

Supplementary Materials:

**Sex-dependent Clinical Presentation, Body Image, and Endocrine Status in
Long-term Remitted Anorexia Nervosa**

Louisa Schloesser, Leon D. Lotter, Jan Offermann, Katrin Borucki,
Ronald Biemann, Jochen Seitz, Kerstin Konrad, Beate Herpertz-Dahlmann

Supplementary Tables

Comorbidity in MINI	Female [% (N)]	Male [% (N)]
Major depressive disorder	16.7 (4)	0
Suicidality	8.3 (2)	11.1 (1)
Panic disorder	12.5 (3)	0
Agoraphobia	4.2 (1)	0
Social phobia	4.2 (1)	0
Generalized anxiety disorder	16.7 (4)	0
Alcohol abuse	0	11.1 (1)
At least one comorbidity	33.3 (8)	11.1 (1)
No comorbidity	66.7 (16)	88.9 (8)

Table S1: Current comorbid psychiatric disorders in patients assessed using the Mini International Neuropsychiatric Interview (MINI)

Percentages of full samples.

	Recovered anorexia nervosa (AN)								Healthy Controls (HC)							
	Female				Male				Female				Male			
	<i>mean</i>	<i>SD</i>	<i>min</i>	<i>max</i>	<i>mean</i>	<i>SD</i>	<i>min</i>	<i>max</i>	<i>mean</i>	<i>SD</i>	<i>min</i>	<i>max</i>	<i>mean</i>	<i>SD</i>	<i>min</i>	<i>max</i>
Residual eating disorder psychopathology (Eating Disorder Inventory 2)																
<i>Drive for thinness^a</i>	22.6	10.4	7.0	40.0	13.0	3.8	9.0	21.0	13.7	7.0	7.0	37.0	11.2	2.9	7.0	16.0
<i>Bulimia^a</i>	14.7	8.1	7.0	35.0	10.7	3.0	7.0	15.0	12.5	5.5	7.0	30.0	11.2	4.0	8.0	20.0
<i>Body dissatisfaction^a</i>	34.3	11.4	15.0	54.0	24.2	7.2	16.0	37.0	22.2	7.7	12.0	40.0	18.0	3.0	13.0	22.0
<i>Ineffectiveness</i>	30.0	11.2	16.0	53.0	23.7	10.7	13.0	46.0	19.1	5.6	9.0	28.0	16.5	3.6	12.0	25.0
<i>Perfectionism^b</i>	21.1	5.3	13.0	34.0	18.7	3.7	15.0	26.0	17.1	5.3	10.0	30.0	17.2	5.0	10.0	26.0
<i>Interpersonal distrust^a</i>	19.4	6.0	9.0	31.0	19.0	5.0	12.0	29.0	15.4	5.2	8.0	32.0	16.0	4.2	11.0	25.0
<i>Interoceptive awareness^b</i>	27.1	9.0	18.0	49.0	23.7	10.2	10.0	43.0	19.8	6.1	11.0	31.0	16.3	3.8	11.0	21.0
<i>Maturity fears^a</i>	24.5	7.2	16.0	48.0	19.1	5.3	12.0	30.0	21.8	6.1	10.0	37.0	20.1	5.2	10.0	29.0
<i>Asceticism^c</i>	19.8	7.6	10.0	34.0	17.6	5.3	10.0	24.0	15.2	3.4	9.0	22.0	14.8	3.7	9.0	21.0
<i>Impulse regulation^c</i>	23.1	7.5	13.0	40.0	23.3	8.5	14.0	39.0	17.4	4.3	12.0	29.0	15.2	3.0	11.0	21.0
<i>Social Insecurity^d</i>	23.4	6.5	14.0	35.0	20.7	6.0	14.0	32.0	18.2	3.5	10.0	27.0	17.1	3.9	12.0	21.5
Body image (Drive for Muscularity Scale & Body Morphing Tool)																
<i>Drive for muscularity^e</i>	32.8	10.4	19.0	55.0	43.1	14.2	16.0	59.0	26.8	6.7	19.0	43.0	27.6	5.6	21.0	37.0
<i>Perceived body fat^a</i>	-6.7	26.5	-74.8	31.7	-11.7	35.5	-54.7	71.9	-6.6	19.9	-64.8	18.0	-4.5	22.1	-32.7	34.5
<i>Desired body fat^a</i>	-31.2	26.6	-79.9	2.2	-18.2	52.5	-81.3	100.0	-22.5	24.8	-92.1	3.6	-23.8	24.1	-71.4	7.9
<i>Perceived muscularity^a</i>	34.5	19.4	.0	66.5	48.2	26.0	8.3	80.9	37.2	15.8	6.5	76.6	20.2	11.5	.0	35.9
<i>Desired muscularity^a</i>	42.7	19.7	.0	88.5	73.4	24.0	33.2	100.0	46.9	13.8	16.1	75.1	46.2	16.6	12.4	68.2
<i>Perceived definition^a</i>	38.3	14.2	6.1	60.1	70.3	20.0	28.1	100.0	39.8	14.8	7.9	71.4	39.2	19.9	7.6	65.5
<i>Desired definition^a</i>	49.3	20.2	11.9	97.5	88.4	19.7	48.9	100.0	54.8	16.5	7.4	78.4	72.9	15.3	47.9	100.0
Hormonal Status																
<i>Cortisol [ng/ml]</i>	132.9	79.7	32.7	347.9	105.6	52.3	34.2	190.1	205.5	98.0	59.9	460.8	110.0	45.6	42.6	156.4
<i>Leptin [ng/ml]</i>	11.8	7.4	1.1	26.0	1.5	.8	.5	2.8	10.6	6.4	2.5	25.6	3.2	2.5	.4	9.4
<i>Free T3 [pg/ml]</i>	3.5	1.5	2.1	9.6	3.2	.8	2.0	4.7	3.1	.5	2.1	4.3	3.0	.6	2.0	3.7
<i>LH [mIU/ml]^h</i>	9.4	8.6	.6	27.3	8.8	5.8	.1	18.3	13.2	11.1	1.8	34.8	9.5	5.8	3.1	19.3
<i>FSH [mIU/ml]^h</i>	4.8	2.9	.0	11.2	3.4	3.5	.0	12.1	5.6	3.0	1.3	10.4	3.2	2.5	.7	8.0
<i>Progesterone [ng/ml]^h</i>	2.8	4.6	.3	15.8	.7	.3	.4	1.2	1.9	2.8	.5	7.9	.7	.3	.4	1.5
<i>Estradiol [pg/ml]^h</i>	109.0	60.5	38.4	265.5	73.6	15.0	47.4	91.3	74.1	14.3	53.8	95.6	57.9	21.5	12.3	78.3
<i>Testosterone [ng/ml]^h</i>	1.0	.3	.7	1.7	5.5	1.2	3.8	7.8	.9	.2	.6	1.4	6.4	1.6	3.8	9.7

Table S2: Groupwise scores/levels of eating disorder psychopathology, hormonal status, and body image assessments

SD = standard deviation, min = minimum, max = maximum, Missing values: a: n = 1 fHC. b: n = 2 fHC. c: n = 3 fHC. d: n = 4 fHC. e: n = 2 fAN, 3 fHC, 2 mAN. f: n = 2 fAN, 3 fHC. g: n = 1 mHC.

	Analyses of covariance												Simple main effects				
	Full model				Diagnosis			Sex			Interaction			Female		Male	
	df	F	p	η_p^2	F	p	η_p^2	F	p	η_p^2	F	p	η_p^2	Comp.	p	Comp.	p
Residual eating disorder psychopathology (Eating Disorder Inventory 2)																	
Drive for thinness ^a	5, 62	6.73	<.001*	.35	6.77	.012*	.10	6.07	.016*	.09	3.42	.069	.05	AN>HC	<.001*	ns.	.488
Bulimia ^a	5, 62	1.31	.271	.10	.19	.664	.00	1.46	.232	.02	.78	.380	.01	ns.	.262	ns.	.688
Body dissatisfaction ^a	5, 62	7.98	<.001*	.39	14.77	<.001*	.19	6.78	.012*	.10	1.75	.190	.03	AN>HC	.001*	ns.	.083
Ineffectiveness	5, 63	5.85	<.001*	.32	13.95	<.001*	.18	2.07	.155	.03	.83	.367	.01	AN>HC	.001*	ns.	.091
Perfectionism ^b	5, 61	2.54	.038	.17	3.34	.073	.05	.06	.814	.00	1.17	.285	.02	AN>HC	.022*	ns.	.592
Interpersonal distrust ^a	5, 62	2.48	.041	.17	5.30	.025*	.08	.25	.616	.01	.18	.671	.00	AN>HC	.012*	ns.	.275
Interoceptive awareness ^b	5, 61	4.46	.002*	.27	10.96	.002*	.15	.98	.327	.02	.02	.899	.00	AN>HC	.004*	ns.	.084
Maturity fears ^a	5, 62	1.93	.102	.14	.08	.785	.00	2.24	.140	.04	1.38	.245	.02	ns.	.213	ns.	.474
Asceticism ^c	5, 60	2.18	.069	.15	5.45	.023*	.08	.31	.581	.01	.47	.496	.01	AN>HC	.012*	ns.	.259
Impulse regulation ^c	5, 60	4.72	.001*	.28	15.31	<.001*	.20	.01	.930	.00	.33	.571	.01	AN>HC	.003*	AN>HC	.023*
Social Insecurity ^d	5, 59	3.81	.005	.24	8.19	.006*	.12	.74	.392	.01	.41	.525	.01	AN>HC	.002*	ns.	.166
Body image (Drive for Muscularity Scale & Body Morphing Tool)																	
Drive for muscularity ^c	5, 56	4.18	.003*	.27	15.50	<.001*	.22	4.10	.048*	.07	2.97	.090	.05	AN>HC	.029*	AN>HC	.004*
Perceived body fat ^a	5, 62	2.96	.019	.19	.10	.748	.00	.04	.850	.00	.41	.527	.01	ns.	.741	ns.	.703
Desired body fat ^a	5, 62	.67	.651	.05	.03	.869	.00	.71	.402	.01	.66	.418	.01	ns.	.277	ns.	.780
Perceived muscularity ^a	5, 62	3.42	.009	.22	8.33	.005*	.12	.49	.489	.01	10.38	.002*	.14	ns.	.771	AN>HC	.001*
Desired muscularity ^a	5, 62	3.96	.004*	.24	5.08	.028*	.08	9.11	.004*	.13	9.97	.002*	.14	ns.	.408	AN>HC	.002*
Perceived definition ^a	5, 62	6.27	<.001*	.34	9.95	.002*	.14	14.84	<.001*	.19	13.20	.001*	.18	ns.	.663	AN>HC	<.001*
Desired definition ^a	5, 62	7.66	<.001*	.38	.79	.377	.01	31.09	<.001*	.33	4.47	.038*	.07	ns.	.237	ns.	.071
Hormonal status																	
Cortisol	5, 63	3.89	.004*	.24	2.73	.103	.04	7.14	.010*	.10	2.38	.128	.04	HC>AN	.004*	ns.	.918
Leptin	5, 63	15.31	<.001*	.55	<.01	.948	.00	35.17	<.001*	.36	1.42	.237	.02	ns.	.239	ns.	.423
Free T3	5, 63	1.00	.423	.07	.71	.404	.01	.06	.805	.00	.30	.584	.01	ns.	.301	ns.	.786
LH ^{f,h}	5, 33	3.02	.024	.31	.02	.897	.00	.20	.662	.01	.23	.638	.01	ns.	.869	ns.	.428
FSH ^{a,h}	5, 34	2.21	.076	.25	.12	.736	.00	.69	.413	.02	.17	.685	.01	ns.	.654	ns.	.948
Progesterone ^h	5, 34	.99	.440	.13	.04	.844	.00	3.60	.006	.01	.01	.944	.00	ns.	.858	ns.	.760
Estradiol ^{g,h}	5, 33	2.28	.069	.26	4.04	.053	.11	1.22	.277	.04	1.12	.301	.03	ns.	.099	ns.	.266
Testosterone ^h	5, 34	64.4	<.001*	.90	1.42	.242	.04	253.67	<.001*	.88	5.63	.023*	.14	ns.	.195	ns.	.063

Table S3: Group comparison of eating disorder psychopathology, body image assessments and hormonal status

Statistic: two-way analyses of covariance with bootstrapping with inclusion of *diagnosis* and *sex* main effects, the interaction of *diagnosis* \times *sex*, and age as well as BMI-SDS as covariates. Significant interaction effects were followed up on by evaluation of simple main effects of diagnosis within each sex category (Šidák correction). Partial eta-squared is used to demonstrate effect sizes. * significant at alpha-level of $p < 0.05$, with Bonferroni correction per set of analyses at the level of full model ($p < .0045$, $p < .0063$, $p < .0071$). Bold numbers indicate effects significant on factor- *and* model-level, and simple-main effects *if* corresponding interaction *and* model effects were significant. Missing values: a: $n = 1$ fHC. b: $n = 2$ fHC. c: $n = 3$ fHC. d: $n = 4$ fHC. e: $n = 2$ fAN, 3 fHC, 2 mAN. f: $n = 1$ fAN, g: $n = 1$ mHC, h: excluding probands with hormonal contraception. fT3 = free triiodothyronine, LH = luteinizing hormone, FSH = follicle-stimulating hormone, df = degrees of freedom, η_p^2 = partial eta-squared, comp. = comparison, ns. = not significant.

	Analyses of covariance												Simple main effects				
	Full model				Diagnosis			Sex			Interaction			Females		Males	
	<i>df</i>	<i>F</i>	<i>p</i>	η_p^2	<i>F</i>	<i>p</i>	η_p^2	<i>F</i>	<i>p</i>	η_p^2	<i>F</i>	<i>p</i>	η_p^2	<i>Comp.</i>	<i>p</i>	<i>Comp.</i>	<i>p</i>
Residual eating disorder psychopathology (Eating Disorder Inventory 2)																	
<i>Drive for thinness^a</i>	5, 53	6.37	<.001*	.38	3.84	.055	.07	8.07	.006*	.13	3.57	.064	.06	AN>HC	<.006*	ns.	.963
<i>Body dissatisfaction^a</i>	5, 53	6.73	<.001*	.39	8.57	.005*	.14	7.87	.007*	.13	1.93	.170	.04	AN>HC	.001*	ns.	.369
<i>Ineffectiveness</i>	5, 54	4.57	.002*	.30	8.55	.005*	.14	2.65	.110	.05	1.43	.237	.03	AN>HC	.001*	ns.	.406
<i>Interoceptive awareness^a</i>	5, 53	3.15	.015*	.23	6.07	.017*	.10	.93	.340	.02	.16	.687	.00	AN>HC	.012*	ns.	.317
<i>Impulse regulation^b</i>	5, 52	3.17	.014*	.23	9.58	.003*	.16	.02	.656	.00	.08	.776	.00	AN>HC	.015*	ns.	.143
Body image (Drive for Muscularity Scale & Body Morphing Tool)																	
<i>Drive for muscularity^c</i>	5, 48	2.63	.035*	.22	6.66	.013*	.12	.83	.372	.02	1.04	.312	.02	ns.	.131	AN>HC	.048*
<i>Desired muscularity^a</i>	5, 53	1.96	.100	.16	2.49	.120	.05	4.75	.034*	.08	5.51	.023*	.09	ns.	.431	ns.	.093
<i>Perceived definition^a</i>	5, 53	3.81	.005*	.27	7.04	.011*	.12	10.28	.002*	.16	7.28	.009*	.12	ns.	.955	AN>HC	.013*
<i>Desired definition^a</i>	5, 53	6.04	<.001*	.36	.96	.331	.02	25.85	<.001*	.33	2.07	.156	.04	ns.	.642	ns.	.203
Hormonal status																	
<i>Cortisol</i>	5, 54	2.82	.025*	.21	1.35	.251	.02	5.21	.026*	.09	2.43	.125	.04	HC>AN	.018*	ns.	.701
<i>Leptin</i>	5, 54	14.53	<.001*	.58	.27	.605	.01	38.47	<.001*	.41	2.51	.119	.04	ns.	.328	ns.	.116
<i>Testosterone^d</i>	5, 29	59.92	<.001*	.91	.84	.367	.03	236.50	<.001*	.89	3.26	.082	.10	ns.	.347	ns.	.130

Table S4: Group comparison results of eating disorder psychopathology, hormonal status, and body image assessments while excluding patients with a BMI below the 10th percentile

Only main analyses significant at Bonferroni corrected model level (see Table S3) were repeated. No further multiple comparison correction was applied. Group sizes: N = 20 fAN, 7 mAN, 24 fHC, 9 mHC. Statistics: two-way analyses of covariance with bootstrapping with inclusion of diagnosis and sex main effects, the interaction of diagnosis \times sex, and age as well as BMI-SDS as covariates. Significant interaction effects were followed up on by evaluation of simple main effects of diagnosis within each sex category (Šidák correction). Partial eta-squared is used to demonstrate effect sizes. * significant at alpha-level of $p < 0.05$, uncorrected. Bold numbers indicate effects significant on factor- and model-level, and simple-main effects if corresponding interaction and model effects were significant. fT3 = free triiodothyronine, LH = luteinizing hormone, FSH = follicle-stimulating hormone, df = degrees of freedom, η_p^2 = partial eta-squared, comp. = comparison, ns. = not significant, missing values: a: n = 1 fHC, b: n = 2 fHC, c: n = 1 fAN, n = 3 fHC, n = 2 mHC.

	Analyses of covariance												Simple main effects				
	Full model				Diagnosis			Sex			Interaction			Females		Males	
	<i>df</i>	<i>F</i>	<i>p</i>	η_p^2	<i>F</i>	<i>p</i>	η_p^2	<i>F</i>	<i>p</i>	η_p^2	<i>F</i>	<i>p</i>	η_p^2	<i>Comp.</i>	<i>p</i>	<i>Comp.</i>	<i>p</i>
Residual eating disorder psychopathology (Eating Disorder Inventory 2)																	
<i>Drive for thinness^a</i>	5, 65	6.14	<.001*	.32	10.34	.002*	.14	3.53	.065	.05	1.63	.206	.03	AN>HC	<.001*	ns.	.254
<i>Body dissatisfaction^a</i>	5, 65	8.35	<.001*	.39	19.13	<.001*	.23	4.88	.031*	.07	1.01	.319	.02	AN>HC	<.001*	ns.	.050
<i>Ineffectiveness</i>	5, 66	6.50	<.001*	.33	17.98	<.001*	.21	1.65	.203	.02	.47	.496	.01	AN>HC	<.001*	AN>HC	.040*
<i>Interoceptive awareness^b</i>	5, 64	5.19	<.001*	.29	14.72	<.001*	.19	.60	.440	.01	.00	.996	.00	AN>HC	.001*	AN>HC	.025*
<i>Impulse regulation^c</i>	5, 63	5.59	<.001*	.31	18.16	<.001*	.22	.00	.955	.00	.17	.684	.00	AN>HC	.001*	AN>HC	.007*
Body image (Drive for Muscularity Scale & Body Morphing Tool)																	
<i>Drive for muscularity^d</i>	5, 59	4.60	.001*	.28	17.56	<.001*	.23	3.54	.065	.06	2.90	.094	.05	AN>HC	.020*	AN>HC	.001*
<i>Desired muscularity^a</i>	5, 65	5.17	<.001*	.29	5.62	.021*	.08	10.46	.002*	.14	12.54	.001*	.16	ns.	.285	AN>HC	.001*
<i>Perceived definition^a</i>	5, 65	4.72	.001*	.27	5.72	.020*	.08	11.35	.001*	.15	10.03	.002*	.13	ns.	.483	AN>HC	.002*
<i>Desired definition^a</i>	5, 65	9.07	.001*	.41	0.76	.388	.01	33.86	<.001*	.34	4.99	.029*	.07	ns.	.207	ns.	.073
Hormonal status																	
<i>Cortisol</i>	5, 66	3.49	.007*	.21	2.09	.153	.03	6.41	.014*	.09	1.86	.177	.03	HC>AN	.009*	ns.	.957
<i>Leptin</i>	5, 66	13.80	<.001*	.51	.04	.834	.00	29.96	<.001*	.31	.48	.490	.01	ns.	.393	ns.	.779
<i>Testosterone^e</i>	5, 36	69.55	<.001*	.91	1.40	.244	.04	267.27	<.001*	.88	7.13	.011*	.17	ns.	.120	HC>AN	.047*

Table S5: Group comparison results of eating disorder psychopathology, hormonal status, and body image assessments while additionally including subjects with current Bulimia nervosa

Only main analyses significant at Bonferroni corrected model level (see Table S3) were repeated. No further multiple comparison correction was applied. Group sizes: N = 26 fAN, 10 mAN, 26 fHC, 10 mHC. Statistics: two-way analyses of covariance with bootstrapping with inclusion of diagnosis and sex main effects, the interaction of diagnosis \times sex, and age as well as BMI-SDS as covariates. Significant interaction effects were followed up on by evaluation of simple main effects of diagnosis within each sex category (Šidák correction). Partial eta-squared is used to demonstrate effect sizes. * significant at alpha-level of $p < 0.05$, uncorrected. Bold numbers indicate effects significant on factor- and model-level, and simple-main effects if corresponding interaction and model effects were significant. fT3 = free triiodothyronine, LH = luteinizing hormone, FSH = follicle-stimulating hormone, df = degrees of freedom, η_p^2 = partial eta-squared, comp. = comparison, ns. = not significant, missing values: a: n = 1 fHC, b: n = 2 fHC, c: n = 3 fHC, d: n = 2 fAN, n = 3 fHC, n = 2 mHC.

	Mann-Whitney-U tests											
	HC vs. AN			Male vs. Female			fAN vs. fHC			mAN vs. mHC		
	<i>N</i>	<i>U</i>	<i>p</i>	<i>N</i>	<i>U</i>	<i>p</i>	<i>N</i>	<i>U</i>	<i>p</i>	<i>N</i>	<i>U</i>	<i>p</i>
Residual eating disorder psychopathology (Eating Disorder Inventory 2)												
<i>Drive for thinness</i>	68	840.5	.001*	68	305.5	.028*	49	461.5	.001*	19	55.0	.410
<i>Body dissatisfaction</i>	68	921.5	<.001*	68	290.0	.016*	49	495.0	<.001*	19	68.5	.054
<i>Ineffectiveness</i>	69	929.5	<.001*	69	321.5	.039*	50	498.5	<.001*	19	67.0	.072
<i>Interoceptive awareness</i>	67	852.0	<.001*	67	319.0	.056	48	441.5	.002*	19	66.0	.085
<i>Impulse regulation</i>	66	860.5	<.001*	66	365.0	.250	47	423.0	.002*	19	75.5	.013*
Body image (Drive for Muscularity Scale & interactive Body Morphing Tool)												
<i>Drive for muscularity</i>	62	682.0	.005*	62	487.0	.099	45	336.5	.058	17	61.0	.016*
<i>Desired muscularity</i>	68	623.0	.577	68	625.5	.029*	49	265.5	.490	19	71.0	.034*
<i>Perceived definition</i>	68	547.5	.713	68	650.0	.012*	49	285.0	.764	19	79.0	0.06*
<i>Desired definition</i>	68	678.5	.215	68	785.5	<.001*	49	239.5	.226	19	68.5	.051
Hormonal status												
<i>Cortisol</i>	69	367.5	.007*	69	285.5	.011*	50	159.5	.003*	19	43.0	.870
<i>Leptin</i>	69	579.0	.857	69	60.0	<.001*	50	338.5	.607	19	23.5	.079
<i>Testosterone</i>	40	156.5	.287	40	399.0	<.001*	21	33.0	.255	19	28.5	.178

Table S6: Replication of significant group comparisons using Mann-Whitney U tests

Only main analyses significant at Bonferroni corrected model level (see Table S3) were repeated. * significant at an alpha-level of $p < .05$, uncorrected. U = Mann-Whitney U statistic.

	Analyses of covariance													Simple main effects			
	Full model				Diagnosis			Sex			Interaction			Female		Male	
	<i>df</i>	<i>F</i>	<i>p</i>	η_p^2	<i>F</i>	<i>p</i>	η_p^2	<i>F</i>	<i>p</i>	η_p^2	<i>F</i>	<i>p</i>	η_p^2	<i>Comp.</i>	<i>p</i>	<i>Comp.</i>	<i>p</i>
Body image (Drive for Muscularity Scale & Body Morphing Tool)																	
<i>Difference of desired and perceived body fat</i>	5, 62	.77	.574	.06	.00	.948	.00	.68	.412	.01	1.17	.283	.02	ns.	.262	ns.	.601
<i>Difference of desired and perceived muscularity</i>	5, 62	3.80	.005*	.23	.36	.550	.01	14.77	>.001*	.19	.00	.996	.00	ns.	.553	ns.	.771
<i>Difference of desired and perceived definition</i>	5, 62	2.69	.029*	.18	3.71	.059	.06	4.91	.030*	.07	1.23	.272	.02	ns.	.430	ns.	.055

Table S7: Exploratory evaluation of group differences between BMT difference metrics (*desired* minus *perceived* conditions)

* significant at an alpha-level of $p < .05$, uncorrected

Variable 1	Variable 2	Recovered AN		Healthy controls	
		Female	Male	Female	Male
		<i>rs, p (N)</i>	<i>rs, p (N)</i>	<i>rs, p (N)</i>	<i>rs, p (N)</i>
Perceived body fat	<i>BMI-SDS</i>	.71, <.001* (24)	.83, .831 (9)	.61, .001* (25)	.20, .580 (10)
	<i>Leptin</i>	.43, .039* (24)	.65, .058 (9)	.58, .002* (25)	.28, .434 (10)
	<i>DMS</i>	-.39, .075 (22)	-.37, .330 (9)	.27, .221 (22)	-.17, .686 (8)
	<i>Drive for thinness</i>	.47, .021* (24)	.16, .680 (9)	.74, <.001* (24)	.46, .186 (10)
Desired body fat	<i>BMI-SDS</i>	.47, .020* (24)	-.22, .576 (9)	-.16, .454 (25)	.29, .425 (10)
	<i>Leptin</i>	.47, .021* (24)	-.43, .244 (9)	-.15, .483 (25)	-.28, .434 (10)
	<i>DMS</i>	-.45, .036* (22)	-.43, .252 (9)	-.71, <.001 (22)	-.68, .062 (8)
	<i>Drive for thinness</i>	-.28, .192 (24)	.34, .374 (9)	-.28, .184 (24)	.62, .058 (10)
Perceived muscularity	<i>BMI-SDS</i>	-.22, .313 (24)	.90, .001* (9)	.35, .082 (25)	-.04, .907 (10)
	<i>Leptin</i>	-.26, .229 (24)	-.02, .996 (9)	.05, .815 (25)	-.15, .688 (10)
	<i>DMS</i>	-.12, .592 (22)	-.08, .831 (9)	.30, .169 (22)	-.17, .686 (8)
	<i>Drive for thinness</i>	-.20, .342 (24)	-.77, .016* (9)	.31, .146 (24)	-.27, .449 (10)
Desired muscularity	<i>BMI-SDS</i>	-.30, .154 (24)	.23, .559 (9)	.21, .325 (25)	.03, .934 (10)
	<i>Leptin</i>	-.18, .396 (24)	-.39, .306 (9)	.21, .327 (25)	.26, .466 (10)
	<i>DMS</i>	.16, .482 (22)	.68*, .045* (9)	.02, .932 (22)	.20, .643 (8)
	<i>Drive for thinness</i>	.03, .878 (24)	.17, .655 (9)	.10, .646 (24)	-.10, .774 (10)
Perceived definition	<i>BMI-SDS</i>	-.19, .371 (24)	.05, .898 (9)	.22, .293 (25)	.53, .117 (10)
	<i>Leptin</i>	-.50, .013* (24)	-.33, .381 (9)	-.27, .196 (25)	-.54, .111 (10)
	<i>DMS</i>	.08, .729 (22)	.02, .966 (9)	-.31, .159 (22)	.24, .560 (8)
	<i>Drive for thinness</i>	-.13, .551 (24)	.00, 1.00 (9)	.10, .627 (24)	.50, .137 (10)
Desired definition	<i>BMI-SDS</i>	-.23, .388 (24)	-.21, .604 (9)	-.11, .589 (25)	.48, .166 (10)
	<i>Leptin</i>	-.06, .791 (24)	-.46, .217 (9)	-.09, .655 (25)	-.38, .275 (10)
	<i>DMS</i>	.21, .350 (22)	.24, .537 (9)	-.54, .811 (22)	.00, 1.000 (8)
	<i>Drive for thinness</i>	-.06, .791 (24)	.83, .005* (9)	-.15, .493 (24)	.38, .285 (10)

Table S8: Correlational analyses to validate the Body Morphing Tool results

Variables were correlated using spearman correlations. * significant at uncorrected alpha-level of $p < .05$. AN = Anorexia nervosa, rs = Spearman correlation coefficient, BMI-SDS = body mass index – standard deviation score, DMS = Drive for Muscularity Scale.

Supplementary Figures

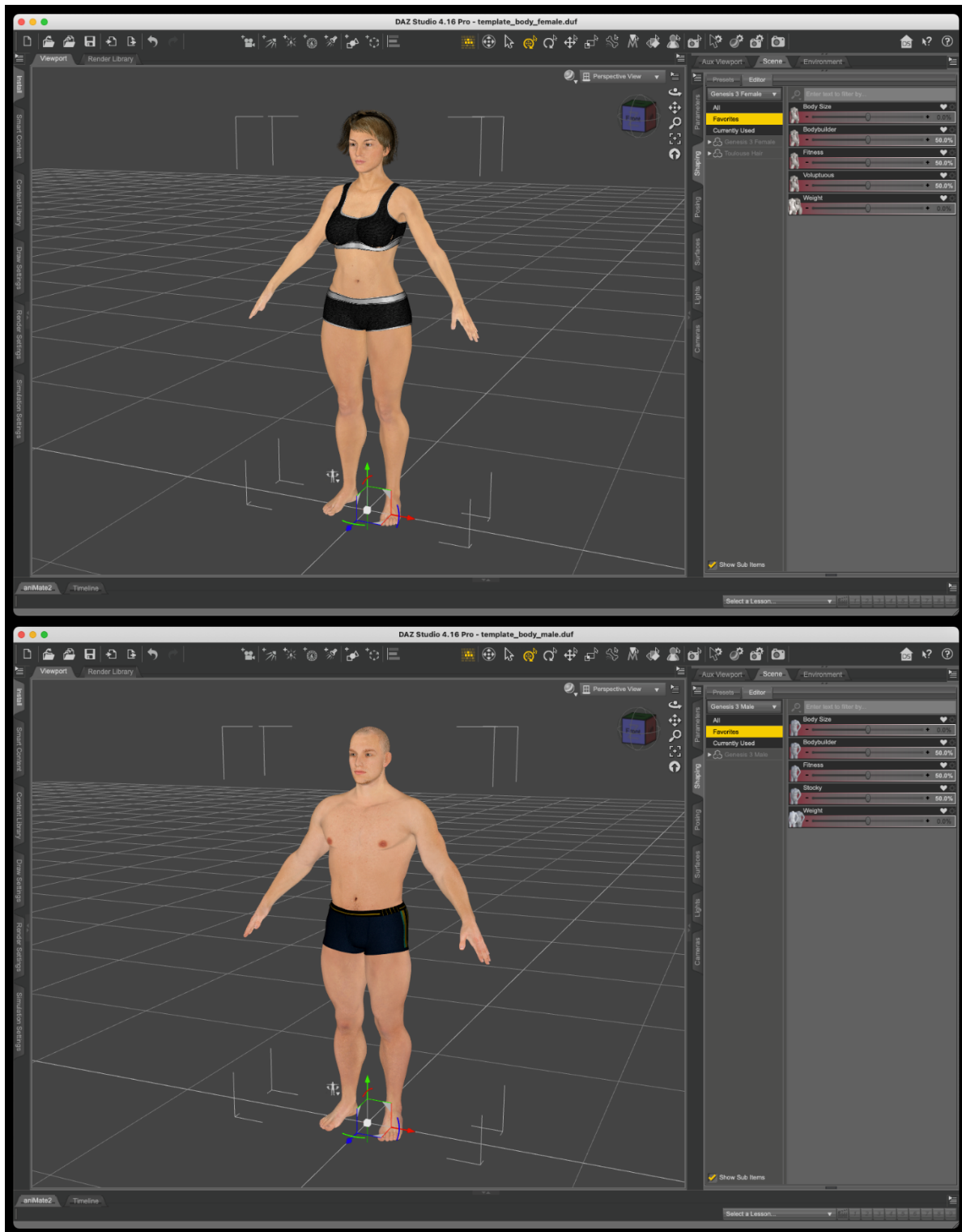


Figure S1: User interface of the Body Morphing Tool (BMT)

Software: *DAZ Studio 4 Pro* (<https://www.daz3d.com/>). The templates were built from packages *Genesis 3 Starter Essentials*, *Female* and *Male Body Morphs*. Participants could move the camera freely around the bodies. For simplicity, five parameters were selected before the experiment to transform the bodies into the desired shape (right side).

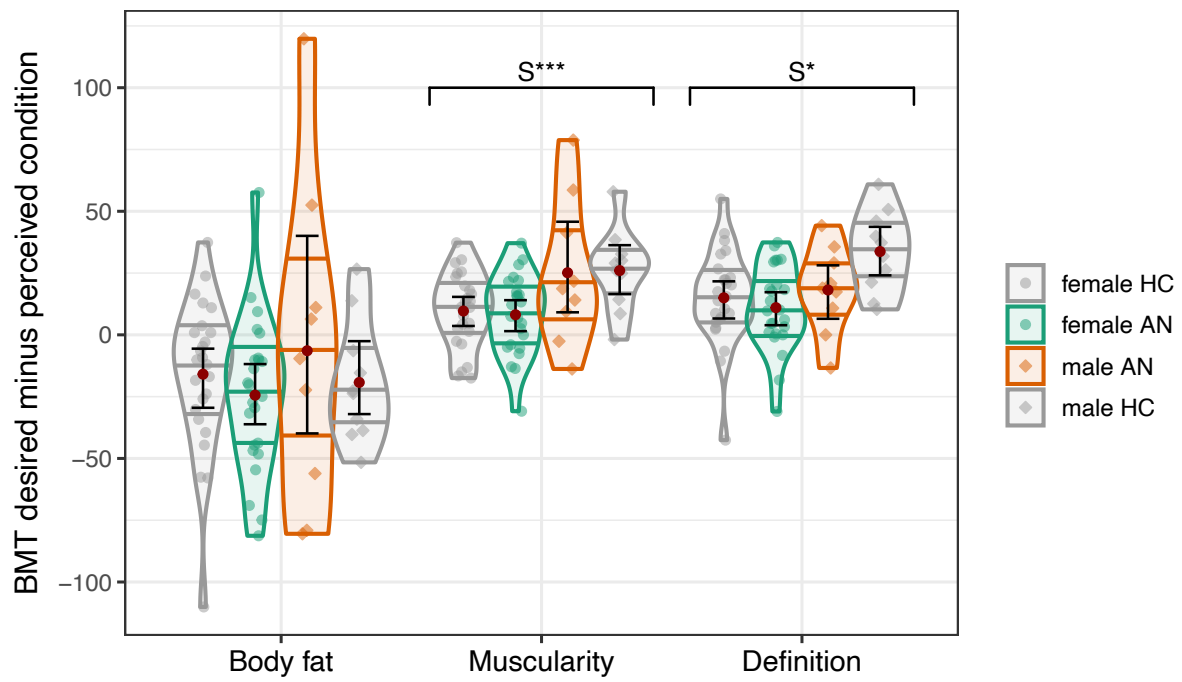


Figure S2: Exploratory evaluation of group differences between BMT difference metrics (*desired minus perceived condition*)

See Figure 1 for descriptions. ANCOVA models were not corrected for multiple comparisons.

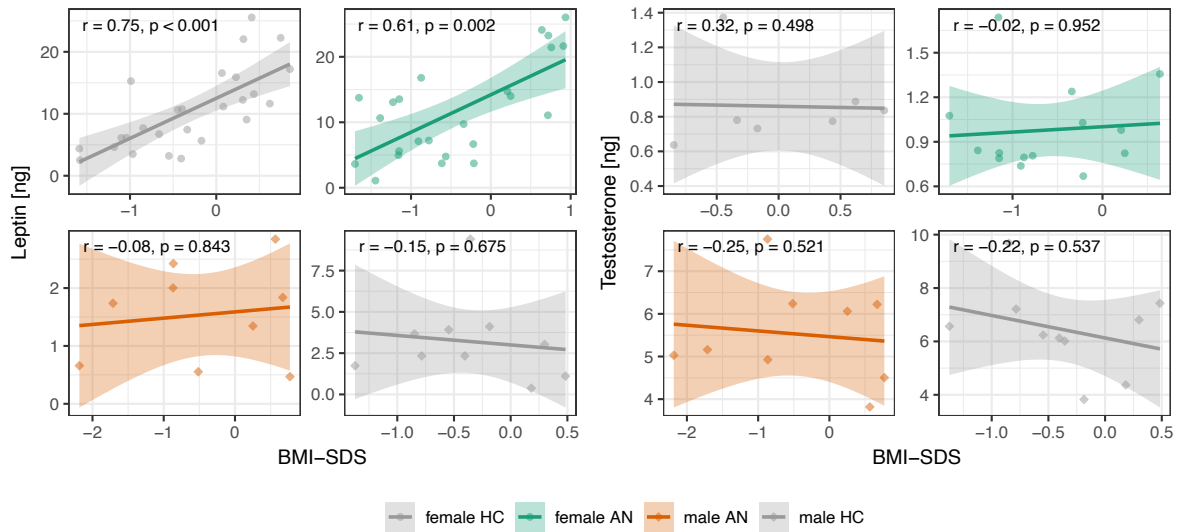


Figure S3: Correlation of leptin and testosterone with BMI-SDS

Spearman correlations were conducted separately by group. Scatter circles and squares depict individual values, regression lines and 95% confidence intervals are shown. Leptin is measured in ng/ml. AN = Anorexia nervosa, HC = healthy controls, BMI-SDS = body mass index – standard deviation score.

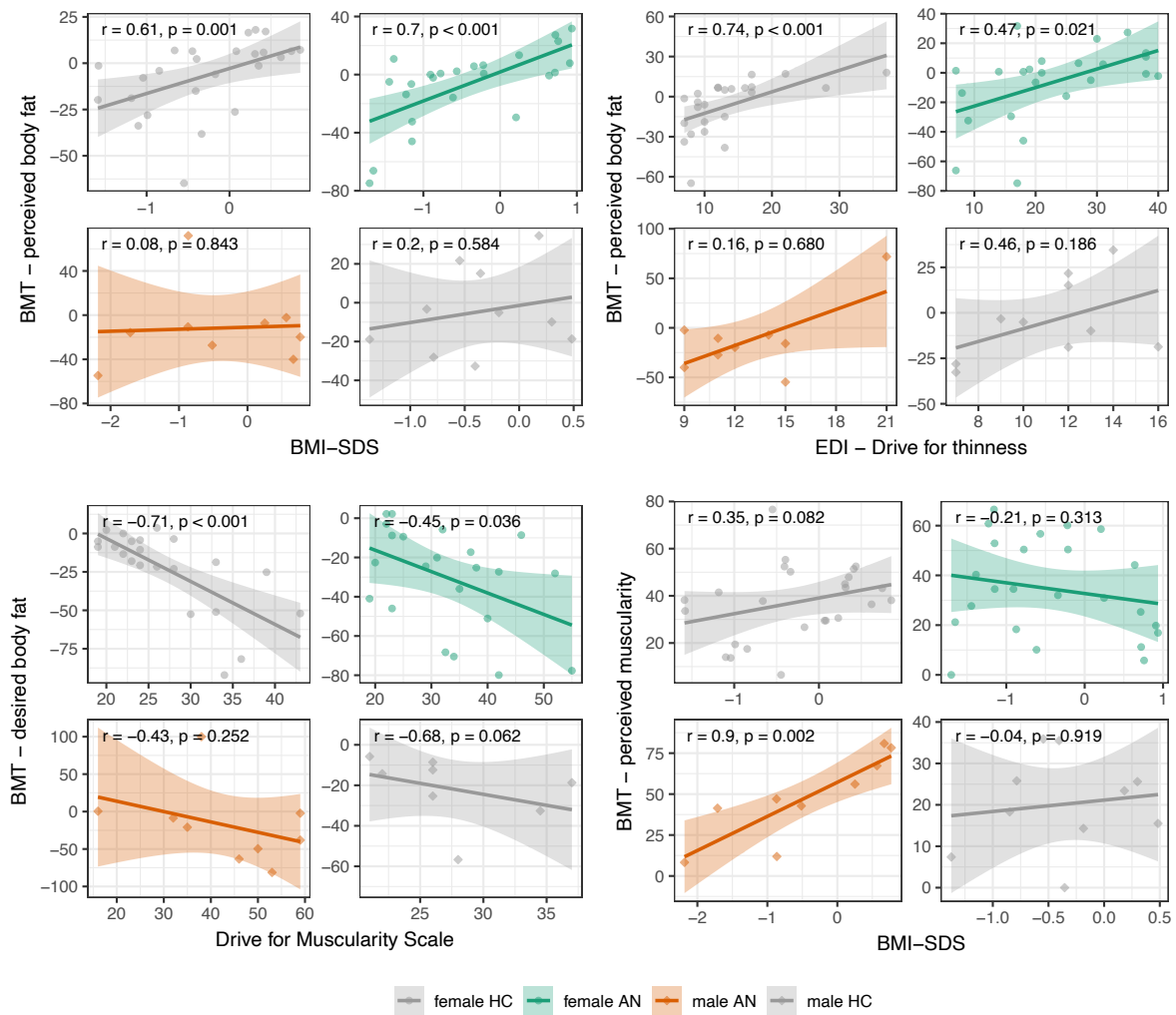


Figure S4: Exemplary associations between body weight, drive for muscularity, drive for thinness, and Body Morphing Tool results

Spearman correlations were conducted separately by group. Scatter circles and squares depict individual values, regression lines and 95% confidence intervals are shown. See Table S5 for full results. AN = Anorexia nervosa, HC = Healthy controls, BMT = Body Morphing Tool, BMI-SDS = body mass index – standard deviation score, EDI = Eating Disorder Inventory 2.

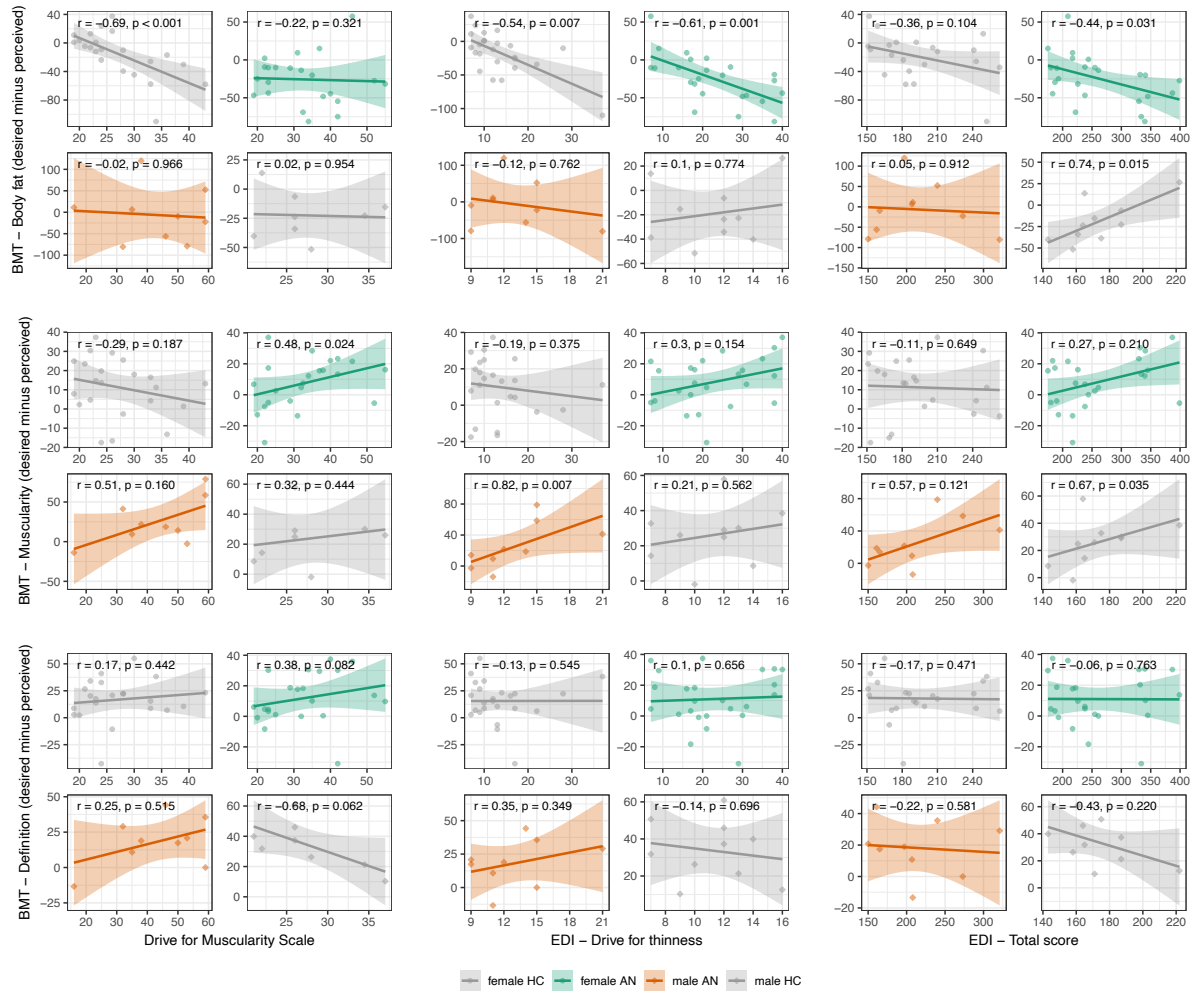


Figure S5: Exploratory evaluation of correlations between BMT difference metrics (*desired* minus *perceived* condition) and drive for muscularity, drive for thinness, and EDI total score

These serve as a preliminary evaluation of the BMT as a clinical tool. The DMS and the EDI – Drive for Thinness scale were selected to validate the derived difference metrics, the EDI global score was selected as a clinical measure of global eating disorder psychopathology. Spearman correlations were conducted separately by group. Scatter circles and squares depict individual values, regression lines and 95% confidence intervals are shown. AN = Anorexia nervosa, HC = healthy controls, EDI = Eating Disorder Inventory 2.