Table 1. Selection of twin studies estimating heritability of energy and macronutrient intakes.*

Author	Sex	Age	Dietary assessment method	Twin registry	Twin pair count	*Heritability*						
						Energy intake	Macronutrient intake					
							Grams per day			Percent energy		
							Fat	*Protein*	*CHO*	*Fat*	*Protein*	*CHO*
Pimpin *et al.* (2013)[a]	Male + female (*n* = 3605)	21 months	3-day diet diary	Gemini cohort (UK)	384 MZ 832 DZ	12[b]	11	12	9	10	8	9
Liu *et al.* (2013)	Male + female (*n* = 358)	11-13 ($\bar{x}$ = 11.8)	3-day diet diary	USC Twin Study (US)	94 MZ 85 DZ	48	44	31	43			
Faith *et al.* (1999)[b]	Male + female (*n* = 108)	≥ 18	Two Buffet-style meals	New York Obesity Centre twin registry (US)	36 MZ 18 DZ	33						
Wade *et al.* (1981)[c]	Female (*n* = 46)	19-58 ($\bar{x}$= 39.2)	3-day diet diary	Toronto Twin Register (Canada)	13 MZ 10 DZ	11 *ns*	-[f]	20 *ns*	66	48 *ns*	70	67
Heller *et al.* (1988)[c]	Male + female (*n* = 400)	17-66 ($\bar{x}$ = 36)	4-day food diary	Australia	106 MZ 94 DZ	38 *ns*	24 *ns* SFA: 10 *ns* MUFA: 33 *ns* PUFA: 3 *ns*	8 *ns*	31 *ns* SC: 20 *ns* CC: 55			
de Castro *et al.* (1993)[d]	Male + female (*n* = 390)	$\bar{x}$ = 38.8	7-day diet diary	Minnesota Twin Registry, (US)	109 MZ 86 DZ	65 (65)	51 (47)	57 (58)	61 (64)			
Hasselbalch *et al.* (2008)	Male & female (*n* = 1212)	18-67 ($\bar{x}$ = 38)	247-item FFQ	Geminakar (Denmark)	600							
	Males					38				36[g]	28	36
	Females					32				53[g]	55[g]	49
Hur *et al.* (1998)[e]	Male + female (*n* = 335)	18-77 ($\bar{x}$ = 42.4)	67-item FFQ	MSTRA (Multi-national)	66 MZ 51 DZ	32 (40)[e]	35 SFA: 37 PUFA: 46	16 *ns*	25 SC: 24 *ns* CC: 18 *ns*			

FFQ, food frequency questionnaire; USC, University of Southern California; MSTRA, Minnesota Study of Twins Reared Apart; MZ, monozygotic; DZ, dizygotic; *ns*, not significant (confidence interval spans 0); SFA, saturated fat; MUFA, monounsaturated fat; PUFA, polyunsaturated fat; CHO, carbohydrates; SC, simple carbohydrates; CC, complex carbohydrates.

*Heritability estimates are derived from the additive genetic effect value (a^2) calculated using structural equation modelling techniques as outlined by (Neale et al., 1992) unless otherwise specified. Twin pairs are same-sex. Ages are in years, unless otherwise specified. Energy intakes were calculated in kilocalories unless otherwise specified.

[a]Values are age- and sex- adjusted. Energy intake calculated in kilojoules.
[b]Age and sex-adjusted total caloric intake/meal heritability estimated only.
[c]Heritability estimates were calculated via Holzingers' *H* or Falconer equations.
[d]Heritability estimated using the LISREL method. Heritability per meal is provided in paratheses.
[e]Twins reared apart study. Weight-adjusted heritability in parentheses (kilocalories/kg). Values are age- and gender- adjusted.
[f]MZ within-pair exceeded between-pair mean square.
[g]Heritability estimate derived from non-additive genetic effects (d^2) due to correlation coefficient between MZ two times greater than DZ twins.

Table 2. Selection of twin studies estimating heritability of empirically derived food intake patterns.*

Author	Sex	Age	Dietary assessment method	Twin registry	Twin pair count	Dietary factor	*Description*	*Heritability*
Faith *et al.* (2008)[a]	Male & Female (*n* = 792)	7	24-h recall (parents)	MacArthur Longitudinal Study of Twins (US)	222 MZ 182 DZ	Peanut butter and jelly intake	Frequent intakes of legumes (peanuts and peanut butter), and jam and jelly.	*M*: 79
						Breakfast cereal and milk intake	Frequent intakes of milk and breakfast cereal.	*ns*
						Bread and butter intake	Frequent intakes of breads, butter and margarine.	*M*: 18 *F*: 20
						Adjusted fruit intake	Frequent intakes of non-citrus fruit, and fruit juice, punch and soda (reverse coded).	*M*: 26
						Adjusted red meat and pork intake	Frequent intakes of beef, pork, lamb and poultry (reverse coded).	*M*: 57
						Vegetable intake	Frequent intakes of deep-coloured vegetables and other vegetables.	*ns*
						Adjusted candy intake	Frequent intakes of candy, and sweets (reverse coded).	*M*: 41 *F*: 27
						Fish and lemon intake	Frequent intakes of fish and citrus fruit.	*M*: 12 *F*: 56
						High-salt snack food intake	Frequent intakes of high-salt snack foods.	*M*: 24
Keskitalo *et al.* (2007)[b]	Male + female (*n* = 4018)	22-27 ($\bar{x}$ = 24.4)	24-item FFQ	Finnish Twin Registry (Finland)	704 MZ 1490 DZ	"Healthy foods"	Frequent intakes of fresh vegetables, fruits, cooked vegetables, berries, porridge, muesli, cereals, reduced-fat cheeses, rice or pasta, chicken yoghurt, and fish.	*M*: 49 *F*: 54
						High-fat foods	Frequent intakes of fried foods, hamburgers, pizza, fried potatoes or French fries, creamy foods, and salty snacks.	*M*: 44 *F*: 47
						Sweet foods	Frequent intakes of other sweets, chocolate, and sweet desserts.	*M*: 42 *F*: 43
						Meat	High intakes of sausage and meat.	*M*: 39 *F*: 44
Teucher *et al.* (2007)[a]	Female (*n* = 3262)	18-79 ($\bar{x}$ = 48.1)	131-item FFQ	Twins UK (UK)	498 MZ 1133 DZ	Fruit and vegetable	Frequent intakes of fruit, allium and cruciferous vegetables; low intakes of fried potatoes.	43
						High alcohol	Frequent intakes of beer, wine and allium vegetables; low intakes of high fibre breakfast cereals and fruit.	48
						Traditional English	Frequent intakes of fried fish and potatoes, meats, savoury pies and cruciferous vegetables.	41
						Dieting	Frequent intakes of low-fat dairy products, low-sugar soda; low intakes of butter and sweet baked products.	41
						Low meat	Frequent intakes of baked beans, pizza and soy foods; low intakes of meat, other fish and seafood, and poultry.	43

Table 2 continued. Selection of twin studies estimating heritability of empirically derived food intake patterns.

Breen *et al.* (2006)[b,c]	Male + female (*n* = 428)	4-5 ($\bar{x}$ = 4.4)	95-item modified FFQ (parents)	Twins Early Development Study (UK)	103 MZ 111 DZ	Vegetables	High liking of broccoli, cabbage, carrots, cauliflower, green beans, mushrooms, onions, parsnips, salad greens and tomato.	37
						Desserts	High liking of cream, cakes, pastries, fruit pie, sponge pudding, custard and dairy desserts.	20
						Meat and fish	High liking of beef, lamb, pork, chicken, bacon, fried fish, white fish and oily fish.	78
						Fruit	High liking of apples, bananas, citrus fruits, grapes, peaches, strawberries and fruit juice.	51
Gunderson *et al.* (2006)[b,d]	Female (*n* = 700)	30-90 ($\bar{x}$ = 50)	100-item FFQ	Kaiser Permanente Twin Registry (US)	704 MZ 1490 DZ	'Healthy' dietary pattern	Frequent intakes of fish or chicken, carrots, tomatoes, salad, green or yellow vegetables, fruits, high fibre grains, rice and potatoes.	50
						'Unhealthy' dietary pattern	Frequent intakes of beef, pork, hot dogs, eggs, cheese, ice cream, butter, margarine, soda, and desserts.	*ns*
van den Bree *et al.* (1999)[b]	Male + female (*n* = 4640)	≥50	99-item semi-quantitative FFQ	Virginia Commonwealth University (US)	935 MZ 713 DZ	Less healthful	Frequent intakes of foods high in fat, salt and sugar.	33
						Healthful	Frequent intakes of a variety of vegetables, fruit, rice, yogurt, skim milk and dark bread.	33

FFQ, food frequency questionnaire; MZ, monozygotic; DZ, dizygotic; M, male; *ns*, not significant (confidence interval spans 0); F, female.

*Heritability estimates are derived from the additive genetic effect value (a^2) calculated using structural equation modelling techniques as outlined by (Neale et al., 1992) unless otherwise specified. Twin pairs are same-sex. Ages are in years, unless otherwise specified.

[a]Food patterns identified through principle component analysis.

[b]Food patterns identified through factor analysis.

[c]Heritabilities derived from a modified 95-item food frequency questionnaire which asked food 'liking' as opposed to intake frequency.

[d]Utilized a twins of mistaken zygosity approach.

Table 3. Selection of twin studies estimating heritability of food group intakes.*

						Heritability												
															Snacks			
Author	Sex	Age	Dietary assessment method	Twin registry	Twin pair count	Vegetables	Potatoes	Fruit	Meat	Fish	Dairy	Eggs	Cereals	Legumes /nuts	Total	Sweets	Savoury	Fast food
Pimpin *et al.* (2013)[a]	Male + female (*n* = 3605)	21 months	3-day diet diary	Gemini cohort (UK)	384 MZ 832 DZ	15	9	10	9 *ns*[h]		17	6 *ns*	9			5-15 *ns*[i]	4 *ns*	
Fildes *et al.* (2014)[b]	Male + Female (*n* = 2686)	3	114-item modified FFQ (parent)	Gemini cohort (UK)	458 MZ 872 DZ	54		53	48[h]		27[j]		32		29			
Hasselbalch *et al.* (2008)[c]	Male & female (*n* = 1212)	18-67 ($\bar{x}$ = 38)	247-item FFQ	Geminakar (Denmark)	600													
Males						24	68	-	34-47[e]	17	HF: 37 LF: 39	-	RG: 19 WG: 24			22 *ns*-45[e]		
Females						14 *ns*	28	-	29-38[i]	61	HF: 32 LF: 39	0 *ns*	RG: 12 *ns* WG: 20			23-27 *ns*[e]		
Keskitalo *et al.* (2007)	Male + female (*n* = 4018)	22-27 ($\bar{x}$ = 24.4)	24-item FFQ	Finnish Twin Registry (Finland)	704 MZ 1490 DZ													
Males						38-40[e]	40-46[e]	37-51[e]	22-47[i]	45	38-48[i]	30	42-49[e]			23-55[i]	43	22-55[i]
Females						48-50[e]	38-44[e]	44-39[e]	44-49[i]	44	37-43[i]	37	40-41[e]			33-54[i]	41	43-54[i]
Teucher *et al.* (2007)[d]	Female (*n* = 3262)	18-79 ($\bar{x}$ = 48.1)	131-item FFQ	Twins UK (UK)	498 MZ 1133 DZ	35-46[f]	36[g]	40	29-39[e]	17 *ns*	HF: 24 LF: 36	29	RG: 8 WG: 29	30-32[e]		30	7 *ns*	26

FFQ, food frequency questionnaire; MZ, monozygotic; DZ, dizygotic; *ns*, not significant (confidence interval spans 0); HF, high fat; LF, low fat; RG, refined grain; WG, whole grain.

*Heritability estimates are derived from the additive genetic effect value (a^2) calculated using structural equation modelling techniques as outlined by (Neale et al., 1992) unless otherwise specified. Twin pairs are same-sex. '*ns*' indicates confidence interval spans 0. '-' indicates model including additive genetic effects not the best fit. Ages are in years, unless otherwise specified. Values presented were derived from single variables, unless otherwise specified.

[a]Heritability analysis performed on age- and sex- adjusted residual scores.

[b]Heritability analysis performed on age- and sex- adjusted residual scores.

[c]Heritability analysis performed on food groups adjusted for total energy intake.

[d]Heritability analysis performed on energy-adjusted residual scores.

[e]Two variables are included in the range.

[f]Five variables are included in the range.

[g]Hertiability for root vegetable intake.

[h]Includes fish.

[i]Three variables are included in the range.

[j]Includes eggs.

Table 4. Selection of twin studies estimating heritability of fluid intakes.*

						Heritability							
Author	Sex	Age	Dietary assessment method	Twin registry	Twin pair count	Water	Alcohol	Soda	Diet soda	Milk	Coffee	Tea	Fruit juice
Pimpin *et al.* (2013)[a]	Male + female (*n* = 3605)	21 months	3-day diet diary	Gemini cohort (UK)	384 MZ 832 DZ	7		5 *ns*[h]		8			1 *ns*
de Castro *et al.* 1993[b]	Male + female (*n* = 390)	x̄ = 38.8	7-day diet diary	Minnesota Twin Registry, (US)	109 MZ 86 DZ	80	73 *ns*	61	64	58 *ns*	73		-
Males						76[f]	82	38[i]	68[i]	-	71		-
Females						-	51	73	65[i]	52	73		-
Hasselbalch *et al.* (2008)[c]	Male & female (*n* = 1212)	18-67 (x̄ = 38)	247-item FFQ	Geminakar (Denmark)	600								
Males								26			63[j]	63[j]	36
Females								30			-	-	0 *ns*
Teucher *et al.* (2007)[d]	Female (*n* = 3262)	18-79 (x̄ = 48.1)	131-item FFQ	Twins UK (UK)	498 MZ 1133 DZ		28				41	38	0 *ns*
Hur *et al.* (1998)[e]	Male + female (*n* = 335)	18-77 (x̄ = 42.4)	67-item FFQ	MSTRA (Multi-national)	66 MZ 51 DZ		38[g]	20 *ns*		33	29	46	25 *ns*

FFQ, food frequency questionnaire; MSTRA, Minnesota Study of Twins Reared Apart; MZ, monozygotic; DZ, dizygotic; *ns*, not significant (confidence interval spans 0).

*Heritability estimates are derived from the additive genetic effect value (a^2) calculated using structural equation modelling techniques as outlined by (Neale et al., 1992) unless otherwise specified. Twin pairs are same-sex. '-' indicates model including additive genetic effects not the best fit. Ages are in years, unless otherwise specified.

[a]Heritability analysis performed on age- and sex- adjusted residual scores.

[b]Heritability estimated using the LISREL method.

[c]Heritability analysis performed on food groups adjusted for total energy intake.

[d]Heritability analysis performed on energy-adjusted residual scores.

[e]Study used twins of mistaken zygosity approach. Heritability analysis performed on age- and gender- adjusted values.

[f]Significant dominant genetic effect

[g]Heritability of alcohol type intake.

[h]Heritability of other beverages group.

[i]Model including additive genetic effects not best fitting model.

[j]Obtained from group 'other', includes coffee, tea and unspecified items.