Fat-Free Mass and Total Daily Energy Expenditure Estimated using Doubly Labelled Water Predict Energy Intake in a Large Sample of Community-Dwelling Older Adults

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Online Supplementary Materials

Supplementary Table 2: Regression coefficients showing the effects of age, sex, fat and fat-free mass indexes, physical activity and total daily energy expenditure on self-reported total daily energy intake when estimated from a single 24hr recall (Models 1-3), the mean of six recalls (Models 4-6), and after removal of individuals classified as under-reporters (Models 7-12).

WHOLE SAMPLE												
EI_{single} (n = 586)	**Model 1 Adj R^2 = 0.08**				**Model 2 Adj R^2 = 0. 09**				**Model 3 Adj R^2 = 0.10**			
	Estimate	**SE**	***ß***	**P value**	**Estimate**	**SE**	***ß***	**P value**	**Estimate**	**SE**	***ß***	**P value**
Predictor												
Intercept	1277.2	478.8	-	0.008	905.1	512.3	-	0.240	767.8	509.6	-	0.132
Age (yrs)	-1.6	5.6	-0.01	0.782	0.252	5.7	0.002	0.965	2.1	5.6	0.02	0.706
Sex	**214.0**	**99.8**	**0.13**	**0.032**	**227.8**	**99.8**	**0.14**	**0.022**	141.8	102.3	0.09	0.166
FMI (kg/m^2)	-17.8	10.5	-0.08	0.090	-14.4	10.6	-0.06	0.176	-13.7	10.5	-0.06	0.192
FFMI (kg/m^2)	**59.7**	**19.3**	**0.19**	**0.002**	**61.6**	**19.2**	**0.19**	**0.001**	25.8	21.9	0.08	0.239
PA (CPM/D)					**0.3**	**0.1**	**0.08**	**0.045**	0.1	0.1	0.04	0.294
TDEE (kcal/day)									**0.3**	**0.1**	**0.20**	**>0.001**
EI_{mean} (n = 586)	**Model 4 Adj R^2 = 0.20**				**Model 5 Adj R^2 = 0.21**				**Model 6 Adj R^2 = 0.22**			
	Estimate	**SE**	***ß***	**P value**	**Estimate**	**SE**	***ß***	**P value**	**Estimate**	**SE**	***ß***	**P value**
Predictor												
Intercept	1225.9	330.2	-	<0.001	1036.0	353.8	-	0.004	926.4	350.9	-	0.009
Age (yrs)	-3.6	3.9	-0.04	0.352	-2.7	3.9	-0.03	0.487	-1.2	3.9	-0.01	0.761
Sex	**251.5**	**68.8**	**0.21**	**<0.001**	**258.5**	**68.9**	**0.22**	**<0.001**	**189.9**	**70.4**	**0.16**	**0.007**
FMI (kg/m^2)	-13.9	7.2	-0.09	0.054	-12.2	7.3	-0.08	0.132	-11.7	7.2	-0.07	0.106
FFMI (kg/m^2)	**67.3**	**13.3**	**0.28**	**<0.001**	**68.3**	**13.3**	**0.29**	**<0.001**	**39.7**	**15.1**	**0.17**	**0.009**
PA (CPM/D)					**0.1**	0.1	0.06	0.139	0.1	0.1	0.02	0.686
TDEE (kcal/day)									**0.3**	**0.1**	**0.21**	**<0.001**

REMOVAL OF UNDER-REPORTERS												
EI_{mean} (n = 385)	**Model 7 Adj R^2 = 0.32**				**Model 8 Adj R^2 = 0.34**				**Model 9 Adj R^2 = 0.46**			
	Estimate	**SE**	***ß***	**P value**	**Estimate**	**SE**	***ß***	**P value**	**Estimate**	**SE**	***ß***	**P value**
Predictor												
Intercept	1096.5	365.5		0.003	625.9	386.5		0.106	300.3	349.3		0.390
Age (yrs)	**-9.6**	**4.2**	**-0.10**	**0.024**	-7.0	9.2	-0.07	0.079	-3.9	3.8	-0.04	0.313
Sex	114.2	78.9	0.10	0.149	153.3	78.8	0.13	0.052	-78.4	74.9	-0.07	0.296
FMI (kg/m^2)	-14.8	9.1	-0.09	0.105	-7.0	9.2	-0.04	0.446	-11.4	8.3	-0.07	0.171
FFMI (kg/m^2)	**116.5**	**15.5**	**0.50**	**<0.001**	**116.2**	**15.2**	**0.49**	**<0.001**	**45.6**	**15.6**	**0.19**	**0.004**
PA (CPM/D)					**0.4**	**0.1**	**0.15**	**<0.001**	0.1	0.1	0.02	0.692
TDEE (kcal/day)									**0.7**	**0.1**	**0.57**	**<0.001**

FMI; fat mass index (FM/height^2), FFMI; fat-free mass index (FFM/height^2), PA; physical activity, TDEE; total daily energy expenditure, CPM/D; counts per minute per day, EI_{single}; total daily energy intake estimated from a single dietary recall, EI_{mean}, total daily energy intake estimated from six dietary recalls. Linear regression used to examine the effects of age, sex, body composition, physical activity and total daily energy expenditure on daily energy intake. In Models 1-3 EI_{single} used as the dependent variable, with FMI and FFMI entered as independent variables in Model 1, FMI, FFMI and PA in Model 2, and FMI, FFMI, PA and TDEE in Model 3. The same models were repeated using EI_{mean} as the dependent variable (models 4-6), and following removal of under-reporters (models 7-9). Given their known effects on FFM, TDEE and EI, sex and age were included in all regression models.

As FM and FFM are positively correlated with height, it has been suggested that these values should be normalised for height as a proxy of body size (Wells et al., 2002). These indices, known as the fat-free mass index (FFMI; kg/m^2) and fat mass index (FMI; kg/m^2), provide relative fat-free and fat masses that can be compared between individuals independent of body size/height. We repeated the analyses presented in Table 2 of the main paper using FMI and FFMI as predictors, but the main outcomes of these models did not differ.