Table S1: Resting energy expenditure predictive equations.

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| **Reference** | **Participants** | **Statistics and cross-validation** | **REE predictive equations** |
| Harris & Benedict (1919) | N=239 (136M, 103F), 21-70 y, 25-124.9 kg, 150-200 cm | M: r = 0.86. CL =211  F: r = 0.77. CL = 212 | M: WT\*13.7516+HTCM\*5.0033 –AGE\*6.755+66.473  F: WT\*9.5634+HTCM\*1.8496-AGE\*4.6756+655.0955 |
| Roza et al.  (1984) | N=337 (168M, 169F), 21-70 years, 25-124.9 kg, 150-200 cm | M: r = 0.86. CL = 213  F: r = 0.83. CL = 201 | M: 13.397\*WT+4.799\*HTCM–5.677\*AGE+88.362  F: 9.247\*WT+3.098\*HTCM–4.33\*AGE+477.593 |
| Bernstein et al. (1983) | N=202 (48 M, 154 F); 28-52 y, 60-204 kg, 157-182cm, BMI>30 | M: R2=0.449  F: R2=0.657  R2=0.485 | M: 11.02\*WT+10.23\*HTCM-5.8\*AGE-1032  F: 7.48\*WT-0.42\*HTCM-3\*AGE+844  19.02\*FFM+3.72\*FM-1.55\*AGE+236.7 |
| Owen et al.  (1986) | N=104 (60 M, 44 F), 18–82 y, 60-171 kg (M) 43-153 kg (F), BMI 18–50 | M: R2=0.71  F: R2=0.74  M: R2=0.74  F: R2=0.71 | M: WT\*10.2+879  F: WT\*7.18+795  M: 22.3\*FFM+290  F: 19.7\*FFM+334 |
| Mifflin et al.  (1990) | N=498 (251 M, 248 F), N=264 normal weight (129 M, 135 F), N=234 obese (122 M, 112 F), 19–78 y, BMI 17–42 | R2= 0.71  R2= 0.64 | 9.99\*WT+6.25\*HTCM-4.92\*AGE+166\*SEX–161  19.7\*FFM+413 |
| Livingston & Kohlstadt  (2005) | N=655 (299 M, 356 F), 18–95 y, 33–  278 kg | M: R2= 0.77  F: R2= 0.71 | M: 293\*WT0.4330– 5.92\*AGE  F: 248\*WT0.4356–5.09\* AGE |
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| Schofield et al.  (1985) | N=7173, N=4814>18 y, BMI 21–24  N= 3388 Italians (47%), N=615 tropical residents, N= 322 Indian  114 published studies, N=7173 subjects (11 000 values, includes group mean values); most European and North American subjects | *r* = 0.65. SE = 0.64; *n* = 2879  *r* = 0.73. SE = 0.49; *n* = 829  *r* = 0.65. SE = 0.64; *n* = 2879  *r* = 0.73. SE = 0.49; *n* = 829 | M: AGE 18–30 y: 0.063\*WT+2.896  F: AGE 18–30 y: 0.062\*WT+2.036  M: AGE 18–30 y: 0.063\*WT–0.042\*HTM+2.953  F: AGE 18–30 y: 0.057\*WT+1.148\*HTM+0.411 |
| FAO  (1985) | Equation based on Schofield et al (1985);  database extended to 11 000 subjects | *r* = 0.65. SD = 151  *r* = 0.72. SD = 121  *r* = 0.65. RSD = 151  *r* = 0.73. RSD = 120 | M: AGE 18–30 y: 15.3\*WT+679  F: AGE 18–30 y: 14.7\*WT+496  M: AGE 18–30 y: 15.4\*WT–27\*HTM+717  F: AGE 18–30 y: 13.3\*WT+334\*HTM+35 |
| Henry et al.  (2005) | N=10552 (5794 M, 4702 F) | *r* = 0.760. SE = 0.652; *n* =2821  *r* = 0.700. SE = 0.564; *n* =1664  *r* = 0.764. SE = 0.645; *n* =2816  *r* = 0.724. SE = 0.542; *n* =1655 | M: AGE 18–30 y: 0.0669\*WT+2.28  F: AGE 18–30 y: 0.0546\*WT+2.33  M: AGE 18–30 y: 0.06\*WT+1.31\*HTM+0.473  F: AGE 18–30 y: 0.0433\*WT+2.5\* HTM+1.18 |
| Muller et al.  (2004) | N=2528 (1027 M, 1501 F), 5–80 y; BMI >25 | r=0.83 | 0.047\*WT– 0.01452\*AGE+1.009\*SEX 3.21 |
| r=0.79 | BMI 25–30: 0.04507\*WT-0.01553\*AGE+1.006\*SEX+3.407 |
| r=0.84 | BMI >30: 0.05\*WT-0.01586\*AGE+1.103\*SEX+2.924 |
| r=0.83 | 0.05192\*FFM+0.04036\*FM+0.869\*SEX-0.01181\*AGE+2.992 |
| r=0.79 | BMI 25–30: 0.03776\*FFM+0.03013\*FM+0.93\*SEX-0.01196\*AGE+3.928 |
| r=0.84 | BMI >30: 0.05685\*FFM+0.04022\*FM+0.808\*SEX-0.01402\*AGE+2.818 |
| Korth et al.  (2007) | N=104 (50 M, 54 F), 21–68 y, BMI 18-41 | *r* = 0.84. *R*2= 0.71. SE = 788 | 41.5\*WT+35.0\*HTCM+1107.4\*SEX-19.1\*AGE-1731.2 |
| *r* = 0.86. *R*2= 0.74. SE = 732 | 108.1\*FFM+1231 |
| De Lorenzo et al. (2001) | N=320 (127 M, 193 F), 18–59 y, BMI 17–40 | M: R2=0.597. SE=650 | M: 53.284\*WT+20.957\*HTCM–23.859\*AGE+487 |
| F: R2=0.597. SE=581 | F: 46.322\*WT+15.744\*HTCM–16.66\*AGE+944 |
| Lazzer et al.  (2007) | N= 346 (164 M, 182 F), 20–65 y, mean BMI 45 (50% FM) | M: R2=0.68. SE=1.14 | M: 0.048\*WT+4.655\*HTM-0.020\*AGE-3.605 |
| F: R2=0.66. SE=0.56 | F: 0.042\*WT+3.619\*HTM-2.678 |
| Johnstone et al.  (2006) | N=150 (43 M, 107 F), 21–64 y, BMI 17–49 | R2=0.774 | 90.2\*FFM+31.6\*FM-12.2\*AGE+1613 |
| Weijs & Vansant (2010) | N=536 F, >19 y, >28 BMI | R2 = 0.69. SEE = 204 | WT\*14.038+HTCM\*4.498+SEX\*137.566−AGE\*0.977−221.631 |
| Frankenfield  (2015) | N=337, >18 y | R2=0.84 | Obese: WT\*10−AGE\*5+SEX\*274+865  Non-obese: WT\*11-AGE\*6+SEX\*230+838  Obese: WT\*10+HTCM\*3−AGE\*5+SEX\*244+440  Non-obese: WT\*10+HTCM\*3−AGE\*5+SEX\*207+454 |
| De la Cruz et al.  (2014) | N=134 (67 M, 67 F), 19-65y | R2=0.68 | 1376.4–308SEX\*\*\*+11.1\*WT–8\*AGE |
| Willis et al.  (2015) | N=159, 18-30y, 30.7 BMI mean | R2=0.77 | 11.2\*WT−7.2\*AGE+237.6\*SEX+780.3 |
| De Luis et al.  (2006) | N=200 (60 M, 140 F), >20y, >30 BMI. | M: R2=0.70  F: R2=0.70 | M: 58.6+(6.1\*WT)+(1023.7\*HTM)–(9.5\*AGE)  F: 1272.5+(9.8\*WT)–(61.6\*HTM)–(8.2\*AGE) |

Abbreviations: M, male; F, female; y, years old; kg, kilograms; cm, centimeters; BMI, body mass index; WT, weight; HTCM, height in centimeters; FFM, fat free mass; FM, fat mass; HTM, height in meters; \*\*\*Female\*1, male\*0.