

**Appendix 2** UK validation study results assessing validity of DATs in children / adolescents (0 to 18 years)

Validation author & year (& Tool author if different)	Reference method	Nutrient assessed & unit	No of participantss	Gender (age)	Dietary assessment tool (DAT)	Administration method	Mean difference (tool minus reference)	LOA
Lanigan <i>et al.</i> 2001	DLW	Energy (Kcal)	21	M & F (6 - 12M)	EFD	Parent	57	-331 to 445
Davies <i>et al.</i> 1994	DLW	Energy (Kcal)	81	M & F (1.5 - 4.5y)	WFD	Parent	-37	-513 to 439
Livingstone <i>et al.</i> 1992	DLW	Energy (Kcal)	58	M & F (7 - 18y)	WFD	Parent (children < 9 y, Children > 10 to 18y)	-351	-1747 to 1045
Livingstone <i>et al.</i> 1992	DLW	Energy (Kcal)	78	M & F (3 - 18y)	DH	Parent (children < 9 y, Children > 10 to 18y)	108	-734 to 951
Reilly <i>et al.</i> 2001 (Johnson)	DLW	Energy (Kcal)	41	M & F (3 - 4y)	MPR	Interviewer	158	-564 to 879
Montgomery <i>et al.</i> 2005 (Johnson)	DLW	Energy (Kcal)	63	M & F (4.5 - 7y)	MPR	Interviewer	60	-569 to 688
Johnson <i>et al.</i> 1996	DLW	Energy (Kcal)	24	M & F (4-7y)	MPR	Interiewer	-54	-1102 to 807
Lanigan <i>et al.</i> 2001	WFD	Energy (Kcal)	72	M & F (6 - 24m)	EFD	Parent	33	-299 to 364
Holmes <i>et al.</i> 2008	WFD	Energy (Kcal)	21	M (2 - 10y)	S-WFD	Parent	-172	-994 to 650
Holmes <i>et al.</i> 2008	WFD	Energy (Kcal)	23	F (2 - 10y)	S-WFD	Parent	-25	-1025 to 975
Holmes <i>et al.</i> 2008	WFD	Energy (Kcal)	19	M (11 -17y)	S-WFD	Self	1	-1259 to 1261
Holmes <i>et al.</i> 2008	WFD	Energy (Kcal)	11	F (11 -17y)	S-WFD	Self	-69	-895 to 757
Holmes <i>et al.</i> 2008	WFD	Energy (Kcal)	38	M (2 - 10y)	MPR	Parent	116	-710 to 942
Holmes <i>et al.</i> 2008	WFD	Energy (Kcal)	38	F (2 - 10y)	MPR	Parent	248	-762 to 1258

Holmes et al. 2008	WFD	Energy (Kcal)	32	M (11 - 17y)	MPR	Self	396	-836 to 1628
Holmes et al (2008)	WFD	Energy (Kcal)	16	F (11-17yr)	MPR	Self	312	-612 to 1236
Holmes et al. 2008	WFD	Energy (Kcal)	38	M (2 - 10y)	Food checklist	Parent	173	-723 to 1069
Holmes et al. 2008	WFD	Energy (Kcal)	38	F (2-10y)	Food checklist	Parent	255	-637 to 1147
Holmes et al. 2008	WFD	Energy (Kcal)	32	M (11 - 17y)	Food checklist	Self	-11	-1399 to 1377
Holmes et al. 2008	WFD	Energy (Kcal)	16	F (11 - 17y)	Food checklist	Self	89	-655 to 843
Cade et al. 2006	WFD	Energy (Kcal)	180	M&F 3 - 7y)	Food checklist	Parent/Interviewer/ self	237	-665 to 1139
Christian et al. 2015 (Cade)	WFD	Energy (Kcal)	67	M&F (8 - 11y)	Food checklist	Parent/Interviewer/ self	228	-1497 to 1881
Lietz et al. 2002 (McKeown)	WFD	Energy (Kcal)	50	M&F (11-13y)	FFQ	Self	574	-956 to 1912
Lanigan <i>et al.</i> 2001	WFD	Protein (g)	72	M&F (6-24m)	EFD	Parent	1	-16 to 17
Holmes et al. 2008	WFD	Protein (g)	21	M (2 - 10y)	S-WFD	Parent	-2	-40 to 35
Holmes et al. 2008	WFD	Protein (g)	23	F (2 - 10y)	S-WFD	Parent	3	-30 to 37
Holmes et al. 2008	WFD	Protein (g)	19	M (11 -17y)	S-WFD	Self	-6	-64 to 53
Holmes et al. 2008	WFD	Protein (g)	11	F (11 -17y)	S-WFD	Self	4	-53 to 61
Holmes et al. 2008	WFD	Protein (g)	38	M (2 - 10y)	MPR	Parent	4	-32 to 40
Holmes et al. 2008	WFD	Protein (g)	38	F (2 - 10y)	MPR	Parent	10	-19 to 40
Holmes et al. 2008	WFD	Protein (g)	32	M (11-17y)	MPR	Self	11	-39 to 61
Holmes et al (2008)	WFD	Protein (g)	16	F (11-17yr)	MPR	Self	10	-40 to 60

Holmes et al. 2008	WFD	Protein (g)	38	M (2-10y)	Food checklist	Parent	10	-26 to 46
Holmes et al. 2008	WFD	Protein (g)	38	F (2-10y)	Food checklist	Parent	11	-19 to 40
Holmes et al. 2008	WFD	Protein (g)	32	M (11-17y)	Food checklist	Self	1	-56 to 59
Holmes et al. 2008	WFD	Protein (g)	16	F (11-17y)	Food checklist	Self	6	-46 to 57
Cade et al. 2006	WFD	Protein (g)	180	M&F (3-7y)	Food checklist	Parent/Interviewer/ self	8	-24 to 40
Christian et al. 2015 (Cade)	WFD	Protein (g)	67	M&F (8-11y)	Food checklist	Parent/Interviewer/ self	5	-66 to 76
Lietz et al. 2002 (McKeown)	WFD	Protein (g)	50	M&F (11-13y)	FFQ	Self	31	-27 to 89
Lanigan <i>et al.</i> 2001	WFD	CHO (g)	72	M&F (6-24m)	EFD	Parent	3	-51 to 58
Holmes et al. 2008	WFD	CHO (g)	21	M (2-10y)	S-WFD	Parent	-25	-113 to 64
Holmes et al. 2008	WFD	CHO (g)	23	F (2-10y)	S-WFD	Parent	-16	-160 to 129
Holmes et al. 2008	WFD	CHO (g)	19	M (11-17y)	S-WFD	Self	4	-185 to 192
Holmes et al. 2008	WFD	CHO (g)	11	F (11-17y)	S-WFD	Self	-20	-131 to 91
Holmes et al. 2008	WFD	CHO (g)	38	M (2-10 y)	MPR	Parent	16	-100 to 132
Holmes et al. 2008	WFD	CHO (g)	38	F (2-10y)	MPR	Parent	24	-109 to 157
Holmes et al. 2008	WFD	CHO (g)	16	F (11-17y)	MPR	Self	41	-49 to 130
Holmes et al. 2008	WFD	CHO (g)	32	M (11-17y)	MPR	Self	49	-132 to 229
Holmes et al. 2008	WFD	CHO (g)	38	M (2-10y)	Food checklist	Parent	24	-101 to 150
Holmes et al. 2008	WFD	CHO (g)	38	F (2-10y)	Food checklist	Parent	41	-102 to 184

Holmes et al. 2008	WFD	CHO (g)	32	M (11-17y)	Food checklist	Self	2	-176 to 180
Holmes et al. 2008	WFD	CHO (g)	16	F (11-17y)	Food checklist	Self	15	-82 to 112
Cade et al. 2006	WFD	CHO (g)	180	M&F (3-7y)	Food checklist	Parent/Interviewer/ self	40	-102 to 182
Christian et al. 2015 (Cade)	WFD	CHO (g)	67	M&F (8-11y)	Food checklist	Parent/Interviewer/ self	27	-238 to 292
Lietz et al. 2002 (McKeown)	WFD	CHO (g)	50	M&F (11-13y)	FFQ	Self	69	-167 to 305
Lanigan <i>et al.</i> 2001	WFD	Fat (g)	72	M&F (6-24m)	EFD	Parent	1	-18 to 20
Holmes et al. 2008	WFD	Fat (g)	21	M (2-10y)	S-WFD	Parent	-8	-57 to 41
Holmes et al. 2008	WFD	Fat (g)	23	F (2-10y)	S-WFD	Parent	2	-42 to 47
Holmes et al. 2008	WFD	Fat (g)	19	M (11-17y)	S-WFD	Self	3	-58 to 64
Holmes et al. 2008	WFD	Fat (g)	11	F (11-17y)	S-WFD	Self	-1	-37 to 36
Holmes et al. 2008	WFD	Fat (g)	38	M (2-10y)	MPR	Parent	4	-39 to 48
Holmes et al. 2008	WFD	Fat (g)	38	F (2-10y)	MPR	Parent	13	-38 to 64
Holmes et al. 2008	WFD	Fat (g)	16	F (11-17y)	MPR	Self	13	-44 to 71
Holmes et al. 2008	WFD	Fat (g)	32	M (11-17y)	MPR	Self	19	-50 to 88
Holmes et al. 2008	WFD	Fat (g)	38	M (2-10y)	Food checklist	Parent	4	-42 to 51
Holmes et al. 2008	WFD	Fat (g)	38	F (2-10y)	Food checklist	Parent	6	-37 to 50
Holmes et al. 2008	WFD	Fat (g)	32	M (11-17y)	Food checklist	Self	-3	-75 to 69
Holmes et al. 2008	WFD	Fat (g)	16	F (11-17y)	Food checklist	Self	1	-37 to 40

Cade et al. 2006	WFD	Fat (g)	180	M&F (3-7y)	Food checklist	Parent/Interviewer/self	6	-35 to 48
Christian et al. 2015 (Cade)	WFD	Fat (g)	67	M&F (8-11y)	Food checklist	Parent/Interviewer/self	17	-63 to 99
Lietz et al. 2002	WFD	Fat (g)	50	M&F (11-13y)	FFQ	Self	22	-49 to 92
Holmes et al. 2008	WFD	Iron (mg)	21	M (2-10y)	S-WFD	Parent	-1.1	-6.9 to 4.7
Holmes et al. 2008	WFD	Iron (mg)	23	F (2-10y)	S-WFD	Parent	-0.5	-6 to 4.9
Holmes et al. 2008	WFD	Iron (mg)	19	M (11-17y)	S-WFD	Self	-1.2	-9.6 to 7.2
Holmes et al. 2008	WFD	Iron (mg)	11	F (11-17y)	S-WFD	Self	0.7	-4.7 to 6.1
Holmes et al. 2008	WFD	Iron (mg)	38	M (2-10y)	MPR	Parent	0.1	-5.7 to 5.9
Holmes et al. 2008	WFD	Iron (mg)	38	F (2-10y)	MPR	Parent	0.7	-5.1 to 6.5
Holmes et al. 2008	WFD	Iron (mg)	16	F (11-17y)	MPR	Self	1.1	-3.5 to 5.7
Holmes et al. 2008	WFD	Iron (mg)	32	M (11-17y)	MPR	Self	1.4	-6.6 to 9.4
Holmes et al. 2008	WFD	Iron (mg)	38	M (2-10y)	Food checklist	Parent	0.5	-5.9 to 6.9
Holmes et al. 2008	WFD	Iron (mg)	38	F (2-10y)	Food checklist	Parent	1.4	-2.8 to 5.6
Holmes et al. 2008	WFD	Iron (mg)	32	M (11-17y)	Food checklist	Self	0.1	-7.7 to 7.9
Holmes et al. 2008	WFD	Iron (mg)	16	F (11-17y)	Food checklist	Self	0.4	-3.2 to 4.0
Cade et al. 2006	WFD	Iron (mg)	180	M&F (3-7y)	Food checklist	Parent/Interviewer/self	1.4	-5.2 to 8.0
Holmes et al. 2008	WFD	Folate µg)	21	M (2-10y)	S-WFD	Parent	-12	-138 to 114

Holmes et al. 2008	WFD	Folate (µg)	23	F (2-10y)	S-WFD	Parent	-2	-140 to 136
Holmes et al. 2008	WFD	Folate (µg)	19	M (11-17y)	WFD	Self	-25	-309 to 259
Holmes et al. 2008	WFD	Folate (µg)	11	F (11-17y)	WFD	Self	-2	-108 to 104
Holmes et al. 2008	WFD	Folate (µg)	38	M (2-10y)	MPR	Parent	7	-111 to 125
Holmes et al. 2008	WFD	Folate (µg)	38	F (2-10y)	MPR	Parent	24	-108 to 156
Holmes et al. 2008	WFD	Folate (µg)	16	F (11-17y)	MPR	Self	8	-82 to 98
Holmes et al. 2008	WFD	Folate (µg)	32	M (11-17y)	MPR	Self	3	-257 to 263
Holmes et al. 2008	WFD	Folate (µg)	38	M (2-10y)	Food checklist	Parent	48	-106 to 202
Holmes et al. 2008	WFD	Folate (µg)	38	F (2-10y)	Food checklist	Parent	72	-120 to 264
Holmes et al. 2008	WFD	Folate (µg)	32	M (11-17y)	Food checklist	Self	16	-268 to 300
Holmes et al. 2008	WFD	Folate (µg)	16	F (11-17y)	Food checklist	Self	21	-115 to 157
Cade et al. 2006	WFD	Folate (µg)	180	M&F (3-7y)	Food checklist	Parent/Interviewer/ self	23	-118 to 164
Holmes et al. 2008	WFD	Vitamin C (mg)	19	M (11-17y)	S-WFD	Self	-7	-147 to 133
Holmes et al. 2008	WFD	Vitamin C (mg)	11	F (11-17y)	S-WFD	Self	-31	-103 to 41
Holmes et al. 2008	WFD	Vitamin C (mg)	21	M (2-10y)	S-WFD	Parent	6	-74 to 86
Holmes et al. 2008	WFD	Vitamin C (mg)	23	F (2-10y)	S-WFD	Parent	7	-131 to 145
Holmes et al. 2008	WFD	Vitamin C (mg)	38	M (2-10y)	MPR	Parent	16	-76 to 108
Holmes et al. 2008	WFD	Vitamin C (mg)	38	F (2-10y)	MPR	Parent	28	-98 to 154

Holmes et al. 2008	WFD	Vitamin C (mg)	16	F (11-17)	MPR	Self	15	-75 to 105
Holmes et al. 2008	WFD	Vitamin C (mg)	32	M (11-17y)	MPR	Self	4	-108 to 116
Holmes et al. 2008	WFD	Vitamin C (mg)	38	M (2-10y)	Food checklist	Parent	33	-87 to 153
Holmes et al. 2008	WFD	Vitamin C (mg)	38	F (2-10y)	Food checklist	Parent	43	-101 to 187
Holmes et al. 2008	WFD	Vitamin C (mg)	32	M (11-17y)	Food checklist	Self	18	-150 to 186
Holmes et al. 2008	WFD	Vitamin C (mg)	16	F (11-17y)	Food checklist	Self	24	-168 to 216
Cade et al. 2006	WFD	Vitamin C (mg)	180	M&F (3-7y)	Food checklist	Parent/Interviewer/self	6.5	-138 to 150
Christian et al. 2015 (Cade)	WFD	Vitamin C (mg)	67	M&F (8-11y)	Food checklist	Parent/Interviewer/self	-27 (median)	No results
Holmes et al. 2008	WFD	Calcium (mg)	21	M (2-10y)	S-WFD	Parent	-77	-663 to 509
Holmes et al. 2008	WFD	Calcium (mg)	23	F (2-10y)	S-WFD	Parent	38	-438 to 514
Holmes et al. 2008	WFD	Calcium (mg)	19	M (11-17y)	WFD	Self	48	-534 to 630
Holmes et al. 2008	WFD	Calcium (mg)	11	F (11-17y)	WFD	Self	43	-509 to 595
Holmes et al. 2008	WFD	Calcium (mg)	38	M (2-10y)	MPR	Parent	15	-565 to 595
Holmes et al. 2008	WFD	Calcium (mg)	38	F (2-10y)	MPR	Parent	133	-329 to 595
Holmes et al. 2008	WFD	Calcium (mg)	16	F (11-17y)	MPR	Self	39	-437 to 515
Holmes et al. 2008	WFD	Calcium (mg)	32	M (11-17y)	MPR	Self	142	-460 to 744
Holmes et al. 2008	WFD	Calcium (mg)	38	M (2-10y)	Food checklist	Parent	60	-568 to 699
Holmes et al. 2008	WFD	Calcium (mg)	38	F (2-10y)	Food checklist	Parent	89	-291 to 469

Holmes et al. 2008	WFD	Calcium (mg)	32	M (11-17y)	Food checklist	Self	39	-583 to 661
Holmes et al. 2008	WFD	Calcium (mg)	16	F (11-17y)	Food checklist	Self	77	-385 to 539
Cade et al. 2006	WFD	Calcium (mg)	180	M&F (3-7y)	Food checklist	Parent/Interviewer/ self	9	-673 to 691
Christian et al. 2015 (Cade)	WFD	Calcium (mg)	67	M&F (8-11)	Food checklist	Parent/Interviewer/ self	185	-466 to 836
Lietz et al. 2002 (McKeown)	WFD	Calcium (mg)	50	M&F (11-13y)	FFQ	Self	203	-393 to 799
Christian et al. 2015 (Cade)	WFD	Sodium (mg)	67	M&F (8-11y)	Food checklist	Parent/Interviewer/ self	151	-2879 to 3181
Albar et al. 2016 (Carter)	Recall	Energy (kcal)	75	M&F (11-18y)	MPR	Self	-55	-797 to 687
Albar et al. 2016 (Carter)	Recall	Protein (g)	75	M&F (11-18y)	MPR	Self	-2	-45 to 41
Albar et al. 2016 (Carter)	Recall	Fat (g)	75	M&F (11-18y)	MPR	Self	-3	-52 to 46
Albar et al. 2016 (Carter)	Recall	CHO (g)	75	M&F (11-18y)	MPR	Self	-11	-152 to 130

WFD= Weighed Food Diary; S-WFD= Semi-Weighed Food Diary; EFD= Estimated Food Diary; MPR= Multiple pass recall; FFQ= Food Frequency Questionnaire; M&F=Male and Female