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Paleolithic ratio as a novel measure of how Paleolithic a diet is: definitions and calculations from paleolithic and Mediterranean-like diet

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Background: Previous results indicate a need to quantify how paleolithic a diet is. In this paper we conceptualize this notion by defining the novel measure Paleolithic ratio as the ratio of Paleolithic food divided by all food in a diet. Food categories defined as Paleolithic in this respect is fruits, nuts, meat, fish, eggs and vegetables excluding legumes. From reported food intake in a previously reported study with increased glucose tolerance and satiety per calorie and decreased waist circumference after advice to follow a Paleolithic diet as compared to a Mediterranean-like diet we also calculate Paleolithic ratios and study their relationship with outcome measures.

Methods: Twenty-nine male ischemic heart-disease patients with impaired glucose tolerance or diabetes type 2, and waist circumference > 94 cm, were randomized to ad libitum consumption of a Paleolithic diet (n=14) based on lean meat, fish, fruit, vegetables, root vegetables, eggs, and nuts, or a Mediterranean-like diet (n=15) based on whole grains, low-fat dairy products, vegetables, fruit, fish, oils and margarines during 12 weeks. Paleolithic ratio for dietary energy, weight and Glycemic Load was calculated as the average ratio of daily intake of Paleolithic food to all food, as recorded in four dayweighed food records.

Results: Paleolithic ratio for dietary energy, weight and Glycemic Load centered on 85 % for the group advised to follow a Paleolithic diet and on 40 % for the group advised to follow a Mediterranean-like diet with significant differences between groups for Paleolithic ratio and absolute amounts of non-Paleolithic food. For absolute amounts of Paleolithic food there were significant differences between groups only for weight. Increased Paleolithic ratio and decreased absolute amount of non-Paleolithic food were associated with improved glucose tolerance, decreased waist circumference and decreased leptin. Decreased absolute amount of non-Paleolithic food was also associated with increased satiety per calorie.

Conclusions: Increased Paleolithic ratio and decreased absolute amount of non-paleolithic food was associated with favorable changes in glucose tolerance, waist circumference and leptin. Decreased absolute amount of non-paleolithic food was also associated with increased satiety per calorie.