



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

The Egyptian Mummy Diet Paradox



Reports over the past century have shown that heart disease and other forms of hardening of the arteries (atherosclerosis) were present in about half of Egyptians entombed as long as 3500 years ago. This finding has raised questions about the dietary causes of modern diseases, and has given rise to the “Egyptian mummy diet paradox.” The paradox being, if the diet of most Egyptians living during these ancient times was nearly

vegetarian, consisting mainly of vegetables, fruits, and breads made from emmer wheat or barley (meat, cheese, and eggs were rarely consumed), why was evidence of heart disease and atherosclerosis being found. This observation seems to be in contradiction to the current scientific consensus that atherosclerosis is caused by a diet high in saturated fats and cholesterol (which means animal foods).

The Egyptian mummy diet paradox has fueled the rise of the theory that carbohydrates are the cause of obesity, heart disease, type-2 diabetes, and other modern diseases. And not just carbohydrates in the form of refined sugars, but also naturally carbohydrate-rich foods, such as rice, corn, potatoes, wheat, beans, and barley. Popular low-carb diets promoting this belief are Atkins, Carbohydrate Addicts, Zone, South Beach, Dukan, and Protein Power. [Authors](#) have specifically invoked the Egyptian mummy diet paradox as solid evidence to support their theories that grains, vegetables, and fruits are the sources of illnesses for Westerners, and that meat, dairy, and eggs are actually health foods. But a closer look is warranted.

However, the belief that carbohydrates are bad and saturated fat is good disregards [50 years of diet-heart research](#) with contrary findings and dozens of metabolic (ward-type-feeding) experiments showing that eating saturated fat and/or cholesterol causes an adverse effect on blood lipids. In addition, thousands of relevant animal studies on the damaging effects of saturated fat and cholesterol are being ignored.



Ancient Egyptian Depiction of Food Offering

Why They Are Called “Mummies”

Ancient Egyptians believed the body must be preserved for the survival of the soul after death into the afterlife. The word “mummy” is derived from the Persian word “mumia,” referring to pitch, a black, asphalt-like substance that oozed from the “Mummy Mountain” in Persia and was used in the embalming process. Thus, the remains of the often-blackened bodies are called mummies.

Findings in contemporary populations of people also contradict the Egyptian mummy diet paradox. For example, the [Tarahumara](#) people, indigenous to northwestern Mexico, live primarily on corn, beans, and squash with very few animal foods and are free of atherosclerosis, obesity, and other modern diseases. Their genetic counterparts, the [Pima](#), living in Arizona, following a diet filled with meat, eggs, and cheese are riddled with heart disease, obesity, type-2 diabetes, and kidney failure. The same freedom from modern diseases can be said about millions of people currently living in rural South America, Central America, Asia, and Africa on diets of potatoes, corn, rice, millet, cassava, and other starch vegetables. However, as these same people migrate to the cities and change to a diet centered on animal foods and processed foods they become fat and sick, just like many of the Egyptians of ancient times and most of the Westerners of today.

Discoveries of Atherosclerosis in Mummies

Beginning in 1898, shortly after the discovery of x-rays, scientists focused their penetrating beams on mummies. The x-rays readily detected calcium deposits deep within the bodies of these ancient Egyptians (calcium accumulates in the tissues as a result of years of chronic inflammation). Calcium deposits in the artery walls, a condition referred to as hardening of the arteries, means that the individual has suffered from years of disease characterized by fiery eruptions: atherosclerosis.

A major technological advance in x-rays was the development of computed tomography (CT). This technology uses multiple x-rays, combined with computer analysis, to show three-dimensional pictures of body parts that look almost lifelike. The first CT studies were performed on Egyptian mummies in 1977, and over the next three decades CT technology has been employed to examine hundreds of mummies.

The controversy of diet and artery disease was raised to new heights by the April 2011 report in the *Journal of the American College of Cardiology (JACC) of Cardiovascular Imaging* showing with CT that half (20 out of 44) of ancient Egyptian mummies with identifiable cardiovascular structures had evidence of atherosclerosis. Calcifications were identified in the heart, aorta, and blood vessels of the legs. Examinations of the hearts and bodies of modern Americans and Europeans by CT show a similar incidence of calcification due to atherosclerosis.

The remains studied were of people who had lived between 1500 and 3500 years ago in Egypt. The life expectancy at the time was between 40 and 50 years, even among the more affluent members of society. Older mummies (average 45 years) showed more artery disease than younger ones (average age of 34.5 years). Three bodies had coronary artery disease, and two mummies showed evidence of severe disease involving virtually every artery system. Among the 25 mummies for whom social position could be determined, 10 were priests or priestesses. The most ancient mummy with hardening of the arteries was the princess Ahmose-Meyret-Anon. She lived between about 1580 and 1550 BC, and so far, she is the earliest known case of coronary atherosclerosis.

There is some clinical correlation to these x-ray findings. [Historical writings](#) document heart disease in people who lived more than 2000 years ago—during times when there were no refrigerators or fast food restaurants. People exercised as a mode of transportation, and tobacco was not grown in the old world. Hippocrates (469-377 BC) described sudden (cardiac) death, and Erasistratos (300 BC) documented the typical symptoms of peripheral arterial disease (intermittent claudication). Ancient Egyptian hieroglyphics mention symptoms consistent with angina, acute myocardial infarction, and congestive heart failure.

Other Western Diseases in Mummies

Atherosclerosis was not the only disease of modern societies identified in ancient Egyptians. The studies of the remains of [Hatshepsut](#), Egypt's greatest woman pharaoh, who reigned more than 3,000 years ago, identified an obese woman with tooth decay. Mummified geese were found inside her tomb, reflecting the rich food consumed by Hatshepsut and other royal Egyptians.

Problems with the teeth are found in mummies. The most common abnormality is wearing down of the teeth by friction caused by eating gritty bread made from flour contaminated by windblown sand and other abrasive materials from the soil and grinding stones. In addition to erosion of the teeth, [examination of the mouth](#) of mummies showed that they had cavities (dental caries), periodontitis, dental abscesses, and missing teeth.

Gallstones have also been found in mummies. Almost all gallstones found in modern people are due to the super-saturation of the bile with cholesterol from consuming meat, eggs, and dairy products. The [bile acids](#) of a mummy buried 3500 years ago were found

to be similar to the bile acid composition of modern man.

Spina bifida (myelomeningocele) is a birth defect where the backbone and spinal canal do not close before birth, producing an often-serious abnormality. This sometimes-fatal condition is due to a diet deficient in the plant-derived nutrients, most importantly folate (the vitamin is folic acid). The study of a six-month-old [infant mummy](#) from 4000 years ago showed the presence of severe spina bifida. The mummified infant's mother was likely a member of aristocracy and ate a diet high in folate-deficient meats, dairy, and eggs. She was lacking in the traditional folate-rich foods of common Egyptians: wheat, barley, vegetables, and fruits.

The Egyptian Mummy Diet Paradox Answered

This apparent contradiction between the disease-filled bodies of mummies and the ancient Egyptian diet is resolved by understanding that people entitled to the rituals of mummification and noble burials were wealthy, typically royalty and priests, not the common person. The rich foods consumed by the elites were vastly different than the frugal, mainly vegetarian, diets that most common farmers and laborers ate.

Hieroglyphic inscriptions on Egyptian temple walls indicate that the royalty regularly consumed beef, sheep, goats, wild fowl, bread, and cake. Excavation of the pyramids found that the foods placed in the burial chambers to provide sustenance for people in the afterlife were ducks, geese, beef, mutton, and lamb. Fish was considered a food for the poor, but was occasionally found in the tombs of the rich.

According to ancient writings, priests cleansed, dressed, and fed the gods' statues in the temples three times a day. The richest of foods were offered to the stone statues of their deities. After the offerings the [priests](#) removed these delicacies from the altar and took them home to feed their families. The [translations](#) of inscriptions on the walls of Egyptian temples showed that priests regularly offered the gods high-fat, high-cholesterol, artery-clogging meals of beef, goose, breads, and cakes. For example, geese, like those found in the tomb of the pharaoh Hatshepsut, is 63 percent fat (20 percent saturated). The bread served was enriched with fat, milk, and eggs. The cakes typically were made with animal fat or oil. A conservative estimate indicates that the diet of royalty was more than 50 percent fat, with a significant portion being saturated fat. The modern Western diet is about the same for most people. Salt intake was also likely high because salt was used as a preservative.

Hair Analysis Proves Ancients Are Like Moderns

Confirmation of the royal Egyptian diet was provided by [research published](#) in 1998 on the molecular makeup of the hair of the mummies. Hair is composed of proteins that are not easily degraded and therefore hair is well preserved for eons for analysis. The carbon, sulfur, and nitrogen isotope compositions of human hair are reliable and powerful indicators of the diet of an individual. When the hairs from Egyptian mummies are compared to those of modern people eating the Western diet the composition is the same, showing they both ate similar diets. (The same kind of hair analysis in this study determined that the Ice Man, preserved in a glacier of the Oetztales Alps 5200 years ago, was essentially vegan.)

It's Not a Mystery. It's the Food.

The well-preserved, disease-ridden remains of ancient Egyptians of the royal class provide unequivocal evidence that atherosclerosis, obesity, and other afflictions commonly experienced in today's developed societies are due to a rich diet high in animal foods. There is nothing paradoxical, old, or new about these findings. Throughout all of recorded human history, almost all people have lived on diets based on starches: corn in Central America, potatoes in South America, rice in the far East, and wheat and barley in the near East (like Egypt). For the common person, feasts occurred only during a few special times a year, usually on holidays. During these celebratory times people would indulge themselves by roasting a pig over a fire or throwing a chicken in the pot of vegetable stew. They could afford extravagance infrequently, and as a result,



atherosclerosis, obesity, and tooth decay were rare to unknown.

In stark contrast, for the wealthy and privileged—the royalty, the aristocrats, the high priests, the kings and queens and their court—feasts were everyday occurrences. Art of the past reflects the medical results: a fat king sitting on his throne with his foot swollen with painful gout.

What has changed over the past 4000 years? The progression of wealth for the masses has been slow until the about two centuries ago, and then, the industrial revolution and the harnessing of fossil fuels brought unprecedented riches to the ordinary person. Now, as if it were normal, every morning begins with a traditional Easter feast of eggs. For lunch and dinner people regularly eat turkey and ham, foods once reserved for Thanksgiving and Christmas. Topping off all this culinary excess are daily birthday parties, with cake and ice cream. Only the number of people who can live like royalty has changed over time. The relationships of food, health, and disease remain the same. There is no Egyptian mummy diet paradox—rich foods always have, and always will, make people sick.

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