

Table S10
Discriminate validity of data obtained using physical activity questionnaires diaries

Participants		Instrument	Parameter (units)	Results	Statistic	Author
Group 1 N, age category	Group 2 N, age category					
Discriminate Validity (CF vs. non-CF)						
<i>Discriminate validity of questionnaires (CF vs. non-CF)</i>						
20 adults with CF	11 healthy controls	HAES	Time spent inactive and time spent in different intensity of activity (min/d)	p=NS	Kruskall-Wallis	Savi 2013 [A:2]
16 children with CF	99 healthy children	Past Year Activity Questionnaire	Time spent in activity (hr/d)	p=NS	Unpaired t-test	Kilbride 2012 [A:14]
			MET hr/d	p=NS		
40 children with CF	32 healthy children	PAQ-C	Activity score (units)	p=0.008 (CF higher)	Generalised estimating equation	Buntain 2006 [A:33]
45 adolescents with CF	68 healthy adolescents	PAQ-C	Activity score (units)	p=NS		
101 adults with CF	35 healthy adults	IPAQ	IPAQ total (MET-min/wk)	p=0.011 (CF lower)	MWUT	Rasekaba 2013 [A:38]
			Work (MET-min/wk)	p=0.003 (CF lower)		
			Transport(MET-min/wk)	p<0.001 (CF lower)		
			Domestic(MET-min/wk)	p=NS		
			Leisure(MET-min/wk)	p=NS		
			Walking(MET-min/wk)	p=0.004 (CF lower)		
			Moderate activity (MET-min/wk)	p=NS		
			Vigorous activity (MET-min/wk)	p=NS		
			Physical activity category Low	p=NS		
			Physical activity category Moderate	p<0.001 (CF more moderate activity)		
Physical activity category High	p<0.001 (CF less in high activity)					
53 children and	83 healthy children	PAQ-C	Activity score (units)	p=NS	Unpaired t-test	Buntain

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adolescents with CF	and adolescent					2004 [A:34]
43 children and adolescents with CF	70 healthy children and adolescent	PAQ-C	Time spent in physical activity (hrs)	p=NS		
43 children and adolescents with CF	70 healthy children and adolescent	PAQ-C	Ratio of physical/sedentary activity	p=NS		
22 adults with CF and low FFM	30 healthy adults	Physical Activity Status Questionnaire (Wilson et al 1986)	Energy expenditure Physical Activity Status (METs)	p<0.01 (CF lower)	Independent t-test	Enright 2007 [A:29]
18 adults with CF and normal FFM	30 healthy adults	Physical Activity Status Questionnaire (Wilson et al 1986)	Energy expenditure Physical Activity Status (METs)	p=NS		
30 children and adolescents with CF	30 healthy children and adolescents	Kriska's Modifiable Activity Questionnaire	Time spent in physical activity (mean hrs/wk)	p=NS	t-test, MWUT or Chi Square depending on data distribution	Nixon 2001 [A:28]
			Time spent in vigorous activity >6METs (mean hrs/wk)	p=0.014 (CF lower)		
			Relative intensity of physical activity (MET-hrs/wk)	p=NS		
<i>Discriminate validity of diaries (CF vs. non-CF)</i>						
70 pre-pubescents with CF	70 healthy pre-pubescents	Modified Bouchard Activity Diary	Energy expenditure (MJ/d)	Mild CF more active than healthy p<0.05	ANOVA	Selvadurai 2004 [A:13]
				Moderate to severe CF vs. healthy p=NS		
78 pubescents with CF	78 healthy pubescents	Modified Bouchard Activity Diary	Energy expenditure (MJ/d)	Mild CF more active than healthy p<0.05		
				Moderate to severe CF less active than healthy p<0.05		
Discriminate Validity (between groups of patients with CF who have different phenotype)						

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<i>Discriminate validity of questionnaires (between groups of patients with CF who have different phenotype)</i>						
101 adults with CF						
Male adults (n=56)	Female adults (n=45)	IPAQ	IPAQ total and domain scores (MET min/wk)	p=NS	MWUT	Rasekaba 2013 [A:38]
22 children and adolescents with CF						
13 males	9 females	Physical activity Questionnaire (Bobosa)	Time spent in physical activity (hrs/wk)	p=NS	Not available	Hafen 2013 [A:37]
41 adolescents and adults with CF						
Males	Females	HAES	Time spent in physical activity (min/d)	p=NS	t-test	Ruf 2012 [A:9]
59 children and adolescents with CF						
Completers of exercise programme (n=59)	Non-completers of exercise programme (n=13)	HAES	Time spent in moderate to vigorous activity (weekday) (%time)	p=NS	Wilcoxon	Paranjape 2012 [A:20]
			Time spent in moderate to vigorous activity (weekend) (%time)	p=NS		
Male (n=40)	Female (n=19)	Time spent in moderate to vigorous activity (weekday) (%time)	p=NS			
		Time spent in moderate to vigorous activity (weekend) (%time)	p=NS			
Non-responders (change in shuttles <10) (n=26)	Responders (change in shuttles ≥10) (n=30)	Time spent in moderate to vigorous activity (weekday) (%time)	p=NS			
		Time spent in moderate to vigorous activity (weekend) (%time)	Non-responders less improvement in activity than responders, p=0.03			
39 children and adolescents with CF						
BMD ≤-1SD	BMD >-1SD	Baecke Physical Activity	Total Physical Activity Score	p=NS	MWUT	Neri 2008 [A:25]
BMD ≤-2.5SD	BMD >-2.5SD		Total Physical Activity	p=NS		

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		Questionnaire	Score			
40 adults with CF					Independent t-test	Enright 2007 [A:29]
Low FFM (n=22)	Normal FFM (n=18)	Physical Activity Status Questionnaire (Wilson et al 1986)	Energy expenditure (METs)	Low FFM lower than normal FFM, p<0.01		
56 adults with CF					ANOVA	Ionescu 2003 [A:30]
Low FFM	Normal FFM	Physical Activity Status Questionnaire (Not reported see Wilson et al 1986)	Energy expenditure (METs)	Low FFM less active than normal FFM, p<0.05		
Mild lung impairment	Severe lung impairment		Energy expenditure (METs)	Severe less active than mild lung impairment, p<0.01		
Moderate lung impairment	Severe lung impairment		Energy expenditure (METs)	p=NS		
22 adults with CF					t-test	Ionescu 2000 [A:31]
Low FFM (n=12)	Normal FFM (n=10).	Physical Activity Status Questionnaire (Not reported see Wilson et al 1986)	Energy expenditure (METs)	Low FFM lower activity than normal FFM, p=0.001		
Males (n=11)	Females (n=11)	Physical Activity Status Questionnaire (Not reported see Wilson et al 1986)	Energy expenditure (METs)	p=NS		
30 children and adolescents with CF					t-test, MWUT or Chi Square depending on data distribution	Nixon 2001 [A:28]
FEV ₁ <80% predicted (n=10)	FEV ₁ ≥80% predicted (n=20)	Kriska's Modifiable Activity Questionnaire	Physical activity (mean hrs/wk)	p=NS		
			Relative intensity of physical activity (MET-hrs/wk)	p=NS		
			Vigorous activity >6METs (mean hrs/wk)	p=NS		
BMI<90%	BMI ≥90%	Kriska's	Physical activity (mean	p=NS		

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predicted (n=10)	predicted (n=20)	Modifiable Activity Questionnaire	hrs/wk			
			Relative intensity of physical activity (MET-hrs/wk)	p=NS		
			Vigorous activity >6METs (mean hrs/wk)	p=NS		
41 adolescents and adults with CF					t-test	Ruf 2012 [A:9]
Males	Females	7D-PAR	Time spent in physical activity (min/d)	p=NS		
16 adolescents with CF					MWUT	Baker and Wideman 2006 [A:36]
Males (n=8)	Females (n=8)	30-Day Physical Activity Recall Questionnaire (adapted from Sallis et al 1993 and Sallis et al 1996)	Light (<3METs) (MET-hrs/30 days)	p=NS		
			Moderate (3.0-5.9METs) (MET-hrs/30 days)	p=NS		
			Hard (6.0-8.9METs) (MET-hrs/30 days)	p=0.005		
			Very hard (≥9METs) (MET-hrs/30 days)	p=NS		
			Hard/very hard (6.0-≥9METs) (MET-hrs/30 days)	p=0.036		
			Total METs (MET-hrs/30 days)	p=NS		
<i>Discriminate validity of diaries (between groups of patients with CF who have different phenotype)</i>						
21 pre-pubescent males with CF		Modified Bouchard Activity Diary	Energy expenditure (MJ/d)	p=NS	ANOVA	Selvadurai 2004 [A:13]
14 PI	7 PS					
18 pre-pubescent females with CF				p=NS		
12 PI	6 PS					
18 pubescent males with CF				p=NS		

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12 PI	6 PS				
24 pubescent females with CF				p<0.05 PI less active than PS	
16 PI	8 PS				

Abbreviations: BMD=Bone mineral density; BMI=Body mass index; d=day; FEV₁=Forced expiratory volume in one second; FFM=fat free mass; HAES=Habitual Activity Estimation Scale; hrs=hours; IPAQ= International Physical Activity Questionnaire; MET=metabolic equivalent; min=minute; MJ=mega joule; MWUT=Mann-Whitney U Test; NS=not significant; PAQ-C=Physical Activity Questionnaire for Children; PI=pancreatic insufficiency; PS=pancreatic sufficiency; wk=week

Note 1: Only data reported in the original articles are recorded

Note 2: All references are listed in the online supplementary material reference list