

Table S1. Results from DEXA analysis.

Region	Mirabegron^a		P
	Pre	Post	
Total tissue (kg)	84.9 ± 2.6	84.3 ± 2.6	0.282
Total Fat (kg)	39.5 ± 2.4	38.9 ± 2.6	0.136
Total Lean (kg)	45.5 ± 1.9	45.4 ± 1.8	0.92
Total Bone (kg)	2.5 ± 1	2.5 ± 1	0.44

^aData are presented as mean ± SEM (n=13) and were analyzed by paired, two-tailed Student's t-tests. There were no significant changes in the leg, gynoid, trunk, or android regions in fat, lean, or bone mass.

Table S2. Results from indirect calorimetry.

Measure	Mirabegron^a		P-value
	Pre	Post	
VO₂ (L/min)	0.221 ± 0.008	0.221 ± 0.008	0.99
VCO₂ (L/min)	0.183 ± 0.009	0.181 ± 0.008	0.66
RQ	0.827 ± 0.014	0.819 ± 0.013	0.49
REE (kcal/day)	1532 ± 61	1538 ± 56	0.8

^aData are presented as mean ± SEM (n=13) and were analyzed by paired, two-tailed Student's t-tests.

Table S3. Results from PET-CT scans.

Measure	Mirabegron^a		P-value
	Pre	Post	
SUV_{mean}	0.48 ± 0.21	0.53 ± 0.23	0.53
SUV_{max}	1.45 ± 0.74	1.87 ± 1.02	0.55
SUV_{peak}	1.21 ± 0.62	1.35 ± 0.7	0.77
Glycolysis	80 ± 51	108 ± 67	0.71

^aStandardized uptake value (SUV) and glycolysis data are presented as mean ± SEM and were analyzed by paired, two-tailed Student's t-tests (n=12).

Table S4. Measurements of systemic inflammation and adipokines.

Marker	Mirabegron^a		P-value
	Pre	Post	
TNFα (pg /ml)	3.00 \pm 0.23	2.93 \pm 0.20	0.48
MCP1 (pg /ml)	138 \pm 5	138 \pm 6	0.98
Adiponectin (ug /ml)	6.09 \pm 0.65	6.13 \pm 0.53	0.90
HMW Adiponectin (ug / ml)	2.53 \pm 0.37	2.49 \pm 0.36	0.66
Resistin (pg /ml)	1518 \pm 35	1492 \pm 33	0.49
FGF21	1299 \pm 60	1578 \pm 83	0.25
Adipsin (ng/ ml)	2300 \pm 34	2393 \pm 29	0.23
Leptin (ng/ ml)	52 \pm 2	52 \pm 3	0.85

^aData are presented as mean \pm SEM (n=12) and were analyzed by paired, two-tailed Student's t-tests.

Table S6. Primer sequences.

Gene symbol	Forward	Reverse
<i>ACTB</i>	GAGCACAGAGCCTCGCCTTT	CGCGGCGATATCATCATCCAT
<i>COXIV</i>	AGC CAG AAG GCA CTG AAG GA	AGC CCC TGT TCA TCT CAG CA
<i>PGC1A</i>	TCC TTC CTC CAT GCC TGA CG	TTA GCT GAG TGT TGG CTG GTG
<i>PLIN5</i>	TGT CTG AAG CCG CTC GC	ACA CTG GAT CTG GGG ATC TGA
<i>PPIA</i>	CCCACCGTGTTCTTCGACAT	GCTGTCTTTGGGACCTTGTCT
<i>PPIB</i>	AAGTCACCGTCAAGGTGTATTTT	TGCTGTTTTTGTAGCCAAATCCT
<i>TBP</i>	CCCGAAACGCCGAATATAATCC	AATCAGTGCCGTGGTTCGTG
<i>TFAM</i>	GTT TCT CCG AAG CAT GTG GG	GAC AGA TGA AAA CCA CCT CGG
<i>TUBB</i>	ACCAACCTACGGGGATCTGAA	TTGACTGCCAACTTGCGGA
<i>UBC9</i>	CTGGAAGATGGTCGTACCCTG	GGTCTTGCCAGTGAGTGTCT

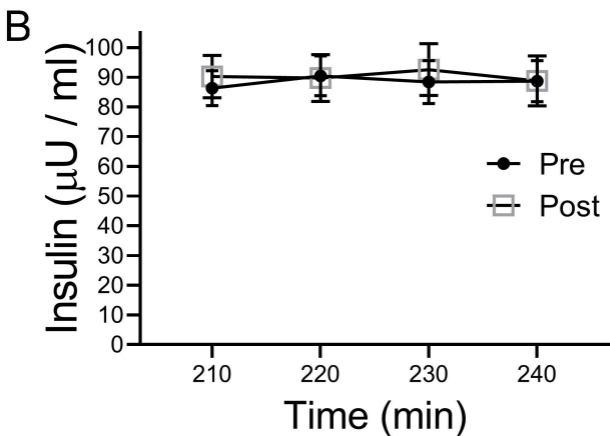
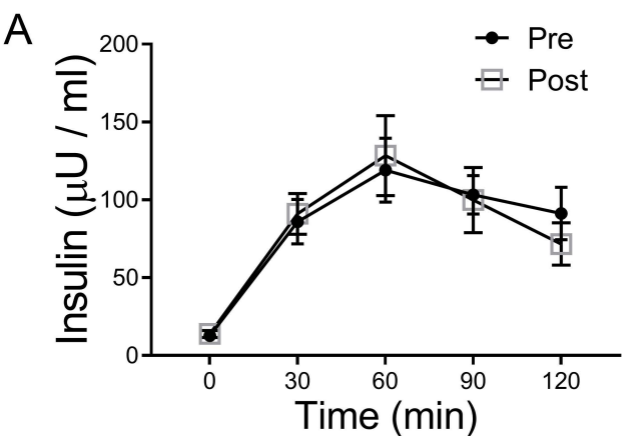


Figure S1. Insulin levels during the OGTT and euglycemic clamp. A) Insulin levels are shown during the OGTT. B) Insulin levels are shown during the final 30 min of insulin infusion during the the euglycemic clamp. Data are presented as mean \pm SEM.

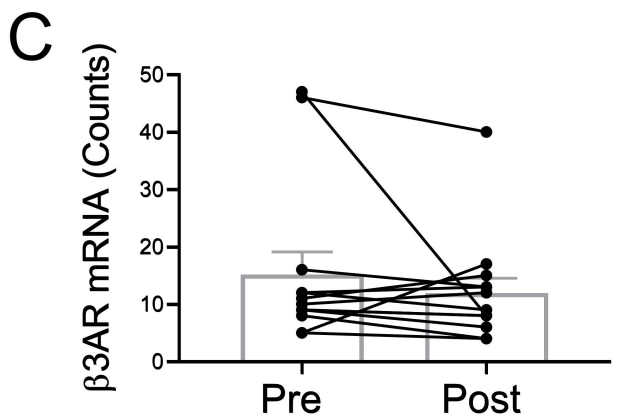
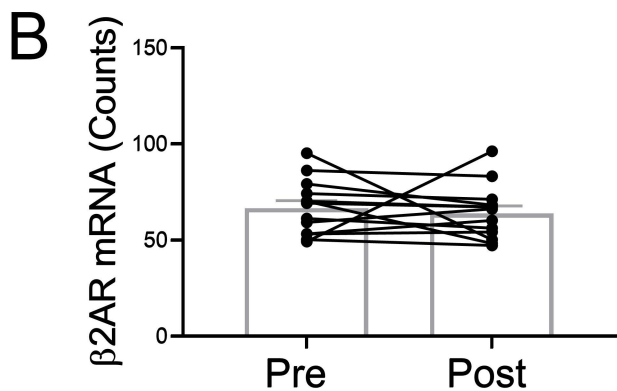
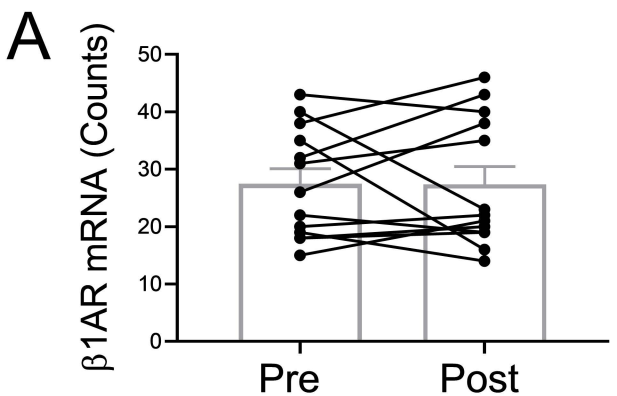


Figure S2. β AR mRNA expression before and after mirabegron treatment. A-C) the mRNA expression of the indicated β AR was determined using the nanostring nCounter system as described in "Methods." Data are presented as mean \pm SEM.