Supplementary Table 1. Summary of Laboratory Values.

HORMONE	N	Mean (SD)	Range	Research Laboratory Healthy Male range
Testosterone (ng/dL)	96	342 (126)	49 – 672	175-781
Free Testosterone (pg/mL)	95	74 (27)	5 -140	--
Free Androgen Index	95	47 (24)	3 - 133	--
T/Estradiol Ratio	94	110 (56)	17 - 343	--
Estradiol (pg/mL)	94	34 (10)	<20 - 58	20 - 47
25-OH Vitamin D (ng/mL)	96	26 (9)	8 - 63	9-38
Leptin (ng/mL)	95	9.6 (7.2)	1.8 - 42.3	2.5 - 5.3 (lean)
LH (mIU/mL)	96	3.3 (2.2)	0.4 - 13.6	1.24-8.62

Supplementary Table 2. Unadjusted and age-adjusted Pearson correlations between all hormonal and metabolic measures.

	Correlation	N	UNADJUSTED		AGE – ADJUSTED	
			R-value	P-value	R-value	P-value
Leptin	Testosterone	95	-0.24	**0.02**	-0.23	**0.03**
	Free Testosterone	95	-0.10	0.36	-0.05	0.65
	Free Androgen Index	95	0.11	0.29	0.18	0.08
	T/E2 Ratio	93	-0.28	**0.006**	-0.27	**0.01**
	BMI	83	0.64	**<0.001**	0.64	**<0.001**
	25-Hydroxyvitamin D*	95	-0.14	0.18	-0.19	0.073
BMI	Testosterone	84	-0.24	**0.03**	-0.23	**0.04**
	Free Testosterone	83	-0.13	0.24	-0.11	0.34
	Free Androgen Index	83	0.06	0.59	0.10	0.36
	T/E2 Ratio	83	-0.33	**0.002**	-0.33	**0.003**
	25-Hydroxyvitamin D*	84	-0.17	0.12	-0.19	0.08
25-Hydroxyvitamin D*	Testosterone	96	0.01	0.89	0.05	0.66
	Free Testosterone	95	-0.12	0.24	-0.04	0.72
	Free Androgen Index	95	-0.24	0.02	-0.15	0.14
	T/E2 Ratio	94	0.001	0.99	0.04	0.74

*Season Adjusted

Supplementary Figure 1. Longitudinal distribution of EDSS scores.