



UNIVERSITY OF LEEDS

This is a repository copy of *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*.

White Rose Research Online URL for this paper:

<https://eprints.whiterose.ac.uk/181930/>

Version: Supplemental Material

Article:

Hopkins, M orcid.org/0000-0002-7655-0215, Casanova, N, Finlayson, G orcid.org/0000-0002-5620-2256 et al. (2 more authors) (2021) 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. *The Journal of Nutrition*. ISSN 0022-3166

<https://doi.org/10.1093/jn/nxab434>

Reuse

Items deposited in White Rose Research Online are protected by copyright, with all rights reserved unless indicated otherwise. They may be downloaded and/or printed for private study, or other acts as permitted by national copyright laws. The publisher or other rights holders may allow further reproduction and re-use of the full text version. This is indicated by the licence information on the White Rose Research Online record for the item.

Takedown

If you consider content in White Rose Research Online to be in breach of UK law, please notify us by emailing eprints@whiterose.ac.uk including the URL of the record and the reason for the withdrawal request.



eprints@whiterose.ac.uk
<https://eprints.whiterose.ac.uk/>

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

M Hopkins

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	β	P value	Estimate	SE	β	P value	Estimate	SE	β	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	β	P value	Estimate	SE	β	P value	Estimate	SE	β	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	β	P value	Estimate	SE	β	P value	Estimate	SE	β	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/height²), FFMI; fat-free mass index (FFM/height²), 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/m²) and fat mass index (FMI; kg/m²), 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.