

The Evolution of the Human Diet

By Chung H. Wu, M.D., FACOG, director of DVIF&G's Polycystic Ovarian Syndrome (PCOS) Early Detection and Treatment Program

For several years I have studied how to help patients make certain lifestyle changes to prevent certain diseases and to enhance their fertility. The role of diet and nutrition is very important not only in helping couples conceive, but also in helping them achieve a healthy pregnancy and birth.

To help patients better understand how and what they should be eating, I have summarized the evolution of the human diet based on current established and speculative theories.

Approximately three million years ago, humans branched out from the other apes. But because they still lived in the jungle, they relied on vegetation as their primary food source. To survive in this vegetative jungle, humans, apes, horses, cows, and other plant-eating animals have relatively long intestines to facilitate thorough absorption of nutrients and calories from the plants. Since plants are low calorie and high fiber, they require a long time to digest and absorb, and the long intestines serve this purpose well.

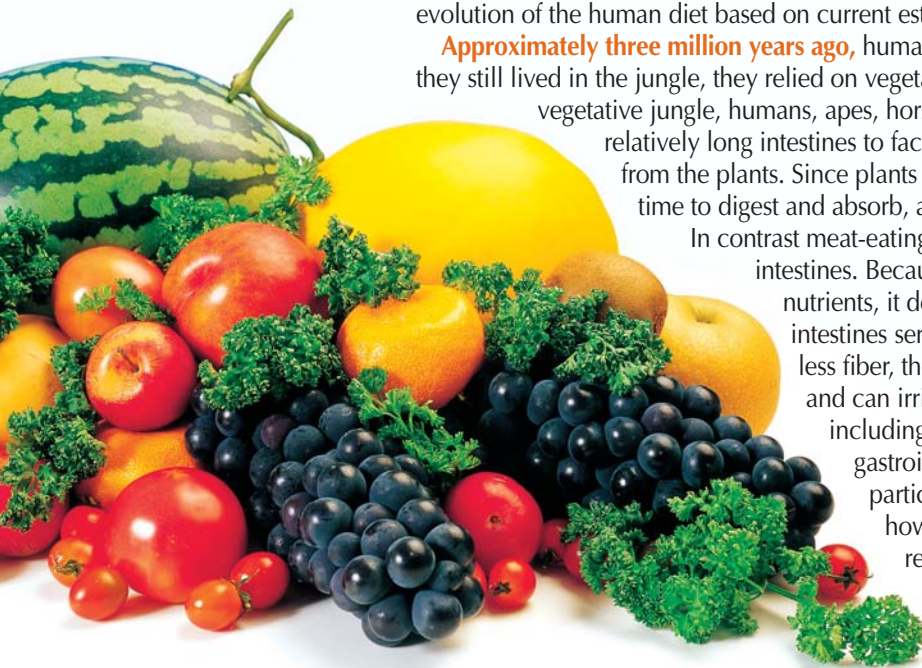
In contrast meat-eating animals, such as dogs and cats, have relatively short intestines. Because meat contains much more calories and high nutrients, it does not require a long time to digest. The short intestines serve this purpose well. In addition since meat contains less fiber, the food remains in the intestines for a longer duration and can irritate them. This can lead to intestinal disorders, including cancer of the intestines. Therefore, in nature the gastrointestinal system is well designed for the type of foods particular animals consume. If for one reason or another, however, plant-eating animals begin to eat meat, its residue would remain in the intestines much longer and eventually will irritate the colon and could lead to diverticulitis, colon cancer, and other colon disorders. This phenomenon is frequently observed in people who eat a high meat, low vegetable diet.

In contrast, in Asian countries where people eat a minimal amount of meat and a high amount of vegetables, colon disorders and colon cancer in particular are rare.

Despite 3 million years of human evolution, our intestinal structure still remains in a primitive state and has not evolved to accommodate the meat-eating habits we developed tens of thousands of years ago.

Approximately one million years ago, the eastern part of Africa suffered a drought that likely destroyed most of the vegetation. Humans probably started to migrate eastward to look for food. During that period, the human ape started to rise up to a standing position in order to look for food in a distant area. Gradually this may have led to the human becoming the only ape capable of standing, walking, and running in an upright position.

Approximately 100,000 years ago, the human's lifestyle evolved into a "hunter-gathering" existence. Usually isolated groups of people hunted and gathered in order to survive. Sometimes they played with leftover animal bones. When they accidentally broke the bones and found there was





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something soft and pink inside, they tasted it. They found that the "bone marrow" not only tasted good, but also satisfied their appetites. Moreover because it had high calories, they didn't have to spend all day long eating plants for needed energy. This is when we think that humans began eating meat. Later the groups hunted larger animals using tools invented for the purpose. Meat then became a part of their daily diet, along with fruits and vegetables. Chimpanzees are the only other apes that learned to taste meat like the human. They, however, still rely on plants as their main food because they have not developed the skills to work in teams to hunt for larger animals.

Approximately 10,000 years ago, humans realized there were special plants with seeds that can be grown in the field and then harvested. They also found that these seeds could be stored for some time. Food storage solved the inconvenience of daily food searching. Humans then started to settle in the delta areas of the rivers to plant the crops, and an agricultural society developed. Eventually, humans started to cultivate vegetables and fruits as an additional food source. But vegetables could not be preserved for long periods of time like the crops. Therefore crops became the primary food and vegetables and occasional meat the secondary foods. In spite of this transition, our intestinal structure still remains as it was millions of years ago—designed for plants but not for refined crop food or meat.

Although crops can help humans survive, they still can cause unexpected problems — especially in recent decades. Crops are mainly starch, especially refined starch, which tends to absorb quickly and increase blood glucose levels in such a way to force the pancreas to release an excess amount of insulin. Elevated insulin output can make people gain weight, leading to insulin resistance and eventually metabolic syndrome.

After World War II (1945), most countries were trying to recover from the war and were still quite poor. They relied on a diet of starchy crops as their primary food. In the United States the government started to promote good nutrition to improve health, and the food industry developed. We were encouraged to eat meat and dairy products as an essential food source and to maintain starch intake, while vegetables and fruits were left out and practically neglected. That's why we developed the habit of eating meat and starch, especially highly palatable refined starchy foods such as white bread and white rice. Furthermore, in order to improve the taste of starchy foods and also for financial

incentive, the food industries produced whole varieties of processed foods. This led to familiar "fast-foods" and "junk foods" for convenience. In the last two to three decades, most people began to eat plenty of processed foods, including high-calorie fatty meat, while healthy foods such as vegetables, fruits, and seafood were sidelined. Excess food intake combined with a sedentary and stressful lifestyle caused many people to become overweight or obese, eventually leading to metabolic syndrome, a major cause of infertility and other health problems.

There has recently been a heated debate between the low-carbohydrate diets represented by the Dr. Atkins diet versus the low-fat "heart-healthy" diet represented by Dr. Ornish. Based on what we know about the physiological function of the gastro-intestinal system and the type of food available, I believe that both are "correct" and both are also "wrong."

Basically a combination of a low carbohydrate and low fat diet is healthiest, especially when the main source of carbohydrates is from nutrient-rich and fiber-filled fruits and vegetables.

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Because carbohydrates in fruits and vegetables are absorbed slowly, they will not induce high sugar levels in blood and are less likely to raise insulin levels. Elevated insulin levels can lead to infertility, weight gain, hypertension, cardiovascular disorders, and diabetes. A low fat diet has its benefits, especially if you consume healthy fats such as olive oil, canola oil, or fish oil as the primary fat source and avoid saturated fat. A low fat diet also avoids trans-fats, which are particularly detrimental to the cardiovascular system. Vegetable oils can transform into trans-fats when the vegetable oils are heated (or cooked).

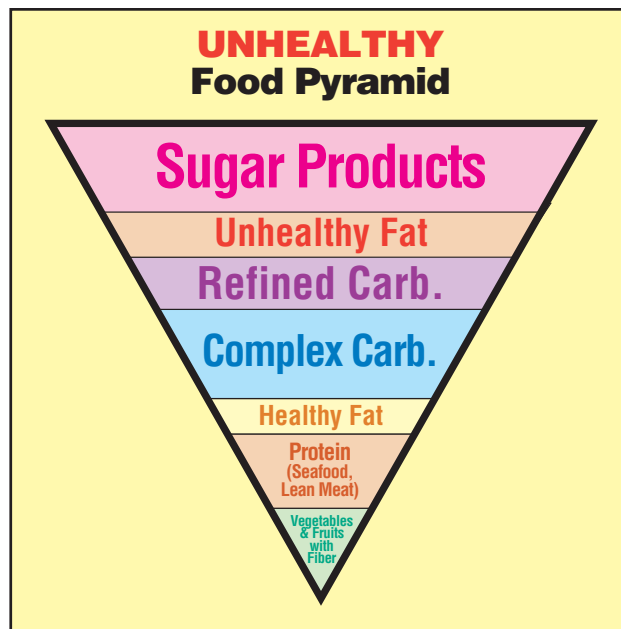
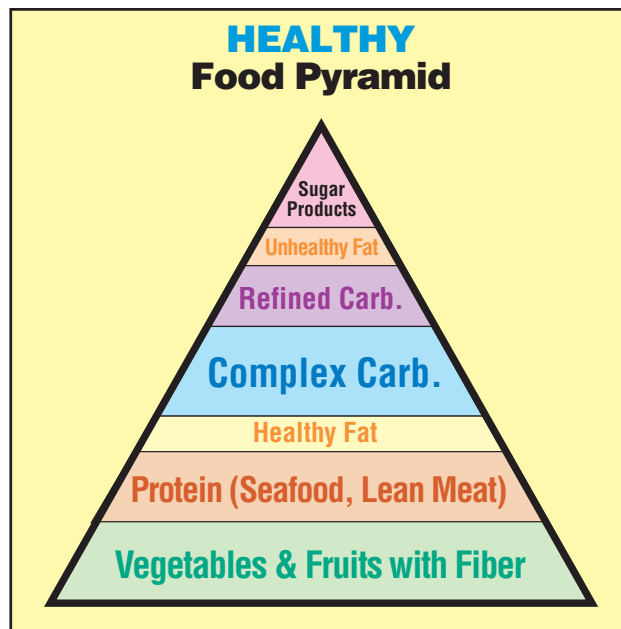
For optimal health we should maintain a low-carb, low-fat diet that's high in fruits and vegetables with moderate to minimal meat consumption (See "Eating for Health" on page 3). If possible, choose seafood (especially ocean fishes) as a protein source, which are also rich in healthy omega-3 fatty acids and good cholesterol (HDL).

Eating for Health

- Healthy foods consist of **vegetables and fruits with fiber**, especially organic vegetables and fruits.
- Protein sources consist of **seafood, lean meat**, non-fatty meat, and especially organic meat, chicken, seafood or beef.
- **Healthy fats** include olive oil, canola oil, and omega-3 fatty acids.
- **Complex carbohydrates**, including whole grains (healthy carbohydrates). However, carbohydrates from fruits and vegetables are much healthier since absorption of the carbohydrates is much slower.
- **Refined carbohydrates**, such as refined rice, noodles, and processed starches, are very unhealthy.
- **Unhealthy fats** include animal fat and trans-fats. They're especially found in processed foods that contain a lot of trans-fat derived by cooked vegetable oil or polyunsaturated fatty acids. Cheese, rich in animal fat and cholesterol, also is considered unhealthy. Most meat (beef, pork, chicken, even lean cuts) in general contain significant amount of cholesterol and are considered unhealthy.
- **Sugar products**, including all refined sugary foods, such as ice cream, cake, cookies, or even the starchy processed foods and all drinks containing sugar, are unhealthy foods.

To eat healthy, gradually decrease carbohydrate intake and replace it with vegetable-based foods and add meat or seafood to make the vegetables palatable and enjoyable. Gradually increase the vegetable-based foods until they become the main food. Starchy foods should be gradually decreased to a minimum and considered as side dishes. For meat intake, look for natural seafood or organic meat (which is harder to come by but worthy) rather than relying on commercially processed artificial meats or even fishes (such as the recently introduced salmon fish and catfish). As for dessert, choose fruits and cut down on sugary, sweet treats.

In addition, you may want to supplement multivitamins with additional vitamin C, vitamin E, and omega-3 fatty acids, such as fish oil or flaxseed oil, as an essential nutritional supplement. If you want to lose weight, learn to control portions, exercise regularly, and control stress to minimize the adverse effect of stress hormones.



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Happy Birthday to . . .



Ewan Brasure Wickward, born on December 6, 2003, to Shawn and Robert Wickward.

Lucas John Knoop, born on March 25, 2004, to Laura and John Knoop.

Madison Kate Duenas and **Kayla Nicole Duenas**, born on May 10, 2004, to Laura and Maurice Duenas.

Victoria Mary Santoro, born on June 3, 2004, to Angela and Victor Santoro.

Griffin Edward Gaughan, born on June 7, 2004, to Cynthia Sora and Vincent Gaughan.

Tatyana Lewis, born on July 2, 2004, to Tyeta and J.D. Lewis.

Kylie Rose Krawiec, born on August 12, 2004, to Melissa and Jeff Krawiec.

Katherine Lisa Hager, born on August 18, 2004, to Lisa and Jeff Hager.

Adam Troy Merrill, born on August 30, 2004 to Bonnie and Adam Merrill.

Harshini Kattalai and **Srinidhi Kattalai**, born on October 3, 2004, to Kavitha Kannankumar and Lex Kattalai.

All the babies and parents are doing well. Thank you, DVIF&G!

Check Us Out on the Web

The DVIF&G website at www.startfertility.com has been under reconstruction for the past few months. It's now ready and has been relaunched. The redesigned site includes information on treatment, insurance, news, and success stories, along with several links to get you the help you need to conceive. We hope you like it. Let us know what you think. E-mail us your comments to: christinenorris@earthlink.net.