[redacted]

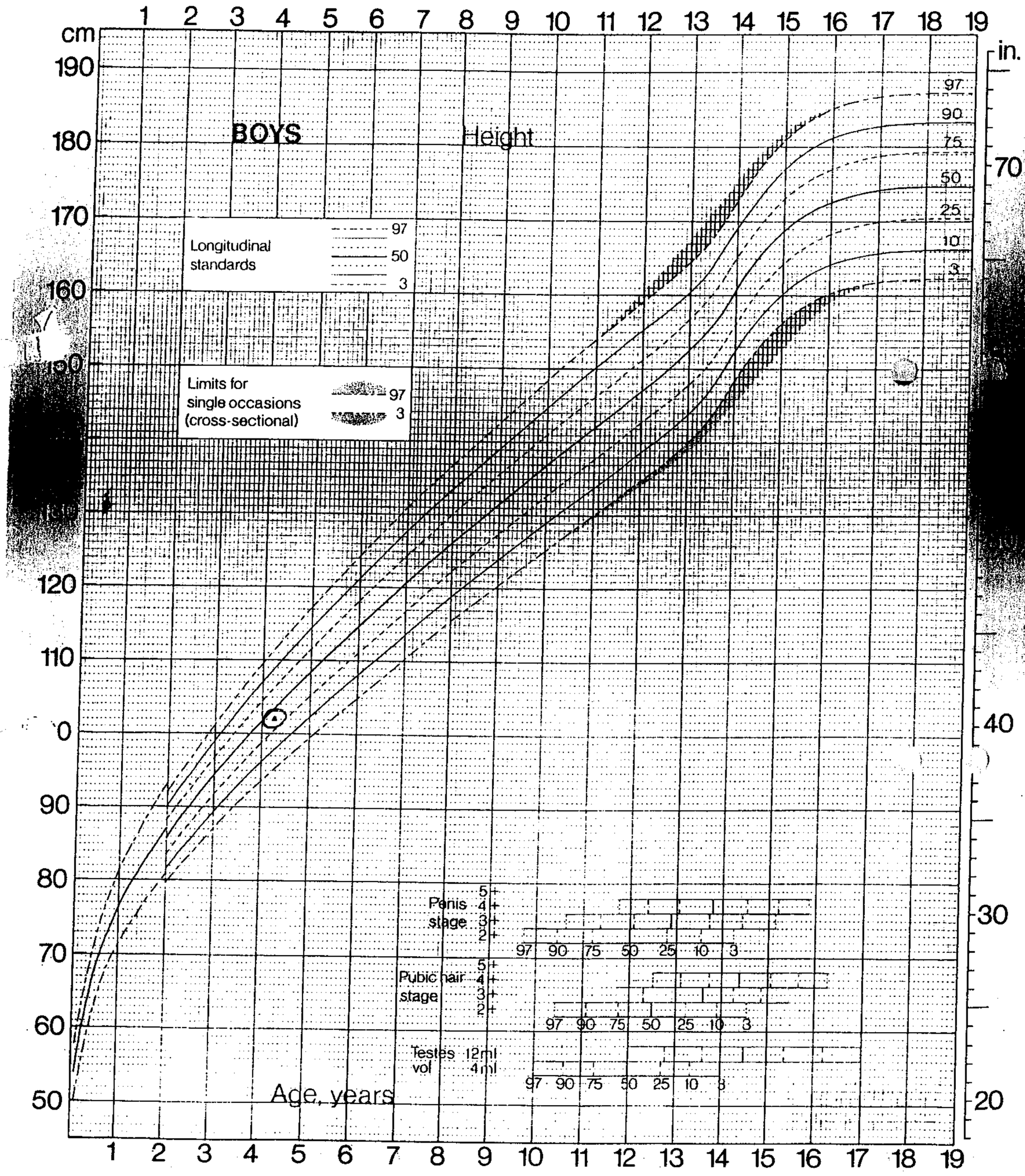
Reg. No.

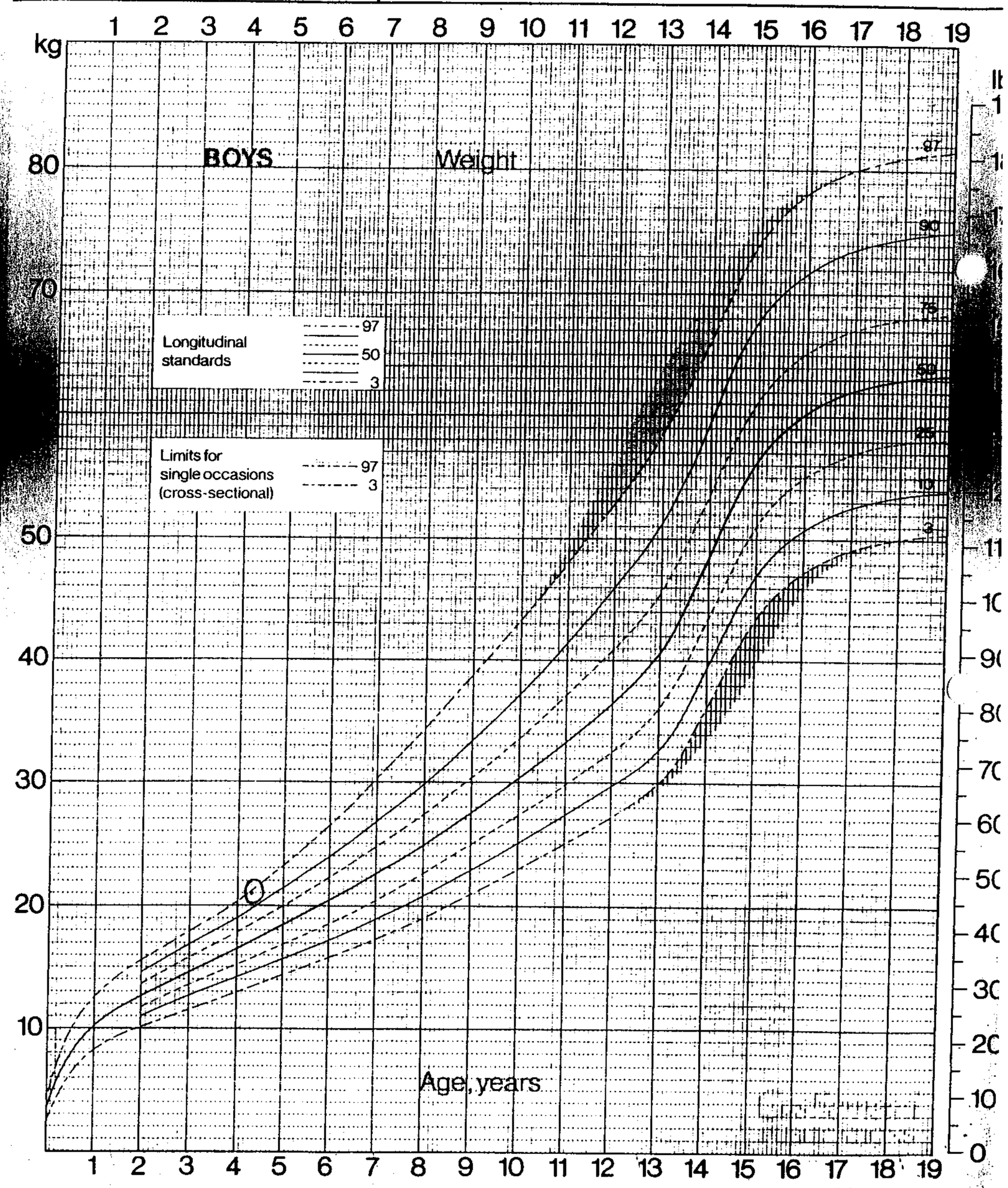
Surname

Forename

Date of Birth / / . Decimal Yr.

Notes/Treatn [redacted]




058-010-031

AS – ROYAL

Surname STRAIN

Forename ADAM

Hospital/Clinic Name

Date of Birth / / .
Decimal Yr.

**Boys: Birth-19 years**
**Height and Weight**
TANNER-WHITEHOUSE [illegible]
Ref. HA [illegible]

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Date of Examination | | | | | | | | | | | | |
| Age | | | | | | | | | | | | |
| Height cm/in | | | | | | | | | | | | |
| Height Percentile | | | | | | | | | | | | |
| Height Velocity cm/yr | | | | | | | | | | | | |
| Weight kg/lb | | | | | | | | | | | | |
| Weight Percentile | | | | | | | | | | | | |
| Weight Velocity kg/yr | | | | | | | | | | | | |
| Weight-for-Height Percentile | | | | | | | | | | | | |
| Head Circumference cm/in | | | | | | | | | | | | |
| Head Circumference Percentile | | | | | | | | | | | | |
| Bone Maturity Score | | | | | | | | | | | | |
| Skeletal Age | | | | | | | | | | | | |
| Puberty Ratings — Genitalia | | | | | | | | | | | | |
| Puberty Ratings — Pubic Hair | | | | | | | | | | | | |
| Puberty Ratings — Axillary Hair | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

TABLE OF DECIMALS OF YEAR

| | 1 JAN. | 2 FEB. | 3 MAR. | 4 APR. | 5 MAY | 6 JUNE | 7 JULY | 8 AUG. | 9 SEPT. | 10 OCT. | 11 NOV. | 12 DEC. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 000 | 085 | 162 | 247 | 329 | 414 | 496 | 581 | 666 | 748 | 833 | 915 |
| 2 | 003 | 088 | 164 | 249 | 332 | 416 | 499 | 584 | 668 | 751 | 836 | 918 |
| 3 | 005 | 090 | 167 | 252 | 334 | 419 | 501 | 586 | 671 | 753 | 838 | 921 |
| 4 | 008 | 093 | 170 | 255 | 337 | 422 | 504 | 589 | 674 | 756 | 841 | 923 |
| 5 | 011 | 096 | 173 | 258 | 340 | 425 | 507 | 592 | 677 | 759 | 844 | 926 |
| 6 | 014 | 099 | 175 | 260 | 342 | 427 | 510 | 595 | 679 | 762 | 847 | 929 |
| 7 | 016 | 101 | 178 | 263 | 345 | 430 | 512 | 597 | 682 | 764 | 849 | 932 |
| 8 | 019 | 104 | 181 | 266 | 348 | 433 | 515 | 600 | 685 | 767 | 852 | 934 |
| 9 | 022 | 107 | 184 | 268 | 351 | 436 | 518 | 603 | 688 | 770 | 855 | 937 |
| 10 | 025 | 110 | 186 | 271 | 353 | 438 | 521 | 605 | 690 | 773 | 858 | 940 |
| 11 | 027 | 112 | 189 | 274 | 356 | 441 | 523 | 608 | 693 | 775 | 860 | 942 |
| 12 | 030 | 115 | 192 | 277 | 359 | 444 | 526 | 611 | 696 | 778 | 863 | 945 |
| 13 | 033 | 118 | 195 | 279 | 362 | 447 | 529 | 614 | 699 | 781 | 866 | 948 |
| 14 | 036 | 121 | 197 | 282 | 364 | 449 | 532 | 616 | 701 | 784 | 868 | 951 |
| 15 | 038 | 123 | 200 | 285 | 367 | 452 | 534 | 619 | 704 | 786 | 871 | 953 |
| 16 | 041 | 126 | 203 | 288 | 370 | 455 | 537 | 622 | 707 | 789 | 874 | 956 |
| 17 | 044 | 129 | 205 | 290 | 373 | 458 | 540 | 625 | 710 | 792 | 877 | 959 |
| 18 | 047 | 132 | 208 | 293 | 375 | 460 | 542 | 627 | 712 | 795 | 879 | 962 |
| 19 | 049 | 134 | 211 | 296 | 378 | 463 | 545 | 630 | 715 | 797 | 882 | 964 |
| 20 | 052 | 137 | 214 | 299 | 381 | 466 | 548 | 633 | 718 | 800 | 885 | 967 |
| 21 | 055 | 140 | 216 | 301 | 384 | 468 | 551 | 636 | 721 | 803 | 888 | 970 |
| 22 | 058 | 142 | 219 | 304 | 386 | 471 | 553 | 638 | 723 | 805 | 890 | 973 |
| 23 | 060 | 145 | 222 | 307 | 389 | 474 | 556 | 641 | 726 | 808 | 893 | 975 |
| 24 | 063 | 148 | 225 | 310 | 392 | 477 | 559 | 644 | 729 | 811 | 896 | 978 |
| 25 | 066 | 151 | 227 | 312 | 395 | 479 | 562 | 647 | 731 | 814 | 899 | 981 |
| 26 | 068 | 153 | 230 | 315 | 397 | 482 | 564 | 649 | 734 | 816 | 901 | 984 |
| 27 | 071 | 156 | 233 | 318 | 400 | 485 | 567 | 652 | 737 | 819 | 904 | 986 |
| 28 | 074 | 159 | 236 | 321 | 403 | 488 | 570 | 655 | 740 | 822 | 907 | 989 |
| 29 | 077 | | 238 | 323 | 405 | 490 | 573 | 658 | 742 | 825 | 910 | 992 |
| 30 | 079 | | 241 | 326 | 408 | 493 | 575 | 660 | 745 | 827 | 912 | 995 |
| 31 | 082 | | 244 | | 411 | | 578 | 663 | | 830 | | 997 |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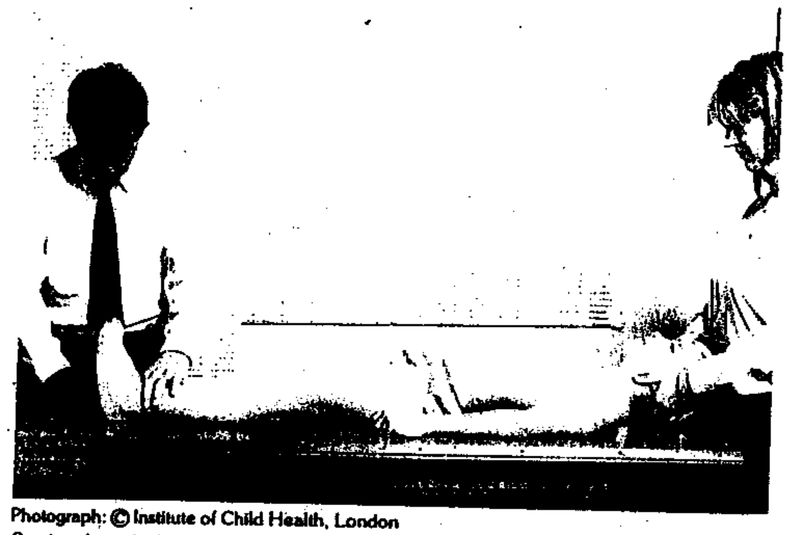
# Measuring Tec' ques



Photograph: © Institute of Child Health, London

**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 his head in contact with a board at the top of the table and another straightens the legs, turns the feet upwards 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 nose tipped upwards). A right-angled block (preferably counterweighted) is then slid down the wall until its bottom surface touches the child's head, and a

Photograph: © Institute of Child Health, London

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 upwards 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.

**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 conveniently recorded to the last completed 0.1 kg. above the age of six months. The bladder should be empty.

## Notes on the use of Height and Weight Standard Charts (1975)

**Height and weight attained charts (distance)**
Heights and weights can most easily be charted by using a transparent ruler, especially if the measurements have been in inches and pounds. The lines marked 'longitudinal standards' represent the centiles for children followed at successive ages. The shaded areas marked 'limits' for single occasions (cross-sectional)' represent the 3rd and 97th centiles for cross-sectional data. On the first occasion a child is seen these wider limits apply; however on subsequent occasions a child initially falling within the shaded area should progress towards and into the longitudinal centiles.
The limits of normality taken must depend on the purpose for which the standards are being used. They also depend on the level of the average values obtained in a given clinic: regional variations may require a slight shifting of the scale from place to place. Some allowance for Registrar-General Occupational Category differences may also be made. As a rough guide, however, one might say that children outside the area of the tenth to ninetieth percentile range should be regarded with slight suspicion, and those outside the third to ninety-seventh range as unhealthy until proved otherwise.

**Height and weight velocity charts**
The standards are appropriate for velocity calculated over a whole year period, not less (since a smaller period requires wider limits). The yearly velocity should be plotted at the midpoint of the year. The 'longitudinal whole-year centiles' are appropriate to children who have their peak velocity at the average age for this event. The shaded areas include the velocity curves of all children who have their peak velocities up to two standard deviations of age before and after this average age. The arrows and diamonds mark the 3rd, 50th and 97th centiles of peak velocity when the peak takes place at these early and late limits. Corresponding points for peaks at other ages may be found by interpolation. Whether early or late the shape of the velocity curve should follow the general shape shown by the centile lines. The charts are published in J. M. Tanner & R. H. Whitehouse, *Archives of Disease in Childhood*, 1976, Vol. 51.

**Stages of Puberty**
Ages of attainment of successive stages of pubertal sexual development are given in the 'distance' charts. 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. Testis sizes are judged by comparison with the Prader orchidometer (Zachmann, Prader, Kind, Haflinger & Budliger, *Helv. Paed. Acta*, 29, 61-72, 1974); only two sizes are given here out of a succession of 10.

**Source of standards**
The details of the source data and of the construction of these standards are set forth in J. M. Tanner, R. H. Whitehouse and M. Takaishi, *Archives of Disease in Childhood* 1966 Volume 41. For the most part heights and weights for the age 0-5 are from the data of the University of London, Institutes of Education and Child Health, Child Study Centre, and the Oxford Child Health Survey, and for the ages 5½-15½ from the London County Council survey reported by Scott in 1959. Height attained and height velocity percentiles are calculated on the assumption of a Gaussian distribution at each age; weight attained and weight velocity percentiles were estimated directly from the frequency distributions. Smoothing was in general carried out graphically. The shape of the longitudinal standards are based on longitudinal data from the Harpenden Growth Study and the International Children's Centre, London Longitudinal Study of the Institute of Child Health, London.
Stages of development of the secondary sex characters may be recorded on t' front page. The following standard ratings on a scale of 1 to 5 may be used. (Ta. by kind permission of the publishers from the standard illustrations in *Growth at Adolescence* 2nd ed.: Oxford, Blackwell Sci. Pupl., 1962; see also Chapter 7 in *Textbook of Paediatrics* ed. J. Forfar and G. Arneill, Churchill-Livingstone 1973).

**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 penis, which occurs at first mainly in length. Further growth of 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**
*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, chiefly 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).

**DECIMAL AGE**
The system of decimal age has been used in all charts. Thus the year is divided into 10 not 12. Each date in the calendar is marked (from the table on front page) in terms of thousandths of the year. Thus January 7th 1962 is 62.016. The child's birth date is similarly recorded e.g. child born on June 23rd 1959 has the birthday 59.474. Age at examination is then obtained by simple subtraction, e.g. 62.016-59.474 = 2.542, and the last figure is rounded off. This system greatly facilitates the computing of velocities, since the proportion of the year between two examinations is easily calculated.

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058-010-032