Electronic supplementary material
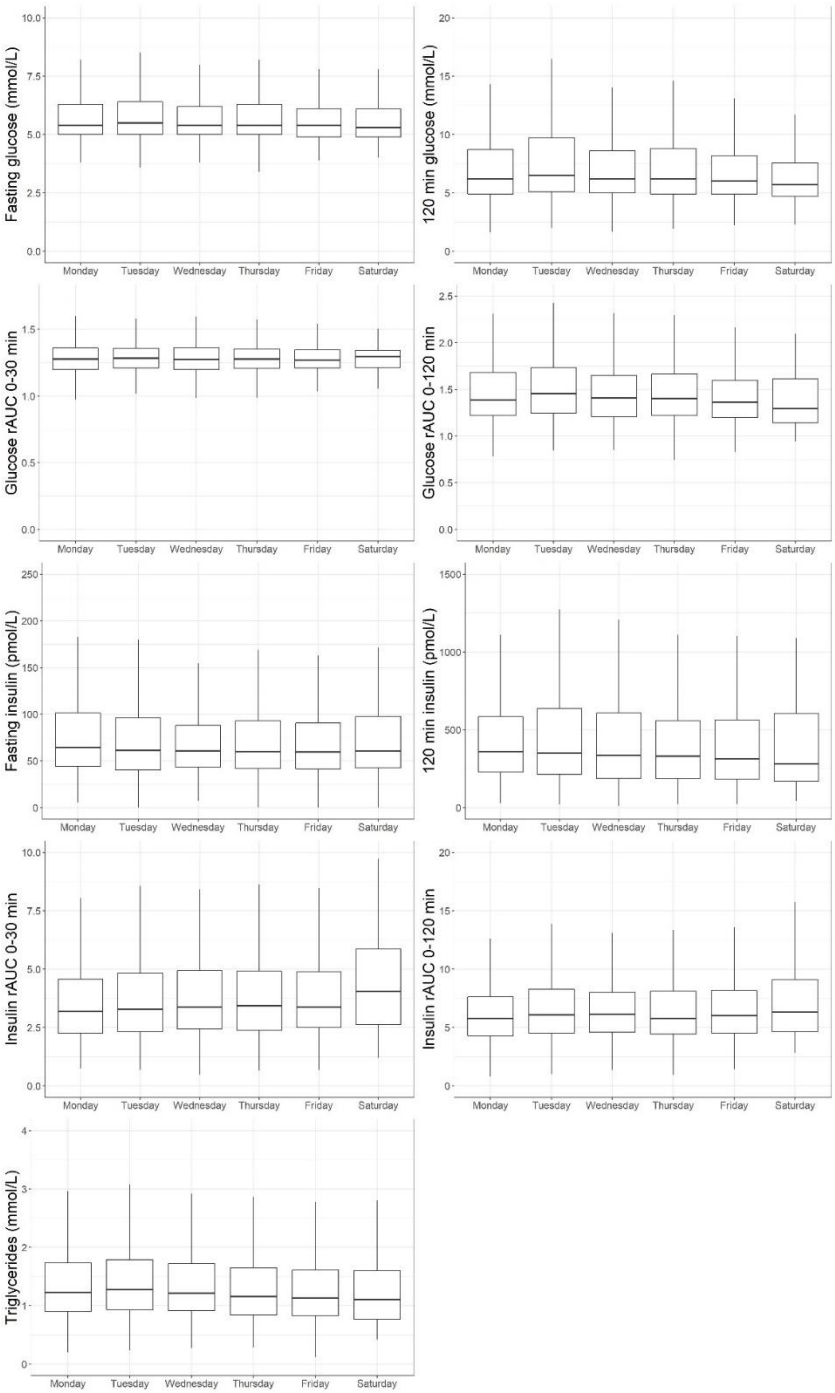
Figure S1. Boxplots of the outcomes by day of the week of the clinical examination, outliers not plotted.

Sensitivity analyses

Exclusion of those examined on Saturdays

Table S1 – Estimates of the mean difference between Mondays vs. Tuesday-Friday (reference group= Tuesday-Friday) for glucose, insulin and triglyceride. Participants examined on Saturdays excluded (248 individuals excluded).

	Model 1		Model 2		Model 3		Model 4	
	n	Estimate (95% CI)	n	Estimate (95% CI)	n	Estimate (95% CI)	n	Estimate (95% CI)
Plasma glucose								
Fasting (%) #	7387	1 (0:2)	7386	**1 (0;2)**	6803	**1 (0;2)**	5175	**1 (0;2)**
120 min (%) #	6946	-1 (-4;2)	6945	0 (-2;2)	6427	0 (-2;2)	4925	0 (-2;2)
rAUC$_{0-30}$	2857	0 (-0.02;0.01)	2857	-0.01 (-0.02;0.01)	2630	0 (-0.02;0.01)	1801	0 (-0.02;0.01)
rAUC$_{0-120}$	2717	-0.02 (-0.05;0.02)	2717	-0.03 (-0.05;0)	2501	-0.02 (-0.05;0)	1702	-0.03 (-0.06;0.01)
Plasma insulin								
Fasting (%) #	3262	**10 (2;17)**	3262	**8 (1;16)**	2990	**9 (3;16)**	2039	**8 (1;17)**
120 min (%) #	2973	8 (-1;17)	2973	6 (-2;15)	2744	5 (-3;14)	1888	7 (-3;17)
rAUC$_{0-30}$ (%) #	2838	**-6 (-11;0)**	2838	-5 (-9;0)	2615	-4 (-9;1)	1792	-3 (-9;3)
rAUC$_{0-120}$ (%) #	2614	-4 (-9;2)	2614	-3 (-8;2)	2408	-2 (-7;3)	1656	0 (-6;7)
Triglyceride								
Fasting (%) #	7383	3 (0;6)	7382	**3 (0;6)**	6800	**3 (1;6)**	5172	**4 (1;8)**

Model 1: crude model only including day of the week. Model 2: as model 1 with additional adjustment for age, sex, and type 2 diabetes status (known type 2 diabetes vs. no type 2 diabetes/screen detected type 2 diabetes). Model 3: as model 2 with additional adjustment for BMI, smoking status, education level and the Dutch healthy eating index. Model 4: model 3 with additional adjustments for variation in time in bed (weekend-weekday), moderate to vigorous physical activity (weekend-weekday) and retirement status. # Log-transformed before analysis and back-transformed for presentation. Estimates and 95% CIs marked with **bold** are statistically significant (p<0.05).

Table S2 – Estimates of the mean difference between Mondays vs. Tuesday-Friday (reference group= Tuesday-Friday) for glucose, insulin and triglyceride for the outcomes with a statistically significant interaction between day of the week and either sex or type 2 diabetes status. Participants examined on Saturdays excluded (248 individuals excluded).

		Model 1		Model 2		Model 3		Model 4	
		n	Estimate (95% CI)	n	Estimate (95% CI)	n	Estimate (95% CI)	n	Estimate (95% CI)
Stratified by sex									
120 min glucose (%) #	*Women*	3536	-3 (-6;1)	3535	-1 (-4;1)	3286	-2 (-4;1)	2538	-2 (-5;0)
120 min glucose (%) #	*Men*	3410	0 (-4;5)	3410	2 (-1;5)	3141	2 (-1;4)	2387	3 (0;6)
Fasting insulin (%) #	*Women*	1584	0 (-8;9)	1584	0 (-8;8)	1471	2 (-5;9)	1013	0 (-8;9)
Fasting insulin (%) #	*Men*	1678	**18 (6;31)**	1678	**17 (5;30)**	1519	**17 (6;28)**	1026	**17 (4;31)**
Stratified by T2D status									
Fasting glucose (%) #	*T2D*	1523	**4 (1;7)**	1523	**4 (1;7)**	1373	**3 (0;6)**	995	3 (0;7)
Fasting glucose (%) #	*No known T2D*	5863	0 (0;1)	5863	0 (0;1)	5430	0 (0;1)	4180	0 (0;1)
rAUC$_{0-120}$ insulin (%) #	*T2D*	509	-10 (-20;1)	509	-10 (-19;1)	465	-9 (-19;2)	317	-12 (-25;2)
rAUC$_{0-120}$ insulin (%) #	*No known T2D*	2105	-1 (-7;5)	2105	-1 (-7;5)	1943	0 (-6;6)	1339	3 (-4;11)
Fasting triglyceride (%) #	*T2D*	1523	4 (-3;11)	1523	4 (-3;10)	1373	5 (-1;12)	995	**13 (5;22)**
Fasting triglyceride (%) #	*No known T2D*	5859	3 (0;6)	5859	3 (0;6)	5427	**3 (0;6)**	4177	3 (-1;6)

Model 1: crude model only including day of the week. Model 2: as model 1 with additional adjustment for age, sex, and type 2 diabetes status (known type 2 diabetes vs. no type 2 diabetes/screen detected type 2 diabetes). Model 3: as model 2 with additional adjustment for BMI, smoking status, education level and the Dutch healthy eating index. Model 4: model 3 with additional adjustments for variation in time in bed (weekend-weekday), moderate to vigorous physical activity (weekend-weekday) and retirement status. # Log-transformed before analysis and back-transformed for presentation. Estimates and 95% CIs marked with **bold** are statistically significant (p<0.05).

Exchange of type 2 diabetes status with HbA$_{1c}$ in model 2, 3 and 4

Table S3 – Estimates of the mean difference between Mondays vs. Tuesday-Saturday (reference group= Tuesday-Saturday) for glucose, insulin and triglyceride when the type 2 diabetes status is exchanged with HbA1c.

	Model 2		Model 3		Model 4	
	n	Estimate (95% CI)	n	Estimate (95% CI)	n	Estimate (95% CI)
Plasma glucose						
Fasting (%) #	7622	**1 (0;2)**	7022	**1 (0;2)**	5349	0 (0;1)
120 min (%) #	7171	0 (-2;2)	6636	-1 (-2;1)	5091	-1 (-3;1)
rAUC$_{0-30}$	2943	-0.01 (-0.02;0.01)	2706	0.00 (-0.02;0.01)	1860	0.00 (-0.02;0.01)
rAUC$_{0-120}$	2803	-0.03 (-0.06;0.00)	2577	-0.03 (-0.06;0.00)	1761	**-0.04 (-0.07;0.00)**
Plasma insulin						
Fasting (%) #	3348	**8 (1;16)**	3070	**9 (3;17)**	2103	**9 (1;18)**
120 min (%) #	3054	5 (-3;14)	2816	5 (-3;14)	1946	6 (-3;17)
rAUC$_{0-30}$ (%) #	2921	-4 (-9;1)	2688	-4 (-9;1)	1850	-2 (-8;4)
rAUC$_{0-120}$ (%) #	2695	-3 (-8;2)	2480	-2 (-7;3)	1713	1 (-5;7)
Triglyceride						
Fasting (%) #	7619	**3 (0;6)**	7020	**4 (1;7)**	5347	**5 (2;8)**

Model 1: crude model only including day of the week. Model 2: as model 1 with additional adjustment for age, sex, and HbA$_{1c}$. Model 3: as model 2 with additional adjustment for BMI, smoking status, education level and the Dutch healthy eating index. Model 4: model 3 with additional adjustments for variation in time in bed (weekend-weekday), moderate to vigorous physical activity (weekend-weekday) and retirement status. # Log-transformed before analysis and back-transformed for presentation. Estimates and 95% CIs marked with **bold** are statistically significant (p<0.05).

Table S4 – Estimates of the mean difference between Mondays vs. Tuesday-Saturday (reference group= Tuesday-Saturday) for glucose, insulin and triglyceride when the type 2 diabetes status is exchanged with HbA1c.

		Model 2		Model 3		Model 4	
		n	Estimate (95% CI)	n	Estimate (95% CI)	n	Estimate (95% CI)
Stratified by sex							
120 min glucose (%) #	*Women*	3634	**-3 (-6;0)**	3380	**-3 (-6;-1)**	2617	**-5 (-8;-2)**
120 min glucose (%) #	*Men*	3537	3 (0;6)	3256	3 (0;6)	2474	**4 (0;7)**
Fasting insulin (%) #	*Women*	1614	0 (-8;9)	1502	2 (-5;10)	1039	0 (-8;9)
Fasting insulin (%) #	*Men*	1734	**18 (5;32)**	1568	**19 (7;31)**	1064	**19 (5;36)**
Stratified by T2D status							
Fasting glucose (%) #	*T2D*	1566	**3 (1;6)**	1410	**3 (1;6)**	1022	**3 (0;6)**
Fasting glucose (%) #	*No known T2D*	6055	0 (0;1)	5612	0 (0;1)	4327	0 (0;1)
$rAUC_{0-120}$ insulin (%) #	*T2D*	522	-4 (-14;6)	475	-4 (-14;7)	324	-9 (-21;6)
$rAUC_{0-120}$ insulin (%) #	*No known T2D*	2173	-2 (-7;4)	2005	-1 (-6;5)	1389	3 (-4;10)
Fasting triglyceride (%) #	*T2D*	1566	4 (-2;11)	1410	6 (-1;13)	1022	**14 (6;23)**
Fasting triglyceride (%) #	*No known T2D*	6052	3 (0;6)	5610	**3 (0;6)**	4325	3 (0;6)

Model 1: crude model only including day of the week. Model 2: as model 1 with additional adjustment for age, sex, and HbA$_{1c}$. Model 3: as model 2 with additional adjustment for BMI, smoking status, education level and the Dutch healthy eating index. Model 4: model 3 with additional adjustments for variation in time in bed (weekend-weekday), moderate to vigorous physical activity (weekend-weekday) and retirement status. # Log-transformed before analysis and back-transformed for presentation. Estimates and 95% CIs marked with **bold** are statistically significant (p<0.05).

Complete case analyses for all models based on available cases for model 4

Table S5 – Estimates of the mean difference between Mondays vs. Tuesday-Saturday (reference group= Tuesday-Saturday) for glucose and insulin and triglyceride.

	Model 1		Model 2		Model 3		Model 4	
	n	Estimate (95% CI)	n	Estimate (95% CI)	n	Estimate (95% CI)	n	Estimate (95% CI)
Plasma glucose								
Fasting (%) #	5354	0 (-1;1)	5354	1 (0;2)	5354	1 (0;2)	5354	**1 (0;2)**
120 min (%) #	5095	-2 (-5;1)	5095	0 (-2;2)	5095	0 (-2;2)	5095	0 (-2;2)
rAUC$_{0-30}$	1860	0 (-0.02;0.01)	1860	0 (-0.02;0.01)	1860	0 (-0.02;0.01)	1860	0 (-0.02;0.01)
rAUC$_{0-120}$	1761	-0.04 (-0.08;0.00)	1761	-0.02 (-0.06;0.01)	1761	-0.03 (-0.06;0.01)	1761	-0.02 (-0.06;0.01)
Plasma insulin								
Fasting (%) #	2107	9 (0;19)	2107	9 (0;19)	2107	**9 (1;18)**	2107	**9 (1;18)**
120 min (%) #	1949	7 (-3;19)	1949	7 (-3;18)	1949	7 (-2;17)	1949	7 (-3;17)
rAUC$_{0-30}$ (%) #	1853	-3 (-9;5)	1853	-4 (-10;2)	1853	-4 (-9;2)	1853	-4 (-9;2)
rAUC$_{0-120}$ (%) #	1716	1 (-6;8)	1716	0 (-6;6)	1716	0 (-6;6)	1716	0 (-6;6)
Triglyceride								
Fasting (%) #	5351	**4 (1;7)**	5351	**4 (1;8)**	5351	**5 (2;8)**	5351	**5 (2;8)**

Model 1: crude model only including day of the week. Model 2: as model 1 with additional adjustment for age, sex, and type 2 diabetes status (known type 2 diabetes vs. no type 2 diabetes/screen detected type 2 diabetes). Model 3: as model 2 with additional adjustment for BMI, smoking status, education level and the Dutch healthy eating index. Model 4: model 3 with additional adjustments for variation in time in bed (weekend-weekday), moderate to vigorous physical activity (weekend-weekday) and retirement status. # Log-transformed before analysis and back-transformed for presentation. Estimates and 95% CIs marked with **bold** are statistically significant ($p<0.05$).

Table S6 – Estimates of the mean difference between Mondays vs. Tuesday-Saturday (reference group= Tuesday-Saturday) for glucose and insulin and triglyceride.

	Stratification	Model 1		Model 2		Model 3		Model 4	
		n	Estimate (95% CI)	n	Estimate (95% CI)	n	Estimate (95% CI)	n	Estimate (95% CI)
Stratified by sex									
120 min glucose (%) #	*Women*	2620	-3 (-6;1)	2620	-2 (-5;1)	2620	-3 (-5;0)	2620	-2 (-5;0)
120 min glucose (%) #	*Men*	2475	-1 (-6;4)	2475	2 (-1;6)	2475	3 (0;6)	2475	3 (0;6)
Fasting insulin (%) #	*Women*	1042	1 (-9;12)	1042	2 (-8;13)	1042	1 (-8;10)	1042	1 (-8;10)
Fasting insulin (%) #	*Men*	1065	**16 (0;34)**	1065	**16 (1;34)**	1065	**18 (3;34)**	1065	**18 (3;35)**
Stratified by T2D status									
Fasting glucose (%) #	*T2D*	1023	4 (0;7)	1023	4 (0;8)	1023	3 (0;7)	1023	4 (0;7)
Fasting glucose (%) #	*No known T2D*	4331	1 (0;1)	4331	0 (-1;1)	4331	0 (0;1)	4331	0 (0;1)
$rAUC_{0-120}$ insulin (%) #	*T2D*	325	-14 (-26;1)	325	-13 (-26;1)	325	-12 (-25;2)	325	-12 (-25;3)
$rAUC_{0-120}$ insulin (%) #	*No known T2D*	1391	3 (-4;10)	1391	3 (-4;10)	1391	3 (-4;10)	1391	3 (-4;10)
Fasting triglyceride (%) #	*T2D*	1023	**14 (5;24)**	1023	**14 (6;24)**	1023	**14 (6;23)**	1023	**14 (6;23)**
Fasting triglyceride (%) #	*No known T2D*	4328	3 (-1;7)	4328	3 (-1;6)	4328	3 (0;6)	4328	3 (0;6)

Model 1: crude model only including day of the week. Model 2: as model 1 with additional adjustment for age, sex, and type 2 diabetes status (known type 2 diabetes vs. no type 2 diabetes/screen detected type 2 diabetes). Model 3: as model 2 with additional adjustment for BMI, smoking status, education level and the Dutch healthy eating index. Model 4: model 3 with additional adjustments for variation in time in bed (weekend-weekday), moderate to vigorous physical activity (weekend-weekday) and retirement status. # Log-transformed before analysis and back-transformed for presentation. Estimates and 95% CIs marked with **bold** are statistically significant ($p<0.05$).