



THE MCDUGALL NEWSLETTER | *It's the food.*

An Independent Critique of Low-carb Diets: The Diet Wars Continue—Part 3

In the [September](#) and [October](#) 2012 McDougall newsletters, I presented readers with articles addressing the dangers of low-carbohydrate diets, which are also popularly known as Paleo and Primal diets and as Atkins-type diets. Please take this opportunity to read these articles.

[In this article](#) I look at some specific populations who lived before the globalization of the western diet and explore the health of a number of cultures that lived both on low-carbohydrate (meat, poultry, fish, egg, and milk) based diets and high carbohydrate (rice, corn, and potato) diets.

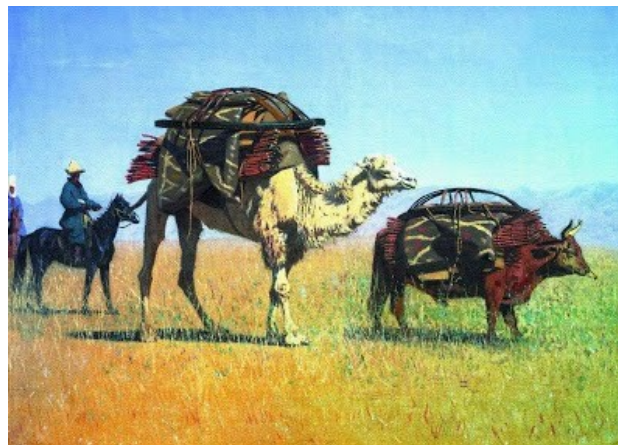
I present findings on the health of the nomadic populations from the Steppes in Central Asia and the Pampas in South America who lived the “low-carbers dream”, subsisting on enormous amounts of grass-fed meat and milk. Their ways of eating did not protect them from obesity, heart disease, and cancer. On the other hand, I present populations from Asia-Pacific and Africa, subsisting almost entirely on plant foods (up to 95% of calories from carbohydrates), which were lean, muscular and largely free of heart disease, stroke and cancer.

The Nomadic Kirghiz and Dzungarian Plainsmen

In the 1920's, Kuczynski reported on the nomadic plainsmen of the Kirghiz and Dzungarian Steppes in Central Asia and estimated that they consumed an astonishing 20 liters of fermented mare's milk, and between 10 to 20 pounds (4.5 to 9kg) of meat per day.^{1,2} Lack of systematically documented dietary data however suggests that these findings could have been slightly overestimated, as evidently has been the case for early researcher's estimates of the Masa'i's intake of milk, meat, cholesterol and total energy.³ Nevertheless, these nomadic plainsmen consumed enormous quantities of organic pasture raised animals foods, perhaps among the largest ever documented.

Kuczynski noted that these nomads, evidently largely as a result of their diet experienced a high incidence of obesity, premature extensive atherosclerosis, contracted kidney, apoplexy, arcus senilis, and gout.^{4,5} In specific, Kuczynski asserted that:²

They get arteriosclerosis in an intense degree and often at an early age as shown by cardiac symptoms, nervous disorders, typical changes of the peripheral vessels, nephrosclerosis and, finally, apoplectic attacks. Even in men thirty-two years old I frequently observed arcus senilis.



The Nomadic Kirghiz Plainsmen

Kuczynski compared the diet and health of these nomadic plainsmen with Russian peasants, who had an apparent low incidence of these conditions while consuming a vastly different diet. Their diet was based on soup, bread, pickles, potatoes, with very little meat, but consumed large amounts of alcohol.⁵ In comparison to the nomadic plainsmen, Kuczynski asserted in regards to these Russian peasants that:²

Repeatedly I found at the age of about seventy years no signs of arteriosclerosis, no arcus senilis, etc.; they were men of youthful appearance, with no grey in their still abundant growth of hair, and with their sexual functions still intact.

For more information regarding the health of nomadic populations, Don Matesz has previously posted an [informative review](#) addressing the high rates of obesity, cardiovascular disease and cancer among the modern, still largely nomadic Mongols consuming diets rich in organic pasture raised animal foods.

The Native Indonesians

In 1916, Cornelis D. de Langen observed that the native Javanese, the indigenous people of the Indonesian island of Java who consumed a diet which was 'mainly vegetarian with rice as the staple, that is very poor in cholesterol and other lipids', had very low levels of serum cholesterol and incidence of coronary heart disease.⁶ Conversely, de Langen observed that their Javanese counterparts who worked as stewards on Dutch passenger ships and consumed traditional cholesterol laden Dutch food had much higher levels of serum cholesterol and incidence of coronary heart disease.⁷ Blackburn noted in regards to de Langen's classical findings from Indonesian hospitals that:⁶

Pursuing this clinical impression, he reviewed 10 years of admissions charts and found only 5 cases of acute gallbladder disease among many thousands of patients passing through the medical wards and only 1 case on the surgery service among 70,000 admissions surveyed.

Following these observations, de Langen stated in regards to the rarity of vascular disease among the Javanese that:⁶

thrombosis and emboli, so serious in Europe, are most exceptional here. This is not only true of internal medicine, but also on surgery, where the surgeon needs take no thought of these dreaded possibilities among his native patients. Out of 160 major laparotomies and 5,578 deliveries in the wards, not a single case of thrombosis or embolism was seen.

These findings closely resemble observations from over 15,000 operations carried out in Norway during the period around World War II, where the changes in incidence of post-operative thrombosis was consistent with changes in the availability of cholesterol laden foods [[reviewed previously](#)]. Blackburn also noted in regards to de Langen's 1922 experiment, which is regarded as apparently the first ever systematic feeding experiment of diet in relation to serum cholesterol levels, that:⁶

...he found an average 40 mg/dl increase in cholesterol in 5 Javanese natives who were shifted from a rice-based vegetarian cuisine to a 6-week regimen high in meat, butter, and egg fats.

These findings were reproduced decades later in hundreds of tightly controlled feeding experiments, firmly establishing that dietary cholesterol and isocaloric replacement of complex carbohydrates and unsaturated fat by saturated fat raises LDL and total cholesterol in humans.⁸

In 1908, Williams noted in regards to the findings of early doctors who practiced in Indonesia and the rarity of cancer among the Javanese that:⁹

...a single example of a malignant tumour in a native being esteemed a great rarity.

The Okinawans

In 1949, a government survey found that in Okinawa, known to have the highest concentration of centenarians in the world, the population consumed about 85% of their total energy intake from carbohydrates, with the staple at the time being the sweet potato. The dietary survey also showed that the Okinawans derived about 9% of their energy intake from protein and less than 4% of energy from all sources of animal foods combined (Table 1).¹⁰ These findings were largely consistent with previous dietary surveys dating back to 1879 and 1919.¹¹

TABLE 1. Traditional dietary intake of Okinawans and other Japanese circa 1950

	Okinawa, 1949 ^a	Japan, 1950 ^b
Total calories	1785 ^c	2068
Total weight (grams)	1262	1057
Caloric density (calories/gram)	1.4	2.0
Total protein in grams (% total calories)	39 (9)	68 (13)
Total carbohydrate in grams (% total calories)	382 (85)	409 (79)
Total fat in grams (% total calories)	12 (6)	18 (8)
Saturated fatty acid	3.7	4.7
Monounsaturated fatty acid	3.6	5.3
Polyunsaturated fatty acid	4.8	8.0
Total fiber (grams)	23	23
Food group	Weight in grams (% total calories)	
Grains		
Rice	154 (12)	328 (54)
Wheat, barley, and other grains	38 (7)	153 (24)
Nuts, seeds	<1 (<1)	<1 (<1)
Sugars	3 (<1)	8 (1)
Oils	3 (2)	3 (1)
Legumes (e.g., soy and other beans)	71 (6)	55 (3)
Fish	15 (1)	62 (4)
Meat (including poultry)	3 (<1)	11 (<1)
Eggs	1 (<1)	7 (<1)
Dairy	<1 (<1)	8 (<1)
Vegetables		
Sweet potatoes	849 (69)	66 (3)
Other potatoes	2 (<1)	47 (2)
Other vegetables	114 (3)	188 (1)
Fruit ^d	<1 (<1)	44 (1)
Seaweed	1 (<1)	3 (<1)
Pickled vegetables	0 (0)	42 (<1)
Foods: flavors & alcohol	7 (<1)	31 (2)

^aData derived from analysis of U.S. National Archives, archived food records, 1949 and based on survey of 2279 persons.

^bJapan National Nutrition Survey, 1950.

^cTotal daily caloric intake was originally reported as 1785 kcal/day in 1949. This was estimated to be 17% less than government-recommended daily intake. Differences in assumptions regarding particular foods, cooking methods, and choice of nutritional analysis programs result in a range of 1605 to 2012 kcal/day.

^dPapaya and tomatoes were classified as vegetables.

In 1946, Steiner examined autopsies of 150 Okinawans, of which 40 were between the age of 50 and 95. Steiner noted only seven cases of slight aortic atherosclerosis, all of which were found in those over the age of 66, and only one case of calcification in the coronary arteries. In 1946 Benjamin reported similar findings from a study of 200 autopsies on Okinawans.¹²

Even in 1995 the observed rates of coronary heart disease and dietary related cancers, including that of the colon, prostate, breast and ovarian in Okinawa were not only many fold lower than that of the United States, but even significantly lower than that of mainland Japan.¹⁰ This may be explained by the likelihood that these diseases are slowly progressive diseases and therefore the more traditional Okinawan diet consumed several decades prior would still have played a major role in the development and manifestation of these diseases.^{13 14 15}

The Papua New Guineans

The Papua New Guineans traditionally subsisted on a plant based diet, of which a number of varieties of sweet potatoes typically supplied over 90% of dietary intake. They also grew a number of other crops including corn, as well as sugar cane which was consumed as a delicacy. Pig feasts are organised a few times a year, but at which pork is not consumed in excess of 50 grams. A dietary survey on the Papua New Guineans highlanders estimated that carbohydrate accounted for 94.6% of total energy intake, among the highest recorded in the world. Total energy intake was adequate, however only 3% of energy intake was derived from protein (25g for men and 20g for women), yet there was no evidence of dietary induced protein deficiency or anemia. Furthermore, this surveyed population was described as being muscular and mostly very lean, physically fit and in good nutritional state.^{16 17} They also drank 'soft' water which is considered a risk factor for cardiovascular disease. It was estimated that tobacco was smoked by 73% of males and 20% females. Also, the highlanders spend up to twelve hours a day inside a smoke-filled house due to centrally placed open wood fires with little ventilation and no chimneys in their homes, resulting in a very high exposure to hazardous smoke in this population.¹⁶

Despite cardiac risk factors including high exposure to smoke and soft drinking water, a number of authors observed a great rarity of incidence of atherosclerosis, coronary heart disease and stroke among the traditional Papua New Guineans, but also noted an increase in incidence paralleling the Westernization of the nation. In 1958, Blackhouse reported on autopsies of 724 individuals between 1923 and 1934 and found no evidence of heart attack incidence and only one case of slight narrowing of the coronary arteries. However, it has been suggested that this study was selective as only a small portion of the autopsies were performed on females or the elderly. In 1969, Magarey et al. published a report on the autopsy results of 217 aortas and found a great rarity of atherosclerosis. The authors noted that the prevalence and severity of atherosclerosis was less than had been reported in any previously investigated population.¹⁸ In 1973, Sinnett and Whyte published findings from a survey of 779 highlanders using electrocardiograms among other methods, and found little probable evidence of coronary heart disease, and no clinical evidence of diabetes, gout, Parkinson's disease, or any previous incidence of stroke.¹⁶

For a population that consumed virtually the highest intake of carbohydrates out of any population to also have virtually the lowest incidence of atherosclerosis and diabetes ever recorded highlights the vital importance of the health properties of specific carbohydrate rich foods. These findings further question certain 'carbohydrate-induced dyslipidemia' hypotheses, emphasized by certain researchers, who perhaps intentionally do not always take the quality of carbohydrate rich foods into careful consideration.¹⁹

In 1900, Sir William MacGregor reported in the Lancet in regards to the observed rarity of cancer among the native Papua New Guineans, asserting that:²⁰

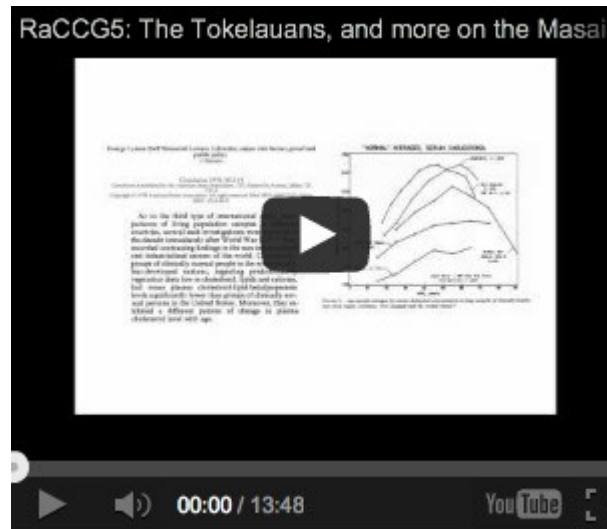
For nine and a half years I never saw a case in British New Guinea; but at the end of that time there occurred an example of sarcoma of the tibia in a Papuan, who had for seven or eight years lived practically a European life, eating tinned Australian meat daily.

In 1974, Clezy brought to attention the rarity of mortality from colorectal cancer among the Papua New Guineans, for which the observed annual rate per 100,000 was 0.6 for men and 0.2 for women. These rates were 100 fold lower than that of many developed nations during the same time period, although this could have been in part explained by under diagnosis.¹⁷

Even in more recent statistics after modest changes towards a western diet, the Papua New Guineans still had among the lowest rates of hip fractures in the world, which Frassetto et al. observed was more than 50 fold lower than that of the Scandinavian nations.²¹ Although these researchers ascribed the worldwide differences in rates of hip fractures to the ratio of vegetable to animal protein, evidence from prospective cohort studies and randomized controlled trials, as well as experimental animal models suggests that saturated fat may be at least as great, if not an even greater contributor to poor bone health.^{22 23 24 25 26}

The Tokelauans and Pukupukans

In the video below, [Plant Positive](#) reviews the diet and health of the Tokelauans and Pukupukans whose diet is rich in coconuts, as well as the diet and health of other South Pacific island populations.



The Tokelauns, and more on the Masai

A 1908 Review on the Causation of Cancer

In 1908, William Roger Williams published an extensive review of the medical literature and documentations from a large number of populations around the world before the widespread use of intensive farming practices. Williams observed that compared to the nations with carnivorous dietary patterns there was a significantly lower incidence of cancer among the nations subsisting predominantly on a plant-based diet. He also noted that groups within nations with carnivorous dietary patterns that largely abstained from animal foods, such as nuns, monks, slaves and prison inmates had a similar low incidence of cancer.⁹

Williams reported on the cancer rates of the area inhabited by the Gaucho of the Argentina Pampas, another nomadic population that subsisted predominantly on organic pasture raised animal foods, noting that:⁹

Cancer is commoner in Argentina which comprises the pampas region inhabited by the Gauchos, who for months subsist entirely on beef, and never touch salt than in other parts of South America. On the other hand, among the natives of Egypt, who are of vegetarian habits, and consume immense quantities of salt, cancer is almost un-



The Nomadic Argentinean Gaucho

These findings are largely consistent with modern reviews from prominent health authorities, including the report from the expert panel of the World Cancer Research Fund that produced convincing evidence that red meat is a major risk factor for cancer and that dietary fiber provides significant protection [[reviewed previously](#)]. However, these findings raise questions as to whether the Egyptians plant-based diet that is centered on wheat provides significant protection against salt sensitive cancers. In regards to the

cancer incidence among the different ethnic groups of Egypt, Williams quoted from a 1902 publication in the British Medical Journal authored by Dr. F. C. Madden of Cairo that:²

The consensus of opinion among medical men in Egypt is, that cancer is never found either in male or female, among the black races of that country. These include the Berberines and the Sudanese, who are all Mussulmans, and live almost entirely upon vegetarian diet. Cancer is fairly common, however, among the Arabs and Copts, who live and eat somewhat after the manner of Europeans.

Williams also observed that the increases in incidence of cancer within populations coincided with increases in animal food intake. For example, in regards to the observed marked increase cancer incidence among the Native American's after gaining easier means to hunt buffaloes, Williams asserted:⁹

In this connexion it should be borne in mind, that in their primitive condition these savages had no horses and no firearms ; consequently it was no easy matter for them to kill the fleet buffaloes, on which they mainly depended for subsistence ; hence, in their primitive condition, they were generally less well nourished than when, after contact with whites, they had, by the acquirement of horses and firearms, become assured of a constant supply of

Historical Overview of the Reversal of Chronic Diseases

In 1903, John Harvey Kellogg, the founder of the Kellogg Company asserted:

Dr John Bell, who was, about a hundred years ago [now two hundred years ago], professor in a leading college in London, wrote that a careful adherence to a vegetarian dietary tended to prevent cancer. He also stated that in some cases persons who had already acquired cancer had been cured by adherence to a non-flesh dietary. When I first read this book, I did not agree with the author; I thought he was mistaken; but I have gradually come to believe that what he says on this subject is true.

These findings are consistent with Dr. Dean Ornish's on-going Prostate Cancer Lifestyle Trial which has already produced strong suggestive evidence of reversal of prostate cancer growth.²⁷ These findings are also consistent with experiments showing that dietary restriction of methionine, typically found in higher quantity and bioavailability in protein rich animal foods compared to unprocessed plant foods can inhibit and even reverse human tumor growth in animal models and in culture [[reviewed previously](#)].

Publications producing evidence of regression of atherosclerosis in humans dates back to the periods following both the World Wars in Scandinavia and the low countries of Europe, where a number of researchers found a trend between changes in intake of cholesterol laden foods throughout periods of food scarcity in the war and changes in the severity of atherosclerosis at autopsy [[reviewed previously](#)]. Several decades later during the 1960's and 70's experiments involving modest dietary and lifestyle changes or drugs produced the first angiographic evidence of modest regression of atherosclerosis.²⁸

In experimental animal models, the first suggestive evidence of regression of atherosclerosis came from rabbit models produced by Anichkov and colleagues during the 1920's. Beginning from 1957 much more substantial evidence of regression was produced in rabbits and then later replicated in a number of other species, including non-human primates.^{29 30}

In 1970, Armstrong et al. published the first study producing substantial evidence of regression of atherosclerosis in non-human primates. Armstrong et al. induced severe autopsy proven atherosclerosis in Rhesus monkeys resembling that of human atherosclerosis by feeding a diet with 40% of energy from egg yolks for 17 months. The egg yolks were then removed from the diet of the remaining monkey's and replaced by either linoleic acid rich chow or sugar rich low fat chow for three years reducing serum cholesterol to 140 mg/dl and resulting in a marked regression of atherosclerosis.^{28 31} These results were later reproduced in well over a dozen experiments in various primate species in which severe atherosclerosis was induced typically by feeding diets rich in dietary cholesterol and saturated fat and then reversed the process either by removing these atherogenic components, or by other means

which significantly reduce serum cholesterol.³⁰

During the late 1980's, Dr. Dean Ornish and Dr. Caldwell Esselstyn began reversing atherosclerosis, and more importantly greatly decreased the number of reoccurring cardiac events in participants who adhered to a plant-based diet and often other lifestyle modifications.^{32 33 34 35} More recently Dr. Esselstyn has replicated his initial findings in around 200 participants over the period of a decade, with publication pending results showing a phenomenal success rate of a 99.5% reduction in reoccurring cardiovascular events [[reviewed previously](#)].



Caldwell Esselstyn on making heart attacks history

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