the child has a head circumference on the 9th centile when gestational correction has been made.

Why not just plot all measurements at corrected age only?

- Fewer mistakes in calculation of corrected age
- Interpretation easier after correction has stopped

This method ensures that everyone looking at the chart can easily see that gestational correction has been applied, while for single plots it may not be clear and this could cause major misinterpretations of the apparent growth pattern. Consider the chart sections below.

If you are monitoring very closely and plotting frequent measurements it is fine to just plot at actual age for most infants, as long as you use the arrow drawn back for every 2nd or 3rd plot.



Growth in preterm infants

Preterm charts show weight and head circumference at birth for babies born between 32 and 42 weeks of gestation. After birth an individual baby's growth is not expected to follow the centile lines shown in the "preterm" section because it shows only birth measurements. Most preterm babies will show slow initial weight gain or weight loss. This means they will appear to fall on the chart.

The charts from 2 weeks to 4 years are based on healthy term infants so do not reflect average growth of preterm infants. However where infants have remained well their growth patterns should match the centile at their corrected age, while children who have had problems in the neonatal period and dropped away will usually gradually climb back up the centiles after term.