

Supplementary Table S1. Baseline participant characteristics.

	Normal Weight	VLCKD	LCD	Bariatric Surgery
N	32	20	20	39
Gender (male/female)	12/20	8/12	10/10	2/37
Age (years)	35.6 ± 9.7	47.2 ± 10.2	49.9 ± 9.3	40.8 ± 10.4
Height (m)	1.69 ± 0.08	1.64 ± 0.09	1.63 ± 0.1	1.63 ± 0.10
Body weight (kg)	64.9 ± 9.3	95.9 ± 16.3	93.0 ± 13.2	121.3 ± 21.61
BMI	22.7 ± 1.7	35.5 ± 4.4	34.6 ± 3.5	44.9 ± 10.4
FM (kg)	23.9 ± 7.0	42.2 ± 9.2	34.6 ± 8.3	56.7 ± 9.9
FFM (kg)	47.2 ± 9.0	50.2 ± 9.9	58.3 ± 11.7	50.7 ± 9.1

Data show the mean±standard deviation. Abbreviations: BMI, body mass index; FM, fat mass; FFM, fat free mass; LCD, low-calorie diet; VLCKD, very-low-calorie-ketogenic diet.

Supplementary Table S2. Association of myokine levels with body composition, HOMA-IR and β -OHB at baseline or following weight loss treatments.

		Body Weight			Fat Mass			Fat Free Mass			β -OHB			HOMA-IR		
		Basal	Δ _ Endpoint	Δ _ Follow-Up	Basal	Δ _ Endpoint	Δ _ Follow-Up	Basal	Δ _ Endpoint	Δ _ Follow-Up	Basal	Δ _ Endpoint	Δ _ Follow-Up	Basal	Δ _ Endpoint	Δ _ Follow-Up
IL-8_ Basal	R	0.076	-0.248	-0.296	0.611	-0.691	-0.657	-0.165	-0.752	-0.264	0.093	-0.233	-0.060	0.051	0.001	0.046
	P-value	0.563	0.054	0.022	<0.001	<0.001	<0.001	0.279	<0.001	0.083	0.552	0.153	0.707	0.713	0.995	0.741
ΔIL-8_ endpoint	R	-0.118	0.033	-0.012	0.128	-0.115	-0.128	-0.237	0.088	-0.042	-0.087	0.039	0.140	0.159	-0.279	-0.210
	P-value	0.391	0.812	0.930	0.429	0.479	0.438	0.142	0.590	0.800	0.607	0.824	0.417	0.276	0.060	0.152
ΔIL-8_ follow-up	R	-0.098	0.005	-0.030	0.153	-0.161	-0.119	-0.408	0.093	-0.049	0.043	-0.074	0.085	-0.152	0.132	0.121
	P-value	0.472	0.968	0.828	0.321	0.296	0.441	0.006	0.547	0.750	0.794	0.670	0.602	0.291	0.380	0.402
MMP2_ Basal	R	0.116	-0.279	-0.201	0.256	-0.313	-0.280	-0.048	-0.207	-0.130	-0.100	-0.101	0.181	0.175	-0.108	-0.074
	P-value	0.357	0.055	0.153	0.040	0.030	0.045	0.703	0.158	0.358	0.525	0.584	0.299	0.190	0.489	0.615
ΔMMP2_ endpoint	R	-0.093	-0.084	-0.110	0.124	-0.334	-0.136	-0.328	0.155	0.154	0.207	-0.213	-0.326	-0.119	0.063	0.050
	P-value	0.535	0.585	0.473	0.405	0.025	0.372	0.024	0.308	0.312	0.226	0.259	0.069	0.436	0.694	0.752
ΔMMP2_ follow-up	R	0.040	0.308	0.056	-0.068	0.108	0.076	0.177	0.012	0.082	-0.055	0.167	-0.125	-0.063	-0.164	-0.036
	P-value	0.791	0.044	0.714	0.655	0.489	0.618	0.241	0.937	0.589	0.756	0.405	0.497	0.686	0.331	0.817
IL-6_ Basal	R	-0.137	0.270	0.242	-0.135	0.304	0.175	0.087	0.112	0.066	-0.363	0.374	0.309	-0.219	0.061	0.141
	P-value	0.260	0.025	0.047	0.348	0.032	0.229	0.550	0.437	0.651	0.010	0.012	0.031	0.076	0.635	0.259
ΔIL-6_ endpoint	R	0.044	-0.077	-0.106	0.126	-0.074	-0.182	0.148	-0.136	-0.137	-0.232	0.205	0.226	0.019	-0.132	-0.116
	P-value	0.735	0.554	0.417	0.422	0.638	0.250	0.342	0.383	0.386	0.129	0.200	0.145	0.885	0.322	0.375
ΔIL-6_ follow-up	R	0.070	-0.118	-0.134	0.068	-0.090	-0.153	0.059	-0.094	-0.109	-0.217	0.091	0.262	0.049	-0.123	-0.147
	P-value	0.586	0.358	0.294	0.646	0.542	0.298	0.693	0.527	0.462	0.142	0.572	0.075	0.704	0.358	0.254
Irisin_ Basal	R	0.001	0.010	0.036	-0.131	0.085	0.124	0.300	-0.097	-0.067	-0.456	0.403	0.199	0.114	-0.252	-0.052
	P-value	0.994	0.931	0.760	0.340	0.539	0.371	0.026	0.487	0.629	<0.001	0.005	0.161	0.353	0.044	0.674
ΔIrisin_ endpoint	R	-0.105	0.064	0.028	0.123	-0.068	-0.228	-0.298	-0.273	-0.296	-0.169	0.053	0.123	0.228	-0.096	-0.203
	P-value	0.375	0.588	0.818	0.374	0.625	0.100	0.029	0.046	0.031	0.237	0.724	0.396	0.064	0.449	0.103
ΔIrisin_ follow-up	R	0.061	-0.123	-0.128	0.062	-0.274	-0.320	-0.238	-0.072	-0.034	0.117	-0.200	0.018	-0.030	0.118	0.029
	P-value	0.609	0.304	0.279	0.659	0.047	0.018	0.083	0.608	0.805	0.415	0.188	0.900	0.806	0.358	0.815

Data represent correlation coefficient evaluated by the Rho Spearman test in differences (Δ) induced by the weight loss treatments from baseline (time-point 1, month 0) to endpoint (time-point 2, month 2–3) or from baseline (time-point 1, month 0) to follow-up (time-point 3, month 4–6). β OHB, β -hydroxybutyrate; HOMA-IR, Homeostatic Model Assessment of Insulin Resistance. Bold indicates statistically significant correlation.