

MedEx-UK: Does Eating the Mediterranean Way Help in the Prevention of Memory Loss in the Elderly?



Hwang Yik Roy* (Student number: 170734022), Dr. Oliver Shannon, Prof. John Mathers, Institute of Cellular Medicine

Introduction

- The Mediterranean Diet (MedDiet) is a diet principally characterised by using olive oil as the main cooking oil, as well as a high intake of plant foods ¹.
- Over the years, a few researches, with the PREDIMED study as the leader, has found that the MedDiet has been correlated with an improvement in the brain health of sample populations in the Mediterranean basin ².

Aim

- As part of the research, we focus on the categorisation of different food items that our sample population has eaten, into specific food categories, and then use this categorisation to gauge and subsequently calculate a MedDiet Adherence Score (MEDAS) to determine the level of adherence of our sample population to eating the Mediterranean way.
- The MEDAS will then be used to calculate and determine the correlation and relationship between adherence to MedDiet and brain health (measured through prevention of memory loss).

Methodology

- One of the fundamental steps to be carried out before measuring MEDAS is the ensure that the different food items are properly classified into respective food categories.
- An Erasmus student has done the initial classification; another student (me) was then called in to do the classification again, independently of the Erasmus student.
- A statistical score (Cohen's kappa) was then calculated, using SPSS (Statistical Package for Social Sciences), to measure the level of agreement between both the students and their codes ³.

Results

- The PREDIMED supplementary appendix has been used as a basis or guide to form different categories and specific categories, as well as the categorisation of food by both students ⁴.

1 Olive Oil	Red Meat	Fish & Sea Food	Poultry & Rabbit
Vegetables	4A Cooked, No Fat	9A Fish, No Fat	12A Cooked, No Fat
2A Raw, No Fat	4B Cooked, Olive Oil	9B Fish, Olive Oil	12B Cooked, Olive Oil
2B Raw, Olive Oil	4C Cooked, Butter	9C Fish, Butter	12C Cooked, Butter
2C Raw, Butter	4D Cooked, Other Fat	9D Fish, Other Fat	12D Cooked, Other Fat
2D Raw, Other Fats	4E Cooked, Unknown Fat	9E Fish, Unknown Fat	12E Cooked, Unknown Fat
2E Raw, Unknown Fat	4F Mixed Cooked, No Fat	9F Mixed Fish, No Fat	13 Sofrito
2F Cooked, No Fat	4G Mixed Cooked, Olive Oil	9G Mixed Fish, Olive Oil	
2G Cooked, Olive Oil	4H Mixed Cooked, Butter	9H Mixed Fish, Butter	
2H Cooked, Butter	4I Mixed Cooked, Other Fat	9I Mixed Fish, Other Fat	
2I Cooked, Other Fat	4J Mixed Cooked, Unknown Fat	9J Mixed Fish, Unknown Fat	
2J Cooked, Unknown Fat		9K Seafood, No Fat	14A Mis. No Fat = QQ
2K Mixed Cooked, No Fat	5 Butter, Margarine & Cream	9L Seafood, Olive Oil	14B Mis. + Olive Oil
2L Mixed Cooked, Olive Oil	6 Surgary Soft Drinks	9M Seafood, Butter	14C Mis. + Butter
2M Mixed Cooked, Butter	7 Wine	9N Seafood, Other Fat	14D Mis. + Other Fat
2N Mixed Cooked, Other Fat		9O Seafood, Unknown Fat	14E Mis. + Unknown Fat
2O Mixed Cooked, Unknown Fat		9P Seafood, No Fat	
Fruit		9Q Mixed Seafood, Olive Oil	
3A Raw Fresh	8A Cooked, No Fat	9R Mixed Seafood, Butter	
3B Fruit Juice	8B Cooked, Olive Oil	9S Mixed Seafood, Other Fat	
3C Cooked Fruit	8C Cooked, Butter	9T Mixed Seafood, Unknown Fat	
3D Canned Fruit	8D Cooked, Other Fat		
3E Frozen Fruit	8E Cooked, Unknown Fat		
	8F Mixed Cooked, No Fat	10 Sweet & Pastries	
	8G Mixed Cooked, Olive Oil	11 Nuts	
	8H Mixed Cooked, Butter		
	8I Mixed Cooked, Other Fat		
	8J Mixed Cooked, Unknown Fat		

Table 1: Supplementary Appendix of the PREDIMED-NAVARRA study: Components and Scoring of the MEDAS and MEDAS Continuous MEDAS Scales ⁴

- After categorisation has been done by the two students, Cohen's kappa (κ) was then calculated using the SPSS (Statistical Package for Social Sciences) Software and the results are as shown:

	Category	Specific Category
Cohen's kappa (κ)	.898	.753

- The Interpretation of Cohen's Kappa is as such ⁴:

Kappa	Agreement
0	Agreement Equivalent to Chance
0.10 – 0.20	Slight Agreement
0.21 – 0.40	Fair Agreement
0.41 – 0.60	Moderate Agreement
0.61 – 0.80	Substantial Agreement
0.81 – 0.99	Near Perfect Agreement
1	Perfect Agreement

Interpretation

- Cohen's kappa was run to determine if there was agreement between the two students on whether different food items would fall into different categories. There was **Near Perfect Agreement** between the two students' judgements, $\kappa = .898$ (as seen on the table above).
- Cohen's kappa was run to determine if there was agreement between the two students on whether different food items would fall into different specific categories. There was **Substantial Agreement** between the two students' judgements, $\kappa = .753$ (as seen on the table above).

Discussion

- It was felt that categorisation of food under a general category was relatively simple as the supplementary appendix in the PREMIED study provided a comprehensive guide.
- However, the relative discrepancy between both students in coding for specific categories reflected the vagueness in the PREDIMED scoring guide, and it should be worked on more to provide better guidance in terms of classification.
 - For example, the cooking method (cooked or mix cooked) has not been adequately explained, leading to confusion when coding the food items.
- A relatively lower inter-observer agreement for the specific food category entails lower reliability of the current coding for either students, and thus this will affect MEDAS.

Conclusion

- It has been found that inter-observer agreement between general food category is near perfect, but there has been a relatively bigger discrepancy for the specific food categories.

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- Contact: Hwang Yik Roy (MBBS): Y.R.Hwang2@Newcastle.edu.my

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