

Supplementary table S1- Further baseline demographic features. Data are median (IQR), GLP-1, Glucagon like peptide-1

	Testosterone therapy	Placebo	P value
Biguanide therapy, n (%)	15 (75%)	13 (72%)	>0.9
GLP-1 analogue therapy, n (%)	4 (20)	2 (10.5)	0.7
Thiazolidinedione therapy, n (%)	1 (5)	1 (5.3)	>0.9
Sulfonylurea therapy, n (%)	8 (40%)	7 (39%)	>0.9
Statin therapy, n (%)	14 (70%)	13 (72%)	>0.9

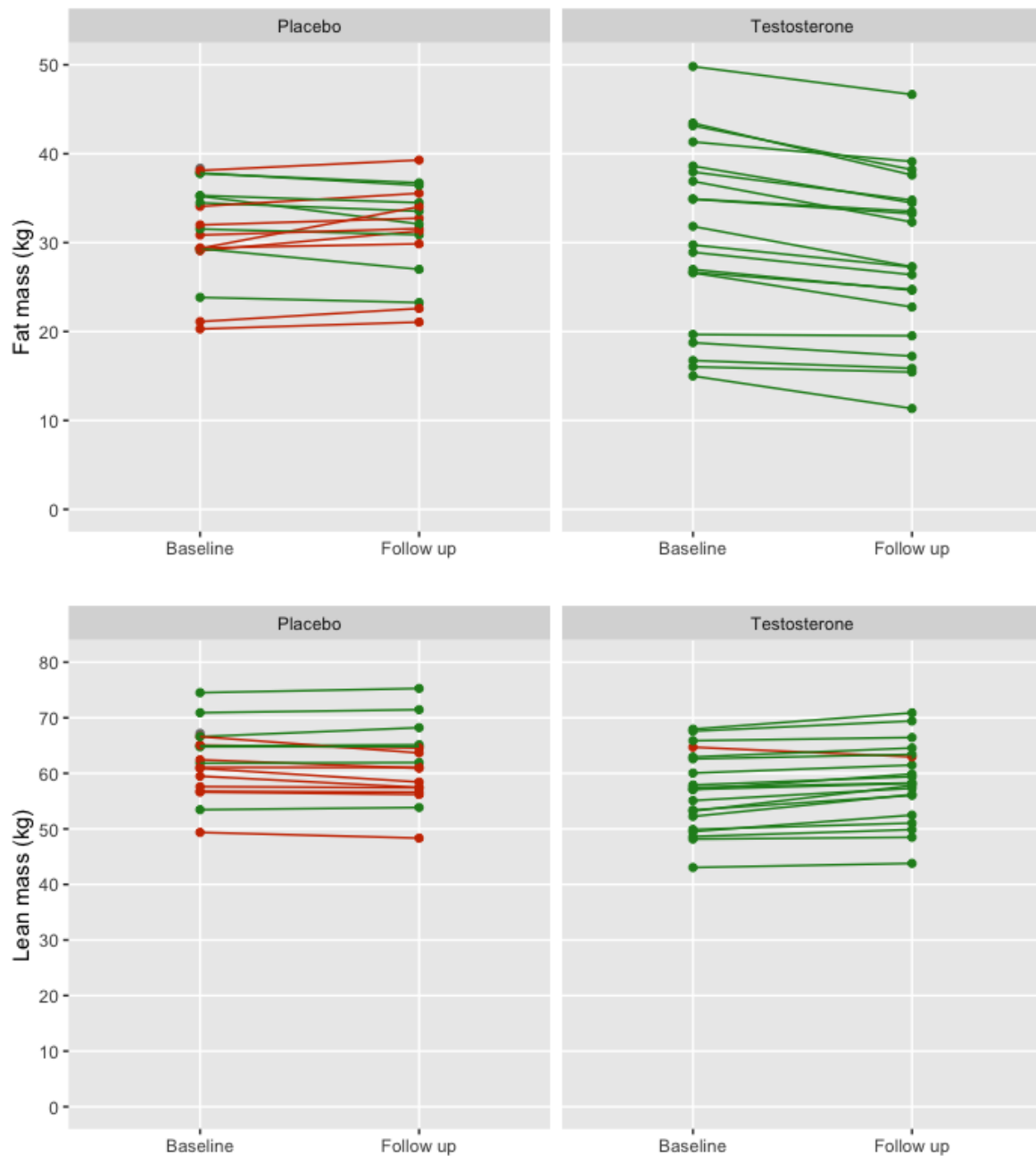
Supplementary table S2- Variable changes at start and end of therapy. Data are median (IQR)

	Testosterone therapy	Placebo	P value
Haemoglobin, g/L			
Baseline	153 (147-156)	153 (144-156)	<0.001
Week 40	166 (158-172)	152 (143-155)	
Haematocrit, %			
Baseline	44 (42-45)	44 (41-45)	<0.001
Week 40	47 (46-49)	43 (42-44)	
TT, nmol/LCMS/MS)			
Baseline	11.8 (8.8-12.7)	9.4 (7.4-13.2)	0.07
Week 40	14.4 (13.3-19.5)	11.6 (8.3-15.2)	
cFT, pmol/L (LCMS/MS)			
Baseline	251 (193-307)	213 (168-297)	0.05
Week 40	354 (285-522)	257 (182-345)	
Albumin, g/L			
Baseline	41.5 (39.0-43.0)	41.0 (40.0-42.0)	0.98

Week 40	40.5 (38.0-43.0)	40.0 (38.5-42.0)	
Bilirubin, µg/mL			
Baseline	11.5 (8.2-16.5)	11.0 (9.5-14.5)	0.18
Week 40	13.0 (8.8-15.0)	9.0 (7.2-13.0)	
INR,			
Baseline	1.00 (0.95-1.05)	1.00 (1.00-1.08)	0.67
Week 40	1.00 (0.90-1.00)	1.00 (0.92-1.00)	
C-reactive protein, mg/dL			
Baseline	1.25 (0.92-1.95)	1.50 (1.00-1.98)	0.06
Week 40	1.35 (0.95-2.08)	2.10 (1.50-4.82)	
Ferritin, ng/mL			
Baseline	188 (116-334)	182 (108-341)	<0.001
Week 40	106 (62-240)	172 (108-340)	
SHBG, nmol/L			
Baseline	28 (20-34)	29 (24-32)	0.46
Week 40	26 (21-29)	27 (25-30)	
LH, IU/L			
Baseline	4.45 (3.38-7.03)	4.50 (3.45-6.15)	<0.001
Week 40	0.10 (0.10-0.12)	4.90 (3.33-6.20)	

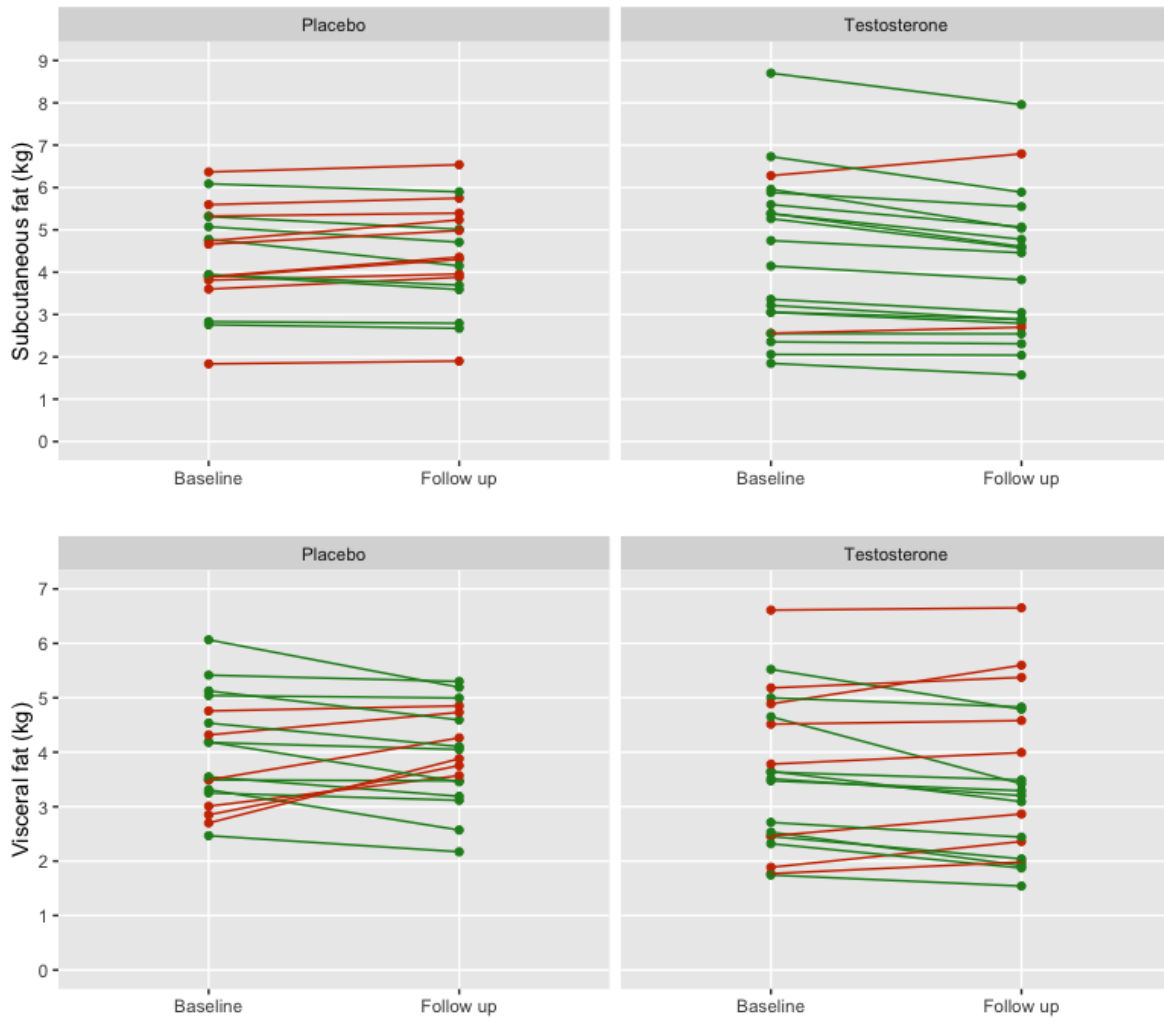
Supplementary Figure 1- Absolute changes in fat mass and lean mass in placebo and testosterone groups as measured by DXA Body Composition. Lines connect observations from the same participant. Red indicates an increase, green a decrease in fat and lean mass.

Individual subject plots of change in fat mass and lean mass



Supplementary Figure 2- Absolute changes in subcutaneous fat and visceral fat as measured by MRI. Lines connect observations from the same participant. Red indicates an increase, green a decrease in subcutaneous and visceral fat.

Individual subject plots of change in subcutaneous and visceral fat



(A)

(B)