



Body Composition and Mediterranean Diet Adherence of Coeliac Patients. A Prospective, Multicenter Study (ARCTIC Study).

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Introduction

Coeliac disease (CD) is an immune-mediated systemic disorder caused by gluten proteins, affecting approximately 1% of the population. The cardiovascular (CV) and metabolic effects of the disease and the gluten-free diet (GFD) used for its treatment are controversial. Current guidelines suggest that the Mediterranean diet is the most suitable for reducing the risk of CV and metabolic disease, both in terms of primary and secondary prevention. The optimal GFD is based on the Mediterranean diet (Figure 1). Our aim was to assess the body composition and adherence to the Mediterranean diet of CD patients who have been on a GFD for at least 1 year.

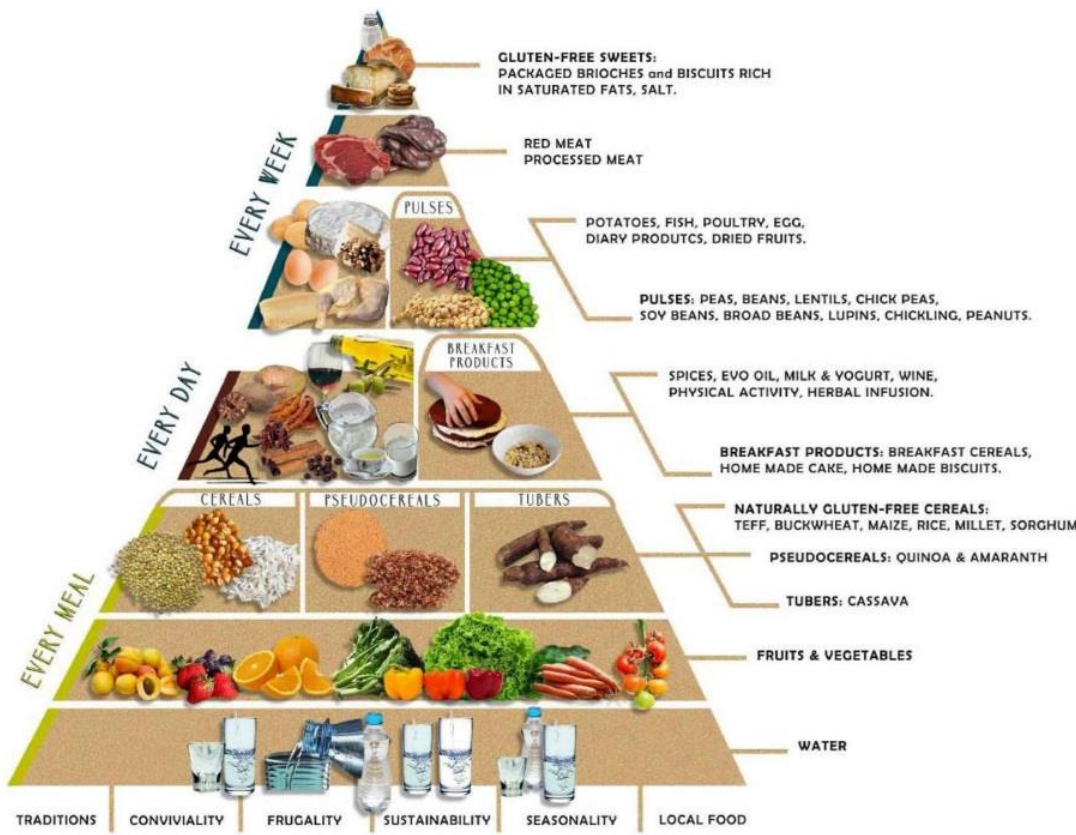


Figure 1. The Mediterranean GFD pyramid

Methodology

Body composition was measured with an InBody 770 device and adherence to the Mediterranean diet was assessed with a 14-item questionnaire (Figure 2). Descriptive statistics and Spearman's rank correlation test were applied to analyze our data, provided as mean ± standard deviation

| Score item                               | Score units       | 1-0 points                                              | 0-5 points                                             | 0-0 points                              |
|------------------------------------------|-------------------|---------------------------------------------------------|--------------------------------------------------------|-----------------------------------------|
| 1. Vegetables (without potatoes)         | Servings per day  | ≥3                                                      | 1-3                                                    | <1                                      |
| 2. Legumes and nuts                      | Servings per week | ≥2                                                      | 1-2                                                    | <1                                      |
| 3. Fruits                                | Servings per day  | ≥2                                                      | 1-2                                                    | <1                                      |
| 4. Whole grain cereals                   | Servings per day  | ≥2                                                      | 1-2                                                    | <1                                      |
| 5. Lean meat                             | Servings per week | ≥4                                                      | 2-4                                                    | <2                                      |
| 6. Fish and shellfish                    | Servings per week | ≥2                                                      | 1-2                                                    | <1                                      |
| 7. Fatty meat and processed meat         | Servings per week | <1                                                      | 1-2                                                    | ≥2                                      |
| 8. Full fat dairy products not fermented | Servings per day  | <1                                                      | 1-2                                                    | ≥2                                      |
| 9. Low fat and fermented dairy products  | Servings per day  | ≥2                                                      | 1-2                                                    | <1                                      |
| 10. Vegetable oils                       | Teaspoons per day | 4-8                                                     | 2-4                                                    | >8 or <2                                |
| 11. Olive and canola oil                 | Teaspoons per day | >3                                                      | 1-3                                                    | <1                                      |
| 12. Avocado                              | Units per week    | >3                                                      | 0-5-3                                                  | <0-5                                    |
| 13. Sugar                                | Teaspoons per day | <4                                                      | 4-8                                                    | >8                                      |
| 14. Wine                                 | Glasses per day   | Women: ≤1<br>Men: ≤2<br>Moderate and usually with meals | Women: ≤1<br>Men: ≤2<br>Moderate and rarely with meals | Women: >1<br>Men: >2<br>or non-drinkers |

Figure 2. Mediterranean Diet Score

Results

Data from 105 patients (84 females, 21 males, mean age 36±13 years) were analyzed. Regarding body composition, body weight was 68±17 kg, BMI was 23.9±5.5 kg/m , waist-hip ratio was 0.89±0.07, body fat percentage was 27±10%, skeletal muscle mass was 27±7 kg and visceral fat area was 89±50 cm on average. CD patients' Mediterranean diet adherence was low (5.44±1.54 points), due to an inadequate consumption of whole grains (34.3%), fish (22.9%), avocado (13.4%) and red wine (29.5%).

Summary and Conclusions

Despite the lack of correlation between body composition parameters and adherence rates (Figure 3), patients with CD have an elevated waist-hip ratio and visceral fat area, as well as insufficient intakes of fibre, fish and red wine. Our data suggest that, in addition to maintaining a GFD, an increased fibre consumption and adherence to a Mediterranean diet are necessary for the prevention of CV and metabolic complications, which should be emphasized during patient follow-up.

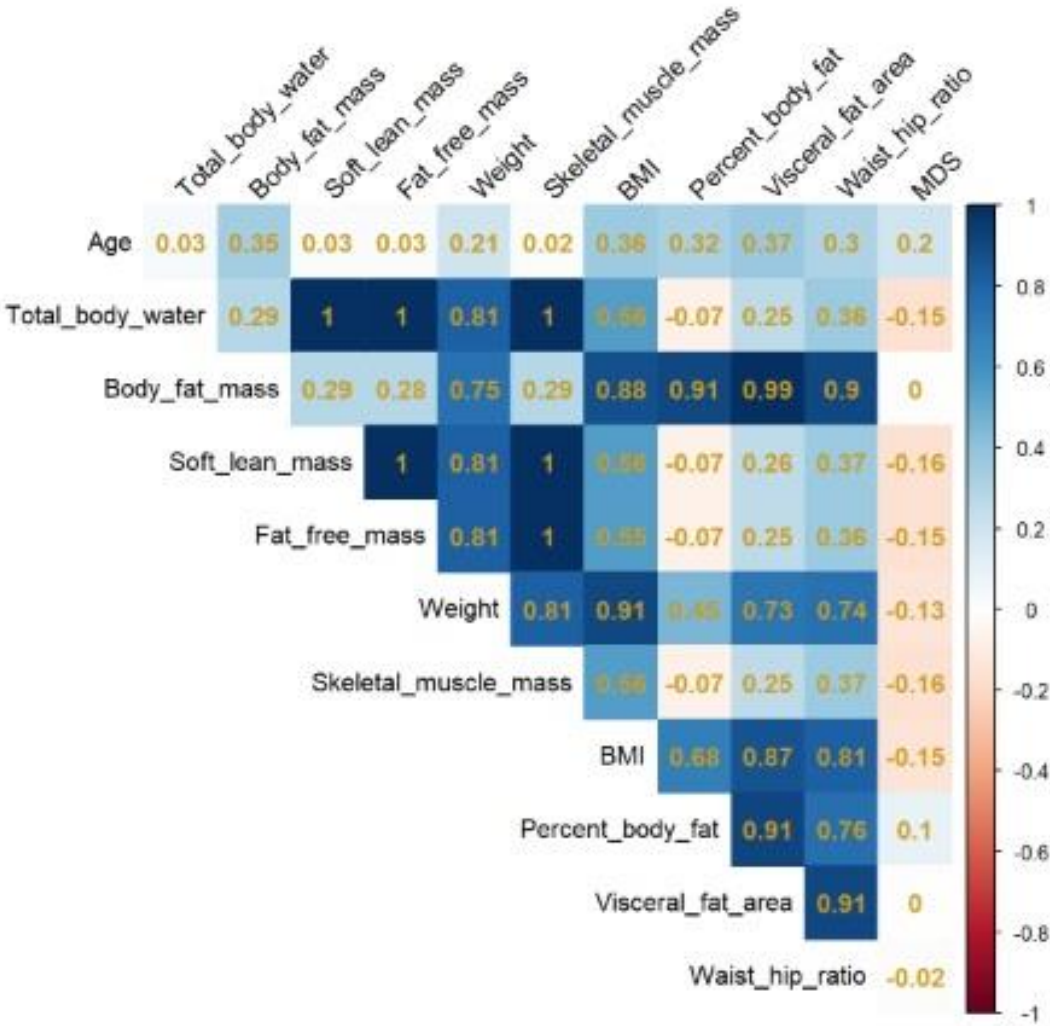


Figure 3. Relationship between adherence and body composition parameters