Supporting Information

Table S1: REE estimation equations listed in Table 5.

Author (REE unit) **Sex**	**Estimation equation**
Bernstein (kcal)	
F	(W x 7.47) - (h x 0.42) - (A x 3.0) + 844
M	(W x 11.02) + (h x 10.23) - (A x 5.8) - 1032
Black (MJ)	
F	$0.963 \times W^{0.48} \times H^{0.50} \times A^{-0.13}$
M	$1.083 \times W^{0.48} \times H^{0.50} \times A^{-0.13}$
BMI (kcal) (Harrington et al)	
F	(BMI x 28.15) - (A x 6.44) + 905
M	(BMI x 28.15) - (A x 6.44) + 1290
De Lorenzo (kJ)	
F	(W x 46.322) + (h x 15.744) - (A x 16.66) + 944
M	(W x 53.284) + (h x 20.957) – (A x 23.859) + 487
Harris Benedict, 1919 (kcal)	
F	(W x 9.5634) + (h x 1.8496) - (A x 4.6756) + 655.0955
M	(W x 13.7516)+ (h x 5.0033) - (A x 6.755) + 66.475
Harris Benedict, 1984 (kcal)	
F	(W x 9.247) + (h x 3.098) - (A x 4.330) + 477.593
M	(W x 13.397) + (h x 4.799) - (A x 5.677) + 88.362
Henry (W, H, A; MJ)	
F	18-30y: (W x 0.0433) + (H x 2.57) - 1.18 30-60y: (W x 0.0342) + (H x 2.1) - 0.0486
M	18-30y: (W x 0.06) + (H x 1.31) + 0.473 30-60y: (W x 0.0476) + (H x 2.26) - 0.574
Henry (W, A; MJ)	
F	18-30y: (W x 0.0546) + 2.33 30-60y: (W x 0.0407) + 2.9
M	18-30y: (W x 0.0669) + 2.28 30-60y: (W x 0.0592) + 2.48
Huang et al (kcal)	
F	(W x 10.158) + (h x 3.933) - (A x 1.44) + 60.655
M	(W x 10.158) + (h x 3.933) - (A x 1.44) + 273.821 + 60.655
Korth (kJ)	
F	(W x 41.5) + (h x 35.0) - (A x 19.1) - 1731.2
M	(W x 41.5) + (h x 35.0) + 1107.4 – (A x 19.1) - 1731.2
Lazzer (MJ)	
F	(W x 0.042) + (H x 3.619) - 2.678
M	(W x 0.048) + (H x 4.655) – (A x 0.020) - 3.605
Livingston & Kohlstadt (kcal)	
F	$(W^{0.4356} \times 248) - (A \times 5.09)$
M	$(W^{0.4330} \times 293) - (A \times 5.92)$
Mifflin-St.Jeor et al (kcal)	
F	(W x 9.99) + (h x 6.2) - (A x 4.92) - 161
M	(W x 9.99) + (h x 6.2) - (A x 4.92) + 5
Müller (W, A; MJ)	
F	(W x 0.047) + (A x 0.01452) + 3.21
M	(W x 0.047) + 1.009 + (A x 0.01452) + 3.21
Müller (BMI; MJ)	
F	BMI ≤ 18.5: (W x 0.07122) - (A x 0.02149) + 0.731 BMI > 18.5-25: (W x 0.02219) + (h x 0.02118) - (A x 0.01191) + 1.233 BMI > 25-30: (W x 0.04507) - (A x 0.01553) + 3.407 BMI ≥ 30: (W x 0.05) - (A x 0.01586) + 2.924

M	BMI ≤ 18.5: (W x 0.07122) - (A x 0.02149) + 0.82 + 0.731 BMI > 18.5-25: (W x 0.02219) + (h x 0.02118) + 0.884 - (A x 0.01191) + 1.233 BMI > 25-30: (W x 0.04507) + 1.006 - (A x 0.01553) + 3.407 BMI ≥ 30: (W x 0.05) + 1.103 - (A x 0.01586) + 2.924
Owen et al (kcal)	
F	(W x 7.18) + 795
M	(W x 10.20) + 879
Schofield (WHO) (kcal)	
F	18-30y: (W x 0.062) + 2.036 30-60y: (W x 0.034) + 3.538
M	18-30y: (W x 0.063) + 2.896 30-60y : (W x 0.048) + 3.653
Schofield (W, H, A; kcal)	
F	18-30y: (W x 0.057) + (H x 1.148) + 0.411 30-60y: (W x 0.034) + (H x 0.006) + 3.53
M	18-30y: (W x 0.063) - (H x 0.042) + 2.953 30-60y: (W x 0.048) - (H x 0.011) + 3.67
WHO / FAO (W, A; kcal)	
F	18-30y: (W x 14.7) + 496 30-60y: (W x 8.7) + 829
M	18-30y: (W x 15.3) + 679 30-60y: (W x 11.6) + 879
WHO / FAO (W, H, A; kcal)	
F	18-30y: (W x 13.3) + (H x 334) + 35 30-60y: (W x 8.7) - (H x 25) + 865
M	18-30y: (W x 15.4) - (H x 27) + 717 30-60y: (W x 11.3) - (H x 16) + 901
Bernstein (Body composition; kcal)	(FFM x 19.02) + (FM x 3.72) - (A x 1.55) + 236.7
Cunningham (Body composition; kcal)	(FFM x 21.6) + 370
Huang et al (Body composition; kcal)	
F	(FFM x 14.118) + (FM x 9.367) - (A x 1.515) + 521.995
M	(FFM x 14.118) + (FM x 9.367) - (A x 1.515) + 220.863 + 521.995
Johnstone et al (Body composition; kJ)	(FFM x 90.2) + (FM x 31.6) - (A x 12.2) + 1613
Korth (Body composition; kJ)	(FFM x 108.1) + 1231
Lazzer (Body composition; MJ)	
F	(FFM x 0.067) + (FM x 0.046) + 1.568
M	(FFM x 0.081) + (FM x 0.049) – (A x 0.019) - 2.194
Mifflin-St.Jeor et al (Body composition; kcal)	(FFM x 19.7) + 413
Müller (Body composition; MJ)	
F	(FFM x 0.05192) + (FM x 0.04036) + (A x 0.01181) + 2.992
M	(FFM x 0.05192) + (FM x 0.04036) + 0.869 + (A x 0.01181) + 2.992
Müller (Body composition & BMI; MJ)	
F	BMI ≤ 18.5: (FFM x 0.08961) + (FM x 0.05662) + 0.667 BMI > 18.5-25: (FFM x 0.0455) + (FM x 0.0278) - (A x 0.01291) + 3.634 BMI > 25-30: (FFM x 0.03776) + (FM x 0.03013) - (A x 0.01196) + 3.928 BMI ≥ 30: (FFM x 0.05685) + (FM x 0.04022) - (A x 0.01402) + 2.818
M	BMI ≤ 18.5: (FFM x 0.08961) + (FM x 0.05662) + 0.667 BMI > 18.5-25: (FFM x 0.0455) + (FM x 0.0278) + 0.879 - (A x 0.01291) + 3.634 BMI > 25-30: (FFM x 0.03776) + (FM x 0.03013) + 0.93 - (A x 0.01196) + 3.928 BMI ≥ 30: (FFM x 0.05685) + (FM x 0.04022) + 0.808 - (A x

	0.01402) + 2.818
Owen et al (Body composition; kcal) F	(FFM x 19.7) + 334
M	(FFM x 22.3) + 290

A age in years, *BMI* body mass index, *F* female, *FFM* fat-free mass, *FM* fat mass, *H* height in m, *h* height in cm, *kcal* kilocalories, *kJ* kilojoule, *M* male, *MJ* megajoule, *REE* resting energy expenditure

Table S2: References for REE estimation equations listed in Table 5 and Table S1.

S1. Bernstein RS, Thornton JC, Yang MU, Wang J, Redmond AM, Pierson RN Jr *et al*. Prediction of the resting metabolic rate in obese patients. *Am J Clin Nutr* 1983; **37**(4): 595-602.

S2. Black AE, Coward WA, Cole TJ, Prentice AM. Human energy expenditure in affluent societies: analysis of 574 doubly-labelled water measurements. *Eur J Clin Nutr* 1996; **50**: 72-92.

S3. Harrington ME, St Jeor ST, Silverstein LJ. Predicting resting energy expenditure from body mass index: practical applications and limitations: annual conference proceedings, North American Association for the Study of Obesity. *J Obesity Res* 1997; (Suppl): AO66 (abstract).

S4. De Lorenzo A, Tabliabue A, Andreoli A, Testolin G, Comelli M, Deurenberg P. Measured and predicted resting metabolic rate in Italian males and females, aged 18-59 y. *Eur J Clin Nutr* 2001; **55**: 208-214.

S5. Harris JA, Benedict FG. *A biometric study of basal metabolism in man.* Publication no.279. Carnegie Institute of Washington: Washington, DC, 1919.

S6. Roza AM, Shizgal HM. The Harris Benedict equation reevaluated: resting energy requirements and the body cell mass. *Am J Clin Nutr* 1984; **40**: 168-182.

S7. Henry CJK. Basal metabolic rate studies in humans: measurement and development of new equations. *Public Health Nutr* 2005; **8**: 1133-1152.

S8. Huang KC, Kormas N, Steinbeck K, Loughnan G, Caterson ID. Resting metabolic rate in severely obese diabetic and nondiabetic subjects. *Obes Res* 2004; **12**: 840-845.

S9. Korth O, Bosy-Westphal A, Zschoche P, Glüer CC, Heller M, Müller MJ. Influence of methods used in body composition analysis on the prediction of resting energy expenditure. *Eur J Clin Nutr* 2007; **61**(5): 582-589.

S10. Lazzer S, Agosti F, Resnik M Marazzi N, Mornati D, Sartorio A. Prediction of resting energy expenditure in severely obese Italian males. *J Endocrinol Invest* 2007; **30**: 754-761.

S11. Lazzer S, Agosti F, Silvestri P, Derumeaux-Burel H, Sartorio A. Prediction of resting energy expenditure in severely obese Italian women. *J Endocrinol Invest* 2007; **30**(1): 20-27.

S12. Livingston EH, Kohlstadt I. Simplified resting metabolic rate – predicting formulas for normal-sized and obese individuals. *Obes Res* 2005; **13**: 1255-1262.

S13. Mifflin MD, St Jeor ST, Hill LA, Scott BJ, Daugherty SA, Koh YO. A new predictive equation for resting energy expenditure in healthy individuals. *Am J Clin Nutr* 1990; **51**: 241-247.

S14. Müller MJ, Bosy-Westphal A, Klaus S, Kreymann G, Luhrmann PM, Neuhauser-Berthold M *et al*. World Health Organization equations have shortcomings for predicting resting energy expenditure in persons form a modern, affluent population: generation of a new reference standard from retrospective analysis of a German database of resting energy expenditure. *Am J Clin Nutr* 2004; **80**: 1379-1390.

S15. Owen OE, Holup JL, D'Alessio DA, Craig ES, Polansky M, Smalley JK *et al*. A reappraisal of the caloric requirements of men. *Am J Clin Nutr* 1987; **46**: 875-885.

S16. Owen OE, Kavle E, Owen RS, Polansky M, Caprio S, Mozzoli MA *et al*. A reappraisal of caloric requirements in healthy women. *Am J Clin Nutr* 1986; **44**: 1-19.

S17. Schofield WN. Predicting basal metabolic rate, new standards and review of previous work. *Hum Nutr Clin Nutr* 1985; **39C**: 5-41.

S18. Food and Agricultural Organization/World Health Organization/United Nations University. *Energy and Protein Requirements.* Report of a Joint FAO/WHO/UNU Expert Consultation World Health Organization Technical Report Series 724. WHO: Geneva, Switzerland, 1985.

S19. Cunningham JJ. Body Composition as a determinant of energy expenditure: a synthetic review and a proposed general prediction equation. *Am J Clin Nutr* 1991; **54**: 963-969.

S20. Johnstone AM, Rance KA, Murison SD, Duncan JS, Speakman JR. Additional anthropometric measures may improve the predictability of basal metabolic rate in adults subjects. *Eur J Clin Nutr* 2006; **60**: 1437-1444.