



# Lesson 13

## The Mediterranean Diet





# **The Mediterranean Diet** Supplementary Information

# Disclaimer

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# About

Supplementary information accompanies each Nutrition Update video and serves as a resource for those interested in diving deeper into Nutrition Update video content. All supplementary information is reviewed by a medical doctor and citation information is included throughout. Every effort has been made to preserve nuance and detail, so if you have any questions, do not hesitate to send an email to [healthpatrolorg@gmail.com](mailto:healthpatrolorg@gmail.com).



# Notes

# Note 1

Key for Icons in Figures 3-5\*



Positive Effect



Mixed Effects, Nuanced Effects, or Doubt



No Effect



Negative Effect

\*Effects must be statistically significant, or likely due to an examined factor and not due to chance.

# Note 2

## Error and Update Policy

**Error Policy:** If you find an error (including potential or actual copyright infringement), please notify Vinay Kalva immediately at [healthpatrolorg@gmail.com](mailto:healthpatrolorg@gmail.com). Errors will be fixed as quickly as possible.

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# Why This Topic?

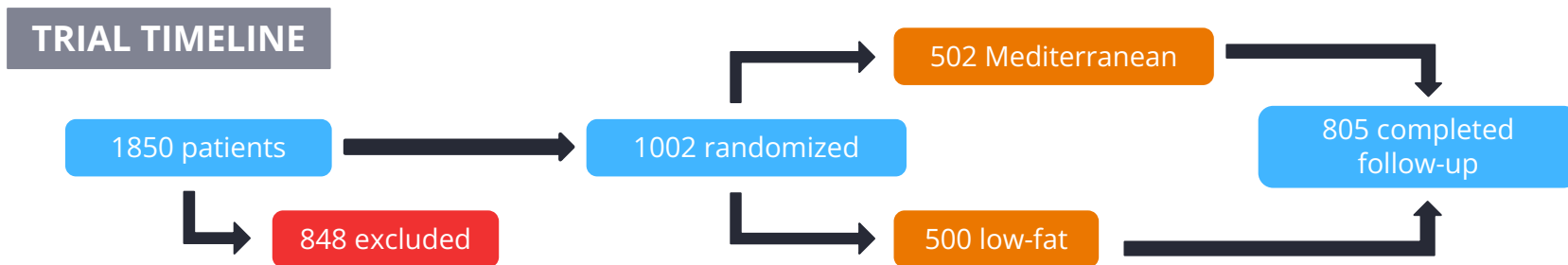


# Recently Published Study

A paper was recently published in *PLOS Medicine* (**Yubero-Serrano *et al.***)<sup>1</sup>, according to **Science Daily**<sup>2</sup>. It reported on a randomized controlled trial (RCT) that examined the effect of the Mediterranean diet on endothelial function. For more information about the paper, see **Figure 1**.

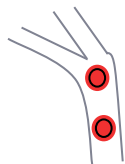
# Figure 1

Graphical Summary of (Yubero-Serrano *et al.*)<sup>1</sup>



This work is an adaptation of Figure 1 of [Mediterranean diet and endothelial function in patients with coronary heart disease: An analysis of the CORDIOPREV randomized controlled trial](#) by Yubero-Serrano *et al.* used under the [CC-BY 4.0 license](#). This work ("Trial Timeline") is licensed under the [CC-BY 4.0 license](#). (Vinay)

## MARKERS



Endothelial function

## CONCLUSIONS



This work is an adaptation of [Mediterranean diet and endothelial function in patients with coronary heart disease: An analysis of the CORDIOPREV randomized controlled trial](#) by Yubero-Serrano *et al.* used under the [CC-BY 4.0 license](#). This work ("Graphical summary of (Yubero-Serrano *et al.*)") is licensed under the [CC-BY 4.0 license](#). (Vinay)



# What is the Mediterranean Diet?

# Figure 2

## Foods Included in the Mediterranean Diet



Fruits



Vegetables



Whole Grains



Legumes



Nuts



Seafood



Olive Oil



**Source:** Mayo Clinic<sup>3</sup>



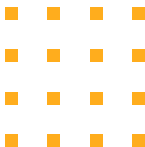

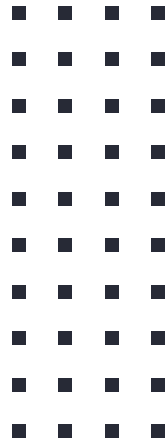
# Is the Mediterranean Diet Healthy?

# Is the Mediterranean Diet Healthy?

The Mediterranean diet is very healthy as it prioritizes whole foods, which is important. However, to determine whether or not it is a good diet requires high-quality research. The remaining supplementary information will showcase medical organization guidelines, systematic reviews and meta-analyses, as well as select primary research to allow you to determine whether or not a Mediterranean diet is right for you.



# The Mediterranean Diet for Cardiovascular Diseases (CVD)



# Table 1





## Dietary Recommendations for Cardiovascular Disease

Statement & Reference	Recommendation
ACC/AHA Recommendation (Arnett <i>et al.</i> ) <sup>4</sup>	Class 1 Recommendation & Level B (Randomized) of Evidence for a diet similar to the Mediterranean diet
USPSTF Recommendation (Krist <i>et al.</i> ) <sup>5</sup>	Grade B Recommendation to Counsel Adults at Risk for CVD about healthy diets (e.g. DASH and Mediterranean)
Cochrane Collaboration (Rees <i>et al.</i> ) <sup>6</sup>	Moderate- and low-certainty evidence supports modest benefits for a Mediterranean diet, although some ongoing studies could change this recommendation
European Society of Cardiology (ESC) Guidelines (Piepoli <i>et al.</i> ) <sup>7</sup>	Class 1 recommendation, B Level of Evidence for a diet with similar characteristics to a Mediterranean diet



## Figure 3

### Recommendations in Context

American College of Cardiology/American Heart Association Recommendation (Arnett <i>et al.</i> ) <sup>4</sup>	
United States Preventive Services Task Force (USPSTF) Recommendation (Krist <i>et al.</i> ) <sup>5</sup>	
Cochrane Collaboration (Rees <i>et al.</i> ) <sup>6</sup>	
European Society of Cardiology (ESC) Recommendation (Piepoli <i>et al.</i> ) <sup>7</sup>	



# The Mediterranean Diet for Neurological Diseases

# Table 2

## Dietary Recommendations for Stroke and Dementia

Statement & Citation	Recommendation
AHA/ASA Recommendation for Treatment of Stroke (Kernan <i>et al.</i> ) <sup>8</sup>	Class 2A, Level C evidence for recommending Mediterranean Diet ("reasonable to counsel patients...to follow a Mediterranean diet instead of a low-fat diet")
WHO Dementia Recommendation <sup>9</sup>	Moderate-quality evidence supports recommendation to advise normal adults with normal brain function or mild cognitive impairment to adhere to the Mediterranean diet (varies, however, by patient)
Canadian Stroke Best Practice Recommendations (Wein <i>et al.</i> ) <sup>10</sup>	Level B evidence to suggest recommendation of a Mediterranean diet ( $\leq 1$ RCT and/or several high-quality, large non-randomized/observational studies)

# Table 3

## Studies of the Mediterranean Diet & Other Neurological Diseases\*

Reference	Study Type	Disease Examined	Sample Size	Pooled Sample Size	Conclusion
Alcalay <i>et al.</i> (2012) <sup>12</sup>	Case-control study	Parkinson's disease	455	N/A	Effective for Parkinson's disease
Gao <i>et al.</i> (2007) <sup>13</sup>	Prospective cohort study		131,368	N/A	Effective for Parkinson's disease (not statistically significant)
Francis & Stevenson (2018) <sup>14</sup>	Literature Review	Many types	7 (for Mediterranean diet for 2 conditions)	N/A	Mediterranean diet is consistent with mainstream dietary recommendations**
van den Brink <i>et al.</i> (2019) <sup>15</sup>	Literature Review	<b>Cognitive decline &amp; Alzheimer's disease</b>	56	135,327	Adhering to a Mediterranean diet is beneficial for cognitive decline**

\*The diseases in the table are from those included in Table 1 of the recently published report by the GBD 2017 US Neurological Diseases Collaborators, excluding any types of stroke and/or dementia which were covered in **Table 2**.<sup>11</sup> Note that not all diseases in the *JAMA Neurology* paper are included as the Mediterranean diet has not been studied for certain diseases.<sup>14</sup>

\*\*The information in this column is specifically for the Mediterranean diet and excludes other diets such as the Dietary Approaches to Stop Hypertension (DASH) diet.



# The Mediterranean Diet for Cancer

# The Mediterranean Diet and Cancer

The American Cancer Society recommends a diet similar to the Mediterranean diet.<sup>16</sup> In the following slides, systematic reviews on the Mediterranean diet and different types of cancer are included (these are the most updated versions as of December 2020).

# Table 4






## Systematic Reviews on the Mediterranean Diet and Cancer

Reference	Cancer Examined*	Sample Size (studies)	Total Patients	Conclusion
Cheng <i>et al.</i> (2019) <sup>18</sup>	Prostate cancer	10	434,305	No statistically significant effect of a Mediterranean diet on prostate cancer risk
Morze <i>et al.</i> (2020) <sup>19</sup>	All cancers	117	3,202,496	See Figure 3
Mentella <i>et al.</i> (2017) <sup>20</sup>	All cancers	N/A	N/A	See Figure 3
Steck <i>et al.</i> (2015) <sup>21</sup>	Colorectal cancer	12	2,272,221	Diets like the Mediterranean diet reduce colorectal cancer risk
Moazzen <i>et al.</i> (2020) <sup>22</sup>	Upper gastric cancer	21	1,558,724	A higher Mediterranean Diet Score was correlated with better upper gastric cancer outcomes

\*The cancers included are from the GBD Cancer Collaboration's 2019 report on the global prevalence of cancer. The results of the analysis, which were published in *JAMA Oncology*, used the ICD-10 code to determine which cancers were included (32 types of cancer, including 4 types of leukemia).<sup>17</sup>

# Figure 4

## Summary of Systematic Reviews of Mediterranean Diet & Cancer

Cheng <i>et al.</i> (2019) <sup>18</sup>	
Morze <i>et al.</i> (2020) <sup>19*</sup>	
Mentella <i>et al.</i> (2019) <sup>20**</sup>	
Steck <i>et al.</i> (2015) <sup>21</sup>	
Moazzen <i>et al.</i> (2020) <sup>22</sup>	

\*This paper examined several different types of cancer. The authors of this paper explain that: "...our results suggest that highest adherence to the MedDiet was related to lower risk of cancer mortality in the general population, and all-cause mortality among cancer survivors as well as colorectal, head and neck, respiratory, gastric, liver and bladder cancer risks. Moderate certainty of evidence from cohort studies suggest an inverse association for cancer mortality and colorectal cancer, but most of the comparisons were rated as low or very low certainty of evidence."<sup>19</sup>

\*\*Mentella *et al.*<sup>20</sup> also examine more than one type of cancer. The authors conclude that the Mediterranean diet reduces risk of getting and is protective against several types of cancer.





# The Mediterranean Diet for Diabetes

# Table 5

## Systematic Reviews on the Mediterranean Diet and Diabetes\*

Reference	Type of Diabetes Examined	Sample Size (studies)	Total Patients	Conclusion
Esposito <i>et al.</i> (2015) <sup>24</sup>	Type 2 Diabetes	13	288,444	Mediterranean diets are suitable for type 2 diabetes management
Toi <i>et al.</i> (2020) <sup>25</sup>	Type 2 Diabetes & others	60	N/A	Healthy diets like the Mediterranean diet decrease risk of Type 2 Diabetes
Raveendran <i>et al.</i> (2018) <sup>26</sup>	Type 1 & Type 2 Diabetes	11	N/A	The Mediterranean diet is beneficial for Type 2 Diabetes
Uusitupa <i>et al.</i> (2019) <sup>27</sup>	Type 2 Diabetes	7	4,090	A Mediterranean diet is recommended for pre-diabetes





\*This table includes only Type 1 and Type 2 diabetes as these are the types of diabetes examined by the Global Burden of Disease Study (GBD) and in a subsequent analysis in *BMC Public Health*.<sup>23</sup>



# Summary of Evidence

# Figure 5

## The Mediterranean Diet – Summary of Evidence

Cardiovascular Diseases	
Neurological Diseases	
Cancer	
Type 2 Diabetes	



# Pros & Cons

# Pros and Cons

## Pros

- A Mediterranean diet is among the most healthy diets that you can consume
- A Mediterranean diet has been definitively proven to reduce CVD risk
- The Mediterranean diet contains foods with antioxidants, which help with cognitive function based on existing literature

## Cons

- Possible excess intake of calories due to lack of specific guidelines
- One single food is not beneficial and foods must be eaten together



# Conclusion

# Conclusion

Based on evidence reviews from major medical organizations and medical scientific societies as well as systematic reviews and some preliminary primary research, the Mediterranean diet is a safe and effective dietary pattern for cardiovascular and some neurological conditions, many cancers, and type 2 diabetes.





# Credits

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- Presentation template by [SlidesCarnival](#)
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