ABBREVIATION AND VARIABLES

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Abbreviations:

ASIS Anterior superior iliac spine (bony landmark)

AT Adipose tissue

B-mode US Brightness mode ultrasound (diagnostic ultrasound)

CT Computed tomography

E Excluded: index indicates that the fibrous structures embedded in the SAT are not

included in the thickness value

I Included: index indicates that the fibrous structures are included

MRI Magnetic resonance imaging

ROI Region of interest

SAT Subcutaneous adipose tissue

SUM Standardised (B-Mode) Ultrasound Measurement of SAT

US Ultrasound

VAT Visceral adipose tissue WHO World Health Organisation

Nomenclature of participant groups:

F Female participant M Male participant

SUM measurement sites:

UA	(1)	Upper abdomen
LA	(2)	Lower abdomen
FT	(3)	Front thigh
LT	(4)	Lateral thigh
MC	(5)	Medial calf
ES	(6)	Erector spinae
DT	(7)	Distal triceps
BR	(8)	Brachioradialis

Variables, indices, parameters, and symbols:

a Arm span [m]

a/h
 Arm span-to-stature ratio (sometimes also termed 'ape index')
 A_B
 Cross sectional area at biceps (at maximum girth of tensed biceps)

A_C Cross sectional area at

 A_{T} Cross sectional area of the thigh (measured at FT)

B Biceps girth

BMI Body mass index: $BMI = m/h^2$ [kgm⁻²]

 $\begin{array}{ll} \textit{C} & \text{Calf girth (at the site MC)} \\ \textit{c}_{\text{SAT}} & \text{Speed of sound in SAT} \\ \textit{c}_{\text{SKIN}} & \text{Speed of sound in skin} \end{array}$

D Sum of SAT-thicknesses of the eight sites [mm]

 $D_{\rm I}$ Sum of SAT-thicknesses with embedded fasciae included [mm] $D_{\rm E}$ Sum of SAT-thicknesses with embedded fasciae excluded [mm]

d SAT thickness at a given measurement site [mm]

(median of typically 50 to 200 distances measured by SUM within the ROI),

 d_{F} Thickness of fasciae embedded in the SAT at a given site, in [mm] D_{F} Sum of fascia thicknesses at the eight sites: D_{F} = D_{I} - D_{E} , [mm]

 $D_{F,\%} = 100 \cdot (D_{I} - D_{E})/D_{V}$ in [%]

D_{SKIN} Sum of skin-thicknesses from the eight sites [mm]

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IASMS
International Association of Sciences in Medicine and Sports

 $d_{8,\text{mean}}$ Mean SAT thickness of the eight sites: $d_{8,\text{mean}} = D/8$ [mm]

 $d_{8,\text{mean,corr}}$ $d_{8,\text{mean}} = \alpha \cdot d_{8,\text{mean}}$ [mm]; α : SAT-depot-sites correction factor [Störchle2018]

 d_{SKIN} Skin thickness at a given measurement site

 d_{UA} , d_{LA} ,... SAT thicknesses at the eight measurement sites (UA, LA, ..., BR)

Δ Difference to another value

h Stature [m]

k Body shape weighting exponent (used to define the MI-equation)leg length / [m]: distance from floor to the bony landmark ASIS

 I^* leg length I^* : calculated as $I^*=h-s$ [m]

m Body mass [kg] m_{SAT} SAT-mass [kg]

 $m_{SAT,\%}$ SAT-mass in percent of m

MI Mass index $MI = S_R \ m/(hs) \ [kgm^{-2}];$ notation: $MI \equiv MI_1$ [Müller2025] MI_L Mass index $MI_L = ml/(S_L h^3) \ [kgm^{-2}];$ [Müller2025] MI_{L^*} Mass index $MI_{L_*} = ml/(S_{L_*} h^3) \ [kgm^{-2}];$ [Müller2025]

ρ density (of SAT: ρ_{SAT})s Sitting height [m]

S sitting height index (Cormic index): S=s/h,

 S_R Reference value of S; $S_{R,M}$ =0.525, $S_{R,F}$ =0.530 [Müller 2024]

Σ Sum of values

Thigh girth (measured at FT)

U Upper body girth (underneath the armpit, at mid-tidal expiration)

W Waist girth

W/h Waist-to-stature ratio

Statistics:

ABS Absolute value of a number

LOA Limit of agreement

MEAN Mean value

N Number of values; number of participants in a group

p% Percentile, p50%=MEDIAN R² Coefficient of determination

ρ Spearman's rank-order correlation coefficient (Spearman's rho)

SD Standard deviation

SEE Standard error of estimate

Note: In Excel-tables of NISOS-BCA software exports, indices are indicated by an underscore ("_")