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Winter 3-24-2023

## Utilization of Diet on the Development of Coronary Artery Disease

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### Repository Citation

McGarry, Morgan; Grant, Emalee; Guzzi, Melissa; and Morrissey, Lillian, "Utilization of Diet on the Development of Coronary Artery Disease" (2023). *Non-Thesis Student Work*. 23.

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# Utilization of Diet on the Development of Coronary Artery Disease

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University of Maine, School of Nursing

## Introduction

Coronary artery disease is the number one cause of death globally (World Health Organization, 2020). Adhering to diets such as the Mediterranean and D.A.S.H. (Dietary Approaches to Stop Hypertension) diets help to improve the lipid profile of patients and therefore reduces the incidence of coronary artery disease (CAD). As these diets primarily focus on lowering lipid levels in the blood.

### Dietary Approaches to Stop Hypertension:

- High calcium, magnesium, and fiber
- Low saturated fats
- Moderate protein
- Low fat dairy products

(Djoussé et al., 2018);(Said et al., 2021)

### Mediterranean Diet:

- Limited intake of meat and added sugars
- Increased intake of vegetables, fish proteins and nuts
- Moderate amounts of fish, poultry, dairy products and eggs
- Small amounts of red meat
- Moderate consumption of wine with meals
- Low levels of saturated fatty acids
- High levels of monounsaturated fats, complex sugars, dietary fiber and antioxidants

(Noites et al., 2015);(Massini et al., 2022).

## PICO QUESTION

(P) In adults with high cholesterol (I), what is the effect of consuming a Mediterranean diet (C) compared to the D.A.S.H. diet (O) in the development of coronary artery disease

Figure 1

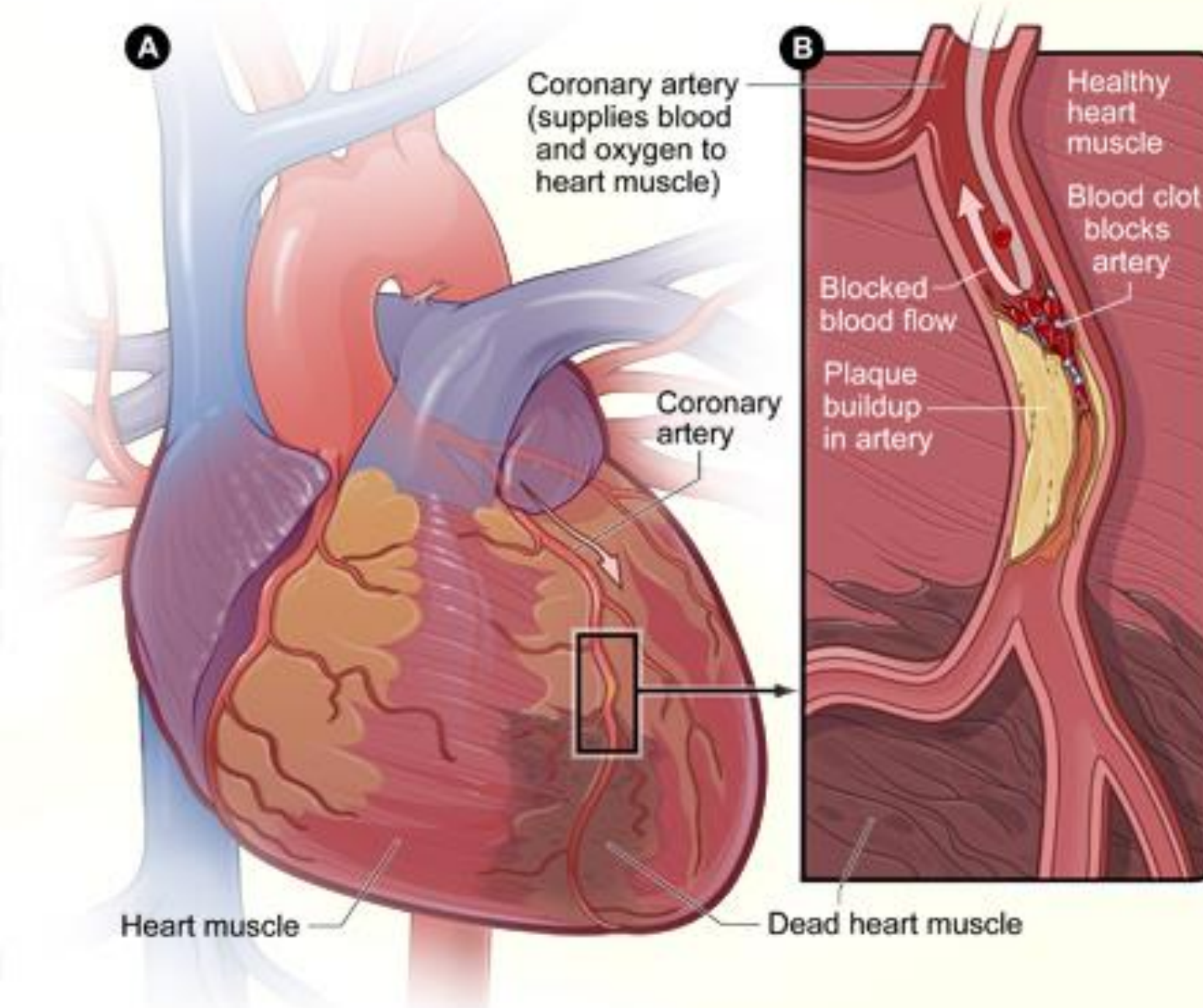


Figure 1:  
Figure A is an overview of a heart and coronary artery showing damage caused by a heart attack.

Figure B is a cross-section of the coronary artery with plaque buildup and a blood clot resulting from plaque rupture.  
(National Heart, 2017)

## Methods

•Databases used in this literature search include CINAHL, PubMed, and Nursing Reference Center.

•Using terms and keywords: "D.A.S.H.", "Mediterranean", "coronary artery disease", and "atherosclerosis"

•Articles were limited to peer-reviewed primary research studies or systematic reviews with a publication date after 2018.

•Articles that did not discuss diet and its effect on coronary artery disease were excluded

•Twelve articles were chosen from the results that fell within the search criteria

## Results

### Prevention with the Mediterranean diet (Delgado-Lista et al., 2022):

- This study was a long-term randomized trial comparing the effects of the Mediterranean and low-fat diets in secondary prevention of cardiovascular disease
- Patients with coronary heart disease who eat a Mediterranean versus low-fat diet were evaluated for 7 years.
- found the Mediterranean diet is superior in preventing major cardiovascular events

### Prevention with the D.A.S.H. diet (Said et al., 2021):

- Evaluated the the benefits of the D.A.S.H. diet versus usual healthy dietary advice on risk of coronary artery disease
- Participants were separated into two dietary groups for twelve weeks
- Cardiovascular risk was reduced significantly between the two groups, with no statistically significant difference in risk reduction
- More beneficial risk factors decline while using the D.A.S.H. diet

### Mediterranean Versus D.A.S.H. diet (Zhang et al., 2022):

- Multiethnic cohort study
- D.A.S.H. and Mediterranean diet scores were assessed and compared to cholesterol levels
- A strong association was found with D.A.S.H. and Mediterranean diets and lower Low-Density-Lipid Cholesterol levels.

Figure 2

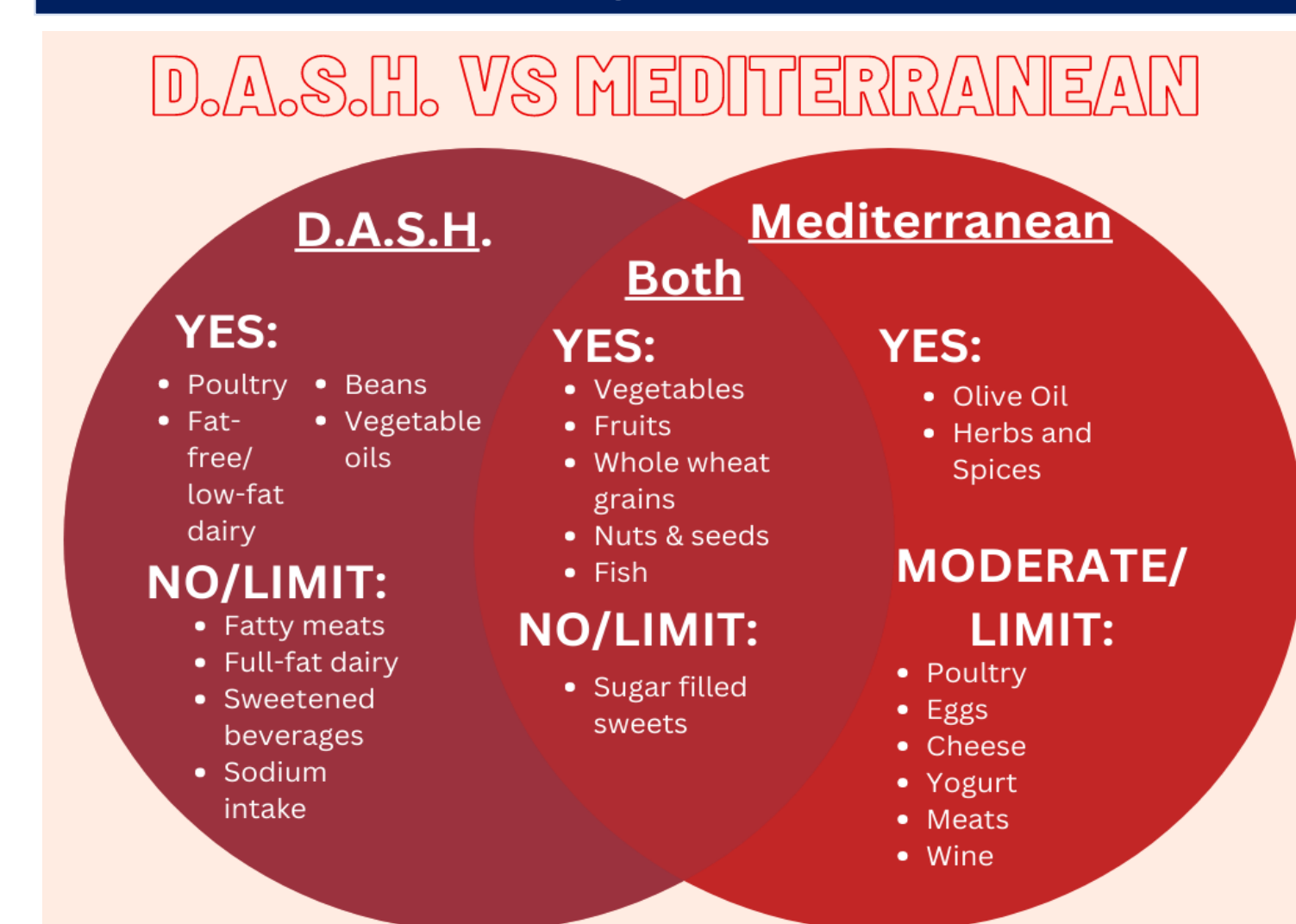
Variables	Before treatment	After treatment	P value*
	Mean ± SD	Mean ± SD	
BMI (kg/m <sup>2</sup> )	35.72 ± 5.37	33.36 ± 5.18	<.001
Systolic blood pressure (mmHg)	140.34 ± 9.65	130.54 ± 9.26	<.001
FBS	109.76 ± 25.92	103.67 ± 22.51	<.001
Total cholesterol	224.4 ± 57.94	212.52 ± 54.18	<.001
LDL	148.06 ± 42.44	136.85 ± 36.95	<.001
HDL	36.78 ± 31.25	39.82 ± 5.89	<.001
TGs	172.93 ± 64.1	159.28 ± 61.42	<.001

Figure 3: pre and post treatment results of using the DASH diet (Said et al., 2021)

## Conclusions

- The research found that the D.A.S.H. diet and the Mediterranean diet were equally effective in lowering the incidence rate of coronary artery disease
- Both diets result in lower Low-Density-Lipid Cholesterol levels
- This research can be utilized in the medical field when understanding which patients are most at risk for coronary artery disease and providing education needed on changing their diets to include D.A.S.H. or Mediterranean components.

Figure 3



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