**Birth Weight**

Plot preterm infants on the box birthweight chart for infants less than 32 weeks gestation and any other infants requiring special assessment. Use this section for infants of less than 37 weeks gestation. As with term infants, there may be some weight loss in the early days, from 42 weeks, plot on the 0-1 year chart with gestational correction.

**Head Circumference**

Gestational correction

For small age, plot above or below the centile to identify babies who need assessment.

*Measure length until age 2, measure height after age 2.*

A child's height is usually slightly less than their weight.

**GIRLS 0-1 year**

- Birth Weight
- Head Circumference
- Length/Height
- Recording Date
- Health worker name

**GIRLS 1-4 years**

- Weight
- Height
- Location
- Health worker name
The chart for birth measurements (32–42 weeks) Babies should be weighed in the first week as part of the Organization (WHO) standards with UK preterm and birth desirable for all children, whether breast fed or formula fed, ONS/CHI No: Please place sticker (if available) otherwise write in space provided.

Who should use this chart? Anyone who measures a child, plots or interprets charts should be suitably trained, or be supervised by someone qualified to do so. Further information and training materials see www.growthcharts.rcph.co.uk.

A growth chart for all children

The UK-WHO growth chart combines World Health Organisation (WHO) standards with UK preterm and birth data. The chart from 2 weeks to 6 years of age is based on the WHO growth standard, derived from measurements of healthy, non-smoked, breastfed children of mothers who did not smoke. The chart for birth measurements (32–42 weeks gestation) is based on British children measured around 1990. The charts depict a healthy pattern of growth that is desirable for all children, whether breast fed or formula fed, and of whatever ethnic origin.

When to weigh

When measuring children up to 2 years, remove all clothes and nappy, children older than 2 years should wear minimal clothing only. Always remove shoes.

Weight: use only class III clinical electronic scales in metric setting.

Length (before 2 years): use a rigid rule or a measuring tape. Position head and feet as illustrated with child standing as straight as possible.

When measuring children up to 2 years, remove all clothes and nappy, children older than 2 years should wear minimal clothing only. Always remove shoes.

Weight: use only class III clinical electronic scales in metric setting.

Length (before 2 years): use a rigid rule or a measuring tape. Position head and feet as illustrated with child standing as straight as possible.

Head circumference: use a narrow plastic or paper tape to measure where the head circumference is greatest.

Interpreting the chart

Assessing weight loss after birth Most babies lose some weight after birth but 80% will have regained this by 2 weeks of age. Fewer than 5% of babies lose more than 10% of their weight at any stage; only 1 in 50 are 10% or more lighter than birth weight at 2 weeks.

Percentage weight loss can be calculated as follows:

Weight loss = current weight–birth weight
Percentage weight loss = (Weight loss / Birth weight) x 100%

For example, a child born at 3.500 kg who drops to 3.150 kg at 5 days has lost 350g or 10%; in a baby born at 3.000 kg, a 300g loss is 10%.

Careful clinical assessment and evaluation of feeding technique is indicated when weight loss exceeds 10% or recovery of birth weight is slow.

What do the centiles mean?

These charts indicate a child’s size compared with children of the same gender and maturity who have shown normal growth. The chart also shows how quickly a child is growing. The centile lines on the chart show the expected range of weights and heights (or lengths); each describes the number of children expected to be below that line (e.g. 50% below 50th, 91st below the 91st). Children in all shapes and sizes, but 99 out of 100 children who are growing optimally will be between the two outer lines (4th and 96th centiles); half will lie between the 25th and 75th centile lines.

Being very small or very big can sometimes be associated with underlying illness. There is no single threshold below which a child’s weight or height is definitely abnormal, but only 4 per 1000 children who are growing optimally are below the 4th centile, so these children should be assessed at some point to exclude any problems. Those above the 99th centile for height are almost always healthy. Also calculate BMI if weight and height centiles appear very different.

What is a normal rate of weight gain and growth?

Babies do not all grow at the same rate, so a baby’s weight often does not follow a particular centile line, especially in the first year. Weight is most likely to track within one centile space (the gap between two centile lines), in infancy, acute illness can lead to sudden weight loss and a weight centile fall but on recovery the child’s weight usually returns to its normal centile within 2–3 weeks. However, a sustained drop through two or more weight centile spaces is unusual (fewer than 2% of infants) and should be carefully assessed by the primary care team, including measuring length/height.

Because it is difficult to measure length and height accurately in pre-school children, successive measurements commonly show wide variation. There are worries about growth; it is useful to measure on a few occasions over time; most healthy children will show a stable average position over time.

UK children have relatively large heads compared to the WHO standard, particularly after the age of 6 months. After the age of 6 weeks a head circumference below the 2nd centile will be seen in only 1 in 250 children. A head circumference above the 99th centile, or crossing upwards through 2 centile spaces should only cause concern if there is a continued rise after 6 months, or other signs or symptoms.

Why do the length/height centiles change at 2 years?

The growth standards show how children grow up to 2 years of age, and height from age 2 onwards. When a child is measured standing up, the spine is squashed a little, so their height is slightly lower than when measured lying down. The centile line shifts slightly at age 2 to allow for this. It is important that this difference does not worry parents; what matters is whether the child continues to follow the same centile after the transition.

Predicting adult height

Parents like to know how tall their child will be as an adult. The child’s recent growth rate is a good indicator of how tall they will be as an adult. The chart on the next page is a guideline to the height of the right hand chart to find the average adult height for children on this chart. Four out of five children will have adult heights that are within 6cm above or below this value.

Weightage to BMI conversion chart

BMI indicates how heavy a child is relative to his or her height and is the simplest measure of thinness and fatness from the age of 2, when height can be measured fairly accurately. This chart provides an approximate BMI centile, accurate to a quarter of a centile space.

Instructions for use

1. Read off the weight and height centiles from the growth chart.
2. Plot the weight centile (left axis) against the height centile (bottom axis) on the chart above.
3. If between centiles, read across in this position.
4. Read off the corresponding BMI centile from the slanting line.
5. Record the centile with the date and child’s age in the data box.

Interpretation

In a child over 2 years of age, the BMI centile is a better indicator of overweight or underweight than the weight centile; a child whose weight is average for their height will have a BMI between the 25th and 75th centiles, whatever their height centile. BMI above the 91st centile suggests that the child is overweight; a child below the 91st centile is very overweight (clinically obese). BMI below the 2nd centile is unusual and may reflect undernutrition.

References