Re: asian 70% carb diet "paradox"

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- *From*: "TC" <tunderbar@xxxxxxxxxxx>
- *Date*: 15 Feb 2007 09:47:19 −0800

On Feb 15, 9:46 am, "TC" <tunder...@xxxxxxxxxxx> wrote:

> http://www.ajcn.org/cgi/content/abstract/34/2/184
>
> Comparison of serum glucose, insulin, and glucagon responses to
> different types of complex carbohydrate in noninsulin−dependent
> diabetic patients
> PA Crapo, J Insel, M Sperling and OG Kolterman
>
> We have studied the acute effects of oral ingestion of dextrose, rice,
> potato, corn, and bread on postprandial serum glucose, insulin, and
> glucagon responses in 20 diabetic subjects with nonketotic, noninsulin
> requiring fasting hyperglycemia. The carbohydrate loads were all
> calculated to contain 50 g of glucose. The data demonstrate that 1)
> dextrose and potato elicited similar postprandial serum glucose
> responses whereas rice and corn elicited lower responses, with bread
> intermediate; 2) postprandial insulin responses were relatively flat
> but rice ingestion led to significantly lower insulin responses than
> did potato; 3) urinary glucose excretion during the 3 h after
> carbohydrate ingestion was greatest following dextrose and least after
> rice and corn. In conclusion, there is a range in the magnitude of
> postprandial hyperglycemia after ingestion of different complex
> carbohydrates in diabetic patients with fasting hyperglycemia and
> emphasis on the use of the less hyperglycemic starches could be of
> therapeutic value in controlling hyperglycemia.
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> TC

http://www.westonaprice.org/traditional_diets/food_in_china.html

Food in China−−Variety and Monotony
By Sally Fallon and Mary G. Enig, PhD

Many have wondered why Weston Price did not include the Oriental countries like China and Japan in his monumental studies; and what he would have discovered had he done so. The answer to the first question

is that the major nations of the East did not fit his criteria−that of isolated, nonindustrialized groups whose foodstuffs were entirely indigenous, with none of them coming in from the outside. China and Japan, while still relatively "traditional" in the 1930s, both had a long history of trade with other nations; and both had a considerable amount of industry.

There is a widespread feeling, however, that it would have been worthwhile for Price to study the peoples of both nations, especially in light of recent controversy over high rates of degenerative disease among Western nations, and the notion that China and Japan, with their low−fat, largely vegetarian diets, are relatively free of such problems. Indeed, popular writers have portrayed the nations of China and Japan as regions in which a fiber−rich diet based on grains and vegetables offers substantial protection against cancer, heart disease and osteoporosis. Americans, they argue, should reduce consumption of meat, milk and animal fats and follow the Oriental model.

Unlike Japan, China is a vast country with a wide diversity of ethnic groups and eating habits−and large differences in the life−styles of rich and poor. In general, however, the Chinese recognize the relationship of diet to good health, and believe that the ideal diet is one that stresses both diversity and balance. Ancient texts stress the importance of the five flavors (pungent, sour, sweet, bitter and salty); the five grains (wheat, glutinous millet, millet, rice and beans); the five tree−fruits (peaches, plums, apricots, chestnuts and dates); the five vegetables (mallows, coarse greens, scallions, onions and leeks); and the five domestic animals (fowl, sheep beef, horses and pigs.)1 Meat, although not to be eaten in excess, was valued for its strengthening properties.

Chinese restaurant meals today are rich in animal foods, but the truth is that the vast majority of Chinese cannot afford to include much in the way of meat or fish in their diets. Herein lies the great paradox of Chinese foodways. For whereas a fundamental feature of Chinese heating habits is the inclusion of a wide diversity of food items−everything from pickled ant eggs to dog hams−most Chinese, especially most Chinese in rural areas, consume a diet that is dull and limited in the extreme. A 1946 survey of rural China indicated that 88% of the diet was composed of cereals and legumes, with only 5% as vegetables, 3% as meat and fish and 4% as fats. 2

Rice is China's most important cereal. In the Southern regions it is consumed at all three meals. A 1939 survey found that adult males in the region ate as much as 485 pounds of rice per year. In other parts of China, however, rice is not consumed at all. Millet and wheat production dominate the more arid regions of northern China−with millet consumed principally in the form of a fluffy porridge, and wheat made into noodles and bread, although in the poorest regions, wheat is consumed as a rough porridge. Barley, sorghum, corn, buckwheat, rye and oats constitute minor crops in China, but the total

of them all adds substantially to the amount of carbohydrate food consumed by the populace.

Traditionally, rice and wheat were eaten as whole grains or whole meal, probably after a long, slow steaming in the case of rice, or a soaking procedure in the case of wheat. Noodles were made by a process of stretching and sun drying that amounted to a partial fermentation. Today these grains are consumed as white polished rice and white wheat flour, shorn of their valuable vitamins and minerals. But millet and the other minor grains continue to be consumed in whole form, as porridges, gruels or cakes. " Congee", a watery porridge made from rice or other grains, is a common food, either eaten plain or with other ingredients such as meat, fish, vegetables or flavoring.

Animal foods in the Chinese diet, while beyond the reach of many, are characterized by great diversity. Scavenger, omnivorous animals such as pig, chicken and duck are preferred to beef and lamb, although beef and lamb−and more meat in general−are consumed by the northern Chinese, who are admired for their size and strength. Whatever the animal, it is entirely consumed−organs, feet, tail and tongue. Packages of duck's tongues are available even in Chinese markets in America. Goose, pigeon, turkey, dog, frog, monkey and snake are available in Chinese markets, often sold live, for the Chinese put a great store on freshness. Even rat figures in accounts of traditional cuisine and bear paw was considered a great delicacy by the aristocracy. Insects such as flies, gnats, earthworms, bees, cicadas, beetles, crickets, silkworm cocoons, waterbugs, locust and stinkbugs are valued both as food and as medicine. The Chinese also cultivate caterpillars that have become infected with a fungus that roots in the caterpillar's neck and grows upward to a height of six to eight inches. When both die, they become dry, hard and brown and may be prepared in a broth. Insects are a valuable source of protein and fat soluble vitamins in the Chinese diet, especially that of the poor, but their use and importance are generally overlooked by researchers. 3

Traditionally lard was used in cooking, by those who could afford it, along with small amounts of sesame oil that was produced by vendors who set up their stone grinders in the street and sold the fresh oil as soon as it was extracted. Today most cooking oil is extracted in factories from rapeseed, soybeans, peanuts and cottonseed.

Eggs are highly valued as a brain food throughout the Orient. In China, they are consumed preserved or fresh, often scrambled with vegetables and other ingredients. In the northern areas, a breakfast dish is prepared by placing a raw egg in a bowl and pouring hot soy milk over it. The mixture is eaten with a flat pancake. Sometimes a raw egg is mixed with hot rice and soy sauce.

Soy foods are widely used in China as an adjunct to animal foods. The Chinese have perfected numerous ways of fermenting soy in order to neutralize phytic acid (which blocks minerals like zinc and calcium),

enzyme inhibitors (which block digestion) and goitrogens (which inhibit thyroid function.) Traditional preparation of soymilk begins with soaking until the beans become soft. The softened beans are ground into a mush on a stone grinder, using copious amounts of water. The mush is then put into a cloth bag and placed under a weight or heavy rock so that all the liquid is squeezed out. The resulting soy paste is then cooked in fresh water. Large amounts of dirty scum that rise to the surface are carefully removed. To serve, raw egg or dried shrimp are placed in a bowl along with scallions, soy sauce, flavorings and vinegar, and the scalding soy milk is poured over. The vinegar causes the soy milk to curdle slightly. In traditional times, homemade soymilk was consumed by the elderly and by nursing mothers in the belief that it stimulated breastmilk, but was not normally used in feeding infants.4

Industrial methods for the production of soymilk leave out the all−important squeezing and skimming steps. The presoaking is shortened by using an alkaline solution. This process helps deactivate some of the enzyme inhibitors, but not the other antinutrients. The high pH value of the soaking solution results in a decrease in cystine content when the beverage is heated, thus lowering total protein availability and soymilk's usefulness as a protein source.5 Various refined sweeteners, preservatives and stabilizers may then be added.

The real value of the soybean is that it can be made into soy sauce, the salty elixir that gives Oriental food its unique character. Traditional soy sauce is made by a fermentation process that takes six to eight months to complete. This long and careful procedure creates a mix of phenolic compounds, including a natural form of glutamic acid, that contribute to the unique taste and aroma of traditionally brewed soy sauce. The modern bioreactor method produces a product by rapid hydrolysis, rather than by complete fermentation, in the space of two days, and uses the enzyme glutamase as a reactor, so that the final product contains large amounts of the kind of unnatural glutamic acid that is found in MSG.6

Various types of vinegars, fermented sauces made from oysters or fish, ginger, garlic, ginseng and a wide variety of peppers and spices are used with great imagination in traditional Chinese cuisine; these too, have been replaced in large measure with preparations in which MSG allows manufacturers to cut corners and use only minimal amounts of basic ingredients.

Salt in general is not added to Chinese food during cooking−rice is prepared without salt, for example−but because it is used in the production of condiments and pickled vegetables, Chinese food has a salty taste, and overall salt consumption is high. Most salt is produced by the evaporation of sea water in the coastal areas so that, unlike industrially processed salt in America, it provides a rich source of natural iodine.7 There is a large black market in salt in China. 8

Since antiquity, the Chinese have used a number of sweeteners including honey, rice or barley malt, palm sugar (jaggery), sorghum syrup and dehydrated sugar cane juice, but only in moderation in accordance with the Oriental concept of balance. Chinese living overseas have adopted Western habits of high sugar consumption. A recent study found that Chinese children in Malaya had as much as 30 percent of the total caloric intake as sugar in the form of candy, cookies, soft drinks and other sweets.9 However, it is unlikely that mainland Chinese will adopt such expensive habits in the foreseeable future.

Chinese cuisine includes a large variety of vegetables, although the diet of the poor is limited to a very few, notably cabbage and various forms of radish. Sweet potato consumption is high, especially among the poor.

Many vegetables are pickled by acid fermentation methods that provide valuable enzymes to a diet in which much of the food is cooked. In the past, lactic−acid fermentation methods were also used in the production of traditional beers made from grains. These were opaque beverages, with a low alcohol content but rich in vitamins, minerals and enzymes. 10 Such traditional beers have given way to modern, factory produced, pasteurized beers. The national drink, of course, is tea. In Manchuria, sweetened tea is fermented to make kombucha.

In general, the modern Chinese diet does not protect them against cancer. The overall rate of cancer in China is twice that of the United States. The Chinese have less cancer of the colon, lung and breast, but far greater levels esophageal, stomach and liver cancer. Heart disease mortality is greater in the US but the Chinese have more stroke−in some districts the rate of death by stroke for those under 65 is as high as 8 percent. While the Chinese have made great strides in reducing the incidence of infectious disease and rates of infant mortality, these still remain major public health problems, especially in areas that are either crowded or remote. TB and parasite infections remain common.

Of particular concern is the high rate of mental retardation−over ten million cases in China, including hundreds of thousands with overt cretinism, especially in the central regions.11 This is blamed on a lack of iodine and the United Nations has called for a World−Bank−financed campaign to iodize salt in China. This will help the Chinese government eliminate the thriving black market in salt, but as Chinese salt is already rich in iodine, it is not likely to solve the problem. Another explanation is the blinding poverty of the region, where each village sports a population of "idiots" whose families can afford to eat nothing more that wheat porridge.

In the 1980s, a group of researchers from Cornell University carried out a massive dietary survey, covering all 25 of China's farflung

provinces, in an effort to determine food consumption and disease patterns. This study is often cited as proof that plant−based diets are healthier than those based on animal foods like meat and milk. Study director T. Colin Campbell claims that the Cornell findings suggest "that a diet high in animal products produces disease, and a diet high in grains, vegetables and other plant matter produces health."12 But the Cornell survey data, when carefully studied, does not support such claims.13

What the Cornell researchers discovered was that meat intake in China was highest in the western border region and very low in a number of impoverished areas centering on Sian. They found that meat eaters had lower triglycerides and less cirrhosis of the liver−and that they took more snuff−but otherwise they found no strong correlation, either negative or positive, with meat eating and any disease.

Some surprising and contradictory findings were associated with egg consumption, with averages of about 15 grams per day in the northern most parts of China, about 12 grams per day in the Shanghai region and amounts bordering on zero in the impoverished area around Sian in central China. (An egg weighs about 50 to 60 grams.) These figures are at odds with statistics that show per capita egg consumption in all of China to be roughly one third that of the United States14, as well as with another study showing per capita egg consumption of 50 to 80 grams per day in the northern part of China15, and suggests that the participants in the Cornell study were not truly representative of the Chinese population. American egg consumption is roughly 40/grams/day, yet the China study showed egg consumption at expected ratios in only two underpopulated northern areas and in the Shanghai region. There was a positive association of egg consumption with the consumption of meat, beer, soy sauce, sea vegetables, sugar and "other oils" and a strong correlation with university education and employment in industry. Egg eaters had more cancers of the brain, lung and bowel, perhaps because large numbers of them live in the polluted Shanghai region. They had less cirrhosis of the liver, fewer peptic ulcers and lower triglycerides. Egg consumption appeared to confer high protection against pulmonary diseases such as TB. There was no significant correlation of egg consumption with heart disease.

Fish consumption ranged from about 120 grams per day on seacoast areas, to zero in remote inland regions. Fish consumption was positively associated with consumption of sugar, "other oils," beer, liquor, meat, and rice and negatively associated with consumption of salt, wheat and legumes. Fish eaters had more diabetes, nasal cancer and liver cancer, but less TB, infectious disease and rheumatism. Fish eaters had lower triglycerides. There was no significant correlation, either positive or negative, of fish eating with coronary heart disease. There was a negative correlation of fish eating with pipe smoking.

Milk consumption was zero in the vast majority of the provinces.

However, in the western border region, milk consumption averaged 856 grams (about 1 quart) per person per day. (Whether this figure includes fermented milk products is not specified.) The rate of coronary heart disease in the western border region was about half that of Jiangxain and Longxian, where no milk products are consumed and where lipid intake is under 10% of total calories. Milk consumption showed no strong correlation, either negative or positive, with any disease but there was a high correlation of milk drinking with taking snuff.

Likewise, percentage of caloric intake from lipids, as determined by a three−day diet survey, was found to have no strong correlation, either positive or negative, with any disease. Fat intake ranged from 45 percent in the remote regions on the western border, to as low as 6 percent in the impoverished Songxian district. Not surprisingly, people who drank milk and ate meat had the highest levels of dietary lipids. Investigators lumped fats and oils together in the dietary recall questionnaire so that no conclusions could be drawn about the effects of animal fats such as lard, which is a good source of vitamin D, versus the effects of vegetable oils such as sesame, soy, cottonseed and peanut oil; nor did they look at consumption of insects and concentrated animal foods like shrimp paste, both of which provide fat soluble vitamins. They did, however, find that the high fat group tended to take snuff while people on low fat diets smoked pipes.

In his introduction to the research results, study director T. Colin Campbell states that there is considerable contemporary evidence supporting the hypothesis "that the lowest risk for cancer is generated by the consumption of a variety of fresh plant products."16 Yet Cornell researchers found that the consumption of green vegetables, which ranged from almost 700 grams per day in Jingxing to zero on the western border, showed no correlation, either positive of negative, with any disease. Dietary fiber intake seemed to protect against esophageal cancer, but was positively correlated with higher levels of TB, neurological disorders and nasal cancer−perhaps because there was a strong correlation between total fiber intake and pipe smoking. Fiber intake did not confer any significant protection against heart disease or most cancers, including cancer of the bowel.

Given the current emphasis on soy foods, it is puzzling that the Cornell Study researchers did not single out soy foods for study as a separate food item. Instead soyfoods are lumped together with other pulses in the category of legumes. Legume consumption varied from 0 to 58 grams per day, with a mean of about 12. Assuming that two−thirds of legume consumption is soy, then the maximum consumption is about 40 grams (about 3 tablespoons) per day with an average consumption of about 9 grams. Mark Messina, author of The Simple Soybean and Your Health, recommends 1 cup, or 230 grams, of soy products per day in his "optimal" diet as a way to prevent cancer, heart disease and osteoporosis.17 However, the Cornell study found that consumption of legumes was not strongly correlated with the prevention of any

degenerative disease, results that cannot be extrapolated to the extravagant health claims of soy promoters, who advocate industrially processed soy products in amounts far greater than those found in the typical Chinese diet.

Cornell researchers found a relatively strong correlation between salt consumption with oesophageal cancer and hypertension. Salt eaters had higher triglycerides but no significantly higher rates of stroke or coronary heart disease. Salt eaters ate less fish and consumed less liquor that those with lower dietary levels of salt.

The Cornell project did not take data on the amount and extent of osteoporosis in China so it is difficult to assess the claims that bone loss is rare among Orientals. They did determine that both dietary calcium and vitamin A−both needed for healthy bones−is low in China. The many references in Chinese medicine to the use of broth for old people and pregnant women indicates that bone loss is indeed a problem. Dishes considered important for pregnant women include fish heads in broth, eggshells dissolved in vinegar, pork ribs cooked in a sweet and sour sauce made with vinegar, and pickled pigs feet prepared with vinegar and sugar. Pigs feet chopped into small pieces and cooked in rice vinegar for as much as 12 hours, then sealed in containers, are traditionally given as gifts to pregnant women and nursing mothers. A 1978 survey of the Peking area reported mild rickets in 20 percent of children under seven years of age, but rickets appears to be rare in southern China where consumption of seafood is high.18

While the Cornell Study, for all the millions spent on it, does not tell us much about the various effects of food on the etiology of disease in China, it does present some intriguing findings about tobacco habits. Those who consumed more animal protein were more likely to take snuff; while those who consumed more plant foods tended to be pipe smokers. Snuff takers had a higher caloric intake than pipe smokers, but total caloric intake had no strong correlations, either negative or positive, with any disease. Researchers found an intriguing indication that handrolled cigarettes protected against cancer, while manufactured cigarettes were associated with increased rates of cancer, albeit very weakly.

Before we throw up our hands and decide that no conclusions can be made about diet and health in China, let us turn our attention to the mixed peoples of Okinawa, situated equidistant from Hong Kong and Tokyo. The average lifespan for women in Okinawa is 84 (compared to 79 in American), and the island boasts a disproportionately large number of centenarians. Okinawans have low levels of chronic illness−osteoporosis, cancer, diabetes, atherosclerosis and stroke−compared to America, China and Japan, which allows them to continue to work, even in advanced years. In spite of Okinawa's horrific role in World War II, as the site of one of the bloodiest battles of the Pacific, Okinawa is a breezy, pleasant place, neither crowded nor polluted, with a strong sense of family and community and where the local people

produce much of what they consume.

And what do Okinawans eat? The main meat of the diet is pork, and not the lean cuts only. Okinawan cuisine, according to gerontologist Kazuhiko Taira, "is very healthy−and very, very greasy," in a 1996 article that appeared in Health Magazine.19 And the whole pig is eaten−everything from "tails to nails." Local menus offer boiled pigs feet, entrail soup and shredded ears. Pork is cooked in a mixture of soy sauce, ginger, kelp and small amounts of sugar, then sliced and chopped up for stir fry dishes. Okinawans eat about 100 grams of meat per day−compared to 70 in Japan and just over 20 in China−and at least an equal amount of fish, for a total of about 200 grams per day, compared to 280 grams per person per day of meat and fish in America. Lard−not vegetable oil−is used in cooking.

Okinawans also eat plenty of fibrous root crops such as taro and sweet potatoes. They consume rice and noodles, but not as the main component of the diet. They eat a variety of vegetables such as carrots, white radish, cabbage and greens, both fresh and pickled. Bland tofu is part of the diet, consumed in traditional ways, but on the whole Okinawan cuisine is spicy. Pork dishes are flavored with a mixture of ginger and brown sugar, with chili oil and with "the wicked bite of bitter melon."

Weston Price did not study the peoples of Okinawa, but had he done so, he would have found one more example to support his conclusions−that whole foods, including sufficient animal foods with their fat−are needed for good health and long life, even in the Orient. In fact, the Okinawan example demonstrates the fallacy of today's politically correct message−that we should emulate the peoples of China by reducing animal products and eating more grains; rather, the Chinese would benefit by adding more strengthening animal foods to their daily fare.

Proponents of the low−fat school argue that the Chinese cannot afford to devote more land to animal husbandry. Consider, however, the fact that the Chinese grasslands, concentrated in the semi−arid lands of the north and west, cover nearly forty percent of China, an area three times that under cultivation. Such lands do not support crop production but are highly suited for grazing purposes−for the production of meat and milk−and many Chinese have proposed that efforts be made in this direction. The Beijing Food Research Institute, however, has opposed such measures. Its director, Wang Qing, who is credited with turning China away from dairy development, contends that cow's milk is a food for the elite, and dairying much too expensive for China to pursue.20 He argues that the Chinese cannot consume dairy products because they are lactose intolerant−but even the lactose intolerant can consume dairy products in limited amounts21, especially fermented dairy products. Meat and dairy products from land that currently is not being used would provide just those nutrients now lacking in the typical Chinese diet−protein,

calcium and fat soluble vitamins. Under Qing's direction, however, China has opted for increased cultivation of valuable agricultural lands in soybeans, in order to provide factory−produced, mineral−blocking, protein−poor soymilk to the populace.

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