



# Relationship between Mediterranean diet, body composition and physical fitness in 13 to 16 years old Icelandic students

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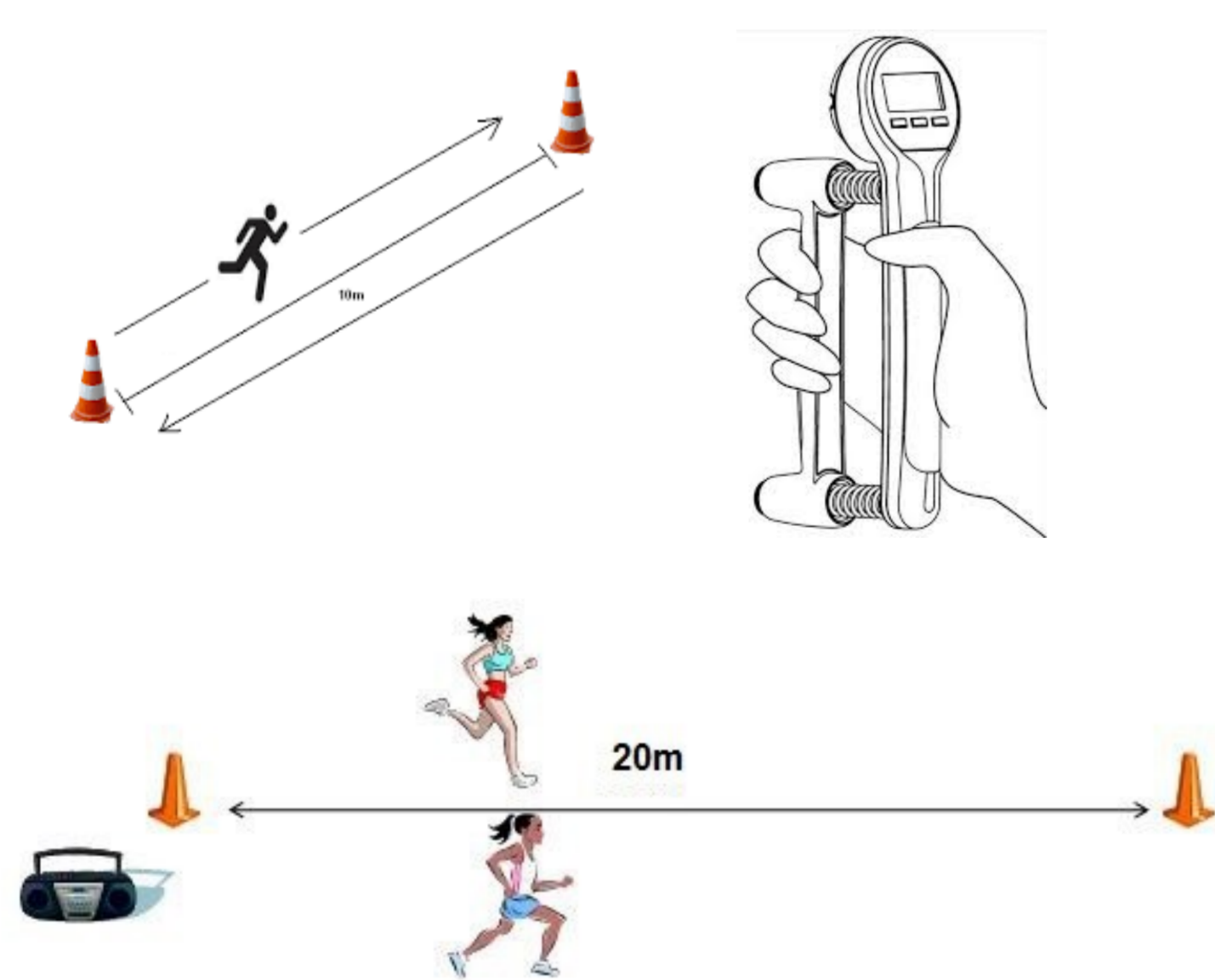
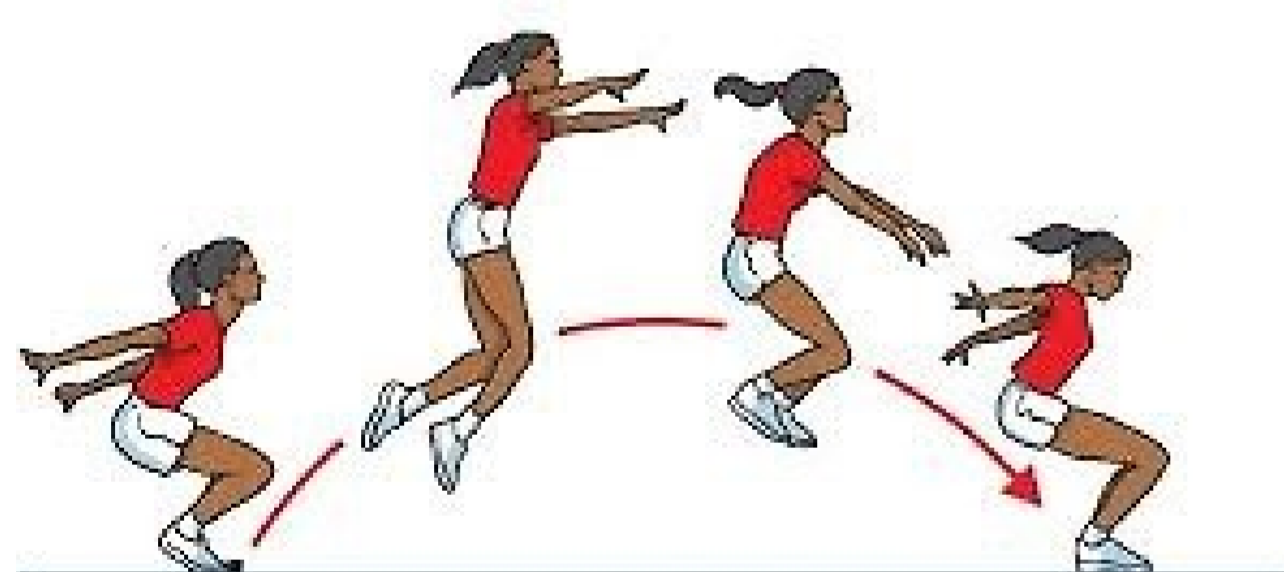
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## Purpose

Obesity among adolescents is currently a major public health concern. Physical activity, physical fitness (PF) and adherence to the Mediterranean diet (MD) are powerful indicators for the prevention and treatment of obesity. The aim of this study was to examine the association between health-related physical fitness components, body composition, and adherence to MD in 13 to 16 years old adolescents.

## Methods

The study design was cross-sectional, with 387 subjects of 13 to 16 years old students (54% boys) from two secondary schools in the capital city of Iceland. The ALPHA Health-Related Fitness Test Battery for Children and Adolescents (ALPHA) Fitness Test battery was used to measure physical fitness and body composition. The Mediterranean Diet Quality Index (KIDMED) questionnaire was used to assess adherence to MD. One-way ANOVA and Bonferroni post-hoc tests were performed for the associations between MD, body composition, and fitness according to gender and age.



## Conclusions

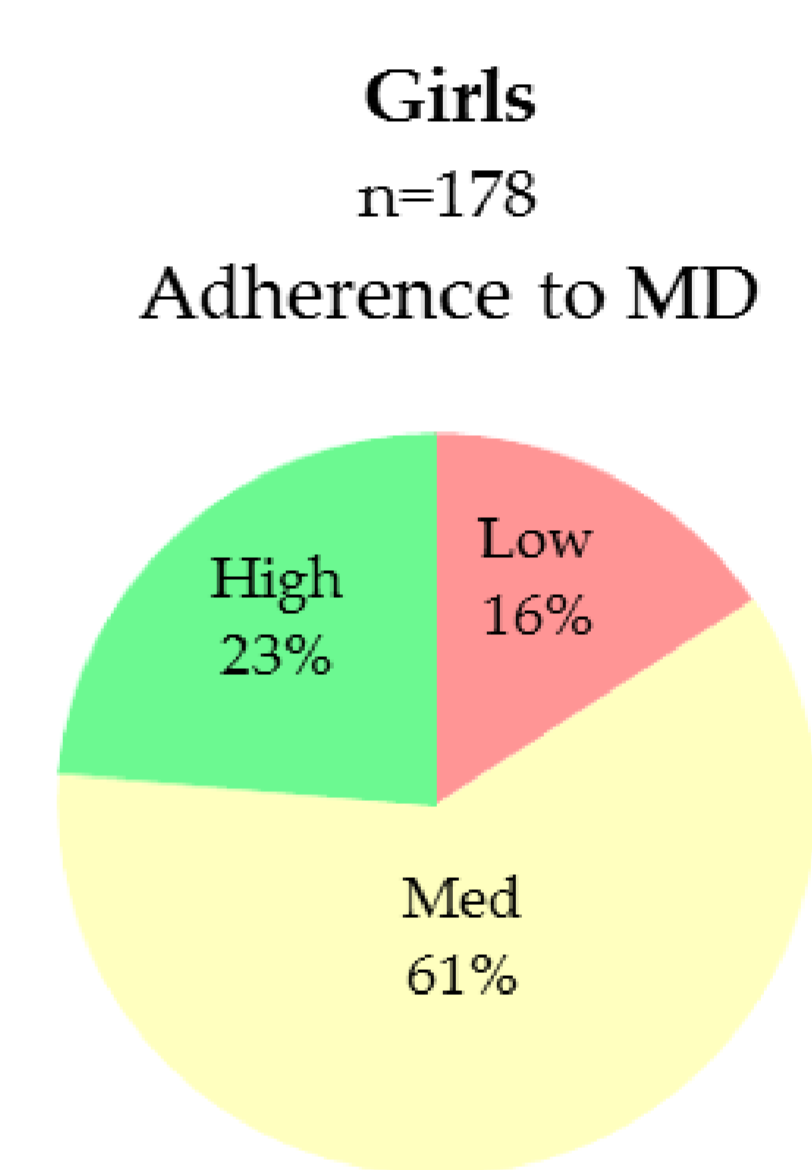
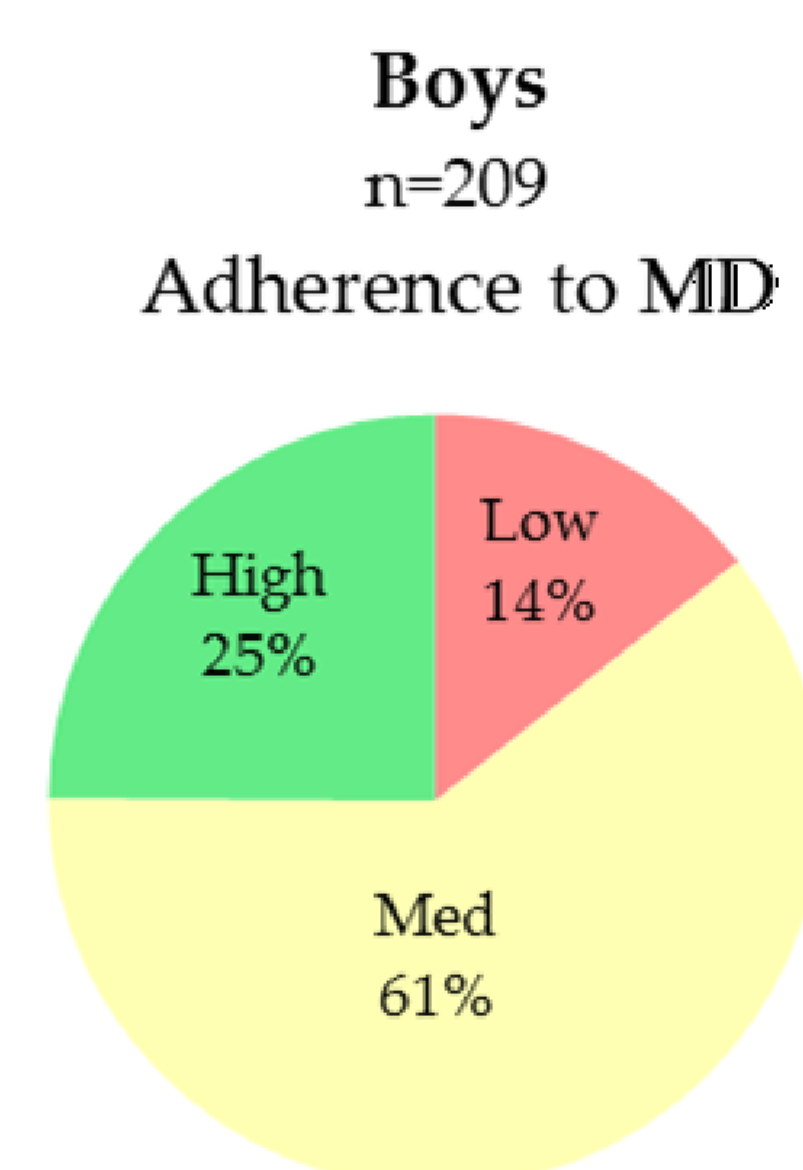
The study found that MD was strongly related to endurance performance in both gender. The current findings indicate that MD is strong determinant of lifestyle related health among adolescents living in Iceland.

## Results

Anthropometric characteristics and PF variables of the sample according to adherence to MD

	Boys			P-value	Girls			P-value
	Low (n=30/209) Mean ± SD	Med (n=127/209) Mean ± SD	High (n=52/209) Mean ± SD		Low (n=28/178) Mean ± SD	Med (n=108/178) Mean ± SD	High (n=42/178) Mean ± SD	
Age (y)	13.37 ± 1.30	13.61 ± 1.10	13.58 ± 1.13	0.562	13.18 ± 0.98	13.29 ± 1.11	13.07 ± 1.11	0.678
Weight (kg)	61.15 ± 15.62	59.72 ± 14.51	56.80 ± 12.48	0.332	57.34 ± 9.90	55.31 ± 12.78	52.83 ± 12.67	0.308
High (m)	1.64 ± 0.10	1.67 ± 0.11	1.66 ± 0.11	0.338	1.62 ± 0.60	1.61 ± 0.09	1.60 ± 0.07	0.586
BMI (kg/m <sup>2</sup> )	23.90 ± 6.06	22.07 ± 4.71	21.41 ± 4.52	0.080	22.34 ± 5.01	22.52 ± 4.40	22.01 ± 4.43	0.824
Body fat (%)	21.84 ± 10.01 <sup>a</sup>	16.79 ± 7.92	16.21 ± 8.03	0.006*	26.50 ± 6.52	25.93 ± 6.69	26.16 ± 6.60	0.919
Waist (cm)	76.95 ± 11.75	73.87 ± 10.68	72.24 ± 8.56	0.142	70.48 ± 8.57	70.29 ± 9.54	68.33 ± 9.36	0.479
Handgrip average (kg)	27.99 ± 8.43	28.81 ± 7.88	26.75 ± 7.59	0.286	24.36 ± 3.69	23.40 ± 4.47	22.45 ± 5.31	0.225
Jump (cm)	177.2 ± 31.4	185.0 ± 27.7	181.3 ± 29.1	0.362	155.75 ± 25.68	160.02 ± 26.42	158.62 ± 23.33	0.730
4x10 m (s)	12.42 ± 2.00 <sup>a</sup>	11.29 ± 1.21	11.59 ± 1.96	<0.002*	12.46 ± 0.90	12.04 ± 1.16	12.07 ± 1.17	0.174
Endurance (CRF)	6.28 ± 2.64 <sup>a</sup>	7.68 ± 2.43	7.85 ± 2.88	<0.018*	4.63 ± 1.32 <sup>a</sup>	6.04 ± 2.12	5.94 ± 1.99	0.004*

\*Expresses statistically significant difference between Low, Med, and High.



Body composition and PF variables of the sample categorized according to the Alpha Fitness test

