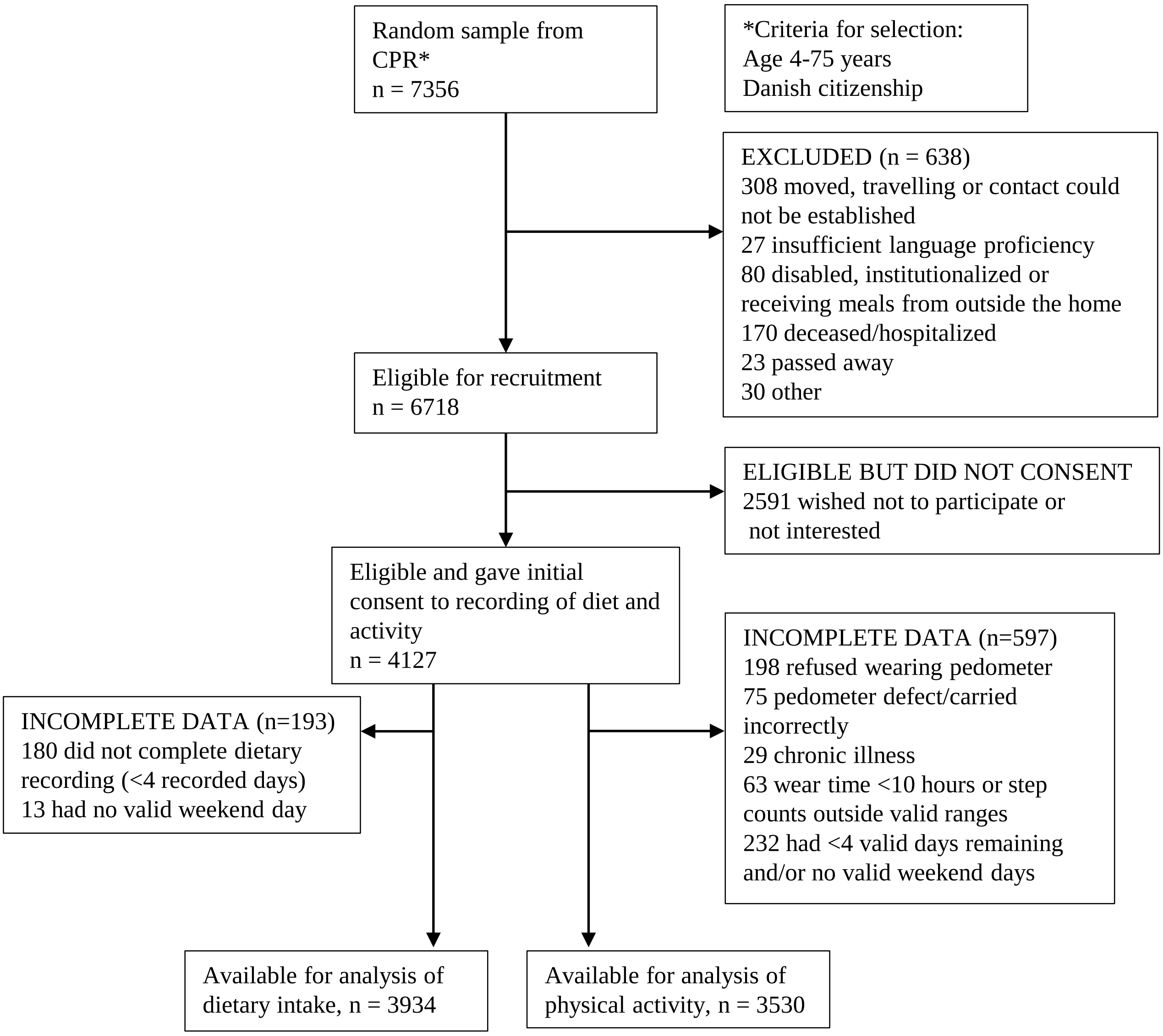
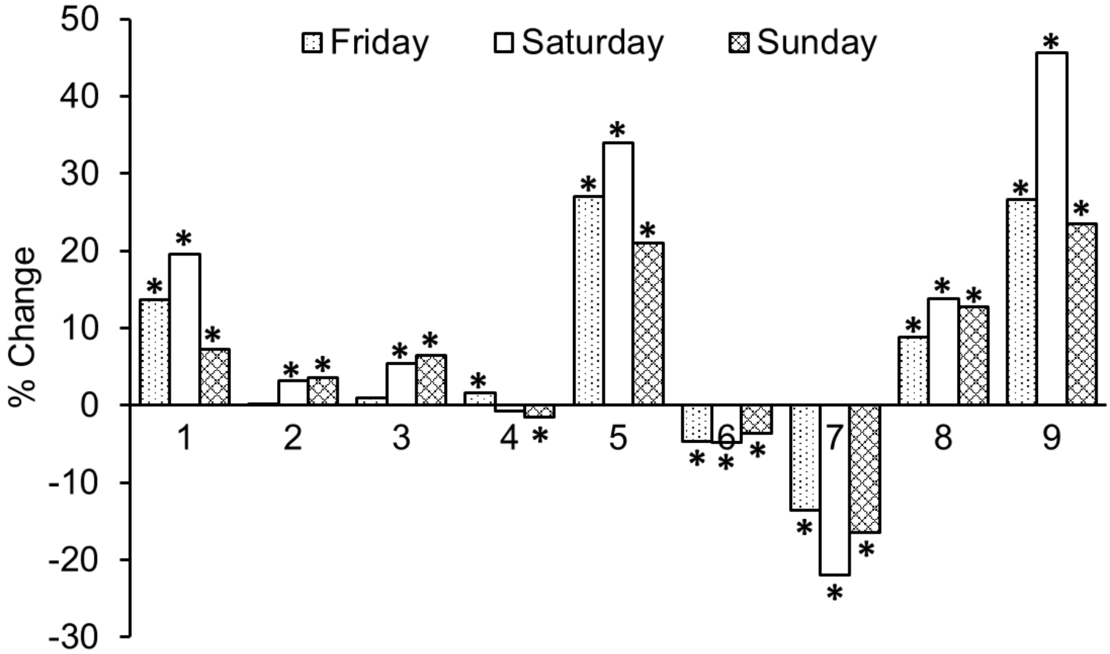
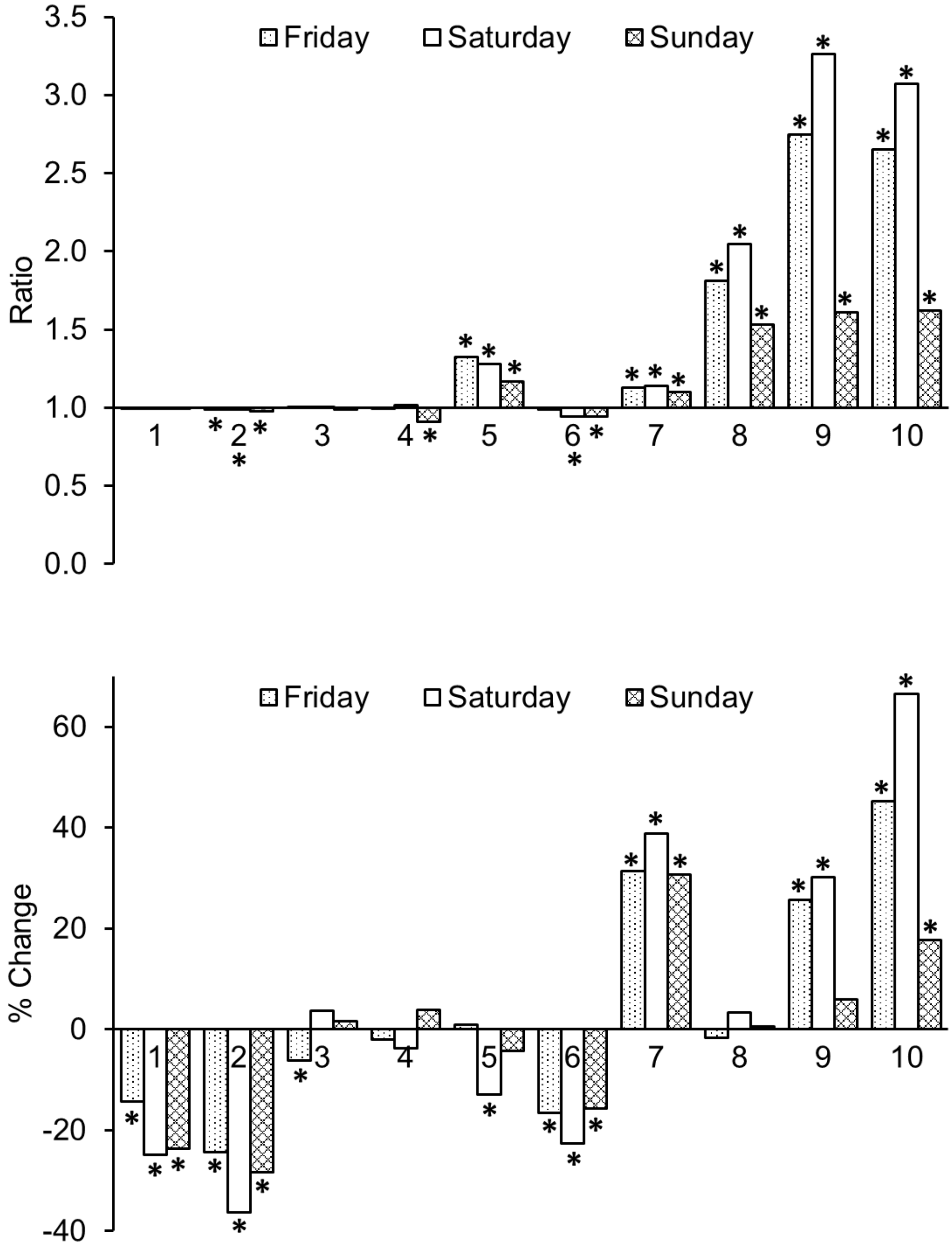
Online supplementary material
Nordman et al.



Supplemental Figure S1 Participant flow chart. CPR: Danish Civil Registration System.



Supplemental Figure S2 Differences in macronutrients and energy intakes between weekdays (Monday-Thursday) and Friday, Saturday and Sunday for the whole study population. (1) Energy MJ/d, (2) Fat E%, (3) Saturated fat E%, (4) Carbohydrates E%, (5) Added sugar E%, (6) Protein E%, (7) Fiber g/10MJ, (8) Energy density kJ/100g (solids), (9) Energy density kJ/100g (liquids). Data are presented as relative differences (percent) from Monday-Thursday and are based on means estimated from mixed linear models (estimated means and 95% confidence intervals are presented in Table 2. Asterisk (*) indicates significant difference in mean compared to Monday-Thursday (p<0.001).



Supplemental Figure S3 Food and beverage consumption on Friday, Saturday and Sunday compared to weekdays (Monday-Thursday) for the whole study population. (1) Vegetables, (2) Fruit, (3) Red meat, (4) Fish, (5) Fast food, (6) Whole grain products, (7) Discretionary foods, (8) Sugar-sweetened beverages, (9) Beer and wine, (10) Alcohol. Data are presented as ratios of the probability of consumption (top pane) with Monday-Thursday as reference (>1 indicates higher probability of consumption on weekend day), and as percentage difference in the amounts consumed compared to Monday-Thursday (bottom pane). Data are based on probabilities and means estimated from mixed logistic and linear regression models (probabilities, means and 95% confidence intervals are presented in Table 2). Asterisk (*) indicates significant difference in probability or mean compared to Monday-Thursday ($p<0.001$). Tests are performed on log-odds scale in logistic regression and on Box-Cox transformed models in linear regression.

Supplemental Table S1 Characteristics of the analytical samples in analysis of dietary intake and physical activity.

	Diet (n=3934)	Physical activity (n=3530)
Individuals with valid recorded days (n(%))		
4 days	7 (0.2)	93 (2.6)
5 days	14 (0.4)	313 (8.9)
6 days	62 (1.6)	966 (27.4)
7 days	3851 (97.9)	2158 (61.1)
Number of observations* (n(%))		
Total	27427 (100)	22839 (100)
Monday	3919 (14.3)	3295 (14.4)
Tuesday	3923 (14.3)	3285 (14.4)
Wednesday	3908 (14.2)	3276 (14.3)
Thursday	3920 (14.3)	3303 (14.5)
Friday	3922 (14.3)	3294 (14.4)
Saturday	3928 (14.3)	3261 (14.3)
Sunday	3907 (14.2)	3125 (13.7)

*Number of valid recording days.

Supplemental Table S2 Pedometer-determined physical activity on weekdays (Monday-Thursday), Friday, Saturday and Sunday for females, males and different age groups.

	Monday-Thursday		**Friday**		**Saturday**		**Sunday**	
	Mean	**95 % CI**	**Mean**	**95 % CI**	**Mean**	**95 % CI**	**Mean**	**95 % CI**
Steps								
Female	8405 [a]	(8244-8568)	8637 [a]	(8423-8854)	7713 [b]	(7511-7919)	7101 [c]	(6904-7300)
Male	9138 [a]	(8953-9325)	9298 [a]	(9058-9542)	8008 [b]	(7784-8235)	7506 [c]	(7287-7729)
4-13	12892 [a]	(12565-13223)	12823 [a]	(12360-13295)	10246 [b]	(9832-10669)	9069 [c]	(8659-9488)
14-24	8976 [a]	(8633-9326)	9869 [b]	(9385-10366)	7973 [c]	(7535-8423)	6920 [d]	(6504-7348)
25-59	8498 [a]	(8333-8664)	8636 [a]	(8420-8854)	7897 [b]	(7691-8107)	7381 [c]	(7180-7585)
60-75	6531 [a]	(6288-6779)	6593 [a]	(6297-6897)	6089 [b]	(5803-6381)	6023 [b]	(5739-6314)
Cadence (steps/min)								
Female	9.8 [a]	(9.6-10.0)	9.7 [a,b]	(9.5-9.9)	9.2 [b,c]	(9.0-9.5)	9.0 [c]	(8.8-9.2)
Male	10.5 [a]	(10.3-10.7)	10.3 [a]	(10.1-10.6)	9.4 [b]	(9.2-9.7)	9.4 [b]	(9.2-9.7)
4-13	16.6 [a]	(16.2-17.0)	15.5 [b]	(14.9-16.1)	13.6 [c]	(13.0-14.1)	13.0 [c]	(12.4-13.5)
14-24	10.4 [a]	(10.0-10.8)	11.0 [a]	(10.5-11.6)	9.6 [b]	(9.1-10.1)	9.0 [b]	(8.5-9.5)
25-59	9.4 [a]	(9.2-9.5)	9.3 [a]	(9.1-9.5)	9.1 [a]	(8.8-9.3)	9.1 [a]	(8.8-9.3)
60-75	7.5 [a]	(7.2-7.8)	7.5 [a,b]	(7.1-7.8)	7.0 [b]	(6.7-7.3)	7.1 [a,b]	(6.8-7.5)
Cycling-adjusted steps								
Female	9677 [a]	(9484-9871)	9770 [a]	(9518-10024)	8389 [b]	(8155-8627)	7710 [c]	(7483-7940)
Male	10179 [a]	(9970-10390)	10247 [a]	(9974-10522)	8660 [b]	(8409-8915)	8097 [c]	(7850-8347)
4-13	14204 [a]	(13838-14575)	13971 [a]	(13454-14497)	10931 [b]	(10474-11399)	9650 [c]	(9198-10114)
14-24	10750 [a]	(10335-11173)	11479 [a]	(10904-12068)	8868 [b]	(8360-9391)	7694 [c]	(7213-8192)
25-59	9622 [a]	(9427-9820)	9639 [a]	(9387-9895)	8492 [b]	(8255-8733)	7908 [c]	(7678-8143)
60-75	7238 [a]	(6958-7524)	7260 [a]	(6917-7612)	6709 [b]	(6299-6964)	6627 [b]	(6299-6964)
Cycling-adjusted cadence (steps/min)								
Female	11.2 [a]	(11.0-11.5)	11.0 [a]	(10.7-11.3)	10.0 [b]	(9.8-10.3)	9.8 [b]	(9.5-10.0)
Male	11.7 [a]	(11.4-11.9)	11.4 [a]	(11.1-11.7)	10.2 [b]	(9.9-10.5)	10.2 [b]	(9.9-10.5)
4-13	18.3 [a]	(17.8-18.8)	16.9 [b]	(16.3-17.5)	14.5 [c]	(13.9-15.1)	13.8 [c]	(13.2-14.4)
14-24	12.5 [a]	(12.0-13.0)	12.8 [a]	(12.2-13.5)	10.6 [b]	(10.1-11.2)	10.0 [b]	(9.4-10.6)
25-59	10.6 [a]	(10.4-10.8)	10.4 [a]	(10.1-10.6)	9.7 [b]	(9.5-10.0)	9.7 [b]	(9.4-10.0)
60-75	8.3 [a]	(8.0-8.6)	8.2 [a,b]	(7.9-8.6)	7.7 [b]	(7.4-8.1)	7.8 [b]	(7.4-8.2)

Means and 95% confidence intervals are estimated from linear regression models and p-values from pairwise comparisons. Regression models contained main effects of weekday (4 levels), gender, age and random effect of subject.

[abcd] Mean values within a row with unlike superscript letters were significantly different ($p<0.001$ for female and male; $p<0.01$ for age subsets).

Supplemental Table S3 Energy and macronutrient intakes on weekdays (Monday-Thursday), Friday, Saturday and Sunday for females and males.

	Monday-Thursday		Friday		Saturday		Sunday	
Nutrient	**Mean**	**95 % CI**	**Mean**	**95 % CI**	**Mean**	**95 % CI**	**Mean**	**95 % CI**
Energy MJ/d								
Female	7.8 [a]	(7.7-7.9)	8.9 [b]	(8.8-9.1)	9.4 [c]	(9.2-9.5)	8.5 [d]	(8.3-8.6)
Male	10.1 [a]	(10.0-10.3)	11.5 [b]	(11.3-11.7)	12.1 [c]	(11.9-12.3)	10.8 [d]	(10.6-11.0)
Fat E%								
Female	35.9 [a]	(35.7-36.1)	35.9 [a]	(35.7-36.1)	37.3 [b]	(37.0-37.7)	37.5 [b]	(37.1-37.8)
Male	36.9 [a]	(36.6-37.1)	36.9 [a]	(36.5-37.2)	37.7 [b]	(37.4-38.1)	37.9 [b]	(37.6-38.3)
Saturated fat E%								
Female	14.0 [a]	(13.9-14.2)	14.2 [a]	(14.0-14.4)	14.9 [b]	(14.7-15.1)	15.1 [b]	(15.0-15.3)
Male	14.7 [a]	(14.6-14.9)	14.8 [a]	(14.6-15.0)	15.4 [b]	(15.2-15.6)	15.4 [b]	(15.3-15.6)
Carbohydrates E%								
Female	47.9 [a]	(47.6-48.1)	48.7 [b]	(48.3-49.0)	47.2 [a,c]	(46.8-47.6)	46.7 [c]	(46.4-47.1)
Male	46.6 [a]	(46.3-46.8)	47.3 [b]	(46.9-47.7)	46.5 [a,b]	(46.1-46.9)	46.2 [a]	(45.8-46.6)
Added sugar E%								
Female	7.9 [a]	(7.7-8.2)	10.3 [b,c]	(10.0-10.6)	10.7 [b]	(10.3-11.0)	9.6 [c]	(9.3-9.9)
Male	8.0 [a]	(7.8-8.3)	9.9 [b,c]	(9.6-10.3)	10.7 [b]	(10.4-11.1)	9.7 [c]	(9.4-10.1)
Protein E%								
Female	16.2 [a]	(16.1-16.4)	15.4 [b]	(15.2-15.6)	15.5 [b]	(15.3-15.7)	15.8 [b]	(15.6-16.0)
Male	16.6 [a]	(16.4-16.7)	15.9 [b]	(15.7-16.1)	15.8 [b]	(15.6-15.9)	15.8 [b]	(15.7-16.0)
Fiber g/10MJ								
Female	27.7 [a]	(27.4-28.0)	23.9 [b]	(23.5-24.3)	21.6 [c]	(21.1-22.0)	23.2 [b]	(22.8-23.6)
Male	24.4 [a]	(24.2-24.7)	21.2 [b]	(20.8-21.6)	19.1 [c]	(18.7-19.5)	20.4 [b]	(20.0-20.8)
Energy density kJ/100g								
Solids								
Female	692 [a]	(686-699)	756 [b]	(747-699)	793 [c]	(784-803)	786 [c]	(777-795)
Male	756 [a]	(749-762)	819 [b]	(810-829)	853 [c]	(844-862)	846 [c]	(836-855)
Liquids								
Female	47 [a]	(45-48)	61 [b]	(59-63)	70 [c]	(68-72)	59 [b]	(57-61)
Male	64 [a]	(62-65)	78 [b]	(76-81)	91 [c]	(89-93)	77 [b]	(74-79)

Means and 95% confidence intervals are estimated from linear regression models and p-values from pairwise comparisons. Regression models contained main effects of weekday (4 levels), gender, age and random effect of subject. For added sugar, p-values were obtained from pairwise comparisons with Box-Cox transformed model.

E%, percentage of energy intake

[abcd] Mean values within a row with unlike superscript letters were significantly different ($p<0.001$).

Supplemental Table S4 Food and beverage intakes on weekdays (Monday-Thursday), Friday, Saturday and Sunday for females and males. Presented as probabilities of consumption (P) and mean intakes on consumption days.

	Monday-Thursday				Friday				Saturday				Sunday			
Food (g/10MJ)	**P**	**95 % CI**	**Mean**	**95 % CI**	**P**	**95 % CI**	**Mean**	**95 % CI**	**P**	**95 % CI**	**Mean**	**95 % CI**	**P**	**95 % CI**	**Mean**	**95 % CI**
Vegetables																
Female	0.988 [A]	(0.99-0.99)	189 [a]	(183-195)	0.988 [A]	(0.98-0.99)	157 [b]	(149-165)	0.98 [A]	(0.98-0.99)	138 [c]	(131-148)	0.98 [A]	(0.98-0.99)	141 [b,c]	(134-148)
Male*	0.99 [A]	(0.98-0.99)	128 [a]	(123-133)	0.99 [A]	(0.98-0.99)	113 [b]	(107-120)	0.98 [A]	(0.98-0.99)	99 [c]	(94-105)	0.98 [A]	(0.98-0.99)	100 [b,c]	(95-106)
Fruit																
Female	0.98 [A]	(0.98-0.99)	180 [a]	(172-187)	0.98 [A,B]	(0.97-0.98)	138 [b]	(130-146)	0.97 [B]	(0.97-0.98)	118 [c]	(112-126)	0.96 [B]	(0.96-0.97)	127 [b,c]	(120-135)
Male*	0.94 [A]	(0.93-0.95)	105 [a]	(100-111)	0.92 [A,B]	(0.90-0.93)	78 [b]	(73-84)	0.93 [A,B]	(0.91-0.94)	65 [c]	(60-69)	0.91 [B]	(0.89-0.92)	77 [b]	(71-82)
Red meat																
Female*	0.91 [A]	(0.90-0.92)	92 [a,b]	(90-95)	0.92 [A]	(0.91-0.94)	85 [a]	(81-89)	0.93 [A]	(0.92-0.94)	97 [b]	(93-101)	0.91 [A]	(0.89-0.92)	99 [b]	(94-103)
Male*	0.97 [A]	(0.96-0.97)	117 [a]	(114-120)	0.96 [A,B]	(0.96-0.97)	112 [a]	(107-116)	0.96 [A,B]	(0.95-0.97)	119 [a]	(114-124)	0.95 [B]	(0.94-0.96)	112 [a]	(108-117)
Fish																
Female*	0.42 [A]	(0.40-0.44)	44 [a]	(42-47)	0.42 [A]	(0.39-0.44)	42 [a]	(39-46)	0.44 [A]	(0.41-0.47)	42 [a]	(38-45)	0.39 [A]	(0.36-0.41)	43 [a]	(39-47)
Male*	0.41 [A]	(0.39-0.42)	37 [a]	(35-40)	0.41 [A]	(0.38-0.43)	38 [a]	(34-41)	0.40 [A]	(0.37-0.43)	37 [a]	(34-41)	0.36 [A]	(0.34-0.39)	42 [a]	(38-46)
Fast food																
Female*	0.18 [A]	(0.17-0.19)	198 [a]	(190-205)	0.25 [B]	(0.23-0.27)	197 [a,b]	(185-210)	0.24 [B]	(0.22-0.26)	167 [b]	(157-179)	0.22 [B]	(0.20-0.24)	176 [a,b]	(165-188)
Male†	0.24 [A]	(0.23-0.25)	194 [a]	(187-201)	0.32 [B]	(0.30-0.34)	198 [a]	(187-209)	0.31 [B]	(0.29-0.34)	173 [a]	(163-183)	0.28 [A,B]	(0.26-0.30)	198 [a]	(186-211)
Whole grain products																
Female*	0.93 [A]	(0.93-0.94)	120 [a]	(118-122)	0.92 [A,B]	(0.90-0.93)	102 [b,c]	(99-105)	0.89 [B,C]	(0.87-0.90)	95 [b]	(92-98)	0.88 [C]	(0.87-0.90)	105 [c]	(101-108)
Male*	0.93 [A]	(0.92-0.94)	120 [a]	(118-123)	0.92 [A]	(0.91-0.94)	99 [b]	(96-102)	0.88 [B]	(0.86-0.89)	91 [c]	(88-94)	0.87 [B]	(0.85-0.89)	98 [b]	(95-101)
Discretionary foods																
Female*	0.82 [A]	(0.80-0.83)	73 [a]	(72-75)	0.89 [B,C]	(0.88-0.91)	97 [b]	(93-105)	0.92 [B]	(0.90-0.93)	101 [b]	(96-105)	0.88 [C]	(0.86-0.89)	93 [b]	(89-97)
Male*	0.72 [A]	(0.70-0.74)	65 [a]	(63-67)	0.84 [B]	(0.82-0.86)	85 [b]	(81-89)	0.86 [B]	(0.84-0.88)	92 [b]	(88-96)	0.82 [B]	(0.80-0.84)	88 [b]	(84-93)
SSB																
Female*	0.10 [A]	(0.09-0.11)	398 [a]	(383-413)	0.20 [B,C]	(0.18-0.23)	398 [a]	(378-418)	0.23 [B]	(0.20-0.25)	418 [a]	(399-439)	0.16 [C]	(0.14-0.18)	416 [a]	(395-439)
Male*	0.15 [A]	(0.14-0.17)	399 [a]	(385-413)	0.25 [B]	(0.22-0.28)	387 [a]	(369-407)	0.29 [B]	(0.26-0.32)	407 [a]	(388-428)	0.23 [B]	(0.20-0.26)	389 [a]	(369-409)
Beer and wine‡																
Female*	0.12 [A]	(0.11-0.14)	301 [a]	(289-314)	0.41 [B]	(0.37-0.45)	373 [b]	(355-391)	0.51 [C]	(0.47-0.55)	374 [b]	(357-393)	0.22 [D]	(0.19-0.26)	324 [a]	(306-342)
Male*	0.28 [A]	(0.25-0.31)	388 [a]	(372-404)	0.63 [B]	(0.59-0.67)	493 [b]	(469-518)	0.72 [C]	(0.68-0.76)	523 [b]	(498-548)	0.41 [D]	(0.36-0.45)	406 [a]	(384-428)
Alcohol (g/d)‡																
Female*	0.15 [A]	(0.13-0.17)	19 [a]	(18-20)	0.48 [B]	(0.44-0.52)	26 [b]	(25-27)	0.59 [C]	(0.54-0.62)	29 [b]	(27-30)	0.27 [D]	(0.24-0.31)	22 [c]	(21-23)
Male*	0.31 [A]	(0.28-0.34)	23 [a]	(22-24)	0.68 [B]	(0.64-0.71)	35 [b]	(33-36)	0.75 [C]	(0.72-0.79)	41 [c]	(39-43)	0.45 [D]	(0.41-0.50)	27 [d]	(26-29)

P: probability of consumption as estimated from logistic regression. Full regression model contained main effects of weekday (4 levels) and age and random effect of subject. Pairwise comparisons carried out on logit scale, back-transformed estimates and 95% confidence intervals reported.

Mean: Mean intake of food and beverage on days of consumption as estimated from linear regression. Regression model contained main effects of weekday (4 levels), gender, age and random effect of subject. Estimates and 95% confidence intervals obtained from log-transformed model by subsequent back-transformation into normal scale, p-values obtained from best fitting model with Box-Cox

SSB: sugar-sweetened beverages

[ABCD abcd] Probabilities and mean values within a row with unlike superscript letters were significantly different ($p<0.001$).

* Full logistic regression model failed to converge. Fixed effect of age removed from model

†Full logistic regression model failed to converge. Model fitted without random effect and weekday as only explanatory variable.

‡Only individuals ≥16 years of age included in model

Supplemental Table S5 Energy and macronutrient intakes on weekdays (Monday-Thursday), Friday, Saturday and Sunday for different age groups.

	Monday-Thursday		Friday		Saturday		Sunday	
Nutrient	**Mean**	**95 % CI**	**Mean**	**95 % CI**	**Mean**	**95 % CI**	**Mean**	**95 % CI**
Energy MJ/d								
4-13	8.0 [a]	(7.8-8.1)	9.4 [b]	(9.2-9.6)	9.1 [b]	(8.9-9.3)	8.2 [a]	(8.0-8.4)
14-24	8.8 [a]	(8.6-9.1)	10.2 [b]	(9.9-10.5)	10.1 [b]	(9.8-10.4)	8.9 [a]	(8.6-9.2)
25-59	9.3 [a]	(9.2-9.5)	10.7 [b]	(10.5-10.8)	11.71 [c]	(11.5-11.9)	10.3 [d]	(10.1-10.4)
60-75	9.2 [a]	(9.0-9.3)	9.8 [b]	(9.6-10.1)	10.37 [c]	(10.1-10.6)	9.9 [b]	(9.7-10.1)
Fat E%								
4-13	34.2 [a,b]	(33.9-34.6)	33.5 [a]	(33.0-34.1)	34.7 [b,c]	(34.2-35.4)	35.7 [c]	(35.1-36.2)
14-24	35.3 [a,b]	(34.8-35.7)	34.5 [a]	(33.8-35.2)	35.3 [a,b]	(34.6-36-0)	36.1 [b]	(35.4-36.8)
25-59	37.0 [a]	(36.7-37.3)	37.3 [a]	(36.9-37.7)	38.8 [b]	(38.4-39.2)	38.7 [b]	(38.3-39.0)
60-75	37.6 [a]	(37.2-38.0)	38.1 [a,b]	(37.6-38.6)	38.7 [b]	(38.2-39.2)	38.4 [b]	(37.9-38.9)
Saturated fat E%								
4-13	13.7 [a]	(13.5-13.9)	13.4 [a]	(13.1-13.7)	14.2 [b]	(13.9-14.4)	14.6 [b]	(14.3-14.8)
14-24	13.8 [a]	(13.6-14.0)	13.6 [a]	(13.2-13.9)	14.2 [a,b]	(13.9-14.6)	14.6 [b]	(14.2-14.9)
25-59	14.5 [a]	(14.4-14.6)	14.9 [b]	(14.7-15.1)	15.6 [c]	(15.4-15.8)	15.6 [c]	(15.4-15.8)
60-75	15.1 [a]	(14.9-15.4)	15.3 [a,b]	(15.0-15.5)	15.7 [b]	(15.4-16.0)	15.7 [b]	(15.4-16.0)
Carbohydrates E%								
4-13	50.4 [a]	(50.0-50.8)	53.0 [b]	(52.4-53.6)	51.4 [c]	(50.9-52.0)	49.7 [a]	(49.1-50.3)
14-24	48.5 [a]	(48.0-49.1)	50.3 [b]	(49.5-51.1)	49.2 [a,b]	(48.4-50.0)	48.3 [a]	(47.5-49.1)
25-59	46.3 [a]	(46.0-46.6)	46.6 [a]	(46.2-47.0)	45.2 [b]	(44.8-45.6)	45.2 [b]	(44.8-45.6)
60-75	45.7 [a]	(45.3-46.1)	45.2 [a,b]	(44.6-45.7)	44.9 [b]	(44.3-45.4)	45.4 [a,b]	(44.8-46.0)
Added sugar E%								
4-13	8.0 [a]	(7.7-8.4)	13.8 [b]	(13.3-14.4)	14.1 [b]	(13.6-14.7)	11.0 [c]	(10.5-11.6)
14-24	9.6 [a]	(9.0-10.1)	12.3 [b]	(11.5-13.1)	12.8 [b]	(12.0-13.6)	11.3 [b]	(10.4-12.1)
25-59	7.7 [a]	(7.4-7.9)	9.2 [b]	(8.9-9.5)	9.9 [c]	(9.6-10.2)	9.2 [b]	(8.9-9.5)
60-75	7.5 [a]	(7.2-7.8)	7.5 [a,b]	(7.1-8.0)	8.1 [b,c]	(7.7-8.5)	8.4 [c]	(8.0-8.8)
Protein E%								
4-13	15.4 [a]	(15.2-15.5)	13.5 [b]	(13.2-13.8)	13.8 [b]	(13.5-14.1)	14.6 [c]	(14.3-14.9)
14-24	16.2 [a]	(16.0-16.5)	15.2 [b]	(14.8-15.5)	15.5 [b]	(15.1-15.9)	15.6 [b]	(15.2-16.0)
25-59	16.7 [a]	(16.6-16.9)	16.1 [b]	(15.9-16.3)	16.0 [b]	(15.8-16.2)	16.2 [b]	(16.0-16.4)
60-75	16.7 [a]	(16.5-16.9)	16.7 [a]	(16.4-17.0)	16.4 [a,b]	(16.2-16.7)	16.2 [b]	(15.9-16.5)
Fiber g/10MJ								
4-13	26.44 [a]	(26.0-26.9)	22.0 [b]	(21.4-22.7)	19.9 [c]	(19.2-20.5)	21.4 [b]	(20.8-22.0)
14-24	23.9 [a]	(23.3-24.4)	20.8 [b]	(20.0-21.5)	19.0 [c]	(18.2-19.8)	20.0 [b,c]	(19.3-20.8)
25-59	26.5 [a]	(26.1-26.8)	22.3 [b]	(21.9-22.7)	19.7 [c]	(19.3-20.1)	21.6 [b]	(21.2-22.1)
60-75	26.4 [a]	(25.9-26.9)	24.7 [b]	(24.1-25.3)	23.0 [c]	(22.4-23.7)	23.7 [c]	(23.1-24.3)
Energy density kJ/100g								
Solids								
4-13	720 [a]	(709-731)	831 [b]	(815-847)	871 [c]	(855-886)	844 [b,c]	(828-860)
14-24	773 [a]	(759-786)	823 [b]	(804-842)	852 [b]	(833-861)	842 [b]	(823-861)
25-59	720 [a]	(713-727)	790 [b]	(781-780)	829 [c]	(820-839)	824 [c]	(815-834)
60-75	703 [a]	(693-713)	722 [b]	(709-735)	751 [c]	(738-764)	755 [c]	(742-768)
Liquids								
4-13	78 [a]	(75-81)	83 [b]	(79-88)	99 [c]	(95-103)	94 [c]	(90-98)
14-24	68 [a]	(64-72)	89 [b]	(84-94)	94 [b]	(89-99)	80 [c]	(75-85)
25-59	45 [a]	(43-47)	63 [b]	(61-65)	74 [c]	(72-76)	58 [d]	(56-60)
60-75	50 [a]	(48-53)	61 [b]	(58-64)	68 [c]	(65-71)	61 [b]	(58-63)

Means and 95% confidence intervals are estimated from linear regression models and p-values from pairwise comparisons. Regression models contained main effects of weekday (4 levels), gender, age and random effect of subject. For added sugar, p-values were obtained from pairwise comparisons with Box-Cox transformed model.

[abcd] Mean values within a row with unlike superscript letters were significantly different ($p<0.01$).

E%, percentage of energy intake

Supplemental Table S6 Food and beverage intakes on weekdays (Monday-Thursday), Friday, Saturday and Sunday for different age groups. Presented as probabilities of consumption (P) and mean intakes on consumption days with 95% confidence intervals of estimates.

	Monday-Thursday				Friday				Saturday				Sunday			
Food (g/10MJ)	**P**	**95 % CI**	**Mean**	**95 % CI**	**P**	**95 % CI**	**Mean**	**95 % CI**	**P**	**95 % CI**	**Mean**	**95 % CI**	**P**	**95 % CI**	**Mean**	**95 % CI**
Vegetables																
4-13	0.98 ^{A}	(0.98-0.99)	146 ^{a}	(138-155)	0.98 ^{A,B}	(0.96-0.99)	123 ^{b}	(113-135)	0.98 ^{A,B}	(0.97-0.99)	102 ^{c}	(93-111)	0.97 ^{B}	(0.95-0.99)	105 ^{b,c}	(96-114)
14-24*	0.97 ^{A}	(0.96-0.98)	136 ^{a}	(128-145)	0.97 ^{A}	(0.96-0.98)	122 ^{a,b}	(110-135)	0.96 ^{A}	(0.94-0.97)	104 ^{b}	(94-116)	0.98 ^{A}	(0.96-0.98)	102 ^{b}	(92-113)
25-59	0.99 ^{A}	(0.99-0.99)	171 ^{a}	(165-177)	0.99 ^{A}	(0.98-0.99)	138 ^{b}	(131-146)	0.99 ^{A}	(0.98-0.99)	126 ^{c}	(120-133)	0.99 ^{A}	(0.98-0.99)	128 ^{b,c}	(121-134)
60-75*	0.99 ^{A}	(0.99-1.00)	144 ^{a}	(136-154)	1.00 ^{A}	(0.99-1.00)	138 ^{a,b}	(127-150)	0.99 ^{A}	(0.99-1.00)	119 ^{c}	(109-130)	0.99 ^{A}	(0.99-1.00)	124 ^{b,c}	(114-135)
Fruit																
4-13	0.98 ^{A}	(0.97-0.98)	141 ^{a}	(131-151)	0.97 ^{A,B}	(0.95-0.98)	99 ^{b}	(89-111)	0.96 ^{B}	(0.94-0.97)	94 ^{b}	(84-105)	0.95 ^{B}	(0.93-0.97)	99 ^{b}	(89-111)
14-24	0.89 ^{A}	(0.86-0.89)	105 ^{a}	(96-115)	0.86 ^{A,B}	(0.83-0.89)	81 ^{b}	(70-92)	0.84 ^{A,B}	(0.81-0.88)	71 ^{b}	(62-81)	0.82 ^{B}	(0.78-0.86)	79 ^{b}	(69-91)
25-59*	0.96 ^{A}	(0.95-0.97)	137 ^{a}	(131-144)	0.95 ^{A}	(0.94-0.96)	98 ^{b}	(92-105)	0.95 ^{A}	(0.94-0.96)	77 ^{c}	(72-82)	0.93 ^{B}	(0.91-0.94)	90 ^{b}	(84-96)
60-75*	0.99 ^{A}	(0.99-1.00)	162 ^{a}	(151-173)	0.99 ^{A}	(0.98-1.00)	146 ^{b}	(133-159)	0.99 ^{A}	(0.98-1.00)	128 ^{b}	(117-140)	0.99 ^{A}	(0.99-1.00)	139 ^{b}	(127-151)
Red meat																
4-13*	0.96 ^{A}	(0.95-0.97)	94 ^{a}	(90-98)	0.93 ^{B,C}	(0.91-0.95)	81 ^{b}	(75-86)	0.94 ^{A,B}	(0.92-0.95)	96 ^{a}	(90-103)	0.90 ^{C}	(0.87-0.92)	101 ^{a}	(95-109)
14-24*	0.95 ^{A}	(0.93-0.96)	110 ^{a}	(106-116)	0.94 ^{A}	(0.92-0.96)	98 ^{b}	(91-106)	0.93 ^{A}	(0.91-0.95)	114 ^{a,b}	(105-123)	0.94 ^{A}	(0.92-0.96)	111 ^{a,b}	(102-119)
25-59*	0.94 ^{A}	(0.93-0.94)	107 ^{a}	(104-110)	0.95 ^{B}	(0.94-0.96)	105 ^{a}	(100-110)	0.95 ^{B}	(0.94-0.96)	112 ^{a}	(107-117)	0.94 ^{A,B}	(0.92-0.95)	109 ^{a}	(105-114)
60-75*	0.94 ^{A}	(0.93-0.95)	101 ^{a}	(97-106)	0.95 ^{A}	(0.93-0.96)	96 ^{a}	(89-103)	0.95 ^{A}	(0.93-0.96)	104 ^{a}	(97-112)	0.94 ^{A}	(0.93-0.96)	97 ^{a}	(90-105)
Fish																
4-13*	0.28 ^{A}	(0.26-0.31)	36 ^{a}	(33-40)	0.26 ^{A}	(0.23-0.30)	32 ^{a}	(27-37)	0.23 ^{A}	(0.20-0.27)	33 ^{a}	(28-40)	0.23 ^{A}	(0.20-0.27)	43 ^{a}	(36-51)
14-24	0.34 ^{A}	(0.31-0.36)	33 ^{a}	(29-36)	0.34 ^{A}	(0.30-0.39)	37 ^{a}	(31-44)	0.30 ^{A}	(0.26-0.34)	33 ^{a}	(27-40)	0.27 ^{A}	(0.23-0.31)	33 ^{a}	(27-40)
25-59*	0.43 ^{A}	(0.41-0.45)	39 ^{a}	(37-42)	0.42 ^{A,B}	(0.40-0.45)	37 ^{a}	(33-41)	0.46 ^{A}	(0.43-0.48)	38 ^{a}	(35-42)	0.38 ^{B}	(0.36-0.41)	41 ^{a}	(37-45)
60-75*	0.57 ^{A}	(0.54-0.60)	50 ^{a}	(47-54)	0.60 ^{A}	(0.55-0.64)	53 ^{a}	(47-60)	0.62 ^{A}	(0.57-0.66)	48 ^{a}	(42-54)	0.60 ^{A}	(0.55-0.64)	50 ^{a}	(44-57)
Fast food																
4-13*	0.31 ^{A}	(0.29-0.33)	184 ^{a}	(175-193)	0.43 ^{B}	(0.39-0.47)	185 ^{a}	(171-200)	0.43 ^{B}	(0.39-0.47)	170 ^{a}	(157-184)	0.35 ^{A,B}	(0.31-0.39)	181 ^{a}	(166-197)
14-24*	0.33 ^{A}	(0.31-0.36)	236 ^{a}	(223-249)	0.42 ^{B}	(0.38-0.47)	241 ^{a}	(220-265)	0.37 ^{A,B}	(0.33-0.42)	217 ^{a}	(197-239)	0.31 ^{A}	(0.27-0.35)	239 ^{a}	(215-265)
25-59†	0.21 ^{A}	(0.20-0.22)	195 ^{a}	(187-204)	0.29 ^{B}	(0.27-0.31)	195 ^{a}	(182-208)	0.29 ^{B}	(0.27-0.31)	158 ^{b}	(148-168)	0.28 ^{B}	(0.26-0.30)	182 ^{a}	(170-194)
60-75*	0.08 ^{A}	(0.07-0.09)	153 ^{a}	(141-167)	0.10 ^{A}	(0.08-0.12)	166 ^{a}	(144-191)	0.08 ^{A}	(0.06-0.10)	152 ^{a}	(130-178)	0.08 ^{A}	(0.07-0.11)	143 ^{a}	(123-166)
Whole grain products																
4-13	0.93 ^{A}	(0.92-0.94)	132 ^{a}	(127-136)	0.91 ^{A}	(0.89-0.93)	102 ^{b}	(97-108)	0.78 ^{B}	(0.74-0.82)	93 ^{b}	(88-99)	0.82 ^{B}	(0.79-0.86)	101 ^{b}	(95-107)
14-24	0.79 ^{A}	(0.76-0.81)	122 ^{a}	(117-127)	0.76 ^{A,B}	(0.72-0.80)	94 ^{b}	(88-100)	0.68 ^{B,C}	(0.63-0.73)	94 ^{b}	(88-101)	0.65 ^{C}	(0.60-0.70)	100 ^{b}	(93-107)

25-59*	0.93 [A]	(0.92-0.94)	120 [a]	(117-123)	0.91 [B]	(0.89-0.92)	99 [b]	(96-102)	0.89 [B]	(0.88-0.91)	90 [c]	(87-93)	0.88 [B]	(0.86-0.90)	103 [b]	(100-107)
60-75*	0.99 [A,I]	(0.99-1.00)	112 [a]	(109-116)	0.99 [A]	(0.99-1.00)	106 [b]	(101-110)	0.99 [A,B]	(0.98-0.99)	98 [b]	(94-103)	0.99 [B]	(0.98-0.99)	98 [b]	(94-103)
Discretionary foods																
4-13*	0.82 [A]	(0.80-0.84)	61 [a]	(58-64)	0.96 [B]	(0.95-0.97)	123 [b]	(114-133)	0.96 [B]	(0.94-0.97)	121 [b]	(112-130)	0.91 [C]	(0.88-0.93)	100 [c]	(92-108)
14-24‡	0.69 [A]	(0.65-0.72)	71 [a]	(67-75)	0.78 [B]	(0.73-0.82)	88 [b]	(80-96)	0.78 [B]	(0.74-0.82)	92 [b]	(84-102)	0.75 [A,B]	(0.70-0.79)	90 [b]	(82-100)
25-59*	0.76 [A]	(0.74-0.78)	70 [a]	(68-73)	0.86 [B]	(0.84-0.88)	87 [b]	(83-91)	0.90 [C]	(0.88-0.91)	92 [b]	(88-96)	0.84 [B]	(0.82-0.86)	86 [b]	(82-90)
60-75*	0.80 [A]	(0.77-0.83)	73 [a]	(70-76)	0.84 [A,B]	(0.80-0.87)	75 [a]	(70-80)	0.87 [B]	(0.83-0.89)	86 [b]	(81-92)	0.88 [B]	(0.85-0.91)	91 [b]	(85-97)
SSB																
4-13*	0.21 [A]	(0.19-0.24)	382 [a]	(364-400)	0.47 [B]	(0.42-0.52)	376 [a]	(352-401)	0.56 [B]	(0.51-0.61)	432 [b]	(407-460)	0.38 [C]	(0.33-0.42)	397 [a,b]	(379-425)
14-24*	0.30 [A]	(0.27-0.34)	492 [a]	(464-522)	0.52 [B]	(0.46-0.57)	519 [a]	(480-562)	0.54 [B]	(0.48-0.59)	543 [a]	(502-587)	0.44 [B]	(0.38-0.50)	510 [a]	(470-554)
25-59*	0.11 [A]	(0.10-0.12)	390 [a]	(375-405)	0.18 [B]	(0.15-0.20)	373 [a]	(354-394)	0.20 [B]	(0.18-0.23)	372 [a]	(535-392)	0.16 [B]	(0.14-0.18)	383 [a]	(363-405)
60-75*	0.03 [A]	(0.02-0.04)	324 [a]	(301-349)	0.03 [A]	(0.02-0.05)	299 [a]	(269-332)	0.03 [A]	(0.02-0.04)	311 [a]	(279-346)	0.03 [A]	(0.02-0.04)	311 [a]	(280-346)
Beer and wine																
16-24	0.06 [A]	(0.04-0.07)	464 [a]	(404-533)	0.22 [B]	(0.18-0.28)	648 [b,c]	(556-756)	0.20 [B]	(0.16-0.25)	693 [b]	(592-812)	0.06 [A]	(0.04-0.08)	428 [a,c]	(337-543)
25-59*	0.17 [A]	(0.15-0.19)	334 [a]	(321-248)	0.53 [B]	(0.49-0.56)	442 [b]	(422-463)	0.63 [C]	(0.59-0.66)	457 [b]	(437-478)	0.27 [D]	(0.24-0.30)	353 [a]	(334-372)
60-75*	0.47 [A]	(0.43-0.52)	331 [a]	(317-346)	0.72 [B]	(0.67-0.77)	377 [b,c]	(357-398)	0.84 [C]	(0.80-0.87)	392 [b]	(372-413)	0.70 [B]	(0.65-0.76)	357 [a,c]	(337-377)
Alcohol (g/d)																
16-24	0.07 [A]	(0.06-0.09)	23 [a]	(20-27)	0.29 [B]	(0.24-0.35)	42 [b]	(36-49)	0.28 [B]	(0.23-0.34)	45 [b]	(38-52)	0.08 [A]	(0.05-0.10)	24 [a]	(19-30)
25-59*	0.18 [A]	(0.17-0.20)	20 [a]	(19-21)	0.57 [B]	(0.53-0.61)	31 [b]	(29-32)	0.67 [C]	(0.63-0.70)	36 [c]	(35-38)	0.31 [D]	(0.27-0.34)	24 [d]	(22-25)
60-75*	0.56 [A]	(0.51-0.60)	21 [a]	(20-22)	0.79 [B]	(0.74-0.83)	27 [b]	(25-28)	0.88 [C]	(0.84-0.90)	30 [c]	(28-31)	0.78 [B]	(0.73-0.82)	25 [b]	(23-26)

P: probability of consumption as estimated from logistic regression. Full regression model contained main effects of weekday (4 levels), gender, age and random effect of subject. Pairwise comparisons carried

Mean: Mean intake of food and beverage on days of consumption as estimated from linear regression. Regression model contained main effects of weekday (4 levels), gender, age and random effect of subject.

SSB: sugar-sweetened beverages

[ABCD abcd] Probabilities and mean values within a row with unlike superscript letters were significantly different (p<0.01).

* Full logistic regression model failed to converge. Fixed effect of age removed from model

† Full logistic regression model failed to converge. Model fitted without random effect and weekday as only explanatory variable.

‡ Full logistic regression model failed to converge. Fixed effects of age and and sex removed from model

Literature review

Supplemental Table S7 & Table S8 & text

Weekly variation in dietary intake and physical activity

Several studies in the past have investigated temporal variation in different parameters of dietary intake and physical activity, with the oldest studies dating back to the mid-1900s and prior [1, 2]. Studies exist in various populations and different age groups, and many studies have been able to point to day-of-the-week effects in health behaviour (**Supplemental Table S7** & **Supplemental Table S8**).

Dietary intake

Several studies of varying quality have investigated weekly variation or weekday-weekend differences in dietary intake as one of the main study objectives [3-23]. Additional evidence has been provided from studies looking at weekly variation of dietary intake as a secondary objective [24-33]. The majority of studies were carried out in the United States [3, 5-10, 14, 15, 21, 23-26, 30, 33], but also in Ireland [4], Finland [11], Brazil [13], Canada [17, 22, 28, 34], New Zealand [18], Denmark [19], Spain [31] and United Kingdom [32], in addition to a joint study between several European countries [20]. A summary table of relevant studies on weekly variation in dietary intake can be found in Supplemental Table S7. Some evidence is derived from studies aiming to identify sources of intra- and interindividual variation in dietary intake for development of accurate sampling strategies in monitoring of dietary intake. "Day of the week" has been identified as a source of intraindividual variation in studies using both prospective dietary recording methods [24, 27-29] and 24-hour recalls [25, 26].

Total energy intake is the most studied dietary variable for temporal variation and frequently identified to exhibit a weekly variation, the intake being higher on weekend days across most studied populations [3, 7, 8, 10-14, 16, 17, 19, 21-24, 27-30]. For example, Haines et al. demonstrated in a nationally representative sample of 28 156 children and adults that the average American consumes 82 kcal more per day on weekend days (Friday through Sunday) compared to weekdays (Monday through Thursday) [8]. On the contrary, Nicklas et al. were not able to detect a day-of-the-week effect on energy intake in 10-year old children [15]. Comparisons were however only made between weekdays and Sundays, and people may not display the most extreme weekend behaviour on Sundays [3, 24]. Likewise, Svensson et al. did not find a weekday-weekend difference in energy intake in an extensive study on European children [20]. In a study on 520 children in the United States, Cullen et al. found lower energy intake during weekends, despite less healthful fat practices during the weekend [5].

Other dietary parameters, for which weekday-weekend differences have frequently been studied, are different macronutrients and their percentage contributions to total energy intake (E%). In many studies, intake of total fat has been demonstrated to be larger in the weekends, reported as absolute amounts [3, 7, 16, 27, 30], E% [5, 9, 13, 14, 23] or both [8, 22]. Such results would indicate that a larger fat intake during weekends is not only attributable to a larger total energy intake, but also changed dietary composition. Intakes of carbohydrates and protein show more inconsistent results across studies and populations. Since E% fat seems to be higher during weekends in many studies, subsequent contribution from carbohydrates to energy is often lower [8, 10, 11, 13, 18, 22]. In contrast, some studies have also seen higher E% of carbohydrates during weekends [18, 23]. Results seem to be dependent on the sociodemographic characteristics of the target population, i.e. age, gender, and geography. In the 1980's, Thompson et al. studied weekday-weekend differences in dietary intake in a nationally representative sample of 13 215 adults in the United States [21]. Results showed that while intake of energy, protein, and fat were higher on weekends in those aged 23 to 50, nutrient intakes did not significantly differ in those aged 65 to 74. For men aged 51 to 64, carbohydrate intake was significantly higher during weekends and for women in the same age category intakes of energy and fat were higher.

Aforementioned weekday-weekend differences in energy and macronutrient intakes are a reflection of weekly variation in the intakes of many foods and beverages. Several studies, especially on children, have shown increased consumption of sugar-sweetened beverages or sweet discretionary foods, and a subsequent increase of added sugar during weekends [3, 13, 19, 20]. Sepp et al. studied food patterns of Swedish pre-school children and found that "low-nutrient foods" (confectionery, buns and soft drinks etc.) contributed 20% of the energy during weekdays, compared to 33% during weekend days [35]. Surprisingly, Hart et al. found that overweight children in the U.S. consumed less sweetened drinks and non-nutrient dense snack foods during weekends [9]. Rockell et al. also found a larger consumption of snack foods and sucrose and fructose on schooldays in New Zealand school children, but soft drink consumption was larger during non-schooldays [18].

Vegetable and fruit intake has been found to be smaller or less frequent during weekends in at least populations of U.S adults [3, 10] and children [6, 9, 14], Spanish adults [31], Danish children [19] and the general Canadian population [22]. Some studies have shown significantly lower intakes of whole grain or fibre during weekends [3, 10, 19, 22], others failed to detect a difference between weekdays and weekend days [14, 16, 18]. Burke et al. demonstrated significantly but non-substantially lower intakes of total cereals and dairy products on weekends in Irish adults [4]. A few studies have also demonstrated a larger consumption of meat or meat products during weekends [11, 15, 21]. Perhaps unsurprisingly, strong, and consistent evidence also exists for higher intake of alcohol during weekends or Fridays compared to weekdays [3, 8, 10-12, 17, 21-23, 30, 31, 34]. Gibson et al. studied temporal variation in beverage consumption in British adults and saw notably larger consumption of alcohol on Saturdays, especially among men [34].

As a measure of dietary quality, several studies have looked at weekday-weekend differences in dietary quality index scores. Such scores are compound variables constructed from different components reflecting dietary recommendations and dietary quality [36]. Dietary quality index scores were lower during weekends in all studies that included comparisons with such scores [3, 10, 14, 22, 33].

Some of the observable weekly variation in nutrient and food intake may arise from differences in social and contextual factors of food intake during weekdays and weekend days. Weekly variation of such factors has been studied marginally and may be crucial for painting the full picture of weekend eating behaviour. Bertand and Schanzenbach investigated how different activities during food intake affect energy intake and how these activities differ in weekdays and weekends [37]. In weekends people consumed more calories while socializing and "just eating", but less while watching TV. De Castro et al. demonstrated in two separate studies that during weekends meal sizes were larger, meal duration was longer, and among young and middle-aged adults meals were ingested later and in the company of more people [7, 30]. In a study on Scottish school-aged children's snacking patterns, Macdiarmid et al. demonstrated that while intake of energy, fat and extrinsic sugar intake did not differ on weekend and weekdays, meal frequency was higher in weekdays [32]. Thompson et al. showed likewise that in an adult population the number of meals was lower in weekends [21]. O'Dwyer et al. demonstrated that for meals consumed at home, the number of eating occasions was constant across the days of the week but for meals consumed outside the home, eating occasions increased in weekends [38]. The contribution of fat to energy was above recommendations outside the home. In accordance, An et al. showed that the prevalence of fast-food and full-service restaurant consumption was significantly higher on Fridays, Saturdays and Sundays compared to weekdays (Monday through Thursday)[3].

Physical activity

With increased prevalence of overweight and obesity in the last decades, interest in temporal patterns of physical activity (PA) has also increased. A summary table of relevant studies on weekly variation in PA can be found in Supplemental Table S8. Many studies have investigated day-of-the-week effects on physical activity levels, especially in children and adolescents [9, 39-58]. Findings from different studies are somewhat inconsistent and vary depending on study population and the methods applied. For determination PA level, few studies have applied subjective methods, such as questionnaires and recall of previous activity [9, 43, 47], while most have used objective methods, such as pedometry [40, 44, 52, 59, 60], accelerometery [39, 45, 46, 48-51, 53-58, 61-63], or heart rate monitoring [41, 42]. Depending on the method of recording, outcome measures can be given as the total amount of steps taken in a day, the total amount of time spent undertaking low, moderate or vigorous physical activity or estimated energy expenditure in physical activity.

The vast majority of studies have indicated higher levels of physical activity during weekdays compared to weekends days. Such results have been seen in studies on children and adolescents in France and Spain [39], the United States [40, 44, 46, 50, 63], Canada [55], Denmark [45, 62], the United Kingdom [49, 51, 52] and in a joint study of four European countries [53]. For example, Comte et al. showed in a study on 626 Canadian youth (aged 10-15 years) that time spent undertaking moderate to vigorous PA was approximately 30% lower in weekends compared to weekdays, while light PA was 15% higher [55]. Overall, PA recommendations were achieved by significantly more youth during weekdays. Studies on adult populations have shown similar results in the United States [59-61] and in a large study on participants of African descent from 5 different countries [48].

Opposite trends have also been demonstrated in a few studies. Huang et al. found that total daily energy expenditure and energy expenditure in moderate to vigorous PA was higher on weekends in Taiwanese boys (aged 12-14 years) [43]. Peiró-Velert et al. found that Spanish adolescents had higher energy expenditure during the weekend [47], as did Hart et al. in overweight children in the US, who in addition showed greater percentage of time spent in moderate-to-vigorous physical activity (MVPA) in weekends [9]. It is to be noted that respective studies used questionnaires or activity recalls as their method of PA recording. Steele et al. found in a large study on British 9-10 year-olds no difference in vigorous PA between weekdays and weekends, but found that less time was spent sedentary in weekdays [54]. Trost et al. found that US children had significantly higher levels of MVPA during weekends, but adolescents had significantly lower levels during weekends [64].

References

1. Young CM, Franklin RE, Foster WD *et al.* (1953) Weekly variation in nutrient intake of young adults. *J Am Diet Assoc* 29, 459-464.
2. Leverton RM & Marsh AG (1939) Comparison of food intakes for weekdays and for Saturday and Sunday. *Journal of Home Economics* 81, 111-114.
3. An R (2016) Weekend-weekday differences in diet among U.S. adults, 2003-2012. *Ann Epidemiol* 26, 57-65.
4. Burke SJ, McCarthy SN, O'Dwyer NA *et al.* (2007) Analysis of the temporal intake of cereal and dairy products in Irish adults: implications for developing food-based dietary guidelines. *Public Health Nutr* 8, 238-248.
5. Cullen KW, Lara KM de Moor C (2002) Children's dietary fat intake and fat practices vary by meal and day. *J Am Diet Assoc* 102, 1773-1778.
6. Cullen KW, Baranowski J, Hebert D *et al.* (1998) Meal, Location, and Day of Week Influence Fruit and Vegetable Intake Among 9-14 Year Old Boys [abstract]. *J Am Diet Assoc* 98, A42.
7. de Castro JM (1991) Weekly rhythms of spontaneous nutrient intake and meal pattern of humans. *Physiol Behav* 50, 729-738.
8. Haines PS, Hama MY, Guilkey DK *et al.* (2003) Weekend eating in the United States is linked with greater energy, fat, and alcohol intake. *Obes Res* 11, 945-949.
9. Hart CN, Raynor HA, Osterholt KM *et al.* (2011) Eating and activity habits of overweight children on weekdays and weekends. *Int J Pediatr Obes* 6, 467-472.
10. Jahns L, Conrad Z, Johnson LK *et al.* (2017) Diet Quality Is Lower and Energy Intake Is Higher on Weekends Compared with Weekdays in Midlife Women: A 1-Year Cohort Study. *J Acad Nutr Diet* 117, 1080-1086.e1081.
11. Jula A, Seppanen R Alanen E (1999) Influence of days of the week on reported food, macronutrient and alcohol intake among an adult population in south western Finland. *Eur J Clin Nutr* 53, 808-812.
12. Maisey S, Loughridge J, Southon S *et al.* (1995) Variation in food group and nutrient intake with day of the week in an elderly population. *Br J Nutr* 73, 359-373.
13. Monteiro LS, Hassan BK, Estima CCP *et al.* (2017) Food Consumption According to the Days of the Week - National Food Survey, 2008-2009. *Rev Saude Publica* 51, 93.
14. Nansel TR, Lipsky LM, Liu A *et al.* (2014) Contextual factors are associated with diet quality in youth with type 1 diabetes mellitus. *J Acad Nutr Diet* 114, 1223-1229.
15. Nicklas TA, Farris RP, Bao W *et al.* (1997) Differences in reported dietary intake of 10-year-old children on weekdays compared to Sunday: The Bogalusa Heart Study. *Nutrition Research* 17, 31-40.
16. Post B, Kemper HC Strom-Van Essen L (1987) Longitudinal changes in nutritional habits of teenagers: differences in intake between schooldays and weekend days. *Br J Nutr* 57, 161-176.
17. Richard L & Roberge AG (1982) Comparison of caloric and nutrient intake of adults during week and week-end days. *Nutrition Research* 2, 661-668.
18. Rockell JE, Parnell WR, Wilson NC *et al.* (2011) Nutrients and foods consumed by New Zealand children on schooldays and non-schooldays. *Public Health Nutr* 14, 203-208.
19. Rothausen BW, Matthiessen J, Hoppe C *et al.* (2012) Differences in Danish children's diet quality on weekdays v. weekend days. *Public Health Nutr* 15, 1653-1660.
20. Svensson A, Larsson C, Eiben G *et al.* (2014) European children's sugar intake on weekdays versus weekends: the IDEFICS study. *Eur J Clin Nutr* 68, 822-828.
21. Thompson FE, Larkin FA Brown MB (1986) Weekend-weekday differences in reported dietary intake: The nationwide food consumption survey, 1977–78. *Nutr Res* 6, 647-662.
22. Yang PH, Black JL, Barr SI *et al.* (2014) Examining differences in nutrient intake and dietary quality on weekdays versus weekend days in Canada. *Appl Physiol Nutr Metab* 39, 1413-1417.
23. Rhodes DG, Cleveland LE, Murayi T *et al.* (2007) The effect of weekend eating on nutrient intakes and dietary patterns [abstract]. *FASEB J* 21, 835.832.
24. Basiotis PP, Thomas RG, Kelsay JL *et al.* (1989) Sources of variation in energy intake by men and women as determined from one year's daily dietary records. *Am J Clin Nutr* 50, 448-453.
25. Beaton GH, Milner J, Corey P *et al.* (1979) Sources of variance in 24-hour dietary recall data: implications for nutrition study design and interpretation. *Am J Clin Nutr* 32, 2546-2559.

26. Beaton GH, Milner J, McGuire V *et al.* (1983) Source of variance in 24-hour dietary recall data: implications for nutrition study design and interpretation. Carbohydrate sources, vitamins, and minerals. *Am J Clin Nutr* 37, 986-995.
27. McGee D, Rhoads G, Hankin J *et al.* (1982) Within-person variability of nutrient intake in a group of Hawaiian men of Japanese ancestry. *Am J Clin Nutr* 36, 657-663.
28. Tarasuk V & Beaton GH (1992) Statistical estimation of dietary parameters: implications of patterns in within-subject variation—a case study of sampling strategies. *Am J Clin Nutr* 55, 22-27.
29. Gibson RS, Gibson IL Kitching J (1985) A study of inter- and intrasubject variability in seven-day weighed dietary intakes with particular emphasis on trace elements. *Biological Trace Element Research* 8, 79.
30. de Castro JM (2002) Age-Related Changes in the Social, Psychological, and Temporal Influences on Food Intake in Free-Living, Healthy, Adult Humans. *J Gerontol A Biol Sci Med Sci* 57, M368-M377.
31. Jaeger SR, Marshall DW Dawson J (2009) A quantitative characterisation of meals and their contexts in a sample of 25 to 49-year-old Spanish people. *Appetite* 52, 318-327.
32. Macdiarmid J, Loe J, Craig LCA *et al.* (2009) Meal and snacking patterns of school-aged children in Scotland. *Eur J Clin Nutr* 63, 1297.
33. Hanson KL & Olson CM (2013) School meals participation and weekday dietary quality were associated after controlling for weekend eating among U.S. school children aged 6 to 17 years. *J Nutr* 143, 714-721.
34. Gibson S & Shirreffs SM (2013) Beverage consumption habits “24/7” among British adults: association with total water intake and energy intake. *Nutr J* 12, 9.
35. Sepp H, Abrahamsson L, Junberger ML *et al.* (2002) The contribution of food groups to the nutrient intake and food pattern among pre-school children. *Food quality and preference* 13, 107-116.
36. Guenther PM, Casavale KO, Reedy J *et al.* (2013) Update of the Healthy Eating Index: HEI-2010. *J Acad Nutr Diet* 113, 569-580.
37. Bertrand M & Schanzenbach DW (2009) Time Use and Food Consumption. *American Economic Review* 99, 170-176.
38. O'dwyer N, McCarthy S, Burke S *et al.* (2005) The temporal pattern of the contribution of fat to energy and of food groups to fat at various eating locations: implications for developing food-based dietary guidelines. *Public Health Nutr* 8, 249-257.
39. Aibar A, Bois JE, Generelo E *et al.* (2013) A cross-cultural study of adolescents' physical activity levels in France and Spain. *Eur J Sport Sci* 13, 551-558.
40. Brusseau T, Kulinna P, Tudor-Locke C *et al.* (2011) Children's step counts on weekend, physical education, and non-physical education days. *J Hum Kinet* 27, 123-134.
41. Gavarry O, Giacomoni M, Bernard T *et al.* (2003) Habitual physical activity in children and adolescents during school and free days. *Med Sci Sports Exerc* 35, 525-531.
42. Gilbey H & Gilbey M (1995) The physical activity of Singapore primary school children as estimated by heart rate monitoring. *Pediatric exercise science* 7, 26-35.
43. Huang YC & Malina RM (1996) Physical activity and correlates of estimated energy expenditure in Taiwanese adolescents 12–14 years of age. *American Journal of Human Biology: The Official Journal of the Human Biology Association* 8, 225-236.
44. Jones R, Brusseau TA, Kulinna PH *et al.* (2016) Step Counts on Weekdays, Weekends, and During Physical Education of Navajo High School Students. *J Racial Ethn Health Disparities*.
45. Kristensen PL, Korsholm L, Møller N *et al.* (2008) Sources of variation in habitual physical activity of children and adolescents: the European youth heart study. *Scand J Med Sci Sports* 18, 298-308.
46. Nader PR, Bradley RH, Houts RM *et al.* (2008) Moderate-to-vigorous physical activity from ages 9 to 15 years. *JAMA* 300, 295-305.
47. Peiró-Velert C, Devís-Devís J, Beltrán-Carrillo VJ *et al.* (2008) Variability of Spanish adolescents’ physical activity patterns by seasonality, day of the week and demographic factors. *European Journal of Sport Science* 8, 163-171.
48. Refinetti R, Sani M, Jean-Louis G *et al.* (2015) Evidence for daily and weekly rhythmicity but not lunar or seasonal rhythmicity of physical activity in a large cohort of individuals from five different countries. *Ann Med* 47, 530-537.

49. Rowlands AV, Pilgrim EL Eston RG (2008) Patterns of habitual activity across weekdays and weekend days in 9-11-year-old children. *Prev Med* 46, 317-324.
50. Treuth MS, Catellier DJ, Schmitz KH *et al.* (2007) Weekend and weekday patterns of physical activity in overweight and normal-weight adolescent girls. *Obesity (Silver Spring)* 15, 1782-1788.
51. Riddoch CJ, Mattocks C, Deere K *et al.* (2007) Objective measurement of levels and patterns of physical activity. *Arch Dis Child* 92, 963-969.
52. Duncan MJ, Al-Nakeeb Y, Woodfield L *et al.* (2007) Pedometer determined physical activity levels in primary school children from central England. *Prev Med* 44, 416-420.
53. Nilsson A, Anderssen SA, Andersen LB *et al.* (2009) Between-and within-day variability in physical activity and inactivity in 9-and 15-year-old European children. *Scand J Med Sci Sports* 19, 10-18.
54. Steele RM, van Sluijs EM, Sharp SJ *et al.* (2010) An investigation of patterns of children's sedentary and vigorous physical activity throughout the week. *International Journal of Behavioral Nutrition and Physical Activity* 7, 88.
55. Comte M, Hobin E, Majumdar SR *et al.* (2013) Patterns of weekday and weekend physical activity in youth in 2 Canadian provinces. *Appl Physiol Nutr Metab* 38, 115-119.
56. Corder K, Craggs C, Jones AP *et al.* (2013) Predictors of change differ for moderate and vigorous intensity physical activity and for weekdays and weekends: a longitudinal analysis. *International Journal of Behavioral Nutrition and Physical Activity* 10, 69.
57. Corder K, van Sluijs EMF, Ekelund U *et al.* (2010) Changes in Children's Physical Activity Over 12 Months: Longitudinal Results From the SPEEDY Study. *Pediatrics* 126, e926-e935.
58. Jago R, Anderson CB, Baranowski T *et al.* (2005) Adolescent patterns of physical activity: Differences by gender, day, and time of day. *American journal of preventive medicine* 28, 447-452.
59. Behrens TK & Dinger MK (2003) A preliminary investigation of college students' physical activity patterns. *Am J Health Stud* 18, 169.
60. Tudor-Locke C, Ham SA, Macera CA *et al.* (2004) Descriptive epidemiology of pedometer-determined physical activity. *Med Sci Sports Exerc* 36, 1567-1573.
61. Matthews CE, Ainsworth BE, Thompson RW *et al.* (2002) Sources of variance in daily physical activity levels as measured by an accelerometer. *Med Sci Sports Exerc* 34, 1376-1381.
62. Hjorth MF, Chaput J-P, Michaelsen K *et al.* (2013) Seasonal variation in objectively measured physical activity, sedentary time, cardio-respiratory fitness and sleep duration among 8–11 year-old Danish children: a repeated-measures study. *BMC Public Health* 13, 808.
63. Racette SB, Weiss EP, Schechtman KB *et al.* (2008) Influence of weekend lifestyle patterns on body weight. *Obesity (Silver Spring)* 16, 1826-1830.
64. Trost SG, Pate RR, Freedson PS *et al.* (2000) Using objective physical activity measures with youth: how many days of monitoring are needed? *Medicine & Science in Sports & Exercise* 32, 426.

Supplemental Table S7 Studies on day-of-the-week effects in dietary intake

Study	Country	Population	Method of dietary recording	Type of effect
An, R. (2016). Ann Epidemiol, 26(1), 57-65.	United States	11 646 adults	2 x 24-hour dietary recalls	Overall less healthful intake in weekends, Saturday being the worst day. Increased consumption of energy, energy from sugar-sweetened beverages, alcohol, discretionary foods, total fat, saturated fat, sugar, sodium, cholesterol on Saturday. Decreased intake of fruit, vegetables, fiber and decreased dietary index score.
Basiotis, P. P. et al. (1989). Am J Clin Nutr, 50(3), 448-453.	United States	29 males and females	Daily records of food intake for a year	Energy intake greater on Fridays and Saturdays, lower on Mondays and Tuesdays compared to Thursdays (reference)
Beaton, G. H. et al. (1979). Am J Clin Nutr, 32(12), 2546-2559.	United States	60 males and females	6 x 24-hour recall	Day of the week effect present for absolute nutrient intakes for females. Not present when nutrient concentrations were measured (relative to energy ingested)
Beaton, G. H. et al. (1983). Am J Clin Nutr, 37(6), 986-995.	United States	60 males and females	6 x 24-hour recall	In females, day of the week effect in some micronutrients (riboflavin, calcium),
Bertrand, M., & Schanzenbach, D. W. (2009). Am Econ Rev, 99(2), 170-176.	United States	400 women (≥18 y)	24-hour recall	200 kcal more are consumed on weekends when "just eating" and socialising, less calories consumed while watching TV
Burke, S. J. et al. (2007). Public Health Nutr, 8(3), 238-248.	Ireland	958 adults	7-day food diary	Intakes of total dairy products and total cereal products significantly lower on weekends but amounts (50 g and 53 g) not substantial
Cullen, K. W. et al. (1998). J Am Diet Assoc, 98(9, Supplement), A42.	United States	520 4th-6th graders	7 daily food records	Weekend days provided in general sign. more high-fat practices, less energy, higher percentage of energy from fat. Varied somewhat by meal.
Cullen, K. W. et al. (2002). J Am Diet Assoc, 102(12), 1773-1778.	United States	80 boy scouts (9-14 y)	up to 4 x 24-hour recall	Significant differences in fruit and vegetable intake by meal and day of week
de Castro, J. M. (2002). J Gerontol: Series A, 57(6), M368-M377.	United States	762 adults (20 y to elderly)	7-day dietary records	Increased intakes of energy, fat, carbohydrate, protein and alcohol over the weekend compared to weekdays, most notably in young, not in the elderly. Meal sizes larger in weekends
de Castro, J. M. (1991). Physiol Behav, 50(4), 729-738.	United States	323 adults	7-day food diary	Larger intake of energy and macronutrients, larger meal size, number of pople present and duration of meals in the weekend

Gibson, R. S. et al.(1985). Biol Trace Elem Res, 8(2), 79.	Canada	14 female university students	7-day weighted food diary	Significant weekend effect on energy and trace elements, reduced when expressed on basis of nutrient densities. Suggests that consumption patterns (quality) was the same over the week but total energy differed
Gibson, S., & Shirreffs, S. M. (2013). Nutrition J, 12(1), 9.	United Kingdom	1724 adults	7-day weighted food recording	Total beverage consumption higher on Fridays and Saturdays than other days of the week, attibutable mainly to higher weekend consumption of alcohol
Haines, P. S. et al. (2003). Obesity Research, 11(8), 945-9.	United States	28 156 adults and children (2+ y)	2 x 24-hour dietary recalls	Higher intake of energy, fat, alcohol in the weekend, carbohydrates and protein lower but contribution of carb to total energy unchanged.
Hanson, K. L., & Olson, C. M. (2013). J Nutr, 143(5), 714-721.	United States	2376 children (6-17 y)	2 x 24-hour dietary recalls	Healthy eating index score higher for breakfast, lunch and entire day during weekdays compared to weekend days. No difference in energy intake as percentage of energy requirement
Hart, C. N. et al. (2011). Int J Pediatr Obes, 6(5-6), 467-472.	United States	81 overweight children (6-9 y)	3-day food diary and 3-day previous day physical activity recalls	Greater energy contrinution from fat, fewer servings of fruit and fewer vegetables on weekends, less non-nutrient dense snack foods, sweetened drinks. More tv watching, higher MET values, greater % of moderate to vigorous activity in weekends
Jaeger, S. R. et al. (2009). Appetite, 52(2), 318-327.	Spain	831 adults	1 x 24-hour recall online	Proportion of meals containing hot carbohydrates and yoghurt higher during weekend, fruit lower. Proportion of meals with water higher during weekdays, alcohol more frequently consumed during weekend
Jahns, L. et al.(2017). J Acad Nutr Diet, 117(7), 1080-1086.e1081.	United States	52 women (40-60 y)	24-hour recall every 10 days for 1 year	Higher energy intake in weekends, lower E% of carbs and protein. More consumption of alcohol, solid fat, potatoes, less yoghurt, whole fruits, dark green and orange vagatables, poultry, nuts and seeds and wholegrains in weekends compared to weekdays. Helthy eating index score lower on weekends, prevalence of
Jula, A. et al. (1999). Eur J Clin Nutr, 53(10), 808-812.	Finland	587 adults (317 hypertensives + 270 randomly selected)	4-, 5- or 7-day food records	Across all groups with higher intake of meat and meat products, carbohydrate and alcohol, energy in weekend days
Macdiarmid, J. et al. (2009). Eur J Clin Nutr, 63(11), 1297.	United Kingdom	157 children (5-17 y)	4-day food diary	Intake of energy, total fat, saturated fat and extrinsic sugar intake did not differ between weekdays and weekends. Only meal frequency higher on weekdays

Maisey, S. et al. (1995). Br J Nutr, 73(3), 359-373.	United Kingdom	138 elderly (68-90 y)	7-day semi-weighed dietary record or 5-day menu record, plus 24-48 hour recall or dietary intake and activity	Intakes of meat and meat products, fish and vegetables varied in both frequency and amount. Energy, protein and many micronutrients, alcohol higher in the weekends. Little variation over the week for cereals, fats, fruits, sugars and snacks among others.
McGee, D. et al.. (1982). Am J Clin Nutr, 36(4), 657-663.	United States	329 + 7677 Hawaiian men of Japanese ancestry	7-day dietary records (n=329) and 24-hour recall	Weekly variation patterns seen for most measured nutrients and alcohol
Monteiro, L. S. et al. (2017). Rev Saude Publica, 51, 93.	Brazil	34 003 adults and children (10+ y)	1-day food log	Higher energy in weekend, lower E% carbohydrates, higher E% fat, saturated fat and trans fat. Significant difference in eggs, sugar-added beverage, puff snacks and chips, beans and pasta.
Nansel, T. R. et al. (2014). J Acad Nutr Diet, 114(8), 1223-1229.	United States	252 young diabetics (8-18 y)	3-day food records	Greater energy intake and poorer diet quality in weekends. Lower fruit and vegetable intake, higher total and saturated fat. Others not significant
Nicklas, T. A. et al. (1997). Nutr Res, 17(1), 31-40.	United States	281 children (10 y)	24-hour dietary recall interview	No difference in energy, protein, fat, carbohydrate, sodium. Protein, fructose and lactose, MUFA, PUFA and cholesterol higher on weekdays. Significant differences in percent of energy from fruits, milk and meats (higher on weekdays) and vegetables, poultry, eggs, pork (higher on Sunday)
O'dwyer, N. et al. (2005). Public Health Nutr, 8(3), 249-257.	Ireland	958 adults (18-64 y)	7-day food diary	Number of eating occasions outside the home increased in the weekend. Contribution of fat to energy increased above recommendation in the weekend for home eating. Contribution of fat to food always above recommendation for eating out
Post, B. et al. (1987). Br J Nutr, 57(2), 161-176.	The Netherlands	233 (13-14-y at baseline)	Cross-check dietary history food interview every year for 6 years	On weekend days both girls an boys ate consistently more energy, total fat, cholesterol, carbohydrates. No difference in dietary fiber. Increased consumption of alcohol. Some vitamins and minerals showed differences in same age groups
Rhodes, D. G. et al. (2007). FASEB J, 21, 835.832.	United states	503 adults	3 x 24-hour recall	Weekend energy intake 13% higher overall and 17% higher in obese subjects. Alcohol conumption higher in males, energy from carbohydrates in females. Increased energy from fat in weekends
Richard, L., & Roberge, A. G. (1982). Nutr Res, 2(6), 661-668.	Canada	356 adults	3-day measured food record	More energy and alcohol during weekends. In general no difference in other nutrients
Rockell, J. E. et al. (2011). Public health nutrition, 14(2), 203-8.	New Zealand	2572 children (5-14 y)	1 x 24-hour recall	Cholesterol, hot chips, soft frinkis higher on non-schooldays, available carbohydrate (esp fructose and sucrose), snack foods, fruit etc higher on schooldays.

Rothausen, B. W. (2012). Br J Nutr, 109(9), 1704-13.	Denmark	784 children (4-14 y)	7-day pre-coded food diary	Intake of energy, SSB, white bread, E% of added sugar, energy density, sweets and chocolate higher on weekends. Lower rye bread, fiber, fruit and vegetable in weekends.
Sepp, H. et al. (2002). Food Qual Prefer, 13(2), 107-116.	Sweden	109 pre-school children	7-day diet records	Differences between weekends and weekdays not analyzed statistically but "low-nutrient foods" (buns soft drinks etc) contributed more to total energy intake on weekends that weekdays + some other results
Svensson, A. et al. (2014). Eur J Clin Nutr, 68(7), 822-828.	8 European countries	9497 children (2-9 y)	24-hour recall, 1 per child	Intakes of total sugars and foods and drinks rich in added sugar higher on weekends compared with weekdays. Friday a mix between weekday and weekend day. Energy intake did not differ
Tarasuk, V., & Beaton, G. H. (1992). Am J Clin Nutr, 55(1), 22-27.	Canada	29 adults	356 continous days of dietary recording	Significant differences in intake of energy, fat, protein per joule, calcium per joule but not other variables
Thompson, F. E. et al. (1986). Nutr Res, 6(6), 647-62.	United States	13 215 adults (23-74 y)	3-day dietary records and 24-huor recall	Some differences between age groups and sexes but energy, protein, and fat were higher on weekends than on weekdays in those aged 23 to 50. Fat and energy higher for women 51-64 y. No differences in intakes for men and women 65-74 y. Energy from meats higher on weekends, also alcohol consumption in all except the elderly. Number of meals lower on weekends.
Yang, P. H. et al. (2014). Appl Physiol Nutr Metab, 39(12), 1413-7.	Canada	34 402 adults and children	1 x 24-hour recall	Energy intake higher, dietary quality index score (and its individual components) lower on weekends. After energy adjustment consumption of alcohol and cholesterol higher, carbohydrates, protein and most micronutrients lower on weekends.

Short form citations given. Full references can be found in refererence list

Supplemental Table S8 Studies on day-of-the-week effects in physical activity

Study	Country	Population	Method of recording	Type of effect
Aibar, A. et al. (2013). Eur J Sport Sci, 13(5), 551-558.	France and Spain	301 adolescents	Tri-axial accelerometer for 7 days	Significant difference in MVPA by period of the week, higher MVPA on weekdays
Behrens, T. K., & Dinger, M. K. (2003). Am J Health Stud, 18(2/3), 169.	United States	31 college students	Pedometer 7 days	Subjects were more active on weekdays compared to weekend days
Brusseau, T. et al. (2011). J Hum Kinet, 27, 123-134.	United States	363 children (8-11 y)	Pedometer 7 days	Significantly more active during weekdays than weekends
Comte, M. et al. (2013). Appl Physiol Nutr Metab, 38(2), 115-119.	Canada	626 youth (10-15 y)	Accelerometer 7 days	Time of MVPA approx 30% lower on weekend days, light PA approx 15% higher. PA recommendations better achieved during weekdays
Corder, K. et al. (2013). Int J Behav Nutr Phys Act, 10(1), 69.	United Kingdom	875 children (mean age 10 y at baseline)	Accelerometer 7 days at baseline and after 1 year	Weekend PA decline whereas Weekday PA did not change. Different factors related to the change in decline of PA
Corder, K. et al. (2010). Pediatrics, 126(4), e926-e935.	United Kingdom	844 children (mean age 10 y at baseline)	Accelerometer 7 days at baseline and after 1 year	Physical activity (overall and MVPA) decreased over one year, mainly on weekends. Sedentary time also increased more in weekends
Duncan, M. J. et al. (2007). Prev Med, 44(5), 416-420.	United Kingdom	208 children (mean age 9.3 y)	Pedometer 4 days (2 weekend, 2 weekday)	Significanlty higher step count during weekdays compared to weekend days, boys higher than girls
Gilbey, H., & Gilbey, M. (1995). Pediatr Exerc Sci, 7(1), 26-35.	Singapore	114 children (9-10 y)	3 x14-hour heart rate monitoring in school days + 96 Saturday recordings	No differences detected between activity levels on weekdays and Saturdays (mean number of 5-and 10-min periods of appropriate PA)
Hart, C. N. et al. (2011). Int J Pediatr Obes, 6(5-6), 467-472.	United States	81 U.S. overweight children (6-9 y)	3-day Previous Day Physical Activity Recalls (PDPARs) for two weekdays and one weekend day	In weekends more television watching, more energy expended, greater percentage of time spent in MVPA
Hjorth, M. F. et al. (2013). BMC Public Health, 13(1), 808.	Denmark	730 children (8-11 y)	Accelerometer 7 days	More sedentary time, less total and MVPA in weekends irrespcetive of season
Huang, Y. C., & Malina, R. M. (1996). Am J Hum Biol , 8(2), 225-236.	Taiwan	282 adolescents (12-14 y)	3-day activity record and recall of participation in physical activities over past week	Total daily EE and EE in MVPA higher on weekends than weekdays and higher in boys

Jago, R. et al. (2005). Am J Prev Med, 28(5), 447-452.	United States	81 adolescents (8th grade)	Accelerometer 4 days + previous day PA recall	Significant day-of-the-week effect in MVPA. Friday highest activity in boys, Thursday and Sunday highest in girls. Significant day of the week effect also on sedentary activity. Overall activity lower in girls than in boys.
Jones, R. et al.(2016). J Racial Ethn Health Disparities.	United States	63 Native American high school students (mean age 15 y)	Pedometer 7 days	Youth were significantly more active on weekdays. Significant differences between boys and girls in weekdays
Kristensen, P. L. et al. (2008). Scand J Med Sci Sports, 18(3), 298-308.	Denmark	1318 children and adolescents (8-10 y and 14-16 y)	Accelerometry ≥5 days	Significant effect of type of measurement day on PA, generally lower activity in weekends compared to weekdays. Boys more physically active than girls.
Matthews, C. E. et al. (2002). Med Sci Sports Exerc, 34(8), 1376-1381.	United States	92 adults	21 consequtive days of accelerometry	Physical inactivity lower on weekend days, Saturday being the least inactive day for both men and women
Nader, P. R. et al. (2008). JAMA, 300(3), 295-305.	United States	1032 children (9 y at start)	Accelerometer 7 days at ages 9,11, 12 and 15	From approx 3 hours/d of MVPA at 9 years of age, MVPA decreased more on weekends than on weekdays (41 min vs 38 min per year). At all ages boys and girls had higher MVPA in weekdays than weekends.
Nilsson, A. et al. (2009). Scand J Med Sci Sports, 19(1), 10-18.	4 European countries	1954 children (9-15 y)	Accelerometer 4 days (2 weekend, 2 weekday)	Overall PA, time spent sedentary and proportion of children accumulating over 60 min of MVPA higher during weekdays compared to weekends
Peiró-Velert, C. et al.(2008). Eur J Sport Sci, 8(3), 163-171.	Spain	323 adolescents (12-16 y)	Cale's Four by One-Day Physical Activity Questionnaire, 4 times per year, 2 occasions per season	Adolescents showed higher energy expenditure during the weekend compared to during the week.
Racette, S. B. et al. (2008). Obesity, 16(8), 1826-1830.	United States	48 adults (50-60 y)	Accelerometer measurements for 2-4 weeks at baseline and 2 weeks at months 1,3,6,9 and 12 of intervention	Highest activity highest on Saturdays and lowest on Sundays, average weekend activity did not significantly differ from weekdays
Refinetti, R. et al. (2015). Ann Med, 47(7), 530-537.	5 countries	2328 adults (25-45 y)	Accelerometer 8 days	Significant but modest effect of day of the week. Significantly lower PA in the weekend for the whole population, some differences between countries
Riddoch, C. J. et al. (2007). Arch Dis Child, 92(11), 963-969.	United Kingdom	5595 children (11 y)	Accelerometer 7 days minimum	Children were more active during weekdays compared to weekends but differences were small
Rowlands, A. V. et al. (2008). Prev Med, 46(4), 317-324.	United Kingdom	84 children (9-11 y)	Accelerometer 6 days	Children were more active during weekdays compared to weekend days (frequency and duration of activity bouts higher in weekdays)

Steele, R. M. et al. (2010). Int J Behav Nutr Phys Act, 7(1), 88.	United Kingdom	1568 children (9-10 y)	Accelerometry 7 days	No difference in vigorous PA between weekdays and weekends. Less time was spent sedentary in weekdays compared to weekends.
Treuth, M. S. et al. (2007). Obesity (Silver Spring), 15(7), 1782-1788.	United States	1603 adolescent girls (11-12 y)	Accelerometer 6 days	MVPA higher on weekdays than weekends days in all girls, MVPA lower in overweight girls both on weekdays and weekend days
Trost, S. G. et al. (2000). Med Sci Sports Exerc, 32(2), 426.	United States	381 students, children and adolescents (grade 1-12)	Uniaxial accelerometry 7 days	Children had significantly higher levels of MVPA during weekends, adolescents had significnalty lower levels during weekends
Tudor-Locke, C. et al. (2004). Field Methods, 16(4), 422-438.	United States	209 adults	Pedometer 7 days	Stepcount on weekdays was significantly higher than on weekend days

Short form citations given. Full references can be found in refererence list

PA, Physical activity

MVPA, Moderate-to-vigorous physical activity

EE, energy expenditure