

GROWTH CHART FOR PRETERM BOYS, 30 WEEKS GESTATIONAL AGE

This growth chart is designed to monitor growth of prematurely born infants, born after a gestational age of 30 completed weeks (30w.0d – 30w.6d). The references were calculated using data of children without comorbidity other than related to prematurity (for example no congenital malformations).

Physicians, nurses, trained assistants and other medical professionals may use and interpret the chart for preterm children in the same way as charts for term children. Measurements are plotted at the calendar age of the child since birth. No correction for prematurity is needed.

STANDARD DEVIATION SCORES

The standard deviation (SD) is a measure of the variability of measurements around the mean. The median (or P50) is the value below which 50% of the measurements occur. For length and head circumference the median is equal to the mean, but this is not true for weight. The standard deviation score (SDS) is equal to the number of standard deviations above or below the median (or P50) in the reference population. An SDS of 0.0 represents the median. A measurement above the median corresponds to a positive SDS. A negative SDS is used to represent a measurement below the median. Most children will have measurements between -2.0 SDS and +2.0 SDS (approximately between P2 and P98). About 0.6% of the measurements in the reference population occur below the -2.5 SD line. About 0.1% of the measurements occur below the -3.0 SD line.

The length in cm of the child can be transformed into an SDS by means of the formula:

$$\text{height SDS} = (\text{length in cm} - \text{mean length}) / \text{SD of length}$$

where mean length and SD of length both depend on the age at which the child was measured. The table given below contains the mean length and the SD at a number of exact ages. If the age of the child does not match the tabulated ages, we may calculate values from the table by linear interpolation of age.

| Age | 0.0 | 0.5 | 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 |
|------|------|------|------|------|------|------|------|-------|-------|
| Mean | 38.7 | 62.3 | 73.2 | 80.4 | 86.3 | 91.4 | 96.0 | 100.1 | 103.8 |
| SD | 3.0 | 2.8 | 3.1 | 3.4 | 3.7 | 3.9 | 4.2 | 4.4 | 4.7 |

TARGET HEIGHT

The Target Height (TH) is the expected final height of the child given the height of both biological parents. The TH is important in evaluating the growth curve of a child. The TH is calculated according to the method of Van Dommelen, Schonbeck and Van Buuren, Arch Dis Child 2012, 97: 182.

For boys, the following formula is used:

$$\text{TH boy} = 44.5 + 0.376 * \text{height father} + 0.411 * \text{height mother}$$

where the height of the father and mother are given in cm.

The 95% TH-range is equal to [TH - 11; TH + 11].

The TH-Standard Deviation Score (TH-SDS) is equal to

$$\text{TH-SDS boy} = (\text{TH boy} - 183.8) / 7.1$$

