Boys 2-18 years

Endorsed By Australasian Paediatric Endocrine Group

Surname _____

Given Names _____

Identification No. _____

Date of Birth _____

Head Circumference

Measuring Technique: The tape should be placed over the eyebrows, above the ears and over the most prominent part of the occiput taking a direct route. A paper tape is preferable to plastic, which stretches unacceptably under tension. The maximum measurement should be recorded to the nearest 0.1 cm.
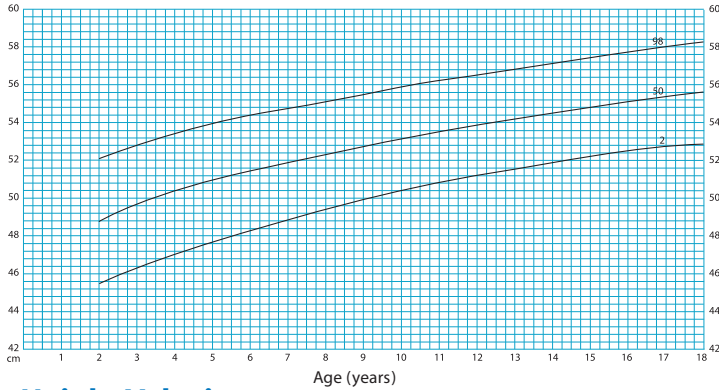
Data Source: 2-5 yr: Jones, D.L. 1973, *NSW Health Communication Publication.* 5-18 yr: Nellhaus, G. 1968, *Pediatrics,* 41:106-114.

Height Velocity

The standards are appropriate for velocity calculated over a whole year period, not less, since a smaller period requires wider limits (the 3rd and 97th centiles for a whole year being roughly appropriate for the 10th and 90th centiles over six months). The yearly velocity should be plotted at the mid-point of a year. The centiles given in black are appropriate to children of average maturational tempo, who have their peak velocity at the average age for this event. The red line is the 50th centile line for the child who is two years early in maturity and age at peak height velocity, and the green line refers to a child who is 50th centile in velocity but two years late. The arrows mark the 3rd and 97th centiles at peak velocity for early and late maturers.

Centiles of a whole year velocity for maturers at average time — 97, 50, 3

97 and 3 centile at peak height velocity for
Early (+ 2SD) maturers
Late (- 2SD) maturers
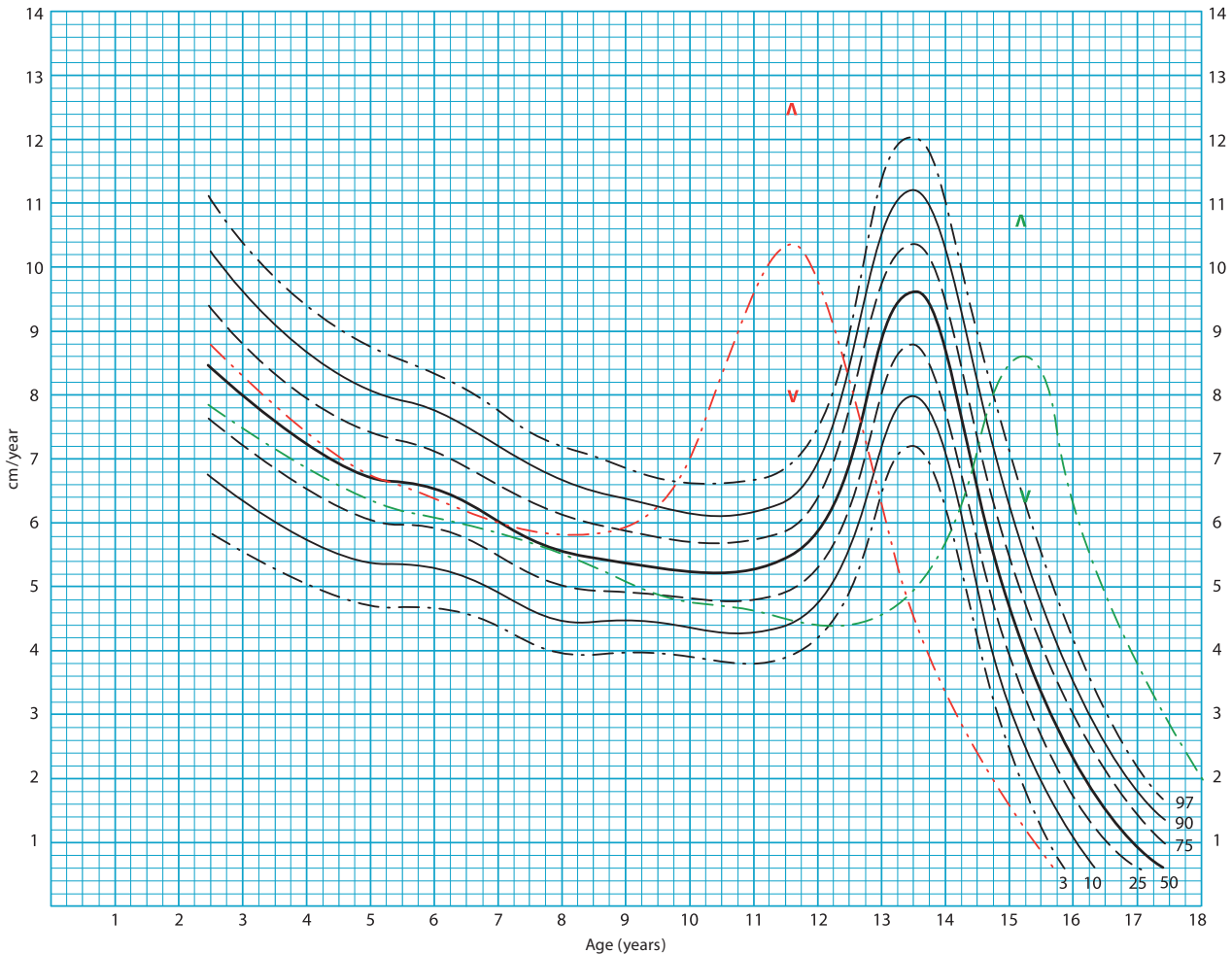
Data Source: Tanner, J. & Davies, P.S.W. 1985, *Journal of Pediatrics,* 107.

Age (years)

Height Percentile

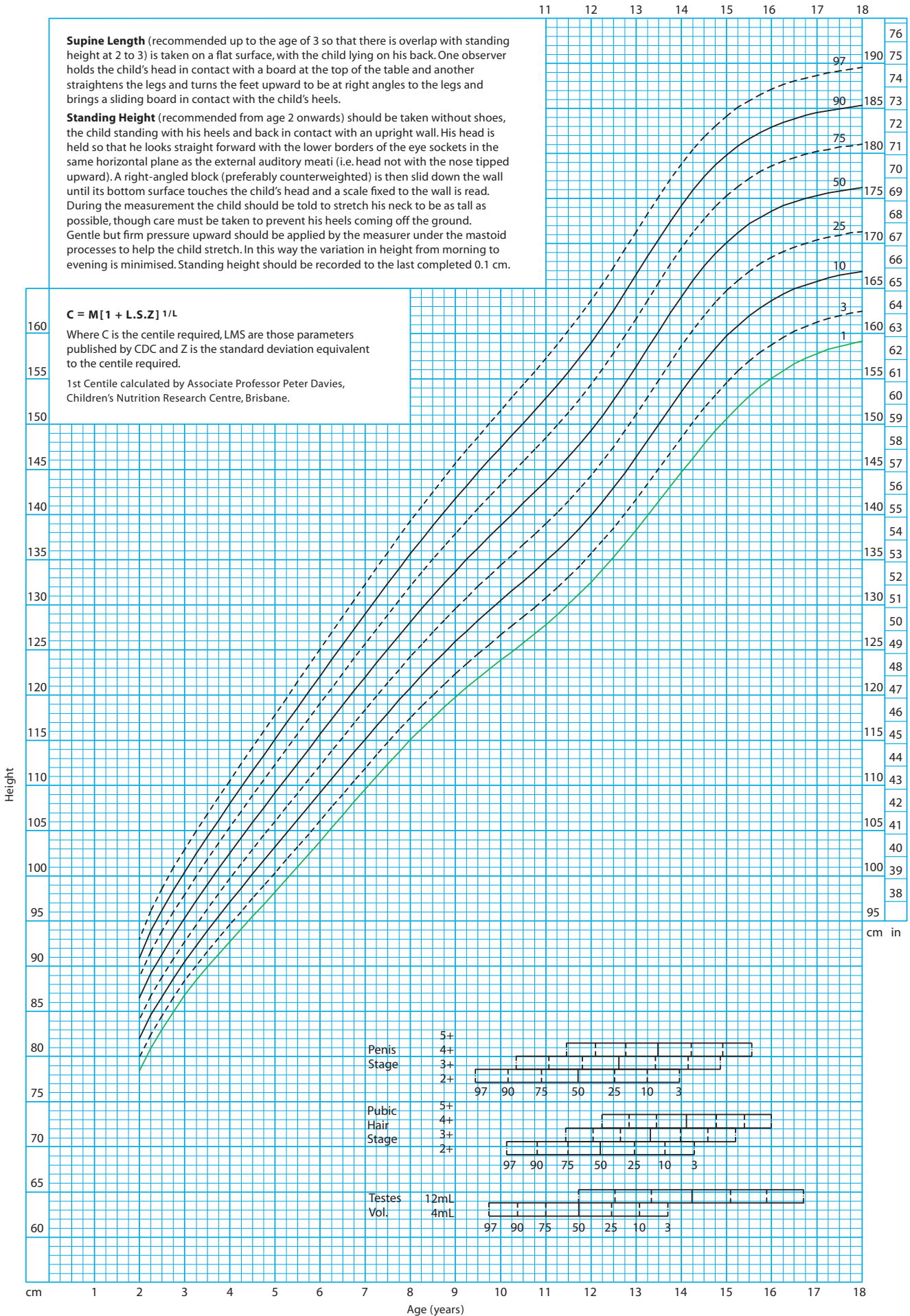**Mother's Height** _____

Father's Height _____

Supine Length (recommended up to the age of 3 so that there is overlap with standing height at 2 to 3) is taken on a flat surface, with the child lying on his back. One observer holds the child's head in contact with a board at the top of the table and another straightens the legs and turns the feet upward to be at right angles to the legs and brings a sliding board in contact with the child's heels.

Standing Height (recommended from age 2 onwards) should be taken without shoes, the child standing with his heels and back in contact with an upright wall. His head is held so that he looks straight forward with the lower borders of the eye sockets in the same horizontal plane as the external auditory meati (i.e. head not with the nose tipped upward). A right-angled block (preferably counterweighted) is then slid down the wall until its bottom surface touches the child's head and a scale fixed to the wall is read. During the measurement the child should be told to stretch his neck to be as tall as possible, though care must be taken to prevent his heels coming off the ground. Gentle but firm pressure upward should be applied by the measurer under the mastoid processes to help the child stretch. In this way the variation in height from morning to evening is minimised. Standing height should be recorded to the last completed 0.1 cm.

C = M [1 + L.S.Z] $^{1/L}$

Where C is the centile required, LMS are those parameters published by CDC and Z is the standard deviation equivalent to the centile required.

1st Centile calculated by Associate Professor Peter Davies, Children's Nutrition Research Centre, Brisbane.

Height

Penis Stage: 5+ 4+ 3+ 2+
97 90 75 50 25 10 3

Pubic Hair Stage: 5+ 4+ 3+ 2+
97 90 75 50 25 10 3

Testes Vol.: 12mL 4mL
97 90 75 50 25 10 3

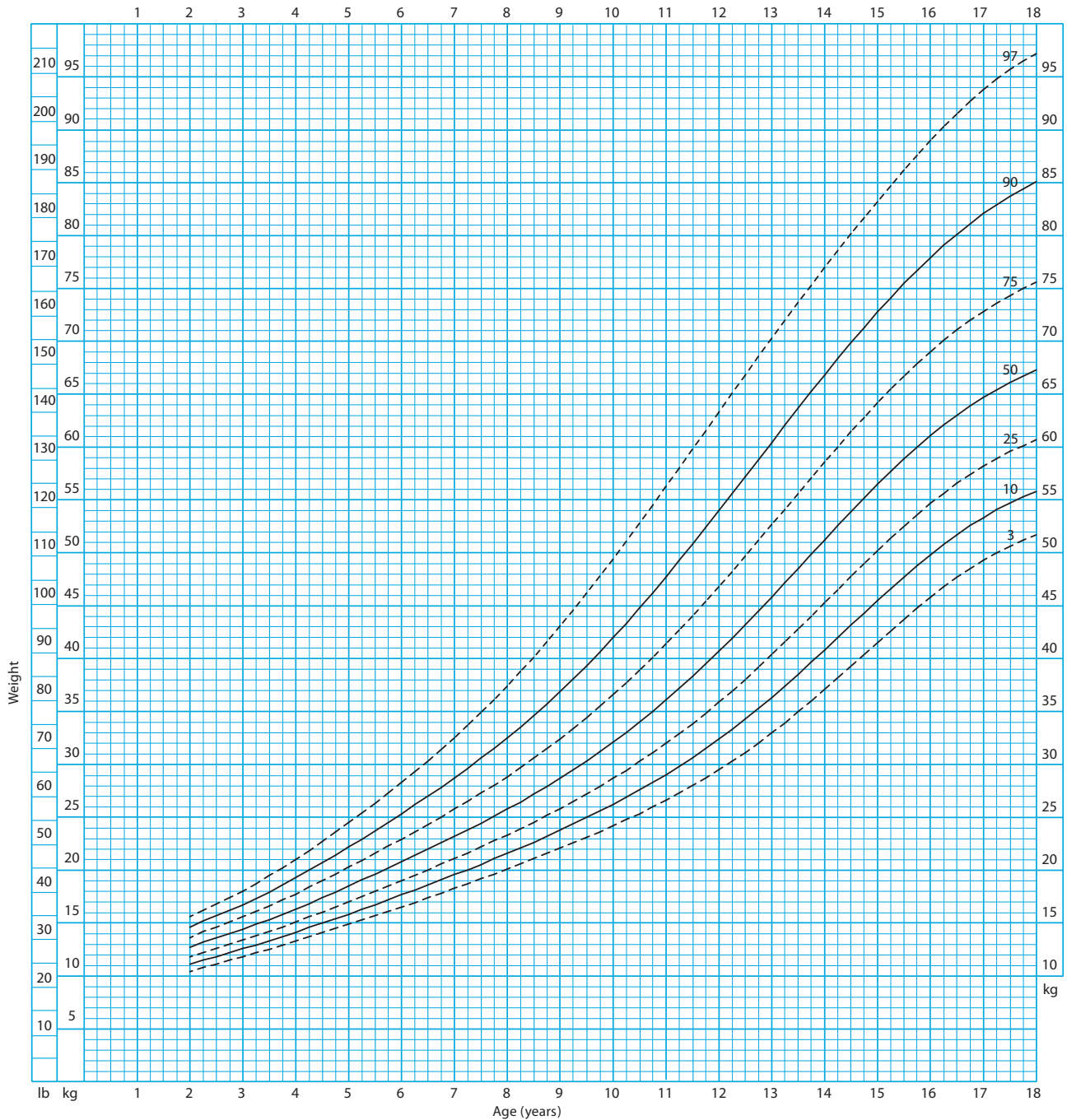Age (years)

Weight Percentile

Weight should be taken in the nude, or as near thereto as possible. If a surgical gown or minimum underclothing (vest and pants) is worn, then its estimated weight (about 0.1 kg) must be subtracted before weight is recorded. Weights are conventionally recorded to the last completed 0.1 kg above the age of six months. The bladder should be empty.

Body-Mass Index
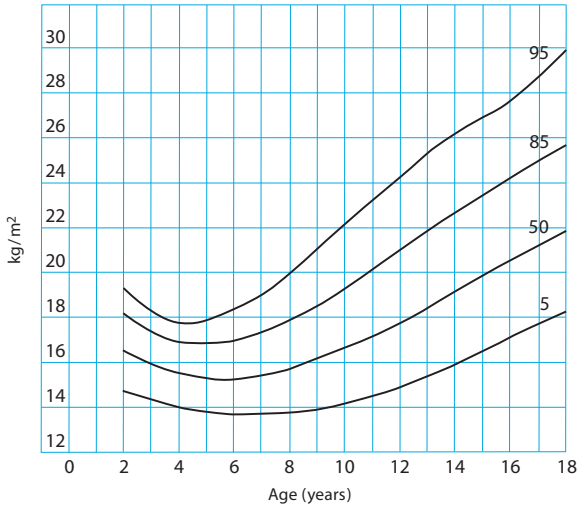
kg/m²

Age (years)

Data Source: www.cdc.gov/nchs/about/
major/nhanes/growthcharts/datafiles.htm

					PUBERTAL STAGES			
DATE	AGE	HEIGHT	WEIGHT	HEAD CIRCUM.	GENITAL	PUBIC HAIR	TESTES	
							L	R

Weight

Age (years)

Data Source: www.cdc.gov/nchs/about/major/nhanes/growthcharts/datafiles.htm

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Stages of Puberty

Ages of attainment of successive stages of pubertal sexual development are given in the Height Percentile chart.
The stage Pubic Hair 2+ represents the state of a child who shows the pubic hair appearance stage 2 but not stage 3 (see below).

The centiles for age at which this state is normally seen are given, the 97th centile being considered as the early limit, the 3rd centile as the late limit. The child's puberty stages may be plotted at successive ages *(Tanner. 1962, Growth at Adolescence*, 2nd edn*)*. Testis sizes are judged by comparison with the Prader orchidometer *(Zachmann, Prader, Kind, Haflinger & Budliger. 1974, Helv. Paed. Acta*. 29, 61-72*)*.

Genital (Penis) Development

Stage 1. Pre-adolescent. Testes, scrotum and penis are of about the same size and proportion as in early childhood.

Stage 2. Enlargement of scrotum and testes. Skin of scrotum reddens and changes in texture. Little or no enlargement of penis at this stage.

Stage 3. Enlargement of the penis which occurs at first mainly in length. Further growth of the testes and scrotum.

Stage 4. Increased size of penis with growth in breadth and development of glans. Testes and scrotum larger; scrotal skin darkened.

Stage 5. Genitalia adult in size and shape.

Pubic Hair Development

Stage 1. Pre-adolescent. The vellus over the pubes is not further developed than that over the abdominal wall, i.e. no pubic hair.

Stage 2. Sparse growth of long, slightly pigmented downy hair, straight or slightly curled at the base of the penis.

Stage 3. Considerably darker, coarser and more curled. The hair spreads sparsely over the junction of the pubes.

Stage 4. Hair now adult in type, but area covered is still considerably smaller than in the adult. No spread to the medial surface of thighs.

Stage 5. Adult in quantity and type with distribution of the horizontal (or classically 'feminine') pattern. Spread to medial surface of thighs but not up linea alba or elsewhere above the base of the inverse triangle (spread up linea alba occurs late and is rated stage 6).

Genital and Pubic Hair Development Stages

| Stage 2 | Stage 3 | Stage 4 | Stage 5 |
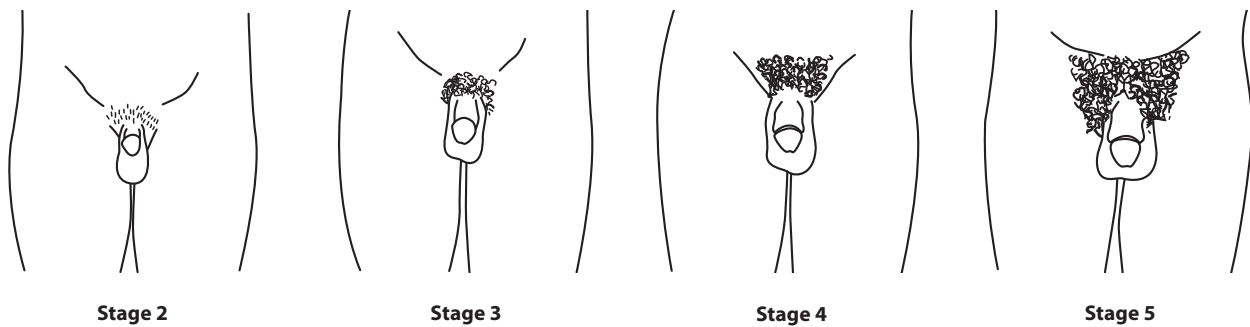
Stretched Penile Length

Measured from the pubo-penile skin junction to the tip of the glans (Shonfeld & Beebe. 1942, *Journal of Urology,* 48, 759-777).