

Rosscraft Anthrotape



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Rosscraft Anthrotape

n e w n e w n e w n e w



- ✓ Increment scale 0 to 200 millimeters
 - ✓ Scale digits in centimeters
- e.g. read as 18.1, one eight point one or
one eight point zero -- this is ISAK
International standard protocol

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Rosscraft Anthrotape



- ✓ Variable length gradation scale
- ✓ Same design as Rosscraft Calipers

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Rosscraft Anthrotape



- ✓ Black stub end. Zero interface. No area of a line.
- ✓ 9 cm from end of toggle to zero interface.

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Rosscraft Anthrotape



- ✓ Read at scale not across space.
- ✓ Extrapolation to nearest 0.5 mm

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Rosscraft Research & Development Division

1. Comments on Technique for Measurement of Girths
2. Teaching aids include a bottle to emphasize correct placement of the fingers for snubbing, moving, pinning and leveling of the tape. Foam cylinder to measure girths without distortion of surface contour.
3. Theory of error in practical terms for human biologists and health professionals. Reduction of error by replication
4. Anthropometric Technique; Menu driven DVD movie available from Rosscraft@datamedia.ca.

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Girth Technique for Human Biologists and Health Professionals

- 1) In all recent communications, we emphasize the need for proper technique for obtaining girths. No whole body composition method serves to assess site specific status or change better than girths and skinfold corrected girths obtained over muscular parts.
- 2) The measurement of girths is critical. This was discussed 16 years ago by Ross WD and Eiben OG (1992) A commentary on the optimal design of an anthropometric tape. Acta Med Auxol 24
- 3) A bottle may be used effectively as a teaching aid to emphasize correct placement for the fingers for snubbing, moving, pinning and leveling of the tape.
- 4) The elements of style are shown in sequence in Anthropometry Technique used in theatres, for laboratory instruction or for individual reference. These are available in student lots from rosscraft@datamedia.ca

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A bottle teaching aid for tape manipulation.



- ✓ Thumb and index fingers are the snubbers.
- ✓ Zero interface is read at the scale increments not across a space.
- ✓ Girths are perpendicular to the long axes at the designated sites
- ✓ Case never leaves right hand for all measures.

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Compressible foam tube teaching aid for tape tension

The light touch for obtaining the perimeter distance without distorting the surface can be emphasized by comparative measurement of foam tubes used for a floating device by child swimmers.

Teaching tip: Patria Hume, AUT University, NZ

Excel spreadsheet algorithms for obtaining technical errors of measurement of independent single and double replicated measures is available as an email attachment.

rosscraft@shaw.ca.

✓ Anthropometrists train to manipulate the tape using light tension without distorting the contour of the measured part.

✓ Compressibility varies. Thus, constant spring devices are inappropriate.

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Error reduction from replication

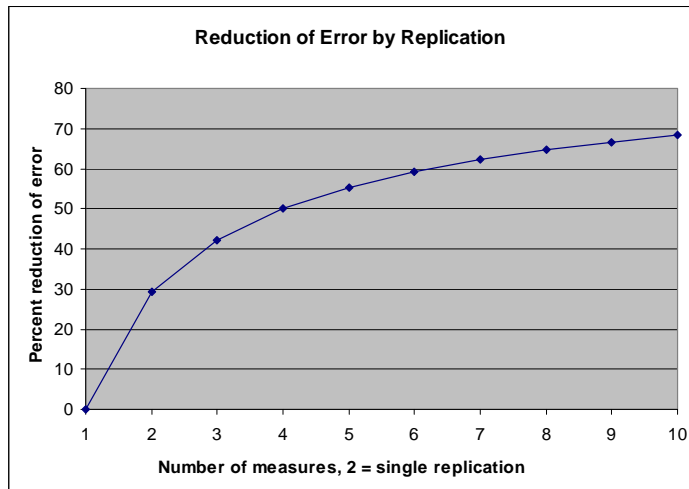
The technical error for independent measurements of girths or any anthropometric technique is given by the error terms as follows:

$$E = (e_1^2 + e_2^2 + e_3^2)^{0.5}$$

When there is no covariant term, the median values are simply the square root of the sum of error terms.

Practically, the measures are from independent series, where there is no memory bias from previous measures.

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Practical implication, mean value of two trials reduces error by 29.3 %. Median of three trials reduces error by 42.3 %, diminishing effect thereafter.

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Quality starts with precise and accurate data.

Here is your own hard working on-the-job-all-the-time personal tutor or teaching assistant featuring: two hours of explicit over-the-shoulder views of locating landmarks, marking, positioning the subject, elegant use of tapes and calipers, transition from site to site, pinning, leveling and applying the right tension.



Visit us online at www.rosscraft.ca
Sales & Service at: rosscraft@datamedia.ca

ANTHROPOMETRY TECHNIQUE

ROSSCRAFT
Innovations Incorporated

*Anthropometry
Technique*



A Menu Driven Instructional Movie
by RV Carr & WD Ross



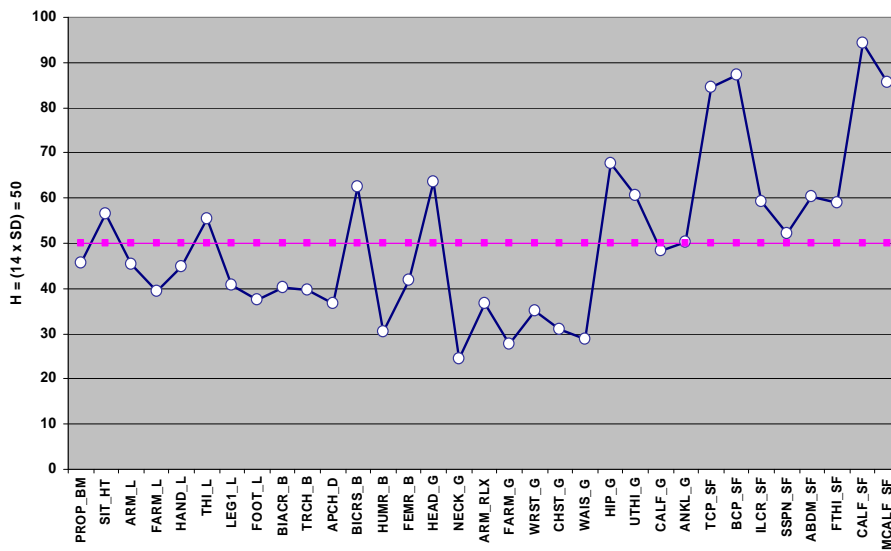
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Basic girths

- ✓ Head, neck, wrist and ankle girths provide a frame for the more malleable girths in the **upper extremity** (arm relaxed, arm flexed and tensed, forearm); **torso** (subscapular, chest, waist, abdominal, hip); and **lower extremity** (upper thigh, mid thigh, and calf).
- ✓ In addition, for Somatotyping and O-Scale Physique Assessment System require: age, gender, height, weight and humerus and femur breadths and 4, 6, or 8 skinfolds.
- ✓ A more comprehensive protocol similar to that required for ISAK certification was used to compare proportionality characteristics of female and male participants in the 1990 World Aquatic Sport Championships in Perth , Australia,

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Proportionality Demonstration: Mean 455 Females minus mean 464 Males, scaled to Male Hull Score 50. World Aquatic Sports Chamionships, Perth 1991. KASP (Carter & Ackland 1994)



All plotting points are interactive to click

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Hull standard scores when mean = 50 standard deviation + 14. F is proportionally larger when scaled to male H50 mean values. Above 50 the F were proportionally larger. Below they were smaller. Each plotting point in Excel charts is interactive. See demo line chart next slide/

THI_L" Value = 55; Leg_L = 41. Inference, F had proportionally longer thigh length and shorter leg length than males .

How about the proportionally big head girth, small neck girth? Whip lash prone Females?

One can compare any item with any other item. Sample to sample, individual to sample, individual to any other individual, or individual with themselves on previous measurement occasions.

Individual iconometric profiles are as unique as the prints on one's hands or DNA profile.

Note: statanalysis of raw scores can be treated similarly.

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Individual Assessment is the most sophisticated and demanding method for the study of human growth

- | | |
|--------------------------|--|
| 1. Narrative | The latter two methods are absolutely dependent on precise and accurate measurement. |
| 2. Pictorial | Precision is assessed by independent replication when there is no memory recall of the proceeding values. |
| 3. Seriation | |
| 4. Quantitative | Objectivity is assessed by comparison with another measurer (e.g. ISAK Certified L3 or L4 Anthropometrist) |
| 5. Iconometric graphics | Accuracy is adherence to a defined standard or protocol used in the data assembly. |
| 6. Individual Assessment | |

6 methods: Boyd & Scammon (1980)

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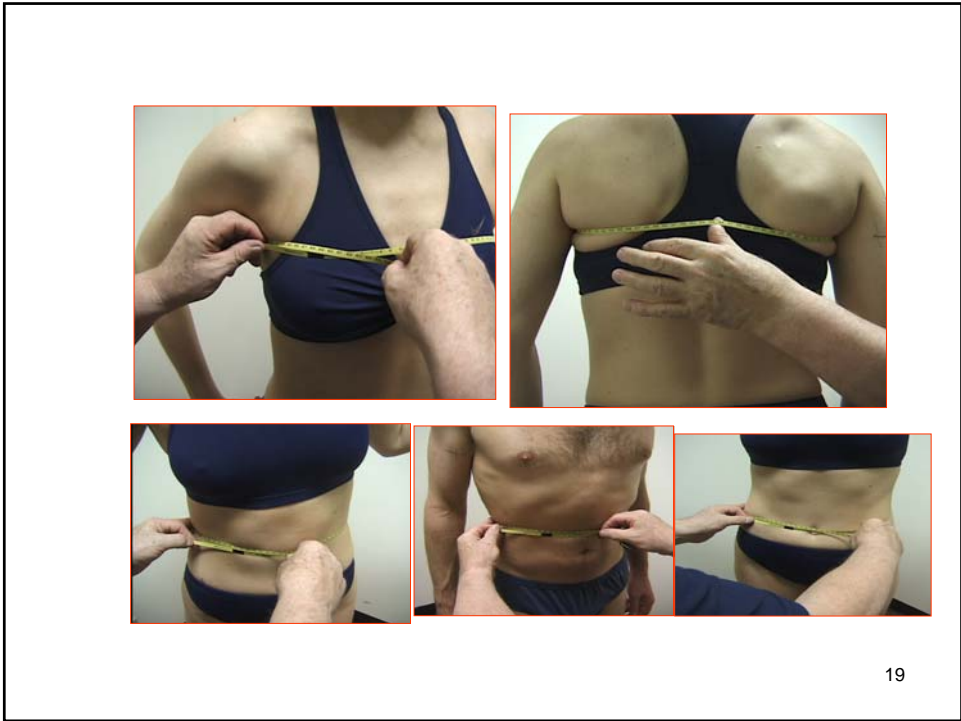
Basic girths Illustrated

From Ross WD , Carr RV, Guelke JM and CarterJEL
(2003) Anthropometry Fundamentals. Rosscraft.

*Note: position of thumb and 2nd digits for snubing and
the 3rd digits for leveling, pinning and transfer of tape.*



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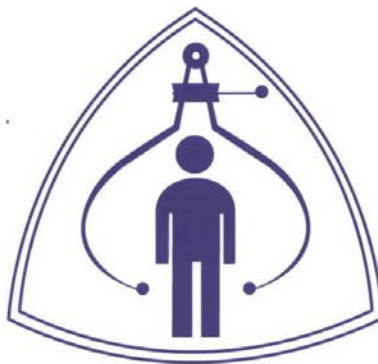




Centurion Anthropometry Kit includes Anthropometry Fundamentals CD and Anthropometry Technique DVD movie. Both are available for individual and group orders from rosscraft@datamedia.ca

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Can we help?



rosscraft@shaw.ca

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