### A growth chart for all children

The UK WHO growth chart combines World Health Organization (WHO) standards with UK preterm and birth data. The chart from 2 weeks to 4 years of age is based on the WHO growth standard, derived from measurements of healthy, non-deprived, breastfed children of mothers who did not smoke. 1

#### Measuring

**Measurements**

- **Length (before 2 years of age):** Proper equipment is essential (length board or mat).
- **Weight:** Use only class III clinical electronic scales in metric setting.
- **Head Circumference:** Narrow plastic or paper tape to mark child standing as straight as possible.

#### Plotting measurements

For babies born at term (37 weeks or later), plot each measurement on the relevant chart by drawing a small dot where a vertical line through the child's age crosses a horizontal line through the measured value. The liasing on the charts (‘weight’, ‘length’, etc.) sits on the 50th centile, providing orientation for ease of plotting.

**Plotting for preterm infants**

A separate low birth weight chart is available for infants of less than 32 weeks gestation and any other infant requiring detailed assessment. For preterm infants born between 32 and 36 weeks, plot all measurements in the preterm section (to the left of the main 0-1 year chart) until 42 weeks, then plot on the 0-1 year chart using gestational correction, as shown below.

**Gestational correction**

Plot measurements at the child's actual age and then draw a line back the number of weeks the infant was preterm. Mark the spot with an arrow (see diagram): this is the child’s gestationally corrected centile. Gestational correction should continue until at least 1 year of age.

**Interpreting the chart**

#### Plotting weight loss after birth

- Most babies lose some weight after birth but 80% will have regained by 2 weeks. Feverier than 3% of babies lose more than 10% of their weight at any time; only 1 in 50 are 10% or more lighter than birth weight at 2 weeks.

Percentage weight loss can be calculated as follows:

$$\text{Percentage weight loss} = \frac{\text{Weight loss}}{\text{Birth weight}} \times 100$$

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

#### What do the centiles mean?

#### Head circumference

- Use only class III clinical electronic scales in metric setting.
- Weight: Use only class III clinical electronic scales in metric setting.
- Head Circumference: Narrow plastic or paper tape to mark child standing as straight as possible.
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#### When to measure

- **Length/Height:** When to weigh

Babies do not follow the same rate of weight gain, growth or general health.

When to measure length/height:

- Length/height should be measured whenever there are any worries about a child's weight gain, growth or general health.

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**Centile terminology**

- The point is within 1/4 of a space of the line they are on, the 95th centile.
- If they should be described as being between the two centiles.

#### Interpreting the chart

#### Weight-to-BMI conversion chart

BMI indicates how healthy 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.

### Predicting adult height

Parents like to know how tall their child will be as an adult. The child's most recent height centile (aged 2-4 years) gives a good idea of this for healthy children. Plot this centile on the adult height predictor to the right of the height chart to find the average adult height for children on this centile.

#### How do the length/height centiles change at 2 years?

The standard growth data shows length to 2 years, and height from age 2 onwards. When a child is measured standard length at 2 years, the centiles shift slightly downwards, and once every 3 months over the age of 1. However, most children do not need to be weighed this often.