BOYS
UK Growth chart 2-18 years

When is further assessment required?
If any of the following:
• Where weight or height or BMI is below the 0.4th centile, unless already fully investigated at an earlier age.
• The height centile is more than 3 centile spaces below the mid-parental centile.
• A drop in height centile position of more than 2 centile spaces can be plotted.
• Smaller children fall or discrepancies between children’s and mid-parental centile, if seen in combination, or if associated with possible underlying disease.
• If there are any other concerns about the child’s growth.

Adult Height Predictor
This allows you to predict the child’s adult height based on their current height, but with a regression adjustment to allow for the tendency of very tall and short children to be less extreme in height as adults. Four boys out of five will have an adult height within ±6 cm of the predicted adult height. Instructions for use Plot the most recent height centile on the centile line on the Adult Height Predictor (see the flap to the right of the height chart centile) and read off the predicted adult height for this centile.

Mid-Parenatal Centile
The ‘mid-parenatal centile’ is the average adult height centile for Children of these parents. It incorporates a regression adjustment to allow for the tendency of very tall and short parents to have children with less extreme height. Comparing this to the child’s current height centile can help assess whether the child’s growth is proceeding as expected. The larger the discrepancy between the two, the less likely it is that the child has some sort of growth disorder. Most children’s heights centiles (nine out of ten) are within ±5 cm of the mid-parental centile, and only 1 percent will be more than three centile spaces below.

Instructions for use
• Plot the Mid-parenatal Centile Comparator on the flap to the right of the height centile chart. If possible measure both parents’ heights, or else use reported heights. Plot their heights on the Mother’s and Father’s height scales. Join the two points with a line. The mid-parental centile is where this line crosses the centile line in the middle. Compare the mid-parental centile to the child’s current height centile, plotted on the adult height predictor centile scale.

Mid-parental target height
This can be obtained by plotting the mid-parental centile on the main chart at age 18 and reading off the corresponding height. Four boys out of five will have an adult height within ±7 cm of this target height. However the predicted adult height (above) is usually closer than mid-parental target height to the child’s final height.

In summary, the technique measures height, length, weight and BMI and can be used to track growth and development from birth to age 18 years. It is a valuable tool for healthcare professionals to monitor and assess the growth of individual children and to identify those who may require further investigation. It is particularly useful for children who are not growing at the expected rate or for whom there are concerns about their growth.

References

© Copyright RCPCH 2012

Body Mass Index (BMI): centile look-up

If weight is above the 75th centile of weight and height and centiles differ, the BMI should be calculated, as the BMI centile is the better indicator of thinness and fatness. The BMI look-up allows you to read off the BMI centile, accurate to a quarter of a centile space. There is a BMI centile grid at the top of the growth chart where the centiles for children with high or low values can be plotted.

Instructions for use
• Note the weight and height centiles from the growth chart.
• Plot the weight centile against the height centile on the BMI look-up chart.
• If between centiles, read across in this position.
• Read off the corresponding BMI centile from the blue slanting lines.

What does a BMI of less or greater than 1 mean?
A BMI below the 5th centile suggests underweight. A child above the 98th centile is very overweight (clinically obese). BMI below the 2nd centile is unusual and may reflect undernutrition, but may simply reflect a small build.

© Copyright RCPCH 2012

Growth patterns before and during puberty
Successive height measurements can show wide variation, because it is difficult to measure height accurately. If there are concerns it is useful to measure on a few occasions over time. Assessing growth during puberty is complex because the age when puberty starts varies.

What does a height in the shaded area below the 0.4th centile mean?
This chart provides some extra guidance about the lower limit (0.4th centile) for height in boys 9-14 years. If a plot falls within the shaded area on the height chart between 9 and 14 years, pubertal assessment will be required and mid-parental centile should be assessed.

If they are in puberty or Completing puberty, they are below the 0.4th centile and should be referred. In most instances a pre-pubertal boy plotted in this area is growing normally, but comparison with the mid-parental centile and growth trajectory will assist the assessment of whether further investigation is needed.

What is the timing of puberty normal?
The three vertical black lines (puberty lines) on the right hand page (9-18 years) of the chart indicate the normal age limits for the ages of puberty for child and born above the WHO growth standard for children aged 2 years to 18 years. The growth of children under 2 years of age should be plotted on the more detailed UK-WHO 0-4 years growth charts.

As well as using this chart for plotting growth data, it also shows a number of new features which you may wish to use to help interpret the growth data.

• Birth centile plotting scale
• BM I look-up and plotting grid
• Scales to estimate adult height and mid-parental centile
• Guide to assessing puberty

Measurements procedure
Accurate measurement is essential and shoes must be removed for all measurements.

Measure height recorded to the last millimetre. A correctly installed height metre is the only equipment that can be reliably used (see illustrations). If a child cannot stand, measure lying on a flat surface, using an approved length measuring device and plot as for height.

Plotting
Plot each measurement by placing a small dot where a vertical line through the child’s age crosses a horizontal line through the measurement. The lettering on the charts (‘weight’, ‘length’ etc.) sits on the 50th centile to provide orientation.

Birth centile plotting scale
The chart starts at age 2 years, but there is a plotting scale on the left of the chart where for term infants, birth weight (and if measured, length) can be plotted to allow comparison of the birth centile with later growth.

Data Recording
Please place sticker (if available) otherwise write in space provided.

A centile space is the distance between two centiles. A centile space is the distance if midway between centiles.

BMI above the 91st centile suggests overweight. A child above the 98th centile is very overweight (clinically obese). BMI below the 2nd centile is unusual and may reflect undernutrition, but may simply reflect a small build.

For further relevant references see fact sheet downloadable fromwww.growthcharts.rcpch.ac.uk

Please place sticker (if available) otherwise write in space provided.

NHS/CHI No: ____________________________

Hospital No: ____________________________

Date of Birth: ____________________________