Supplementary

Table S1. Female Testosterone Exploratory Analysis – All Timepoints. **.**

		GG (n = 9)	PLA (n = 7)	T	G	G × T
Total Testosterone (ng/dL)	Pre	18.44 (3.91)	15.86 (3.39)			
	Wk4	18.83 (6.95)	17.14 (5.55)	0.301	0.551	0.623
	Wk8	15.78 (7.0)	15.86 (4.47)			
Free Testosterone (ng/dL)	Pre	0.21 (0.09)	0.20 (0.06)			
	Wk4	0.22 (0.06)	0.20 (0.08)	0.511	0.715	0.905
	Wk8	0.24 (0.19)	0.21 (0.07)			
Bioavailable Testosterone (ng/dL)	Pre	5.08 (2.44)	4.5 (1.55)			
	Wk4	5.53 (3.78)	5.01 (1.82)	0.465	0.887	0.439
	Wk8	4.42 (3.22)	4.99 (2.0)			

Data are mean (standard deviation). GG: treatment group; PLA: placebo group; T: time effect p-value; G: group effect p-value; G × T: group by time interaction p-value.

Table S2. Female Testosterone Exploratory Analysis – Wk4 and Wk8.

		GG (n = 9)	PLA (n = 7)	T	G	G × T
Total Testosterone (ng/dL)	Wk4	18.83 (6.95)	17.14 (5.55)	0.187	0.773	0.581
	Wk8	15.78 (7.0)	15.86 (4.47)			
Free Testosterone (ng/dL)	Wk4	0.22 (0.06)	0.20 (0.08)	0.366	0.704	0.842
	Wk8	0.24 (0.19)	0.21 (0.07)			
Bioavailable Testosterone (ng/dL)	Wk4	5.53 (3.78)	5.01 (1.82)	0.313	0.987	0.337
	Wk8	4.42 (3.22)	4.99 (2.0)			

Data are mean (standard deviation). GG: treatment group; PLA: placebo group; T: time effect p-value; G: group effect p-value; G × T: group by time interaction p-value.

Table S3. Female Testosterone Exploratory Analysis – Pre and Wk8.

		GG (n = 9)	PLA (n = 7)	T	G	G × T
Total Testosterone (ng/dL)	Pre	18.44 (3.91)	15.86 (3.39)	0.323	0.577	0.323
	Wk8	15.78 (7.0)	15.86 (4.47)			
Free Testosterone (ng/dL)	Pre	0.21 (0.09)	0.20 (0.06)	0.301	0.718	0.674
	Wk8	0.24 (0.19)	0.21 (0.07)			
Bioavailable Testosterone (ng/dL)	Pre	5.08 (2.44)	4.5 (1.55)	0.856	0.995	0.236
	Wk8	4.42 (3.22)	4.99 (2.0)			

Data are mean (standard deviation). GG: treatment group; PLA: placebo group; T: time effect p-value; G: group effect p-value; G × T: group by time interaction p-value.

Body Composition Methodology

Body mass and height were measured to the nearest 0.1 kg and 0.1 cm, respectively, using a stadiometer (Seca, Chino, CA). Total and regional body composition was determined by a whole-body scan on a dual-energy x-ray absorptiometry device (DXA) (Horizon A DXA System, Hologic Inc, Marlborough, MA). Each participant was scanned by a certified technician, and the digital segmentation was determined via a computer algorithm. Fat-free mass, fat mass, body fat percentage, bone mineral content and bone density were determined for each scan. The participant was asked to wear comfortable clothing and remove any items that could attenuate the X-ray beams (this could be jewelry, items containing wire, shoes, etc.). The participant was asked to lie in a supine position with knees and elbows extended and instructed not to move for the entire duration of the scan (approximately 5 minutes). The DXA has a switching-pulse system that rapidly alternates the voltage of the X-ray generator, producing two beams of high and low energies. The

attenuated X-rays that have passed through the participant are measured sequentially with a detector situated on the scanning arm above the patient. An internal wheel corrects for any small fluctuations caused by this method of beam generation. Results from each scan were uploaded and accessed on a computer that was directly linked to the DXA device. Calibration of the densitometer on the DXA device was done against a phantom provided by the manufacturing company prior to testing. The abdominal region was delineated by an upper horizontal border located at half of the distance between the acromion processes and external end of iliac crests, a lower border determined by the external end of iliac crests and the lateral borders extending to the edge of the abdominal soft tissue. All trunk tissue within this standardized height region was selected for analysis.

Table S4. Body Composition All Participants.

		GG (n = 34)	PLA (n = 32)	T	G	G × T
Bone Mineral Content (kg)	Pre	2.68 (0.54)	2.73 (0.54)			
	Wk4	2.69 (0.54)	2.72 (0.53)	0.574	0.712	0.272
	Wk8	2.67 (0.53)	2.73 (0.53)			
Bone Mineral Density (g/cm^2)	Pre	1.20 (0.12)	1.21 (0.11)			
	Wk4	1.20 (0.13)	1.20 (0.10)	0.302	0.816	0.103
	Wk8	1.19 (0.13)	1.20 (0.10)			
Fat Mass (kg)	Pre	24.22 (8.88)	25.45 (9.39)			
	Wk4	24.23 (8.75)	25.60 (9.49)	0.283	0.571	0.839
	Wk8	24.41 (9.00)	25.66 (9.60)			
Lean Mass (kg)	Pre	58.30 (15.14)	58.92 (14.60)			
	Wk4	57.77 (15.24)	58.90 (14.53)	0.192	0.78	0.059
	Wk8	57.82 (15.18)	59.13 (14.97)			
Total Mass (kg)	Pre	85.20 (17.83)	87.11 (17.51)			
	Wk4	84.68 (17.90)	87.23 (17.23)	0.427	0.59	0.151
	Wk8	84.87 (18.21)	87.52 (17.80)			
Body Fat (%)	Pre	28.64 (8.91)	29.41 (8.91)			
	Wk4	28.87 (8.83)	29.54 (9.10)	0.101	0.765	0.628
	Wk8	28.99 (8.88)	29.54 (9.20)			
Body Mass Index (kg/m^2)	Pre	27.90 (4.58)	28.35 (4.22)			
	Wk4	27.68 (4.59)	28.40 (4.24)	0.339	0.503	0.104
	Wk8	27.73 (4.70)	28.77 (4.60)			

GG: treatment group; PLA: placebo group; ; T: time effect p-value; G: group effect p-value; G × T: group by time interaction p-value.

Table S5. Body Composition Male Participants.

		GG (n = 19)	PLA (n = 18)	T	G	G × T
Bone Mineral Content (kg)	Pre	2.98 (0.46)	3.06 (0.44)			
	Wk4	2.98 (0.45)	3.04 (0.44)	0.44	0.619	0.209
	Wk8	2.97 (0.45)	3.05 (0.43)			
Bone Mineral Density (g/cm^2)	Pre	1.25 (0.1)	1.25 (0.1)			
	Wk4	1.25 (0.11)	1.24 (0.1)	0.556	0.917	0.218
	Wk8	1.25 (0.11)	1.25 (0.09)			
Fat Mass (kg)	Pre	22.05 (8.95)	24.15 (8.43)			
	Wk4	22.2 (8.74)	24.2 (8.69)	0.203	0.487	0.933
	Wk8	22.41 (9.17)	24.4 (8.66)			
Lean Mass (kg)	Pre	69.11 (10.67)	70.19 (7.21)			
	Wk4	68.46 (11.01)	70.08 (7.31)	0.113	0.606	0.076
	Wk8	68.65 (10.69)	70.71 (7.59)			
	Pre	94.14 (16.22)	97.4 (11.88)	0.106	0.443	0.307

		GG	PLA			
Total Mass (kg)	Wk4	93.65 (16.22)	97.32 (12.0)			
	Wk8	94.03 (16.69)	98.15 (12.42)			
Body Fat (%)	Pre	22.96 (6.48)	24.36 (6.43)			
	Wk4	23.31 (6.47)	24.4 (6.69)	0.287	0.532	0.919
	Wk8	23.34 (6.49)	24.43 (6.54)			
Body Mass Index (kg/m²)	Pre	28.98 (4.72)	29.42 (3.58)			
	Wk4	28.81 (4.64)	29.41 (3.74)	0.226	0.678	0.294
	Wk8	28.9 (4.81)	29.62 (3.79)			

GG: treatment group; PLA: placebo group; ; T: time effect p-value; G: group effect p-value; G × T: group by time interaction p-value.

Table S6. Body Composition Female Participants.

		GG (n = 15)	PLA (n = 14)	T	G	G × T
Bone Mineral Content (kg)	Pre	2.31 (0.38)	2.31 (0.31)			
	Wk4	2.31 (0.38)	2.32 (0.3)	0.998	0.893	0.994
	Wk8	2.3 (0.38)	2.32 (0.3)			
Bone Mineral Density (g/cm²)	Pre	1.13 (0.12)	1.15 (0.09)			
	Wk4	1.13 (0.12)	1.14 (0.08)	0.933	0.449	0.977
	Wk8	1.12 (0.11)	1.14 (0.08)			
Fat Mass (kg)	Pre	26.96 (8.27)	27.13 (10.6)			
	Wk4	26.8 (8.35)	27.41 (10.48)	0.868	0.916	0.513
	Wk8	26.94 (8.4)	27.29 (10.8)			
Lean Mass (kg)	Pre	44.6 (5.84)	44.43 (6.19)			
	Wk4	44.22 (6.31)	44.53 (6.16)	0.234	0.969	0.471
	Wk8	44.1 (5.98)	44.24 (5.9)			
Total Mass (kg)	Pre	73.87 (12.83)	73.87 (14.52)			
	Wk4	73.33 (13.03)	74.26 (14.07)	0.497	0.921	0.288
	Wk8	73.27 (12.86)	73.84 (13.98)			
Body Fat (%)	Pre	35.83 (5.85)	35.91 (7.37)			
	Wk4	35.92 (5.87)	36.14 (7.46)	0.989	0.952	0.997
	Wk8	36.15 (5.77)	36.11 (7.96)			
Body Mass Index (kg/m²)	Pre	25.61 (4.17)	26.98 (4.69)			
	Wk4	27.68 (4.59)	27.12 (4.62)	0.86	0.652	0.714
	Wk8	26.24 (4.24)	27.68 (5.42)			

GG: treatment group; PLA: placebo group; ; T: time effect p-value; G: group effect p-value; G × T: group by time interaction p-value.