Article published in Human Biology 84(2) : 127-137 (2012) following peer review. The definitive publisher-authenticated version is available from Wayne State University Pres https://doi.org/10.3378/027.084.0202

Table 1. Descriptive statistics of anthropometric phenotypes for the parental generation

Phenotypes	Fathers	Mothers
Stature (cm)	175.1 (6.6)	160.9 (5.7)
Humerus B (cm)	6.84 (0.3)	5.9 (0.3)
Femur B (cm)	9.8 (0.5)	8.8 (0.4)
Weight (kg)	80.9 (11.7)	61.0 (8.8)
Upper arm rel. C (cm)	31.2 (2.6)	27.9 (2.8)
Upper arm cont. C (cm)	33.0 (2.6)	29.0 (2.8)
Waist C (cm)	92.0 (9.2)	75.6 (7.7)
Hip C (cm)	100.2 (6.1)	98.4 (6.9)
Calf C (cm)	38.4 (2.6)	35.9 (2.4)
Biceps SK (mm)	10.3 (4.7)	14.8 (6.2)
Triceps SK (mm)	13.2 (5.1)	23.2 (7.3)
Subscapular SK (mm)	24.5 (8.5)	21.1 (8.5)
Suprailiac SK (mm)	20.2 (8.2)	17.2 (9.2)
Abdominal SK (mm)	34.2 (9.7)	26.0 (9.5)
Calf SK (mm)	14.8 (6.5)	22.6 (7.2)
SK3T (mm)	78.9 (23.7)	64.4 (25.5)
SK3E (mm)	38.2 (14.3)	60.7 (19.0)
BMI (kg/m^2)	26.3 (3.1)	23.6 (3.2)
WHR	0.92 (0.06)	0.77 (0.05)
TER	2.17 (0.56)	1.07 (0.30)
Endomorphy	5.39 (1.47)	6.02 (1.73)
Mesomorphy	5.24 (1.01)	4.22 (1.00)
Ectomorphy	1.37 (0.95)	1.64 (1.00)

Data are given in mean (standard deviation). N, number of individuals; B, breadth; C, circumference; SK, skinfold; SK3T, Sum of truncal skinfolds; SK3E, Sum of extremity skinfolds; BMI, Body mass index; WHR, Waist to hip ratio; TER, Trunk to extremity skinfold ratio.

Table 2. Factor analysis of circumference and skinfold variables.

Circumferences	Factor loadings	Skinfolds	Factor loadings
Upper arm (rel.)	0.984	Biceps	0.898
Upper arm (cont.)	0.986	Triceps	0.844
Waist	0.946	Subscapular	0.840
Hip	0.964	Suprailiac	0.909
Calf	0.964	Abdominal	0.857
		Calf	0.793
Eigenvalue	4.69		4.41
Percent of total variance (%)	93.89		73.54

Table 3. Narrow sense heritability estimates (h^2) and associated standard errors (S.E.) for the studied anthropometric phenotypes

Phenotypes	Heritability ± S.E.[a]
Stature	0.69 ± 0.04
Weight*	0.53 ± 0.05
Upper arm C	0.44 ± 0.05
Waist C	0.39 ± 0.05
Hip C	0.47 ± 0.05
Calf C	0.52 ± 0.05
CRsF	0.47 ± 0.05
Biceps SK	0.41 ± 0.05
Triceps SK	0.45 ± 0.05
Subscapular SK*	0.35 ± 0.05
Suprailiac SK	0.37 ± 0.05
Abdominal SK	0.34 ± 0.05
Calf SK	0.50 ± 0.05
SK3T	0.36 ± 0.05
SK3E	0.47 ± 0.05
SKsF	0.41 ± 0.05
BMI	0.44 ± 0.05
WHR	0.28 ± 0.05
TER	0.41 ± 0.05
Endomorphy	0.38 ± 0.05
Mesomorphy	0.59 ± 0.05
Ectomorphy	0.45 ± 0.05

* log-transformed. [a] All estimates were significant at level $P<0.0001$.

Table 4. Genetic (upper triangle) and environmental (lower triangle) correlation matrices among the studied phenotypes

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1 Stature		.70[a]	.27[b]	.36[a]	.53[a]	.46[a]	.41[a]	.12	.11	.19[d]	.21[c]	.22[c]	.18[c]	.21[c]	.14[d]	.18[d]	.12	-.28[b]	.16[d]	.07	-.31[a]	.27[a]
2 Weight	.48[a]		.82[a]	.84[a]	.94[a]	.86[a]	.92[a]	.60[a]	.58[a]	.63[a]	.70[a]	.69[a]	.56[a]	.71[a]	.61[a]	.69[a]	.80[a]	-.11	.29[b]	.62[a]	.34[a]	-.49[a]
3 Upper arm C	.25[b]	.85[a]		.82[a]	.84[a]	.78[a]	.96[a]	.72[a]	.72[a]	.68[a]	.78[a]	.74[a]	.58[a]	.78[a]	.71[a]	.72[a]	.92[a]	.06	.21[d]	.77[a]	.64[a]	-.76[a]
4 Waist C	.25[b]	.87[a]	.75[a]		.85[a]	.70[a]	.90[a]	.67[a]	.60[a]	.76[a]	.82[a]	.85[a]	.50[a]	.80[a]	.62[a]	.84[a]	.87[a]	.40[b]	.44[a]	.77[a]	.46[a]	-.66[a]
5 Hip C	.46[a]	.90[a]	.78[a]	.78[a]		.80[a]	.93[a]	.69[a]	.63[a]	.70[a]	.78[a]	.76[a]	.60[a]	.79[a]	.67[a]	.76[a]	.85[a]	-.18	.32[a]	.72[a]	.41[a]	-.58[a]
6 Calf C	.40[a]	.80[a]	.68[a]	.65[a]	.76[a]		.87[a]	.51[a]	.50[a]	.47[a]	.54[a]	.51[a]	.58[a]	.53[a]	.55[a]	.57[a]	.79[a]	-.13	.08	.50[a]	.58[a]	-.64[a]
7 CRsF	.34[a]	.95[a]	.93[a]	.87[a]	.90[a]	.82[a]		.70[a]	.67[a]	.71[a]	.79[a]	.76[a]	.59[a]	.80[a]	.69[a]	.78[a]	.93[a]	.05	.29[c]	.75[a]	.60[a]	-.70[a]
8 Biceps SK	.16[d]	.69[a]	.75[a]	.69[a]	.65[a]	.58[a]	.76[a]		.92[a]	.68[a]	.79[a]	.78[a]	.73[a]	.80[a]	.92[a]	.93[a]	.72[a]	.16	-.11	.89[a]	.38[a]	-.60[a]
9 Triceps SK	.11	.65[a]	.72[a]	.61[a]	.68[a]	.59[a]	.72[a]	.80[a]		.65[a]	.75[a]	.73[a]	.83[a]	.75[a]	.97[a]	.93[a]	.69[a]	.06	-.22[d]	.89[a]	.35[a]	-.58[a]
10 Subscapular SK	.14[d]	.73[a]	.75[a]	.74[a]	.69[a]	.59[a]	.77[a]	.77[a]	.73[a]		.77[a]	.78[a]	.42[a]	.89[a]	.61[a]	.79[a]	.71[a]	.23[d]	.46[a]	.87[a]	.30[b]	-.54[a]
11 Suprailiac SK	.08	.70[a]	.72[a]	.75[a]	.65[a]	.56[a]	.74[a]	.78[a]	.74[a]	.77[a]		.94[a]	.65[a]	.96[a]	.77[a]	.92[a]	.81[a]	.18	.35[c]	.94[a]	.34[b]	-.61[a]
12 Abdominal SK	.10	.72[a]	.74[a]	.73[a]	.65[a]	.58[a]	.75[a]	.79[a]	.74[a]	.82[a]	.85[a]		.56[a]	.97[a]	.80[a]	.84[a]	.77[a]	.27[d]	.42[b]	.90[a]	.33[b]	-.62[a]
13 Calf SK	.09	.63[a]	.67[a]	.62[a]	.63[a]	.61[a]	.69[a]	.73[a]	.72[a]	.71[a]	.69[a]	.75[a]		.58[a]	.92[a]	.82[a]	.62[a]	-.04	-.39[a]	.91[a]	.23[c]	-.50[a]
14 SK3T	.11	.76[a]	.77[a]	.85[a]	.70[a]	.61[a]	.80[a]	.83[a]	.78[a]	.89[a]	.95[a]	.95[a]	.75[a]		.74[a]	.92[a]	.82[a]	.23	.68[a]	.95[a]	.35[a]	-.61[a]
15 SK3E	.13	.71[a]	.77[a]	.70[a]	.72[a]	.64[a]	.79[a]	.92[a]	.92[a]	.80[a]	.80[a]	.78[a]	.90[a]	.86[a]		.94[a]	.60[a]	.07	-.27[c]	.87[a]	.33[a]	-.59[a]
16 SKsF	.12	.77[a]	.79[a]	.79[a]	.75[a]	.65[a]	.83[a]	.91[a]	.87[a]	.88[a]	.91[a]	.92[a]	.84[a]	.97[a]	.96[a]		.81[a]	.15	.05	.97[a]	.36[a]	-.64[a]
17 BMI	.16[d]	.92[a]	.85[a]	.89[a]	.85[a]	.77[a]	.94[a]	.72[a]	.70[a]	.77[a]	.77[a]	.77[a]	.69[a]	.83[a]	.79[a]	.84[a]		.14	.27[c]	.80[a]	.74[a]	-.89[a]
18 WHR	-.23[b]	.21[b]	.15[c]	.54[a]	-.01	-.13	.05	.16[c]	.06	.25[a]	.32[a]	.27[a]	.10	.33[a]	.12[d]	.25[a]	.31[a]		.31[c]	.23[d]	.18	-.24[a]
19 TER	.11	.42[a]	.45[a]	.48[a]	.32[a]	.31[a]	.42[a]	.33[a]	.25[a]	.59[a]	.60[a]	.63[a]	.24[a]	.56[a]	.28[a]	.47[a]	.46[a]	.20[b]		.18	.10	-.16
20 Endomorphy	.04	.73[a]	.77[a]	.75[a]	.70[a]	.60[a]	.79[a]	.83[a]	.86[a]	.93[a]	.90[a]	.88[a]	.74[a]	.95[a]	.88[a]	.95[a]	.81[a]	.25[a]	.56[a]		.40[a]	-.65[a]
21 Mesomorphy	.12	.66[a]	.78[a]	.63[a]	.58[a]	.69[a]	.79[a]	.57[a]	.56[a]	.63[a]	.61[a]	.62[a]	.56[a]	.65[a]	.61[a]	.66[a]	.80[a]	.22[b]	.39[a]	.67[a]		-.83[a]
22 Ectomorphy	.06	-.77[a]	-.77[a]	-.77[a]	-.71[a]	-.64[a]	-.82[a]	-.68[a]	-.67[a]	-.78[a]	-.75[a]	-.77[a]	-.68[a]	-.81[a]	-.74[a]	-.81[a]	-.89[a]	-.30[a]	-.48[a]	-.84[a]	-.80[a]	

Estimate is significant at: [a]($P<0.0001$), [b]($P<0.001$), [c]($P<0.01$), [d]($P<0.05$).