

Supplemental Table S1. Relationship between age and height, weight, BMI, and LBMI Z-scores

	b	SE	P	R ²
Height (Z-score)				0.037
Group (vs. healthy weight)				
Obese	1.25	0.54	0.021	
Type 2 diabetes	1.44	0.58	0.013	
Age (years)	-0.01	0.02	0.750	
Interaction (vs. healthy weight)				
Obese	-0.07	0.03	0.026	
Type 2 diabetes	-0.07	0.03	0.037	
Intercept	0.26	0.35	0.472	
Weight (Z-score)				0.739
Group (vs. healthy weight)				
Obese	2.20	0.32	<0.001	
Type 2 diabetes	3.34 ^a	0.34	<0.001	
Age (years)	-0.01	0.01	0.282	
Interaction (vs. healthy weight)				
Obese	0.00	0.02	0.907	
Type 2 diabetes	-0.07 ^b	0.02	<0.001	
Intercept	0.32	0.21	0.127	
BMI (Z-score)				0.667
Group (vs. healthy weight)				
Obese	3.27	0.45	<0.001	
Type 2 diabetes	4.99	0.49	<0.001	
Age (years)	-0.02	0.02	0.235	
Interaction (vs. healthy weight)				
Obese	-0.04	0.02	0.148	
Type 2 diabetes	-0.14 ^b	0.03	<0.001	
Intercept	0.38	0.30	0.206	
LBMI (Z-score)				0.681
Group (vs. healthy weight)				
Obese	2.04	0.33	<0.001	
Type 2 diabetes	3.32 ^a	0.35	<0.001	
Age (years)	0.01	0.01	0.427	
Interaction (vs. healthy weight)				
Obese	0.00	0.02	0.941	
Type 2 diabetes	-0.08 ^b	0.02	<0.001	
Intercept	-0.48	0.22	0.028	

For regression analyses, the healthy weight group is used as the reference. Each model includes group and age as main effects and a group by age interaction term to assess whether group differences vary by age.

^aSignificant difference ($P < 0.05$) in group main effect between obese and type 2 diabetes groups for respective outcome

^bSignificant difference ($P < 0.05$) in interaction effect between obese and type 2 diabetes groups for respective outcome

Supplemental Table S2. Relationship between age and bone Z-scores

	b	SE	P	R ²
BMC (Z-score)				0.240
Group (vs. healthy weight)				
Obese	1.52	0.42	<0.001	
Type 2 diabetes	2.49 ^a	0.45	<0.001	
Age (years)	0.01	0.02	0.546	
Interaction (vs. healthy weight)				
Obese	-0.03	0.02	0.164	
Type 2 diabetes	-0.09 ^b	0.02	<0.001	
Intercept	-0.01	0.27	0.982	
aBMD (Z-score)				0.052
Group (vs. healthy weight)				
Obese	0.46	0.47	0.329	
Type 2 diabetes	1.63 ^a	0.51	0.001	
Age (years)	0.02	0.02	0.378	
Interaction (vs. healthy weight)				
Obese	0.00	0.03	0.888	
Type 2 diabetes	-0.07 ^b	0.03	0.016	
Intercept	0.20	0.31	0.513	

For regression analyses, the healthy weight group is used as the reference. Each model includes group and age as main effects and a group by age interaction term to assess whether group differences vary by age.

^aSignificant difference (P<0.05) in group main effect between obese and type 2 diabetes groups for respective outcome

^bSignificant difference (P<0.05) in interaction effect between obese and type 2 diabetes groups for respective outcome

Supplemental Table S3. Relationship between LBMI Z-scores and bone Z-scores

	b	SE	P	R ²
BMC (Z-score)				0.422
Group (vs. healthy weight)				
Obese	-0.34	0.16	0.033	
Type 2 diabetes	-0.33	0.13	0.009	
LBMI (Z-score)	0.68	0.08	<0.001	
Interaction (vs. healthy weight)				
Obese	-0.05	0.11	0.638	
Type 2 diabetes	-0.05	0.10	0.598	
Intercept	0.37	0.05	<0.001	
aBMD (Z-score)				0.174
Group (vs. healthy weight)				
Obese	-0.70	0.19	<0.001	
Type 2 diabetes	-0.44	0.15	0.005	
LBMI (Z-score)	0.64	0.09	<0.001	
Interaction (vs. healthy weight)				
Obese	-0.11	0.14	0.429	
Type 2 diabetes	-0.21	0.12	0.089	
Intercept	0.67	0.06	<0.001	

For regression analyses, the healthy weight group is used as the reference. Each model includes group and LBMI Z-score as main effects and a group by LBMI Z-score interaction term to assess whether group differences vary across the distribution of LBMI Z-score.

FIGURE LEGENDS

Supplemental Figure S1. BMC Z-scores relative to age and time since diagnosis (years) in youth with type 2 diabetes. The regression line and corresponding 95% confidence interval (gray shaded areas) is displayed. Larger point size represents a longer amount of time since diagnosis of type 2 diabetes. BMC, bone mineral content.

