

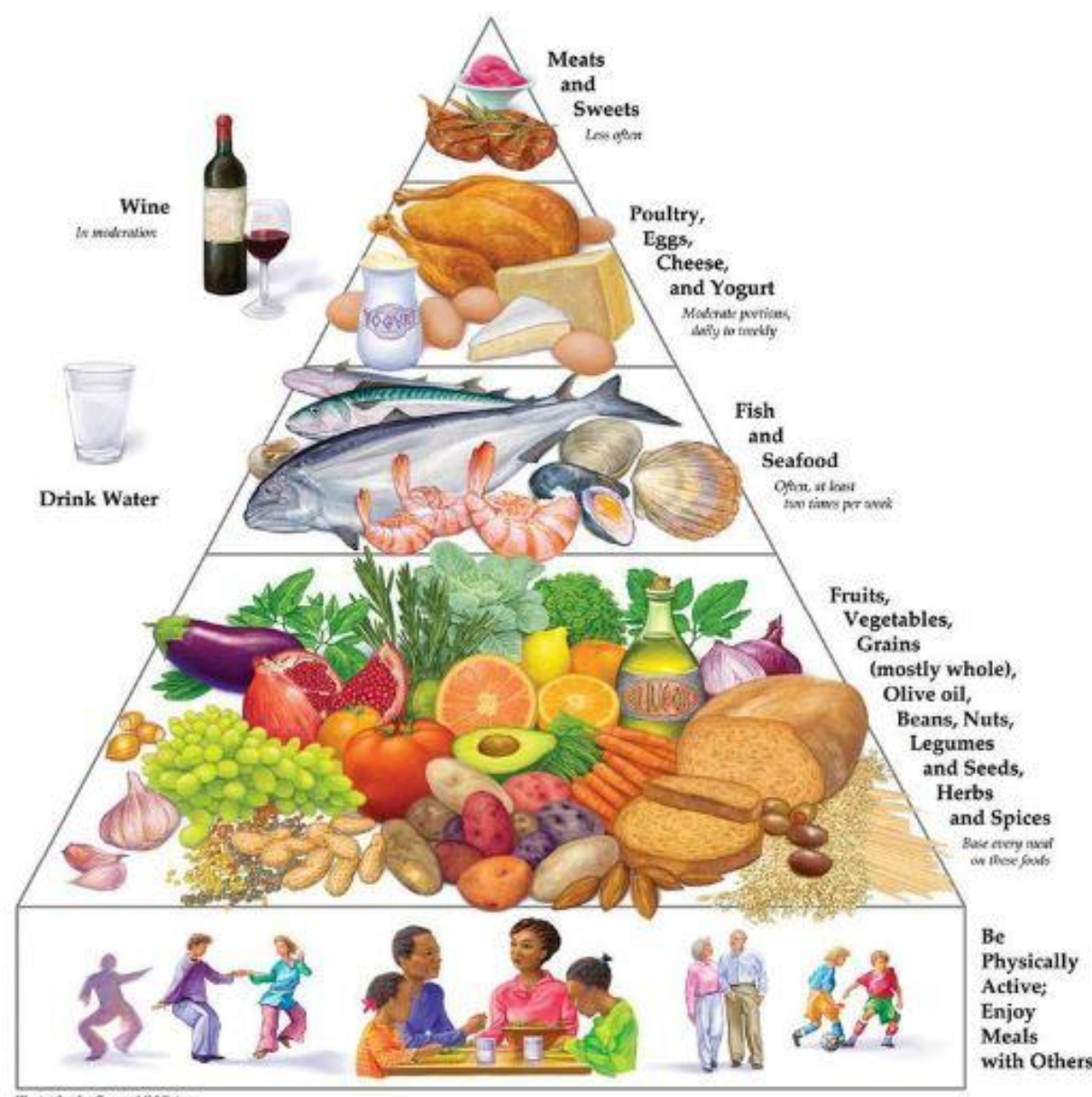
Mediterranean Diet Adherence and Its Association with Cardiometabolic Factors in College Students

Leila Ghaemi, B.S. and Jesse Stable Morrell, Ph.D.

Introduction

The increasing global burden of chronic disease has resulted in a reduced quality of life, premature mortality, and serves as a primary contributor to the massive increase in healthcare expenditures.¹⁻² The current literature indicates an association between the Mediterranean Diet (MD) and improved cardiometabolic effects as well as a decreased risk of CVD, cancer and other chronic diseases²⁻⁶, however, this research in young college students is limited. Developing healthy dietary habits are among the factors that can have protective effects on overall health in young adults as these individuals are still in their formative years and experiencing significant transitions into adulthood.⁷

The Mediterranean Diet



In 1993, Oldways partnered with the Harvard School of Public Health and the World Health Organization to develop the Mediterranean Diet Pyramid.⁸

Objective

To examine the association between Mediterranean Diet adherence and cardiometabolic risk factors in undergraduate university students.

References

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Methods

This study is part of the College Health and Nutrition Assessment Survey (CHANAS), a continuous, cross-sectional study that examines the dietary profile and lifestyle behaviors of undergraduate students at UNH. Data were collected between 2012-2018.

Participants

Students (n=3,117; 67% female) were recruited via an introductory nutrition course at UNH. Individuals were included if they were 18-24 years of age, not pregnant, and presented without any medical restrictions. All students provided informed consent to participate (UNH IRB #5524).

Data Collection

- Students self-reported demographic, wellness behavior, and certain dietary data via an online questionnaire
- Dietary intake was self-reported via a three-day food record, which was further analyzed in a nutrient analysis software
- Anthropometric, biochemical, and clinical assessments were conducted by trained technicians

Mediterranean Diet Score

- A modified MD scoring tool was developed to assess intake of 9 dietary components
- Scores ranged from minimum to maximum MD adherence (0-9) and categories were developed according to scores

Data Management and Analysis

Data are presented as means ± SE or percentages. Mean differences across all MD categories were analyzed via ANCOVA with age, gender, year, semester, daily kcals, and BMI as covariates. IBM SPSS Statistics Version 26 was used to conduct all analyses.

Characteristics for All Students

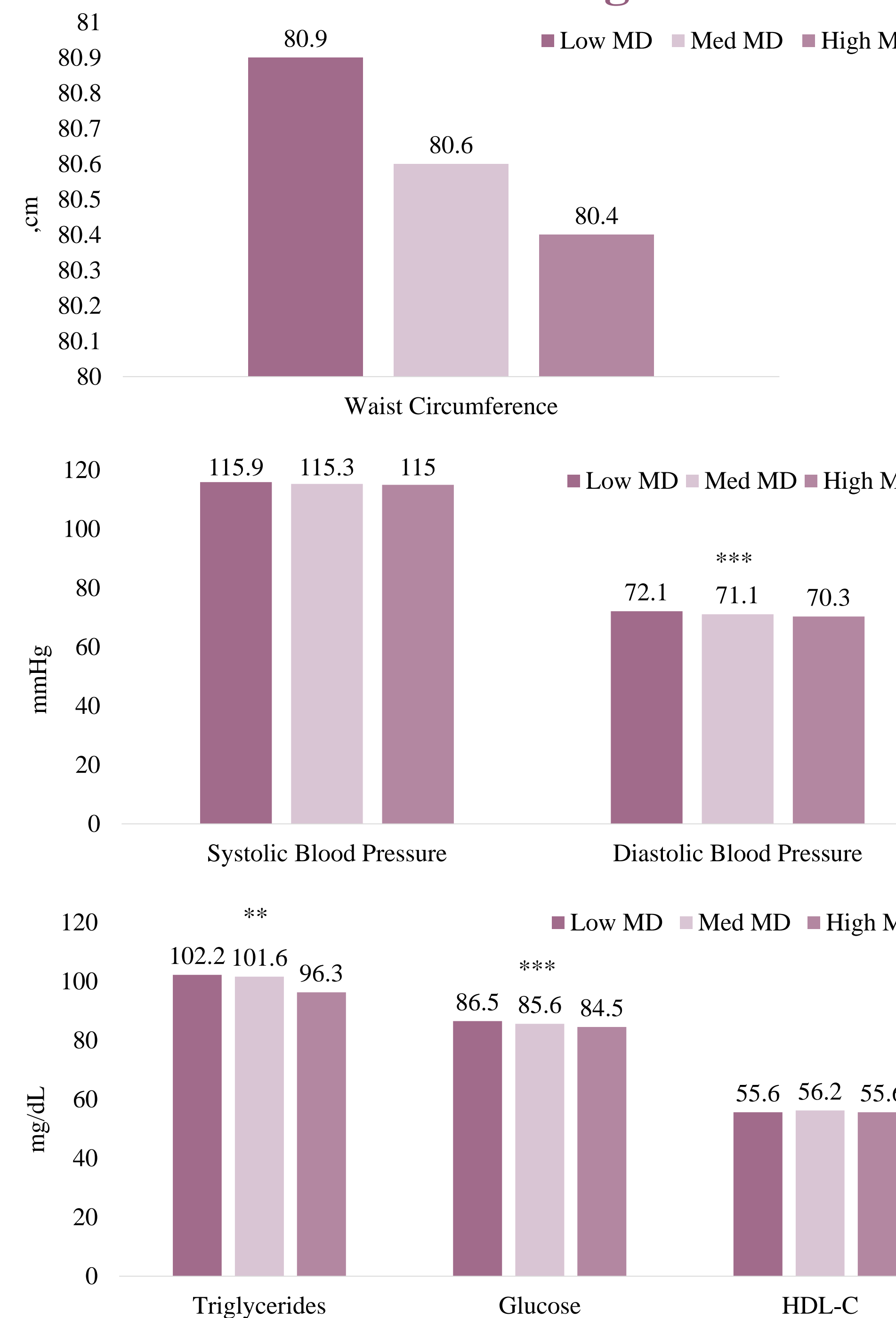
Category (n)	Low MD (1260)	Med MD (1251)	High MD (606)	P
MD Score Range	0-2	3-5	6-9	
Age, years	18.9±.03	18.9±.03	19.0±.05	0.35
Females, % (n)	70.0 (882)	64.3 (805)	66.3 (402)	0.01
Academic Class, % (n)				
Freshmen	53.9 (677)	55.4 (688)	53.7 (320)	0.46
Sophomore	33.2 (417)	29.6 (367)	32.7 (195)	
Junior	8.8 (111)	10.0 (124)	8.6 (51)	
Senior	4.1 (52)	5.0 (62)	5.0 (30)	
Semester, % (n)				
Fall	67.5 (851)	67.8 (848)	69.3 (420)	0.73
Spring	32.5 (409)	32.2 (403)	30.7 (186)	
Body mass index, kg/m ²	23.6±.1	23.5±.1	23.2±.2	0.11
Energy intake, kcals/d	1826.8±19.6	2069.80±19.7	2075.20±28.2	<0.001

MD Scoring Components

Dietary Component	Men	Women
Grains†, oz/d	7.3	5.3
Fruits†, cups/d	1	1.1
Vegetables†, cups/d	1.6	1.6
Fiber†, g/d	19.7	18.7
Cholesterol‡, mg/d	441.8	209.4
MUFA+PUFA/SFA†	1.5	1.4
Milk‡, cups/d	2.2	1.4
Fish†, servings/week	1	1
Alcohol††, drinks/occasion	1-2	1

Gender-specific medians used as cut-offs. Alcohol is based on the *Dietary Guidelines for Americans* moderate drink recommendations
 † If consumption ≥ median, score of 1 assigned; if < median, score of 0 assigned
 ‡ Inverse scoring
 †† If consumption = value, score of 1 assigned; if < or > value, score of 0 assigned

Cardiometabolic Factors Across MD Categories



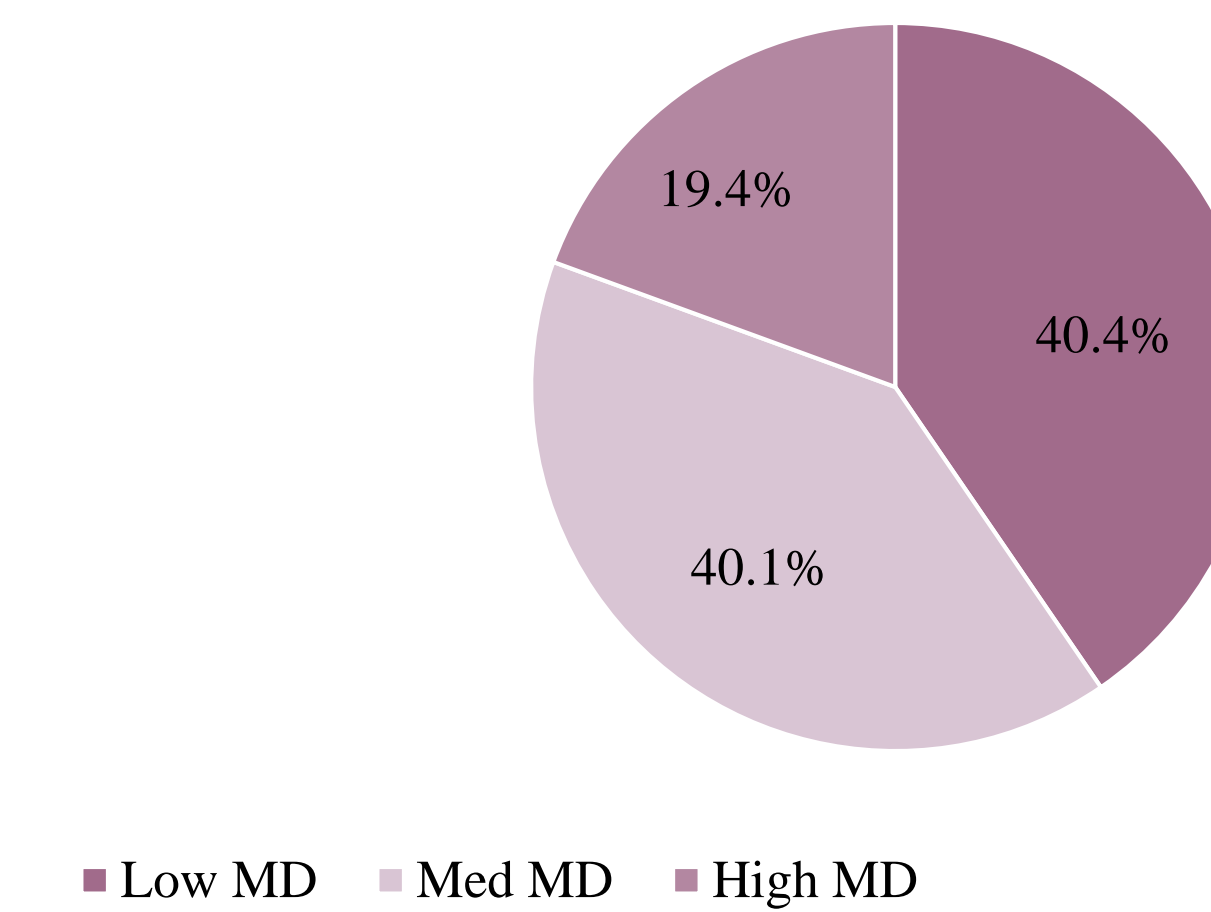
** indicates p<0.05
 *** indicates p<0.001

Dietary Intake Across MD Categories

Category (n)	Low MD (1260)	Med MD (1251)	High MD (606)	P
MD Score Range	0-2	3-5	6-9	
Grains, oz/d	6.1±.06	6.1±.06	6.4±.09	0.007
Fruits, cups/d	0.8±.03	1.4±.03	1.9±.04	<0.001
Vegetables, cups/d	1.3±.03	2.0±.03	2.6±.05	<0.001
Fiber, g/d	16.0±.2	21.8±.2	28.4±.3	<0.001
Cholesterol, mg/d	369.9±5.5	325.0±5.4	268.6±7.8	<0.001
MUFA+PUFA/SFA	1.2±.02	1.6±.02	2.0±.02	<0.001
Milk, cups/d	2.3±.03	1.7±.03	1.2±.04	<0.001
Fish, servings/week	1.1±.06	1.7±.06	2.2±.09	<0.001
Alcohol, drinks/occasion	3.7±.1	3.6±.1	3.2±.2	0.03

MUFA, monounsaturated fatty acids; PUFA, polyunsaturated fatty acids; SFA, saturated fatty acids
 Adjusted for age, gender, year, semester, daily kcals, and BMI

MD Adherence for All Students



Conclusion

Our findings suggest the MD may be linked to some favorable health parameters in young adults. Understanding the relationship between different dietary patterns and development of chronic disease in this population will optimize future interventions aimed at reducing disease burden.

Acknowledgements

This research was funded in part by the New Hampshire Agriculture Experiment Station and USDA National Institute of Food and Agriculture Hatch Project 1010738.

Department of Agriculture, Nutrition, and Food Sciences
 Kendall Hall, Durham, New Hampshire 03824