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Estimated carbon dioxide and energy input burdens of a typical four-member Greek family following two different types of diet

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The dietary choices are directly related to climate change⁽¹⁻⁴⁾, which is identified as the major environmental issue of our times. The aim of the present study is to compare two different diets of a typical four-member household in Athens, Greece, based on the life cycle energy inputs and equivalent CO₂ emissions of the diet constituents.

Two separate weekly diets were created for a hypothetical four-member Greek urban family. The first diet was based on the Mediterranean diet guidelines (large amounts of vegetables and fruits, fish, nuts, pulses and olive oil) and the second diet was created to mimic a more Western type of diet (processed foods, red meat, soft drinks and ready made meals). The contents of each diet were converted initially to mass inputs of food items (e.g. kg of meat, milk, cereals, rice, etc.). The mass inputs were then converted to energy inputs and equivalent CO₂ emissions based on life cycle emission factors found in the literature^(2,3). The utilized carbon dioxide emission factors in this study originated from Sweden and the Netherlands because currently there is no information on carbon dioxide emission factors in Greece, which is an important limitation of the study.

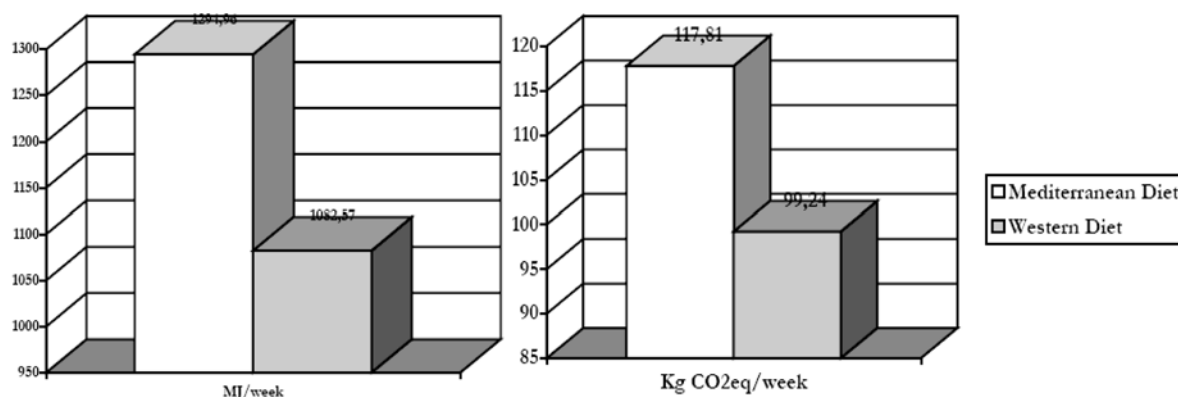


Fig. 1. Comparison of the two diets based on energy inputs and eq. CO₂ emissions.

Contrary to our expectations, the results of the current study indicate that the Mediterranean diet requires higher energy inputs and emits more greenhouse gases in comparison to the Western type of diet (see Fig. 1). This result can be explained by the energy intensive cultivation methods for the vegetables and fruits applied in Sweden and in the Netherlands. The possible environmental burdens of the different types of human diet, warrants further investigations. The need for future research to generate energy input as well as carbon dioxide emission factors representative of the Mediterranean region is identified.

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