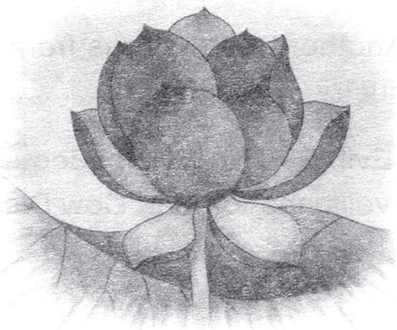
Dharma Words of the Venerable Master Miao Lien

- *A person is able to save millions of lives, at no cost to himself, simply by becoming a Vegetarian.*

- *If you become a Vegetarian, you will enhance your longevity, and your descendants will be born with a greater affinity for faith and piety.*

- *A longevity with health, wealth and happiness will surely come to you and your descendants because of your practice of Vegetarianism.*



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Heartfelt Statements from the Venerable Master Miao Lien

To commemorate the eightieth anniversary of the birth of the Venerable Master Miao Lien and foster in everyone an affinity for purity[1], we have respectfully published four hundred thousand copies of the booklet "Why Medical Doctors are Vegetarian".

Some sentiments he expressed on his eightieth birthday [2] in April, 2001 :

- I am ashamed to have frittered away eighty years, my virtue still not perfected!
- Revulsion at the thought of eating another creature's flesh! This is a reflection of the compassionate heart.
- When someone says "Vegetarian diets are deficient in nutrition", that is nonsense.
- When I see an elderly person maintaining a dignified appearance, I see the benefits of Vegetarianism.

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[1] We wish everyone to be reborn in the Western Pure Land
[2] Also known as "the suffering day of the Mother".

PREFACE

A friend of mine, Mr. Wen-Chieh Yu, recently introduced me to an article entitled "Why I Don't Eat Meat", which was written by Dr. Owen S. Barrett and published in the American magazine "Health and Life". I highly praise this article and, because I feel that it will be very beneficial to the world, I would like to introduce it in more detail to the readers of this book.

Dr. Barrett is a notable American medical doctor with extensive clinical experience. He has been a Vegetarian for over 50 years and knows that a Vegetarian diet will improve one's health, prolong one's life, and help one avoid the malignant diseases that flesh-eaters fall prey to. The Vegetarian diet will also enhance work efficiency and delay the necessity of retirement.

Dr. Barrett's only purpose in advocating Vegetarianism is to promote personal health. Most people, he points out, prefer flesh food because they don't understand, or choose to ignore, the great nutritional value of a Vegetarian diet.

They also choose to disregard the harm caused by eating meat, as this

awareness would contradict their flesh-eating regimen. This is why he stresses in his article the benefits of Vegetarianism to personal health.

Dr. Barrett's article is based on 50 years of Vegetarian diet research and many decades of both medical and clinical experience; before writing the article, he collected and studied many research reports written by leading Nutritionists from around the world. Many of the insightful concepts resulting from his experience and research had never been published before, so in writing this article Dr. Barrett has made an enormous contribution to the global improvement of personal health.

The article was first published by the American Health Association in its magazine "Health and Life". The goal of this Association, and its magazine's editorial purpose, is to promote the health and well-being of all people. Dr. Barrett's article is directly suited to that purpose.

Wai Pak Hing
Hong Kong, July 10,1959

Why I Don't Eat Meat

by Owen S. Barrett, M.D.

Is a person who does not eat meat peculiar or wise?

My mother told me that when I was a baby I refused to eat any kind of meat. She thought – as many mothers do – that I needed meat to make me (grow), so she persisted in giving it to me until I acquired a liking for it. For the past fifty years I have chosen a diet that does not include flesh, fish, or fowl.

In my practice of medicine I have always told my patients the reasons for what I asked them to do. I myself do not like to do anything without knowing why I am doing it and most other people feel the same way. I am going to tell you why I am a vegetarian and why I believe you should be one too.

I love life and want to live as long as I can. These are stirring and eventful days, and I want to know what is going to happen next. I have passed the Biblical threescore years and ten, and am thankful to God that I still find the days too short for all I want to do. I still carry a full practice and like to dip into several outside activities, even if for only a few minutes a day.

Most of my patients at my age are retired, but I have no desire to retire so soon. I would rather spend the day helping the sick, many of whom have been forced to retire early because they lacked the knowledge I possess. I don't want to hold back the knowledge from anyone.

After studying scientifically and observing sickness and its causes through many years I have the conviction that if I had eaten largely of flesh foods during my life, I would now be too decrepit to carry on the practice of medicine. A doctor must be able to think clearly and have endurance and nervous energy to spare.

Aging and fatigue are hastened by flesh foods. Age is the wearing out of the body. The process varies in different people. Within the past week I paid a professional call on two men, one in his (late) forties and the other in his early fifties. Both were on county welfare, and they certainly looked unable to work. Although young in years, they were both old. Tobacco and liquor had played a part, but the part meat played cannot be overlooked.

The cells of the body are little units. Each must take on nourishment, give off

waste and breathe oxygen. When something interferes with this process, the cells and the organs they make up deteriorate.

The late Dr. Alexis Carrel, winner of the Nobel Prize in 1912, recognized that the cells' efficiency in providing nutrition and eliminating waste was what determined the aging of tissue. He extended the life of a bit of chicken heart by bathing it in a nutritive fluid that also removed the waste. So successful was he that the bit of chicken heart was kept alive from 1913 to 1947. After thirty-four years it was thrown into a sink where it died. Dr. Carrel proved that length of life depends largely on eliminating waste and adding nutrition to the cells.

If we could regularly remove all waste from our body cells and apply adequate nutrition, we might easily reach great length of life. If the body fluid that bathes our cells is overloaded with waste, life is shortened.

The Bible indicates that for ten generations before the Flood people lived an average of 912 years. After the Flood they began eating flesh. The life of the next ten generations was shortened by an average of 317 years.

A great many people think that if

you are going to work hard and need a lot of endurance, you must eat a large beefsteak. The facts are the opposite.

Some years ago a well known Yale professor, Dr. Irving Fisher, showed that when vegetarian rookie athletes were pitted against the best of athletes of Yale, the untrained men had more than twice the endurance of meat eating athletes.

Johnny Weismuller, the Tarzan of the movies and a world swimming champion, was invited to the dedication of a new swimming pool in the Battle Creek Sanitarium. Weismuller had made 56 world records, but for five years had made no new ones. After several weeks on a well selected vegetarian diet, he was able to hang up six more world records in the swimming pool.

The vegetarian swimmer Murray Rose of Australia, world champion and winner in the Olympic games has had his diet practice become widely known. He has been a vegetarian since he was two years old. Not only does he swim fast but his ability to spurt ahead at the finish demonstrates the superior endurance that accompanies a fleshless diet.

Why should this be true? Meat contains waste products that the animal

would have eliminated. A person who eats flesh loads himself with wastes of the meat. When these wastes reach the body cells, they bring on fatigue and aging.

Prominent among body waste products are urea and uric acid. Beefsteak contains about 14 grains of uric acid per pound. When steak is boiled, waste appears as a soluble extract in the form of beef tea, which closely resembles urine when analyzed. The uric acid accounts for the quick pickup a steak seems to give, much as a cup of coffee gives. Uric acid or trioxypurin, closely resembles caffeine or dioxypurin, both in chemical name and effect on the body. The solid meat takes several hours to digest, by which time the stimulant has worn off. A lowering of energy results.

The late Dr. L. H. Newburg of the University of Michigan, called attention to the fact that when meat formed 24 percent of a rat's diet that rat became bigger and more active than rats on a normal diet. But after a few months the kidneys of the meat-eating rat became badly damaged. Dairymen tell me that a high protein diet for cows will bring up production of milk but will "burn them out" with eventually lowered production.

Another danger facing the meat eater is the disease in animals common to man. My secretary told me that the dairy where her husband is foreman had four cases of leukemia in one year among its 124 cows. One cow diagnosed as having leukemia died four hours after the veterinarian made the diagnosis. He suggested that the ailing cow be sent to market, but she died before the truck that made regular trips through the dairies picking up non producing cows came along.

Many cows no longer able to produce milk are sent to market and the price paid for them indicates that they are not discarded or used for fertilizer. The wife of a foreman of a large ranch told me that they had a heifer with pneumonia. Fearing they might lose her, they quickly took her to a slaughterhouse and sold her for meat....

The late Dr. John Harvey Kellogg said when he sat down to a vegetarian dinner, "It is nice to eat a meal and not have to worry about what your food may have died from.... "

When it comes to poultry, we face an alarming situation. Recently, I flew to East Lansing, Michigan, and spent a day visiting a special research project started

by the Federal Government in collaboration with 25 state universities to try to control malignancy in chickens. The problem has become so serious that it threatens the poultry industry of the United States.

We have learned that cancer in fowl has several forms. Besides the usual form in which cancerous tumors are found, there is a carrier form in which a chicken may live out its natural life with no sign of cancer but at the same time be infecting other fowls.

This form of cancer is so difficult to detect that the only way the research men can finally determine whether a chicken has the disease is to incubate an egg from the suspected fowl for 14 days. The egg is then sterilized on the surface, carefully broken, and the embryo removed. From it the liver is taken and a small portion is injected into the breast muscle of another chicken. If a cancerous tumor develops at the site of inoculation, it is known then and only then that the hen that laid the egg has the disease.

There is a small chance that an inspector will cull out every diseased fowl, and still less chance that dad will be able to pick a healthy bird for Thanksgiving.

So widespread is the disease among chickens that one of the scientists studying the project, Dr. Eugene F. Oakberg, wrote in a poultry journal:

"The conclusions drawn must consider the possibility that all chickens show the basic microscopic lesions of lymphomatosis." *Poultry Science*, May, 1950, p. 434.

Since the virus or germ, cause of cancer has now been quite well established the possibility or even probability that in eating meat, fish, or fowl a person is going to eat some of them laden with malignancy virus poses a problem. Dr. Wendell Stanley, eminent virus scientist who received the Nobel prize for his work in 1957, has pretty well convinced the medical world at long last that, like all other granulomatous diseases, cancer is no exception and has a germ cause.

This agrees with a statement by Mrs. Ellen G. White recently discovered by the Cornell Biologist Dr. Clive M. McCay, to have been written fifty years in advance of medical science, in which she says:

"People are continually eating flesh that is filled with tuberculosis and cancerous germs. Tuberculosis, cancer, and other fatal diseases are thus communicated."

— *The Ministry of Healing,* p. 313.

Because it is now known that leukemia is rapidly increasing among cattle and a cow may have the disease in her blood long before the appearance of tumors, I predict that ere long both milk cows and beef cattle will be blood tested and laws compelling this practice will be enacted as a public health measure to protect the consumers of milk and meat....

Since President Eisenhower had his heart attack, the medical world has discovered the relation between diet and diseases of the heart and blood vessels. Now we are told to avoid saturated fatty acids, found largely in animal fats. Recent discoveries brought to light the fact that trimming off the fat of meats will gain little advantage, for even of the lean meats we know 75 percent to be in the saturated fatty-acid column.

Dr. Newburg of the University of Michigan, who was called to Washington as an expert of nutrition during the last war, told me that he was very critical of the diet of the American soldiers. He said they were being fed too much meat and too many calories. This diet, he said, tended to make them too heavy, and it hardened their arteries. Autopsies

performed in Korea showed that 75 percent of American soldiers had hardened arteries regardless of their age. Korean soldiers, on a simple diet of vegetables, cereals, and very little meat, showed essentially no hardening of the arteries.

Dr. U. D. Register, leading biochemist, and Dr. Hardinge, both active in the field of human nutrition, said to me that fruit alone, amply supplied in sufficient variety, would provide people with enough protein to meet the actual body demand.

Probably neither scientist would recommend such a drastic program, but it serves to emphasize that the meat interests have oversold Americans on the high protein idea. It is well known that people may go for a number of days without protein and suffer no bad results.

Of course, a balanced diet is best, but the evidence goes to show that meat is an unnecessary factor in the eating program, and it may introduce substances tending to increase the chronic diseases, the degenerative diseases, the acute diseases, and infections.

We have the example of whole nation being forced by war onto a vegetarian program — Denmark during the first

world war was blockaded by sea and land, and the nation was faced with a food shortage.

To feed a cow, kill the cow, and eat the meat meant a loss of 90 percent of the food fed the cow.

Dr. Hindehede, a notable authority on nutrition, was called to the emergency by the King of Denmark. He put the nation on a meatless program for one year. Many thought it would be disastrous; instead, it established a world record for lowered death rate — 34 percent among the male population and nearly as much lowering among the female population with marked decrease in the illness rate. Eating meat the next year sent the death rate back to its prewar level.

Careful observation of the effects of meat eating on thousands of my patients for 45 years had led me to agree with the leading writer on health, Mrs. Ellen G. White, who wrote in the book *Medical Ministry,* pages 266, 267:

"Meat is the greatest disease breeder that can be introduced into the human system."

For those who like the flavor of meat, some very tasty foods made from grains and nuts are available. Dr. Stare

of Harvard wrote me that a diet which included mixed grains, fruits, vegetables, and legumes (peas, beans, soybeans, lentils) with some nuts was adequate when meat was left out.

Research carried out at the College of Medical Evangelists has demonstrated that a meatless diet can be adequate when it includes meatlike dishes made from nuts, grains, and vegetables. These vegetable "meat" dishes help to make the changeover to a non flesh program easier.

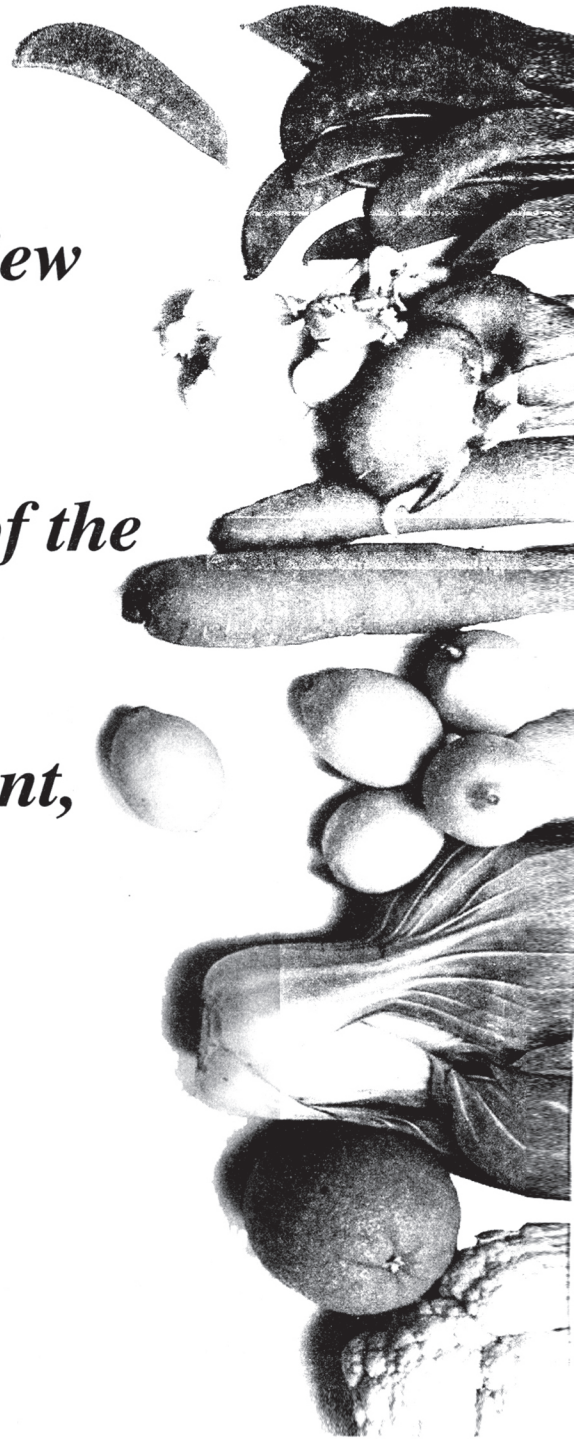
I keep my table supplied with a variety of delicious foods and the lack of meat never bothers my mind. After studying animal diseases in the laboratory and observing the effect of a flesh diet on my patients these many years, I would find it difficult indeed to eat flesh again.

I quite agree with the leading nutritionist of John Hopkins University, Dr. E. V. McCollum, who gave it as his opinion that anyone who chooses to eliminate flesh food from his diet is better off.

Dharma Words of the Venerable Master Miao Lien

- *Vegetarianism provides the best nutrition.*
- *Health and vitality are invaluable.*
- *Vegetarian food is a peerless delicacy of the world.*
- *Vegetarianism rewards future generations.*

An interview with the Director of the Nutrition Department, Taiwan Adventist Hospital



The wise eat the right food;
the ignorant eat the wrong food.

Question:

In recent years the number of Vegetarian restaurants has been growing world-wide, yet there are still few hospitals that offer their patients a Vegetarian menu. I understand, however, that your hospital does advocate Vegetarianism by supplying patients with Vegetarian food.

Is this policy based on either religious belief, medical practice, or scientific experiment?

Answer:

As the Bible says that God provided mankind with a pure Vegetarian diet when He created the world, many people believe that Vegetarianism is based on religious principle. Scientists, however, after studying the natural processes involved, and the functioning of the human intestinal tract in particular, have also concluded that Vegetarianism

is the most appropriate diet for human beings, and for hospital patients in particular. Why is this so?

A vegetable diet is preferable to flesh-eating because meat, although rich in protein, contains other materials that increase the work-load of the body's organs and thereby reduce the body's supply of energy for growth and healing. Cholesterol, saturated fats, and uric acid, for example, are not useful for the human body and can even endanger its health. For hospital patients in particular, whose bodies are already weakened, meat eating can only hinder recovery.

Our Vegetarian diet, which includes all types of grains, beans, fruits, vegetables and dairy products, provides people with an adequate supply of the nutrients essential to restoring and maintaining good health. Brown rice, black wheat buns and whole wheat bread alone supply us with sufficient amounts of vitamin B, iron, calcium and protein, so there can be no way that a Vegetarian diet leads to malnutrition. On the contrary, it not only provides all the nutrients, but also helps relieve the stresses on the organs that always accompany the digestion of flesh.

Question:

How do the Vegetarian meals that you provide in your hospital differ from those served in Buddhist temples?

Answer:

Food served in the temples is intended for Monks who do not have to raise children or perform other family duties and so only require a very simple diet consisting mainly of green vegetables, bean curd, and fruit. As they limit themselves to Buddhist activities, such as meditation, this simple diet easily meets their daily nutritional needs.

On the other hand, medical patients require more calories and protein than healthy Monks do. To speed up our patients' healing processes, hospital meals include a wider variety of foods, such as brown rice, whole wheat, red and green beans, peanuts and peanut butter, soy bean products, and a wider variety of vegetables and fruits. "Hospital" Vegetarianism also includes some milk and egg to provide the extra protein that patients need to recover from illness. While milk and egg are not necessary for a healthy person to achieve a balanced and complete diet, milk may be included in the meals of people who

have recently given up flesh-eating, as this helps them adapt more comfortably to the Vegetarian regimen.

From what I have mentioned, you can see that our Vegetarian diet has the following characteristics:

1. Unbleached grains
2. Legumes and nuts
3. A well-balanced diet including a large variety of foods.

The food served in Buddhist temples does not reflect all these characteristics because the Monks, treasuring merit and overcoming greed and ignorance, only consume the minimal amount of food required to practice the Buddhist virtues.

Question:

The traditional Chinese diet is mostly Vegetarian already, so why is it necessary to promote Vegetarianism among the Chinese?

Answer:

China has been an agricultural country since ancient times, and meat was rarely consumed by most people. In recent years, however, due to industrial growth, meat has become more easily available to the majority of Chinese households; as a result, cardiovascular

disease has risen from the number four to the number one cause of death among the Chinese.

As Vegetarianism is the vital solution to this problem, promoting Vegetarianism is now more important than ever: a country with healthy citizens will become stronger and more prosperous.

As a Vegetarian, your diet will include neither cholesterol nor saturated fat, so if you maintain a regular life style and take enough exercise you will be in excellent shape. Your internal organs will no longer be stressed by the unnecessary digestion of meat and fat and the elimination of their poisonous by-products, so your chances of suffering from cardiovascular and other diseases are much less.

That's why I strongly urge you not to damage your whole body by eating flesh merely to please that seven inches of taste in your throat and mouth!

Question:

Do postnatal and post-operation patients in your hospital also have Vegetarian diets? And, if so, how does this affect their speed of recovery?

Answer:

In Loma Linda, California, nearly half the population is Vegetarian! Medical examinations demonstrated that none of the pregnant or postnatal women there were suffering from any kind of malnutrition. In Los Angeles, a series of intelligence tests indicated that most of the children with high IQs were born from Vegetarian mothers, so both child and mother remain healthy during all phases of childbirth. Certainly, in our hospital alone, many Vegetarian women have given birth successfully to healthy infants.

Some people have difficulty adapting to a Vegetarian diet because of their psychological attitude. If you believe that a Vegetarian diet is nutritionally inadequate, then you should probably not try it. Your negative mental attitude will affect your body's physiological processes and render the diet less effective. In our hospital, trained nutritionists help our patients understand how Vegetarianism works so they can accept it and adapt to its regimen more easily. Some people even end up visiting our hospital just for the food, saying that it refreshes their stomachs!

For a patient to recover well from any trauma, the body must have protein,

and this protein can be found in either animal or plant foods. Animal-based protein, found in flesh, fish, poultry, eggs and so on, is derived from the protein in the plants that the animals eat. Vegetarians understand that it is more efficient to get protein directly from plants rather than "second hand" through the burdensome process of digesting animal flesh. People can easily acquire protein directly from such plants as soybeans, red beans and similar legumes, or nuts such as cashews or peanuts. Grains are also rich in easily digested protein. By taking protein directly from plants instead of second hand, the Vegetarian patient's organ workload is reduced, and recovery thereby accelerated.

There are still very few hospitals that routinely provide post operation and postnatal Vegetarian diets, so it is difficult to establish a statistical picture of the different recovery rates of Vegetarian and non-Vegetarian patients. Observing the Vegetarian patients in our own hospital, however, we have found that their recuperative periods are much shorter than those of non-Vegetarian patients.

Question:

How do you overcome the psychological block that is caused by lack of confidence in the Vegetarian diet? Also, do the Vegetarian patients in your hospital enjoy their meals? Do any of them choose to continue the Vegetarian regimen after they leave the hospital?

Answer:

When people first start thinking about the Vegetarian diet, they are sometimes afraid to try it because they are worried about malnutrition; they believe that such a diet is incomplete. Their beliefs about Vegetarian nutrition are based on ignorance of the nutritional facts, and from this ignorance rises the fear of malnutrition that is the psychological block that makes them reluctant to try a Vegetarian diet. To benefit from the Vegetarian diet, they have to discard their ignorance by learning about the real nature of Vegetarian nutrition. So education, a powerful tool that can change people's ideas and hence their lifestyles, is the only method for overcoming psychological problems when adapting to Vegetarianism.

People need to accept Vegetarian-

ism with a positive psychological attitude before they are ready to adopt a Vegetarian life style. Many of our incoming patients are at first reluctant to accept Vegetarian meals three times a day, but professional Nutritionists and Public Health workers are on hand to explain the nutritional and other benefits of the regimen, and most of the patients end up happy to try it.

Another psychological difficulty in adapting to Vegetarianism is the matter of taste: people do enjoy the taste of meat, and to them a meal without meat is not enjoyable. Taste, however, is just a matter of habit. Motivated by a new awareness of the benefits of meatless meals, people soon develop the habit of anticipating and enjoying the vegetarian taste, and quickly become enthusiastic participants. To have a happy life, we must learn what good habits are, and then practice them until they become our own habits.

Many of our patients continue their Vegetarian diets after being discharged from the hospital. Professor Chen, a Chemistry teacher at the Chinese Cultural University, typically visits our hospital every day just to continue enjoying our vegetarian menu, while many former pa-

tients return regularly to buy whole wheat bread or buns as well as other vegetarian products we prepare in our kitchens. We have not collected any statistics on how many of our former patients continue with the vegetarian diet, but we do notice that when people overcome their initial misconceptions about Vegetarian nutrition and take up the regimen as a habit, they begin to directly experience the personal health benefits of the diet and become enthusiastic about continuing Vegetarianism as part of a healthier lifestyle.

Question:

Are there any important issues we should pay particular attention to when taking up a Vegetarian diet?

Answer:

Although there is more to Vegetarianism than just eating a lot of vegetables and bean curds, you don't really have to rack your brains about food selection to get sufficient amounts of nutrients. People should be careful, however, to include enough protein in their meals. All you have to do is include some legumes, bean curd products, gluten, nuts and perhaps milk in your

menu, and you will get enough protein. As to how much one should eat, including any two of the above-listed items in each meal should satisfy the body's daily need for protein. A balanced Vegetarian meal will also include brown rice and germinated rice, or other foods that provide the amino acids that are missing from gluten. A full range of vitamins is also easily provided by a varied menu of common plant foods: vitamin A, for example can be found in fruits, yellow and dark green vegetables like squash and spinach, hollow-stalk vegetables, and especially in carrots; Vitamin B is plentiful in brown rice, germinated rice, and whole-wheat products; and Vitamin C is richly provided by most fresh fruits and vegetables. A full spectrum of dietary minerals also exists in combination with protein- and vitamin-rich Vegetarian foods: there is simply no need to eat flesh to satisfy the body's nutritional needs.

Question:

Chinese people are often fastidious about the art of cooking — what is the connection between cooking and nutrition?

Answer:

Anyone preparing a meal should recognize that Cooking is an art, and the artistry is in preparing a meal that is nutritious, attractive and enjoyable. Any meal, no matter how nutritious, will not have the best effect on our personal health if we are not attracted to it and do not enjoy eating it. This is why it is important to pay attention to the art of cooking when you are in the process of switching over from a meat-based to a Vegetarian diet. To meat-eaters, plant foods do not have the strong, appealing flavor of flesh foods, so the Vegetarian Cook has to make an extra effort to prepare dishes for the family that are appetizing. Some Vegetarian restaurants even go so far as to prepare imitation meat dishes — such as sweet and sour veggie fish — so their customers can get the healthy effects of a vegetarian meal while still indulging their taste for meaty textures and flavors.

A thoughtful Vegetarian cook will use a wide variety of vegetables as this can provide variety for the eye and the taste and also make the diet more nutritious. From the nutritional perspective, it is important to pay attention to the cooking times of the various vegetables. Veg-

etables cook in less time than meat, so fewer of the nutrients are destroyed in the cooking process. Vegetables should retain their original color when cooked, as it means they have retained their natural flavors and peak nutritional values. Overcooking any vegetable will reduce its nutritional value, so the art of nutritional cooking is to introduce a particular vegetable into the cooking process at an appropriate time, coordinating its cooking time with the cooking times of the other vegetables in the meal. Many cooks end up preferring vegetarian kitchens as there is no need to deal with animal by-products such as guts, feathers, bones and so on. This allows a cleaner and more hygienic kitchen and a happier cook, and happier cooks make more appetizing and nutritious meals.

Finally, no matter how nutritious the food is, it is valueless if people are not attracted to it. After all, we can't just inject three meals a day into our patients' stomachs! On the other hand, if you go to the opposite extreme and prioritize flavor by overcooking, or by overseasoning which causes irritation to the stomach, your body will not be able to ingest the nutrients effectively, and that

is both wasteful and unhealthy. For the best results, an artful Vegetarian cook will find a complementary balance between taste and nutrition, always keeping in mind that a good meal is both attractive and nutritious.

Question:

Is the recent growth in Vegetarianism merely a fad, or do you think it is a continuing trend based on a growth in human awareness? Will Vegetarianism become more and more popular?

Answer:

Many Chinese cling to the long-held misconception that the best nutrition for the average person is found in meat, while a vegetable diet is fit only for Monks. Such people believe it is absurd to put pregnant women and growing children on a vegetarian diet. Some do recognize that Vegetarianism is good, but feel that it is good for elders only. Consequently, although Vegetarians are growing in number, they remain a minority of mainly middle-aged or elderly people. In order for Vegetarianism to become more popular among all the people, we must make a greater effort to get them to change their dietary

habits, and we can do this through providing more public health education. It would be most effective if the major Public Health organizations would get involved and support the promotion of Vegetarianism.

Many people who attend our hospital's public health seminars do decide to try the Vegetarian diet, and, although some cannot overcome their occasional craving for meat, most are able to continue the regimen comfortably. Dietary education plays an important role in expanding Vegetarianism by stressing the health advantages of a Vegetarian diet. "Appetite" is another key factor: as long as we prepare appetizing meals that are attractive and delicious, who would resist becoming a Vegetarian? That's why we emphasize that cooks should put a little extra effort into making Vegetarian dishes that are tasteful.

These days, the number of vegetarian food products, restaurants, and cookbooks available to the public is continuously increasing. Even though Vegetarianism has not been popular in this country, it is beginning to be accepted here too. This trend has been energized by the promotion of Vegetari-

anism by celebrities, such as Taiwan Vice President Hsieh Dong Ming, and by the greater coverage it has been getting in the popular media and in the journals of scientific research. In my opinion, as knowledge of the economic and nutritional benefits of a Vegetarian diet grows, and as delicious Vegetarian food becomes more readily available, Vegetarianism cannot help but grow in popularity. My wish, of course, is that everyone experience the benefits of Vegetarianism.

Question:

How does the human digestive process differ when we consume plant rather than animal food?

Answer:

We can answer this by contrasting the digestive tract of meat-eating animals to that of humans. The intestines of carnivores, such as tigers, are shorter and straighter, with fewer folds, because meat is a more concentrated food and does not require a longer intestine for slow digestion. Also, meat spoils easily, so God gave carnivores relatively shorter intestinal tracts so that the residues of meat digestion would not remain in the

body for a long enough time to become rancid and toxic. In contrast, the human intestine is rather long, about thirty feet, including five feet of large intestine, so it is not suitable to a carnivorous diet because it holds the decaying meat residues in the body too long. High intestinal temperatures make it even easier for these residues to decay and ferment. This is why the feces of carnivores usually smell worse than those of herbivores. When humans eat meat, the other organs have to do extra work to quickly expel the unwanted by-products of meat fermentation, which is why a meat-eater's sweat will smell while a vegetarian's will be odorless.

Some herbivores, such as cows and sheep, have relatively longer digestive tracts than humans, including several stomachs for regurgitation. This is because they eat mainly grass and other high fiber foods which take longer to digest, and require many enzymes to convert the fiber to protein. Of course, God did not intend humans to eat grass; we have access to grains, nuts, legumes, and a variety of fruits and vegetables which are not as fibrous as grass, so we can digest our vegetarian foods more easily and do not require extra stomachs

for regurgitation.

Evidently, meat is not fit for human consumption because we have a long and folded digestive tract which leads to a longer digestion time; on the other hand, grass is not suited to the human diet because we have only one stomach. We should obey natural law, and follow a diet that matches our bodies. The structure of our teeth also suggests that we are naturally vegetarian. Tigers have sharp incisors which complement their meat-eating regimen, while humans have larger, more developed molars which are most suitable for grinding grains and legumes.

Every machine requires a specific type of fuel to function efficiently; if the wrong fuel is used, the machine will eventually break down. The human body is a kind of machine, so if you consume food that is unsuitable for your body, problems such as heart disease, renal disease, and cirrhosis may occur by the time you reach your forties. Many such problems can be avoided by adopting the more natural Vegetarian lifestyle.

Question:

How often, and when, should we

eat during the day? How can we coordinate the content and quantity of our food consumption to improve our dietary habits?

Answer:

The content of each meal passes through the stomach in about two to three hours, but it is not necessary to take food immediately after the stomach becomes empty. Having three meals a day, about five hours apart, is usually desirable although the time and amount of each meal should depend on the life-style of each individual. Those who are less active in the evening should not snack after dinner, because the food eaten will merely turn into useless fat. On the other hand, breakfast should be a plentiful meal for those who are busy during the day, because it provides the energy required for the day's activities. Lunch helps to rejuvenate the body midway through the day, and should be a lighter meal. For those who rest in the evening, dinner should be the smallest meal of the day.

Some people are in the habit of snacking at night, usually after 10 pm, just before going to bed. This is unhealthy because the secretion rate of di-

gestive enzymes decreases during sleep and slows down the digestive process, resulting in a lack of appetite and a light breakfast the next morning. Consequently, bodily energy for the day's activities does not come from breakfast nutrients, but from burning fat stored in the body from the previous evening's snacks. Digesting this kind of fat, which is saturated, increases cholesterol. Also, having too light a breakfast results in over-eating at lunch and dinner which creates a vicious cycle leading to obesity and its attendant health problems. Eating a big dinner or late-night snacks without compensating exercise simply leads to the conversion of unused calories into fat. No wonder it is so common for middle-aged people to gain weight!

Excessive weight gain is a warning sign of disease, so to avoid harmful dietary habits we should do more exercise in the evening and eliminate late-night snacks. It is also a good idea to sleep early and wake up early; it will be easier to avoid night snacks that way, and give you more time in the morning to enjoy a larger breakfast. So the main point is to reduce food intake and increase physical activity in the evening, and go to sleep earlier. It is crucial in the evening

to avoid sedentary behavior which is at the same time exciting, such as playing mahjong or watching television, as these tend to increase the appetite while reducing physical activity.

Once these dietary guidelines are met, you will truly see improvements in your personal health and lifestyle. The basic principles for leading a healthy and prolonged life are: stop eating before you are full, eat only when necessary, and keep a peaceful mind in an active body.

Dharma Words of the Venerable Master Miao Lien

- *"Plain tea and bland food" is a precious guideline for handling a household.*
- *Diligently chanting the Buddha's holy name brings about goodness. As a result, the whole family can be reborn in the Western Pure Land of Ultimate Bliss.*
- *Once reborn, life becomes limitless and relatives will unite forever.*
- *You will regret if you don't cultivate now, because when you approach the end of your life, it will be too late.*
- *Everyone believes that he himself is a smart person, but sadly, his own cleverness may be misleading.*
- *To avoid the miseries of life, one should honestly practice the path of cultivation before his sufferings arrive.*

How to Win an Argument with a Meat-Eater

By Himalayan Academy Publications

While their numbers are rapidly growing, vegetarians are still a minority, and it is not unusual to be confronted with a meat-eater who not only protects his own right to eat flesh, but argues aggresively that vegetarians should join him in his meat-centered diet. Meat-eaters may regard non meat-eaters as a strange lot who munch on "rabbit food", and whose diet doesn't have the substance to make them strong, productive human beings.

While it is certainly best to avoid an argument with the aggressive meat-eater, a lively discussion provides them useful information and could help save the environment, their health and solve the world's hunger problem — maybe even result in a "convert". The following presentation is designed to turn the tables on such discussions by showing the devastating effects of meat-eating both on individuals and on our planet. It is based on a richly informative poster entitled, "How to win an argument with a meat-eater", published by Earthsave, an organization based in Felton, California, giving facts from Pulitzer Prize

nominee John Robbins' book *Diet for a New America*. Below are nine separate arguments against meat-eating and in favor of a vegetarian diet.

1. The Hunger Argument against meat-eating

Much of the world's massive hunger problems could be solved by the reduction or elimination of meat-eating. The reasons: 1) livestock pasture needs cut drastically into land which could otherwise be used to grow food; 2) vast quantities of food which could feed humans is fed to livestock raised to produce meat.

This year alone, twenty million people worldwide will die as a result of malnutrition. One child dies of malnutrition every 2.3 seconds. One hundred million people could be adequately fed using the land freed if Americans reduced their intake of meat by a mere 10%.

Twenty percent of the corn grown in the U.S. is eaten by people. Eighty percent of the corn and 95% of the oats grown in the U.S. is eaten by livestock. The percentage of protein wasted by cycling grain through livestock is calculated by experts as 90%.

One acre of land can produce 40,000

pounds of potatoes, or 250 pounds of beef. Fifty-six percent of all U.S. farmland is devoted to beef production, and to produce each pound of beef requires 16 pounds of edible grain and soybeans, which could be used to feed the hungry.

2. The Environmental Argument against meat-eating

Many of the world's massive environmental problems could be solved by the reduction or elimination of meat-eating, including global warming, loss of topsoil, loss of rain forests and species extinction.

The temperature of the earth is rising. This global warming, known as "the greenhouse effect," results primarily from carbon dioxide emissions from burning fossil fuels, such as oil and natural gas. Three times more fossil fuels must be burned to produce a meat-centered diet than for a meat-free diet. If people stopped eating meat, the threat of higher world temperatures would be vastly diminished.

Trees, and especially the old-growth forests, are essential to the survival of the planet. Their destruction is a major cause of global warming and topsoil loss. Both of these effects lead to diminished

food production. Meat-eating is the number one driving force for the destruction of these forests. Two-hundred and sixty million acres of U.S. forest land has been cleared for cropland to produce the meat-centered diet. Fifty-five square feet of tropical rain forest is consumed to produce every quarter-pound of rain forest beef. An alarming 75% of all U.S. topsoil has been lost to date. Eighty-five percent of this loss is directly related to livestock raising.

Another devastating result of deforestation is the loss of plant and animal species. Each year 1,000 species are eliminated due to destruction of tropical rain forests for meat grazing and other uses. The rate is growing yearly.

To keep up with U.S. consumption, 300 million pounds of meat are imported annually from Central and South America. This economic incentive impels these nations to cut down their forests to make more pasture land. The short-term gain ignores the long-term, irreparable harm to the earth's ecosystem. In effect these countries are being drained of their resources to put meat on the table of Americans while 75% of all Central American children under the age of five are undernourished.

3. The Cancer Argument against meat-eating

Those who eat flesh are far more likely to contract cancer than those following a vegetarian diet.

The risk of contracting breast cancer is 3.8 times greater for women who eat meat daily compared to less than once a week; 2.8 times greater for women who eat eggs daily compared to once a week; and 3.25 greater for women who eat butter and cheese 2 to 4 times a week as compared to once a week.

The risk of fatal ovarian cancer is three times greater for women who eat eggs 3 or more times a week as compared with less than once a week.

The risk of fatal prostate cancer is 3.6 times greater for men who consume meat, cheese, eggs and milk daily as compared with sparingly or not at all.

4. The Cholesterol Argument against meat-eating

Here are facts showing that: 1) U.S. physicians are not sufficiently trained in the importance of the relation of diet to health; 2) meat-eaters ingest excessive amounts of cholesterol, making them dangerously susceptible to heart attacks.

It is strange, but true that U.S. physicians are as a rule ill-educated in the single most important factor of health, namely diet and nutrition. Of the 125 medical schools in the U.S., only 30 require their students to take a course in nutrition. The average nutrition training received by the average U.S. physician during four years in school is only 2.5 hours. Thus doctors in the U.S. are ill-equipped to advise their patients in minimizing foods, such as meat, that contain excessive amounts of cholesterol and are known causes of heart attack.

Heart attack is the most common cause of death in the U.S., killing one person every 45 seconds. The male meat-eater's risk of death from heart attack is 50%. The risk to men who eats no meat is 15%. Reducing one's consumption of meat, dairy and eggs by 10% reduces the risk of heart attack by 10%. Completely eliminating these products from one's diet reduces the risk of heart attack by 90%.

The average cholesterol consumption of a meat-centered diet is 210 milligrams per day. The chance of dying from heart disease if you are male and your blood cholesterol is 210 milligrams daily is greater than 50%.

5. The Natural Resources Argument against meat-eating

The world's natural resources are being rapidly depleted as a result of meat-eating.

Raising livestock for their meat is a very inefficient way of generating food. Pound for pound, far more resources must be expended to produce meat than to produce grains, fruits and vegetables. For example, more than half of all water used for all purposes in the U.S. is consumed in livestock production. The amount of water used in production of the average cow is sufficient to float a destroyer (a large naval ship). While 25 gallons of water are needed to produce a pound of wheat, 5,000 gallons are needed to produce a pound of California beef. That same 5,000 gallons of water can produce 200 pounds of wheat. If this water cost were not subsidized by the government, the cheapest hamburger meat would cost more than $35 per pound.

Meat-eating is devouring oil reserves at an alarming rate. It takes nearly 78 calories of fossil fuel (oil, natural gas, etc.) energy to produce one calory of beef protein and only 2 calories of fossil fuel energy to produce one

calory of soybean. If every human ate a meat-centered diet, the world's known oil reserves would last a mere 13 years. They would last 260 years if humans stopped eating meat altogether. That is 20 times longer, giving humanity ample time to develop alternative energy sources.

Thirty-three percent of all raw materials (base products of farming, forestry and mining, including fossil fuels) consumed by the U.S. are devoted to the production of livestock, as compared with 2% to produce a complete vegetarian diet.

6. The Antibiotic Argument against meat-eating

Here are facts showing the dangers of eating meat because of the large amounts of antibiotics fed to livestock to control staphylococci (commonly called staph infections), which are becoming immune to these drugs at an alarming rate.

The animals that are being raised for meat in the United States are diseased. The livestock industry attempts to control this disease by feeding the animals antibiotics. Huge quantities of drugs go for this purpose. Of all antibi-

otics used in the U.S., 55% are fed to livestock.

But this is only partially effective because the bacteria that cause disease are becoming immune to the antibiotics. The percentage of staphylococci infections resistant to penicillin, for example, has grown from 13% in 1960 to 91% in 1988. These antibiotics and-or the bacteria they are intended to destroy reside in the meat that goes to market.

It is not healthy for humans to consume this meat. The response of the European Economic Community to the routine feeding of antibiotics to U.S. livestock was to ban the importation of U.S. meat. European buyers do not want to expose consumers to this serious health hazard. By comparison, U.S. meat and pharmaceutical industries gave their full and complete support to the routine feeding of antibiotics to livestock, turning a blind eye to the threat of disease to the consumer.

7. The Pesticide Argument against meat-eating

Unknown to most meat-eaters, U.S.-produced meat contains dangerously high quantities of deadly pesticides.

The common belief is that the U.S.

Department of Agriculture protects consumers' health through regular and thorough meat inspection. In reality, fewer than one out of every 250,000 slaughtered animals is tested for toxic chemical residues.

That these chemicals are indeed ingested by the meat-eater is proven by the following facts:

A. Ninety-nine percent of U.S. mother's milk contains significant levels of DDT. In stark contrast, only 8% of U.S. vegetarian mother's milk containing significant levels of DDT. This shows that the primary source of DDT is the meat ingested by the mothers.

B. Contamination of breast milk due to chlorinated hydrocarbon pesticides in animal products found in meat-eating mothers versus non meat-eating mothers is 35 times higher.

C. The amount of the pesticide Dieldrin ingested by the average breast-fed American infant is 9 times the permissible level.

8. The Ethical Argument against meat-eating

Many of those who have adopted

a vegetarian diet have done so because of the ethical argument, either from reading about or personally experiencing what goes on daily at any one of the thousands of slaughterhouses in the U.S. and other countries, where animals suffer the cruel process of forced confinement, manipulation and violent death. Their pain and terror is beyond calculation.

The slaughterhouse is the final stop for animals raised for their flesh. These ghastly places, while little known to most meat-eaters, process enormous numbers of animals each years. In the U.S. alone, 660,000 animals are killed for meat every hour. A surprising quantity of meat is consumed by the meat-eater. The average per capita consumption of meat in the U.S., Canada and Australia is 200 pounds per year! The average American consumes in a 72-year lifetime approximately 11 cattle, 3 lambs and sheep, 23 hogs, 45 turkeys, 1,100 chickens and 862 pounds of fish! Bon appetite!

People who come in contact with slaughterhouses cannot help but be affected by what they see and hear. Those living nearby must daily experience the screams of terror and anger of the animals led to slaughter. Those working

inside must also see and participate in the crimes of mayhem and murder. Most who choose this line of work are not on the job for long. Of all occupations in the U.S., slaughterhouse worker has the highest turnover rate. It also has the highest rate of on-the-job injury.

9. The Physiological Argument

A ninth and most compelling argument against meat-eating is that humans are physiologically not suited for a carnivorous diet. The book *Food for the Spirit, Vegetarianism in the World Religions,* summarizes this point of view as follows. "Many nutritionists, biologists and physiologists offer convincing evidence that humans are in fact not meant to eat flesh." Here are seven facts in support of this view:

- Physiologically, people are more akin to plant-eaters, foragers and grazers, such as monkeys, elephants and cows, than to (carnivores) such as dogs, tigers and leopards.
- For example, (carnivores) do not sweat through their skin; body heat is controlled by rapid breathing and extrusion of the tongue. Vegetarian animals, on the other hand, have sweat pores for heat

control and the elimination of impurities.

- (Carnivores) have long teeth and claws for holding and killing prey; vegetarian animals have short teeth and no claws.
- The saliva of (carnivores) contains no ptyalin and cannot predigest starches; that of vegetarian animals contains ptyalin for the predigestion of starches.
- Flesh-eating animals secrete large quantities of hydrochloric acid to help dissolve bones; vegetarian animals secrete little hydrochloric acid.
- The jaws of (carnivores) only open in an up and down motion; those of vegetarian animals also move sideways for additional kinds of chewing.
- (Carnivores) must lap liquids (like a cat); vegetarian animals take liquids in by suction through the teeth.

There are many such comparisons, and in each case humans fit the vegetarian physiognomy. From a strictly physiological perspective, then, there are strong arguments that humans are not suited to a fleshy diet.

The Health Benefits of Vegetarianism

It was only recently that smoking became recognized as a health and environmental hazard. As a result of research and education on a habit once believed to be not only harmless but stylish, most major U.S. cities have banned smoking of cigarettes, cigars or pipes in all public places. Smoking has also been outlawed in government offices and completely eliminated from all domestic U.S. air flights. Now, another, even more devastating problem is under scrutiny. Its threat to health and the environment is being realized based on overwhelming evidence amassed by recognized authorities over the past fifty years. Recently a group of eminent doctors called the Physicians Committee for Responsible Medicine (PCRM), themselves members of the American Medical Association (AMA), have gathered to change the U.S. consciousness on human nutrition, particularly among the medical community. The PCRM is a nonprofit organization based in Washington, D.C., consisting of doctors and lay persons working together for compassionate and effective medical practice, re-

search and health promotion. Founded in 1985, the PCRM is supported by over 3,000 physicians and 50,000 lay persons. PCRM president Newal D. Barnard, M.D., is a popular speaker and the author of *The Power of Your Plate*.

As stated by the PCRM in their 1991 literature, "A vegetarian diet has been advocated by everyone from philosophers, such as Plato and Nietzsche, to political leaders, such as Benjamin Franklin and Gandhi, to modern pop icons such as Paul McCartney and Bob Marley. Science is also on the side of vegetarian foods. A multitude of studies have proven the health benefits of a vegetarian diet to be remarkable.

"Vegetarian is defined as avoiding all animal flesh, including fish and poultry. Vegetarians who avoid flesh, but do eat animal products such as cheese, milk and eggs are ovo-lacto-vegetarians (ovo = egg; lacto = milk, cheese, etc.). The ranks of those who eschew all animal products are rapidly growing; these people are referred to as pure vegetarians or vegans (vee'guns). Scientific research shows that ovo-lacto-vegetarians are healthier than meat-eaters, and vegans are healthier than ovo-lacto-vegetarians." It should be noted that

the Indian Hindu tradition has always been lacto-vegetarian, permitting the consumption of milk products.

The PCRM literature lists a host of health benefits of a vegetarian diet, including the following:

- Preventing cancer: "Numerous epidemiological and clinical studies have shown that vegetarians are nearly 50% less likely to die from cancer than non vegetarians."
- Preventing heart disease and lowering blood pressure.
- Preventing and reversing diabetes.
- Preventing and alleviating gallstones, kidney stones and osteoporosis.
- Preventing and alleviating asthma.

The New Four Food Groups

In 1991 the Physicians Committee for Responsible Medicine submitted a proposal to change the official "four food groups" which have been promoted by U.S. nutritionists in the U.S. for the past 35 years. Their proposal reflects the fact that the long-held belief in meat as an essential dietary element is being displaced with new findings on the harmful

effects of a meat-centered diet. The PCRM Update, May-June 1991, explains, "On April 8, 1991, PCRM unveiled a proposal to replace the Four Basic Food Groups. The Four Food Groups have been part of U.S. government recommendations since 1956, but promote dietary habits which are largely responsible for the epidemics of heart disease, cancer, stroke and other serious illnesses in this country. The old four groups were meat, dairy, grains and fruits/vegetables. The 'New Four Food Groups' are grains, legumes, vegetables and fruits. Meat and dairy will lose their food group status (by this proposal). The 'New Four Food Groups' represents a nutrition plan that is based on healthy, fiber-rich plant foods rather than the former emphasis on cholesterol-and-fat-laden foods. 'The meat and dairy groups were the principal sources of cholesterol and saturated fat, which is the biggest culprit in raising blood cholesterol,' says PCRM Nutritionist Virginia Messina, M.P.H., R.D. 'These foods are simply not necessary in the human diet.' " PCRM poster offers the following description of the four new food groups.

1. Whole grains includes breads, pastas, rice, corn and all other grains. Note the emphasis on

whole grains rather than refined grains. Build each of your meals around a hearty grain dish-grains are rich in fiber and other complex carbohydrates, as well as protein, B vitamins and zinc.

2. Vegetables are packed with nutrients; they provide vitamin C, beta-carotene, riboflavin and other vitamins, iron, calcium and fiber. Dark green, leafy vegetables such as broccoli, collards, kale, mustard and turnip greens, chicory or bok choy are especially good sources of these important nutrients. Dark yellow and orange vegetables such as carrots, winter squash, sweet potatoes and pumpkin provide extra beta-carotene. Include generous portions of a variety of vegetables in your diet.
3. Legumes, which is another name for beans, peas and lentils, are all good sources of fiber, protein, iron, calcium, zinc and B vitamins. This group also includes chickpeas, baked and refried beans, soy milk, tofu, tempeh and texturized vegetable protein.
4. Fruits are rich in fiber, vitamin C

and beta-carotene. Be sure to include at least one serving each day of fruits that are high in vitamin C-citrus fruits, melons and strawberries are all good choices. Choose whole fruit over fruit juices, which don't contain as much healthy fiber.

Common Dietary Concerns

Those considering a vegetarian diet generally worry about getting enough nutrients, since the belief that meat is a necessary part of keeping strong and healthy is still extremely widespread. Armed with decades of nutritional research data, the PCRM addresses this issue head-on:

"The fact is, it is very easy to have a well-balanced diet with vegetarian foods. Vegetarian foods provide plenty of protein. Careful combining of foods is not necessary. Any normal variety of plant foods provides more than enough protein for the body's needs. Although there is somewhat less protein in a vegetarian diet than a meat-eater's diet, this actually an advantage. Excess pro-

tein has been linked to kidney stones, osteoporosis, and possibly heart disease and some cancers. A diet focused on beans, whole grains and vegetables contains adequate amounts of protein without the 'overdose' most meat-eaters get."

Other concerns are allayed as follows:

"Calcium is easy to find in a vegetarian diet. Many dark, green leafy vegetables and beans are loaded with calcium, and some orange juices and cereals are calcium-fortified. Iron is plentiful in whole grains, beans and fruits."

Vitamin B12: There is a misconception that without eating meat one cannot obtain sufficient v. B12, which is an essential nutrient. This (is) simply not true. The PCRM advises: "Although cases of B12 deficiency are very uncommon, it is important to make sure that one has a reliable source of the vitamin. Good sources include all common multiple vitamins (including vegetarian vitamins), fortified cereals and fortified soy milk."

"During pregnancy one's nutritional needs increase. The American Dietetic Association has found vegan diets adequate for fulfilling nutritional needs during pregnancy, but pregnant women

and nursing mothers should supplement their diets with vitamins B12 and D.

"vegetarian children also have high nutritional needs, but these, too, are met within a vegetarian diet. A vegetarian menu is 'life-extending.' As young children, vegetarians may grow more gradually, reach puberty somewhat later, and live substantially longer than do meat-eaters. Do be sure to include a reliable source of vitamin B12."

Besides the fortified cereals and soy milk mentioned above vitamin B12 sources that are widely available are multiple vitamins, brewers yeast and other potent dietary supplements.

Dharma Words of the Venerable Master Miao Lien

- *Vegetarianism cultivates good karma, while flesh-eating causes evil karma.*
- *One receives the consequences of their actions when the time comes.*
- *One enjoys the rewards of good deeds and suffers the punishments of evil deeds.*
- *To avoid suffering, the best advice is to cultivate goodness as soon as possible, and to abstain from evil.*
- *Eating flesh destroys our conscience, and all the good things that arise from a good conscience.*
- *If one nourishes and accumulates great virtue and merit, one's descendants will benefit for generations to come.*

Main Results from the Oxford Vegetarian Study

By The Oxford Vegetarian Study

The Oxford Vegetarian Study is a nationwide long-term study of the health of 6000 persons who do not eat meat (mostly vegetarians, but including some persons who eat fish) and 5000 meat-eating controls. Vegetarian subjects were recruited with the help of The Vegetarian Society, through vegetarian and health food magazines, and via the media. The control group consists of meat-eating friends and relatives of the non-meat eaters, matched on age and gender. Recruitment to the study took place between September 1980 and January 1984.

Volunteers were sent an initial questionnaire requesting information about their diet, lifestyle (smoking, drinking, work and exercise) and previous medical history. Later, volunteers under the age of 70 were asked to provide a blood sample, and in 1985-86 all participants were sent a dietary record form which they were asked to complete on two weekdays and both weekend days. As a result, blood cholesterol measurements are available for nearly 3800 participants and detailed dietary intake data are available for over 5000 participants.

Diet and serum cholesterol concentration

Total, low density lipoprotein (LDL) and high density lipoprotein (HDL) cholesterol levels were compared in each of four diet groups (vegans, vegetarians, fish eaters and meat eaters) in a paper published in 1987. Total and LDL cholesterol concentrations were both significantly lower in the vegans than in the meat eaters with the vegetarians and fish eaters having intermediate and similar values. HDL cholesterol concentration was similar in all four diet groups. The differences suggested that the incidence of coronary heart disease may be 24% lower in lifelong vegetarians and 57% lower in lifelong vegans than in meat eaters. A subsequent analysis of the diets of a sample of 208 participants (52 from each diet group) showed that the nature rather than the quantity of dietary fat is an important determinant of cholesterol concentration, with health-conscious individuals selecting a fat-modified rather than a low fat diet.

M. Thorogood, R. Carter, L. Ben field, K. McPherson and J.I. Mann. "Plasma lipids and lipoprotein cholesterol concentrations in people with different diets in Britain." *British Medical Journal.*

1987;295:351-353.

M. Thorogood, L. Roe, K. McPherson and J. Mann. "Dietary intake and plasma lipid levels: lessons from a study of the diet of health conscious groups." *British Medical Journal.* 1990;300:1297-1301.

Diet and mortality

A comparison of the mortality (death rate) of meat eaters and non-meat eaters after 12 years of follow-up was published in the British Medical Journal on 25 June 1994. The results show that after adjusting for smoking habits, body mass index (a measure of obesity) and social class (three factors known to influence mortality), the non-meat eaters experienced lower death rates for all causes of death combined, ischaemic heart disease and all cancers combined, the differences being statistically significant (meaning that they were unlikely to have arisen by chance) for all causes and all cancers combined. Only time will tell whether these differences are real or a manifestation of the 'healthy volunteer effect' (the vegetarian volunteers may have been better motivated and therefore healthier than their non-vegetarian controls). If real, it will be interesting to see whether the lower mortality for all

cancers combined applies 'across the board' or only to certain cancers which other studies have suggested vegetarians may be less likely to suffer from. Eventually, it may even be possible to determine which features of the vegetarian diet account for the lower mortality.

M. Thorogood, J. Mann, P. Appleby and K. McPherson. "Risk of death from cancer and ischaemic heart disease in meat and non-meat eaters." *British Medical Journal.* 1994;308:1667-1671.

Emergency appendicectomy and meat eating

Rates of reported emergency appendicectomies (indicating acute appendicitis) were compared according to participants' history of meat consumption in a paper published in the Journal of Epidemiology and Community Health. Participants were grouped according to whether they had always eaten meat, never eaten meat or stopped eating meat. The percentage who reported an emergency appendicectomy was higher among the lifelong meat eaters (10.7%) than either the lifelong non-meat eaters (7.8%) or the former meat eaters (8.0%); and the operations

were performed at an earlier age in the first group (average age at operation 18.9, 26.0 and 19.6 years respectively). The overall age-adjusted emergency appendicectomy rate ratio comparing participants who did not eat meat with those who did was 0.47, suggesting that vegetarians have a 50% lower risk of requiring an emergency appendicectomy than non-vegetarians.

P. Appleby, M. Thorogood, K. McPherson and J. Mann. "Emergency (appendectomy) and meat consumption in the UK." *Journal of Epidemiology and Community Health.* 1995;49:594-596.

Effects of diet, lifestyle and physical characteristics on cholesterol concentration

The effects of dietary, lifestyle and physical factors on participants' concentration of total and high density lipoprotein (HDL) cholesterol in the blood was investigated in a paper published in the Journal of Human Nutrition and Dietetics. High total cholesterol concentration is associated with an increased risk of coronary heart disease, whereas HDL cholesterol is thought to have a protective effect against heart disease. After adjusting for age there was a progres-

sive decrease in total cholesterol concentration from meat eaters to vegans for both male and female participants, with vegetarians having intermediate values. In contrast, HDL cholesterol concentrations were similar in all diet groups for both men and women. When the effects of specific dietary and lifestyle factors were considered, meat and cheese consumption were found to increase total cholesterol, whereas a high intake of dietary fibre was associated with a reduction in total cholesterol for both men and women. In accordance with results from other studies, body mass index (a measure of (obesity)) and alcohol consumption were associated with a decrease and increase respectively in HDL cholesterol concentration in both men and women. The results provide further evidence of the cholesterol-lowering effect of a vegetarian diet with a high dietary fibre content and limited use of cheese. Excluding meat from the diet might be expected to result in a 15-25% reduction in the risk of coronary heart disease, with a similar beneficial effect if cheese is also excluded.

P.N. Appleby, M. Thorogood, K. McPherson and J.I. Mann. "Associations between plasma lipid concentra-

tions and dietary, lifestyle and physical factors in the Oxford Vegetarian Study." *Journal of Human Nutrition and Dietetics.* 1995;8:305-314.

Diet and ischaemic heart disease

Ischaemic heart disease is the most common cause of death in the UK and in many other developed countries. A previous analysis of data from the study showed that non-meat eaters had a 28% lower risk of death from ischaemic heart disease before age 80 than meat eaters after adjusting for differences in smoking habits, body mass index and social class. However, it was unclear which dietary factors might account for this difference. Therefore, the effects of various dietary factors on mortality from ischaemic heart disease were examined in a recent analysis. Participants were grouped not just according to their diet (meat eater, semi-vegetarian, vegetarian/vegan), but also by their consumption of various foods and alcohol according to the answers provided on the recruitment questionnaire. Participants were also divided into thirds of estimated intake of total fat, saturated fat and dietary cholesterol from land animal sources, and into thirds of estimated dietary fibre in-

take from their reported consumption of fibre-rich foods. The main analysis was restricted to participants with no history of cardiovascular disease or diabetes at recruitment, of whom 392 died before age 80, including 64 deaths from ischaemic heart disease. After adjusting for differences in age, sex, smoking habits and social class, vegetarians and vegans had a 17% lower risk of death from ischaemic heart disease than meat eaters (defined as participants eating meat at least once a week) although the result was not statistically significant. The most striking results from the analysis were the strong positive and highly significant associations between increasing consumption of animal fats and ischaemic heart disease mortality, the death rates being roughly three times greater among participants in the highest third of intake compared with the lowest third of intake for each of total animal fat, saturated animal fat, and dietary cholesterol. Consumption of eggs and cheese were also positively associated with ischaemic heart disease mortality, but no protective effects were noted for dietary fibre, fish or alcohol consumption, as might have been expected from findings in other studies.

J.I. Mann, P.N. Appleby, T.J. Key and M. Thorogood. "Dietary determinants of ischaemic heart disease in health conscious individuals." *Heart.* 1997;78:450-455.

Diet and body mass index

Body mass index (BMI — a measure of an individual's relative weight calculated by dividing their weight in kilograms by the square of their height in metres) was calculated for 1914 male and 3378 female non-smokers aged 20-89 at recruitment to the study. Answers to the food frequency questionnaire completed by all participants were used to classify them as either meat eaters or non-meat eaters, and to estimate intakes of animal fat and dietary fibre. Participants were further classified according to their alcohol consumption, exercise level, social class, past smoking habits and parity (whether or not a woman has had children). Mean (average) BMI was lower in non-meat eaters than in meat eaters in all age groups for both men and women. Overall mean BMIs in kg/m^2, adjusted for differences in age between the two groups, were 23.18 and 22.05 for male meat eaters and non-meat eaters respectively and 22.32 and

21.32 for female meat eaters and non-meat eaters respectively, differences of about one kg/m^2 which were massively statistically significant, indicating that they were very unlikely to have occurred by chance. In addition to meat consumption, dietary fibre intake, animal fat intake, social class, past smoking habits, alcohol consumption in men only and parity in women were all independently associated with BMI. However, these factors accounted for only about one-third of the difference in mean BMI between meat eaters and non-meat eaters in both men and women. It was concluded that non-meat eaters are thinner than meat eaters, and that this may be partly due to a higher intake of dietary fibre, a lower intake of animal fat, and in men only a lower intake of alcohol.

Position of the American Dietetic Association: Vegetarian Diets (1997)

Extracted from Former
ADA position:Vegetarian diets.
J Am Diet Assoc 1997;97:1317.

Scientific data suggest positive relationships between a vegetarian diet and reduced risk for several chronic degenerative diseases and conditions, including obesity, coronary artery disease, hypertension, diabetes mellitus, and some types of cancer. Vegetarian diets, like all diets, need to be planned appropriately to be nutritionally adequate.

Position Statement

It is the position of The American Dietetic Association (ADA) that appropriately planned vegetarian diets are healthful, are nutritionally adequate, and provide health benefits in the prevention and treatment of certain diseases.

Vegetarianism in Perspective

The eating patterns of vegetarians vary considerably. The lacto-ovo-vegetarian eating pattern is based on grains, vegetables, fruits, legumes, seeds, nuts, dairy products, and eggs, and excludes meat, fish, and fowl. The vegan, or total vegetarian, eating pattern is similar to the lacto-ovo-vegetarian pat-

tern except for the additional exclusion of eggs, dairy, and other animal products. Even within these patterns, considerable variation may exist in the extent to which animal products are avoided. Therefore, individual assessment is required to accurately evaluate the nutritional quality of a vegetarian's dietary intake.

Studies indicate that vegetarians often have lower morbidity (1) and mortality (2) rates from several chronic degenerative diseases than do nonvegetarians. Although nondietary factors, including physical activity and abstinence from smoking and alcohol, may play a role, diet is clearly a contributing factor.

In addition to the health advantages, other considerations that may lead a person to adopt a vegetarian diet pattern include concern for the environment, ecology, and world hunger issues. Vegetarians also cite economic reasons, ethical considerations, and religious beliefs as their reasons for following this type of diet pattern. Consumer demand for vegetarian options has resulted in increasing numbers of foodservices that offer vegetarian options. Presently, most university foodservices offer vegetarian options.

Health Implications of Vegetarianism

Vegetarian diets low in fat or saturated fat have been used successfully as part of comprehensive health programs to reverse severe coronary artery disease (3,4). Vegetarian diets offer disease protection benefits because of their lower saturated fat, cholesterol, and animal protein content and often higher concentration of folate (which reduces serum homocysteine levels) (5), antioxidants such as vitamins C and E, carotenoids, and phytochemicals (6). Not only is mortality from coronary artery disease lower in vegetarians than in nonvegetarians (7), but vegetarian diets have also been successful in arresting coronary artery disease (8,9). Total serum cholesterol and low-density lipoprotein cholesterol levels are usually lower in vegetarians, but high-density lipoprotein cholesterol and triglyceride levels vary depending on the type of vegetarian diet followed (10).

Vegetarians tend to have a lower incidence of hypertension than nonvegetarians (11). This effect appears to be independent of both body weight and sodium intake. Type 2 diabetes mellitus is much less likely to be a cause of

death in vegetarians than nonvegetarians, perhaps because of their higher intake of complex carbohydrates and lower body mass index (12).

Incidence of lung and colorectal cancer is lower in vegetarians than in nonvegetarians (2,13). Reduced colorectal cancer risk is associated with increased consumption of fiber, vegetables, and fruit (14,15). The environment of the colon differs notably in vegetarians compared with nonvegetarians in ways that could favorably affect colon cancer risk (16,17). Lower breast cancer rates have not been observed in Western vegetarians, but cross-cultural data indicate that breast cancer rates are lower in populations that consume plant-based diets (18). The lower estrogen levels in vegetarian women may be protective (19).

A well-planned vegetarian diet may be useful in the prevention and treatment of renal disease. Studies using human being and animal models suggest that some plant proteins may increase survival rates and decrease proteinuria, glomerular filtration rate, renal blood flow, and histologic renal damage compared with a nonvegetarian diet (20,21).

Nutrition Considerations for Vegetarians

Plant sources of protein alone can provide adequate amounts of essential amino acids if a variety of plant foods are consumed and energy needs are met. Research suggests that complementary proteins do not need to be consumed at the same time and that consumption of various sources of amino acids over the course of the day should ensure adequate nitrogen retention and use in healthy persons (22). Although vegetarian diets are lower in total protein and a vegetarians protein needs may be somewhat elevated because of the lower quality of some plant proteins, protein intake in both lacto-ovo-vegetarians and vegans appears to be adequate (16).

Plant foods contain only nonheme iron, which is more sensitive than heme iron to both inhibitors and enhancers of iron absorption. Although vegetarian diets are higher in total iron content than nonvegetarian diets, iron stores are lower in vegetarians because the iron from plant foods is more poorly absorbed (23). The clinical importance of this, if any, is unclear because iron deficiency anemia rates are similar in vegetarians

and nonvegetarians (23). The higher vitamin C content of vegetarian diets may improve iron absorption.

Although plant foods can contain vitamin B-12 on their surface from soil residues, this is not a reliable source of B-12 for vegetarians. Much of the vitamin B-12 present in spirulina, sea vegetables, tempeh, and miso has been shown to be inactive B-12 analog rather than the active vitamin. Although dairy products and eggs contain vitamin B-12, research suggests that lacto-ovo-vegetarians have low blood levels of vitamin B-12. Supplementation or use of fortified foods is advised for vegetarians who avoid or limit animal foods (24).

Because vitamin B-12 requirements are small, and it is both stored and recycled in the body, symptoms of deficiency may be delayed for years. Absorption of vitamin B-12 becomes less efficient as the body ages, so supplements may be advised for all older vegetarians.

Lacto-ovo-vegetarians have calcium intakes that are comparable to or higher than those of nonvegetarians (25, 26). Calcium intakes of vegans, however, are generally lower than those of both lacto-ovo-vegetarians and omnivores (26). It should be noted that vegans

may have lower calcium needs than nonvegetarians because diets that are low in total protein and more alkaline have been shown to have a calcium-sparing effect (27). Furthermore, when a person's diet is low in both protein and sodium and regular weight-bearing physical activity is engaged in, his or her calcium requirements may be lower than those of a sedentary person who eats a standard Western diet. These factors, and genetic influences, may help explain variations in bone health that are independent of calcium intake.

Because calcium requirements of vegans have not been established and inadequate calcium intakes are linked to risk for osteoporosis in all women, vegans should meet the calcium requirements established for their age group by the Institute of Medicine (28). Calcium is well absorbed from many plant foods, and vegan diets can provide adequate calcium if the diet regularly includes foods rich in calcium (29). In addition, many new vegetarian foods are calcium-fortified. Dietary supplements are advised for vegans only if they do not meet calcium requirements from food.

Vitamin D is poorly supplied in all diets unless vitamin D-fortified foods are

consumed. Vegan diets may lack this nutrient because fortified cow's milk is its most common dietary source. However, vegan foods supplemented with vitamin D, such as soymilk and some cereals, are available. Furthermore, findings indicate that sunlight exposure is a major factor affecting vitamin D status and that dietary intake is important only when sun exposure is inadequate (30). Sun exposure to hands, arms, and face for 5 to 15 minutes per day is believed to be adequate to provide sufficient amounts of vitamin D (31). People with dark skin or those who live at northern latitudes or in cloudy or smoggy areas may need increased exposure. Use of sunscreen interferes with vitamin D synthesis. If sun exposure is inadequate, vitamin D supplements are recommended for vegans. This is especially true for older persons who synthesize vitamin D less efficiently and who may have less sun exposure.

Studies show zinc intake to be lower or comparable in vegetarians compared with nonvegetarians (16).

Most studies show that zinc levels in hair, serum, and saliva are in the normal range in vegetarians (32). Compensatory mechanisms may help vegetarians adapt to diets that may be low in zinc

(33). However, because of the low bioavailability of zinc from plant foods and because the effects of marginal zinc status are poorly understood, vegetarians should strive to meet or exceed the Recommended Dietary Allowances for zinc.

Diets that do not include fish or eggs lack the long-chain n-3 fatty acid docosahexanoic acid (DHA). Vegetarians may have lower blood lipid levels of this fatty acid, although not all studies are in agreement with this finding (34,35). The essential fatty acid linolenic acid can be converted to DHA, although conversion rates appear to be inefficient and high intakes of linoleic acid interfere with conversion (36). The implications of low levels of DHA is not clear. However, it is recommended that vegetarians include good sources of linolenic acid in their diet.

Vegetarianism Throughout the Life Cycle

Well-planned vegan and lacto-ovo-vegetarian diets are appropriate for all stages of the life cycle, including during pregnancy and lactation. Appropriately planned vegan and lacto-ovo-vegetarian diets satisfy nutrient needs of infants,

children, and adolescents and promote normal growth (37). Dietary deficiencies are most likely to be observed in populations with very restrictive diets. All vegan children should have a reliable source of vitamin B-12 and, if sun exposure is limited, vitamin D supplements or fortified foods should be used. Foods rich in calcium, iron, and zinc should be emphasized. Frequent meals and snacks and the use of some refined foods and foods higher in fat can help vegetarian children meet energy needs. Guidelines for iron and vitamin D supplements and for the introduction of solid foods are the same for vegetarian and nonvegetarian infants. When it is time for protein-rich foods to be introduced, vegetarian infants can have pureed tofu, cottage cheese, and legumes (pureed and strained). Breast-fed vegan infants should receive a source of vitamin B-12 if the mother's diet is not supplemented and a source of vitamin D if sun exposure is inadequate.

Vegetarian diets are somewhat more common among adolescents with eating disorders than in the general adolescent population; therefore, dietetics professionals should be aware of young clients who greatly limit food choices and

who exhibit symptoms of eating disorders (38). However, recent data suggest that adopting a vegetarian diet does not lead to eating disorders (39). With guidance in meal planning, vegetarian diets are appropriate and healthful choices for adolescents.

Vegetarian diets can also meet the needs of competitive athletes. Protein needs may be elevated because training increases amino acid metabolism, but vegetarian diets that meet energy needs and include good sources of protein (eg, soyfoods, legumes) can provide adequate protein without use of special foods or supplements. For adolescent athletes, special attention should be given to meeting energy, protein, and iron needs. Amenorrhea may be more common among vegetarian than nonvegetarian athletes, although not all research supports this finding (40,41). Efforts to maintain normal menstrual cycles might include increasing energy and fat intake, reducing fiber, and reducing strenuous training.

Lacto-ovo-vegetarian and vegan diets can meet the nutrient and energy needs of pregnant women. Birth weights of infants born to well nourished vegetarian women have been shown to be simi-

lar to birth-weight norms and to birth weights of infants of nonvegetarians (42). Diets of pregnant and lactating vegans should be supplemented with 2.0 micrograms and 2.6 micrograms, respectively, of vitamin B-12 daily and, if sun exposure is limited, with 10 micrograms vitamin D daily (43,44). Supplements of folate are advised for all pregnant women, although vegetarian women typically have higher intakes than nonvegetarians.

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Dharma Words of the Venerable Master Miao Lien

- *People say that the most important thing is longevity. I believe that one's health is more important. The longer the life of an unhealthy person, the more bitter it will be.*
- *If one wishes to live long, having good health is the key. Honestly speaking, vegetarianism is the essence of longevity and good health.*
- *Who does not wish to have a long life? Flesh-eating is the biggest hindrance. Who does not wish to live longer? Vegetarianism is the secret to longevity.*
- *Though cattle and horses are herbivores, they are animals of gigantic build and strength. They work hard for people regardless of how tough the job is.*
- *For a healthier body, the most valuable asset to have is a vegetarian diet. It is rich in nutrition and benefits both our body and mind.*
- *Plants are low-fat foods that do not cause obesity. Obesity reduces people's energy while a vegetarian diet rejuvenates people's stamina.*
- *Flesh-eating causes fatigue, decay and illness.*
- *Flesh food containing bacteria leads to the suffering of disease.*
- *Tigers and wolves have a ferocious appetite and cause misery for other creatures. How can humans follow their cruel eating habits?*

SARS: Another Deadly Virus From the Meat Industry

by Michael Greger, M.D.

Animal agriculture is not just a public health hazard for those that consume meat. In fact, the single worst epidemic in recorded world history, the 1918 influenza pandemic, has been blamed on the livestock industry.(1) In that case, the unnatural density and proximity of ducks and pigs raised for slaughter probably led to the deaths of 20 to 40 million people across the world.(2) Since then, the raising of pigs and poultry has resulted in millions more human deaths from the 1957-58 Asian flu, the 1968-69 Hongkong flu and the 1977 swine flu.(3) All of these influenza strains seem to have arisen in the same region of southern China where intensive systems of animal agriculture have become a breeding ground for new killer viruses.(4)

For centuries, the Guangdong province of China has had the world's largest concentration of humans, pigs and fowl living in close proximity.(5) In this environment, pigs can become co-infected with both human and avian (bird) strains of influenza. When this happens, a deadly gene swapping can take place, in which the lethality of viral strains rampant in the Chinese poultry industry(6) can combine which the hu-

man transmissibility of the human strains to create new mutated flu viruses capable of infecting and killing people on a global scale.(7)

Other viral threats besides influenza have also escaped from Southeast Asian livestock operations. In 1999, a new virus, now known as the Nipah virus, jumped from pigs to humans in Malaysia, infecting pig breeders and killing about a hundred people before it was stamped out.(8) In the Southern Chinese province of Guangdong, battery chickens are sometimes kept directly above pig pens, depositing their waste right into the pigs' food troughs.(9) It may come no surprise, then, that Guangdong is thought to have been ground zero for the deadly SARS virus as well.(10) The Severe Acute Respiratory Syndrome (SARS) virus is just the latest in a string of human tragedies traced back to our appetite for animal flesh. According to the World Health Organization, SARS, which has already infected thousands worldwide, could become the "first severe new disease of the 21st century with global epidemic potential."(11) And experts are again blaming intensive animal agriculture.(12,13,14,15)

According to China's equivalent of the Centers for Disease Control, the first people to succumb to the SARS virus were bird ven-

dors and chefs, who had been in close and continued contact with chickens, ducks and other birds.(16)

Scientists have identified SARS as a coronavirus, a class of viruses well known to the livestock industry.(17) Coronaviruses are found in many feedlot cattle who die of pneumonia and are responsible for the respiratory disease known as shipping fever in cattle stressed by transport.(18) There's currently a new mutant strain of coronavirus causing outbreaks of a contagious pneumonia on pig farms in several countries.(19) Preliminary work, though, suggests the SARS virus is more related to the one that causes lung infections in chickens.(20)

The concentration of animals with weakened immune systems in unsanitary conditions seems inherent to factory farming. As intensive livestock operations continue to spread worldwide, so will viral breeding grounds.(21) Moving away from intensive animal agriculture and towards more sustainable plant-based methods of production may benefit the health of the planet and its inhabitants in more ways than we know.

Dr. Greger is a general practitioner specializing in vegetarian nutrition. He is author of *Heart Failure: Diary of a Third Year Medical Student* and has

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Table 1:

Food Composition

Food Description	Mea-sure	Wt (g)	Ener (kcal)	Prot (g)	Fat (g)	Calc (mg)	Iron (mg)	Magn (mg)	Pota (mg)	Vt-C (mg)
Rice-cooked (Regulory/long grain)	1 c	158	205	4	<1	16	1.90	19	55	0
Pasta-cooked (Linguini/Rotini)	1 c	140	197	7	1	10	1.96	25	43	0
Bagel, Oat bran	1 ea	71	181	8	1	9	2.19	40	145	<1
English Muffins (Whole wheat)	1 ea	66	134	6	1	175	1.62	47	139	0
Bread (1-lb loaf) Whol wheat	1 ea	454	1160	43	19	572	15.80	209	627	0
Potatoes-baked (with skin)	1 ea	202	220	5	<1	20	2.75	54	844	26
Soybeans-cooked	1/2 c	86	149	15	8	88	4.42	74	443	1
Tofu-regular	1/2 c	124	76	8	5	138	1.38	33	149	<1
Tofu-Soft, silken	1/2 c	124	68	6	3	38	1.02	36	223	0
Peanuts (dried salted)	1 c	146	854	35	73	79	3.30	257	961	0
Pecan halves (dried unsalted)	1 c	108	720	9	73	39	2.30	138	423	2
Macadamias (oil roasted, unsalted)	1 c	134	962	10	103	60	2.41	157	441	0
Pistachios (dried, shelled)	1 oz	28	162	6	14	38	1.90	44	306	2
Almonds (whole, dried, unsalted)	1 c	142	836	28	74	378	5.20	420	1039	1
Lettuce-Head 6"diam	1 ea	539	65	5	1	102	2.70	48	852	21
Broccoli-raw	1/2 c	44	12	1	<1	21	0.39	11	143	41
Mushroom-raw	1/2 c	35	9	1	<1	2	0.43	3	130	1
Mushroom-cooked	1/2 c	78	21	2	<1	5	1.36	9	278	3
Carrots-raw,whole	1 ea	72	31	1	<1	19	0.36	11	233	7
Cabbage-red raw	1 c	89	24	1	<1	45	0.44	13	183	51

* Source: Whitney, Eleanor Noss and Rolfes,Sharon Rady. *Understanding Nutrition*, Thomson Learning, 2002.

Table 2:

Food Composition

Food Description	Mea-sure	Wt (g)	Ener (kcal)	Prot (g)	Fat (g)	Calc (mg)	Iron (mg)	Magn (mg)	Pota (mg)	Vt-C (mg)
Peppers-red (raw, chopped)	1/2 c	75	20	1	<1	7	0.34	7	133	143
Peppers-yellow (raw, chopped)	1 ea	186	50	2	<1	20	0.86	22	394	342
Spinach-cooked	1/2 c	90	21	3	<1	122	3.21	78	419	9
Tomato-fresh	1 ea	123	26	1	<1	6	0.55	13	273	23
Tomato-cooked	1 c	240	65	3	1	14	1.34	34	670	55
Tomato-sundried	1 c	54	139	8	2	59	4.91	105	1850	21
Eggplant-cooked	1 c	99	28	1	<1	6	0.35	13	246	1
Hot green chili-raw	1 ea	45	18	1	<1	8	0.54	11	153	109
Okra-cooked	8 ea	85	27	2	<1	54	0.38	48	274	14
Pumpkin-cooked	1/2 c	123	25	1	<1	18	0.70	11	283	6
Apple-2 3/4" diam	1 ea	138	81	<1	<1	10	0.25	7	159	8
Apricots-fresh	3 ea	105	50	1	<1	15	0.57	8	311	10
Bananas-8 3/4" long	1 ea	118	109	1	1	7	0.37	34	467	11
Avocados-mashed	1 c	230	370	5	35	25	2.35	90	1377	18
Orange-2 5/8" diam	1 ea	131	62	1	<1	52	0.13	13	237	70
blueberry-fresh	1 c	145	81	1	1	9	0.25	7	129	19
strawberries-fresh	1 c	144	43	1	1	20	0.55	14	239	82
Raspberries-fresh	1 c	123	60	1	1	27	0.70	22	187	31
Kiwi fruit-fresh	1 ea	76	46	1	<1	20	0.31	23	252	74
Lemon juice fresh	1 c	244	61	1	0	17	0.07	15	303	112
Papayas-whole	1 ea	304	119	2	<1	73	0.30	30	781	188
Raisins,seedless	1 c	145	435	5	1	71	3.02	48	1088	5
Pineapple-chunks	1 c	155	76	1	1	11	0.57	22	175	24
Peach-whole	1 ea	98	42	1	<1	5	0.11	7	193	6
Watermelon - 1/16 wedge	1 pec	286	91	2	1	23	0.49	31	332	27

* Source: Whitney, Eleanor Noss and Rolfes,Sharon Rady. *Understanding Nutrition*, Thomson Learning, 2002.

Hear No Evil, See No Evil: Inadequacy of U.S. Surveillance for Mad Cow Disease

by Michael Greger, M.D.

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A March 2001 nationwide Gallup poll found that 37% of Americans see mad cow disease as a "major threat" to the health and safety of America. They have reason to be concerned. U.S. safeguards against this deadly disease have been lacking in three major areas. First, the 1997 ban on feeding animal tissues to livestock still contains major loopholes which allow cow blood to be fed to calves, for example, and pigs and chickens who have eaten cattle tissue to be fed back to cows. Europe has forbidden feeding any animals to livestock; the United States should do the same. Second, the ban hasn't been properly enforced. An FDA survey released this year found that 20% of feed mills and rendering plants were in violation of the feed ban even years after it supposedly went into effect. Third, there is inadequate testing of U.S. herds. It is irresponsible to assert that we have no mad cow disease in the United States. There have been no reported cases as of yet, but this may be because we're not looking hard enough.

Neuropathologist Pierluigi Gambetti heads the National Prion Disease Pathology Surveillance Center at Case Western

Reserve University. "If you don't look, you won't find," says Dr. Gambetti, "unless we test more, we will never know if we have it here. If they can do it in Europe, one would think they could do it here." He is referring to the fact that every week in Europe they test ten times as many cattle than we have tested in a decade.

Over the last ten years 12,000 cattle have been tested for the disease in the United States, but that's out of the 350 million slaughtered over that time. The U.S. is presently testing only 1 out of every 18,000 cows slaughtered, whereas countries like Switzerland test 1 out of every 60 cows. Countries like Ireland test more than twice as many cows in one night as the U.S. tests in an entire year. France has one fifth of the number of cows but they're inspecting 36,000 cows a week. If the U.S. has as high an incidence of mad cow disease as France, for example, the current USDA testing program would not detect it.

Germany is testing 20,000 cattle a week compared to our 50 a week. Germany also once confidently declared themselves BSE free. But when they actually started looking intently, they found over 30 cases within two months. The USDA promises to try to increase its testing

to 5,000 cattle a year. This is inadequate; Europe has already tested a million cattle for the disease. You can't find what you're not looking hard enough for.

We're also using a slower, more expensive, more ambiguous test than is used throughout Europe. The immunohistochemistry test used predominantly in the U.S. depends on the quality of the brain tissue obtained and requires accurate interpretation by a trained technician. The rapid testing techniques in Europe which take hours instead of days — allowing a cow to be tested before she enters the food supply — do not depend on tissue preservation and are less subjective.

The testing in the United States has concentrated on so-called "downer" cattle, an industry term describing tens of thousands of cows which collapse for unknown reasons every year and are too sick to stand back up. This is because of the work of Dr. Richard Marsh, former Chairman of the Department of Veterinary Science at the University of Wisconsin-Madison, which showed that there seemed to be a rare strain of bovine spongiform encephalopathy (the technical term for mad cow disease) in the United States which even preceded the outbreak in Britain. This was based largely on evidence that outbreaks of mink

spongiform encephalopathy that wiped out a few U.S. fur farms were linked to the minks eating the remains of downer cattle. Dr. Marsh believed that the form of bovine spongiform encephalopathy (BSE) in the United States manifested itself as more of a "downer" cow disease than a "mad" cow disease.

Many scientists believe that cows got BSE after being fed sheep infected with a sheep spongiform encephalopathy called scrapie. To test Marsh's theory that the U.S. has a native strain of BSE which manifests with different symptoms, American cattle were inoculated with infected tissue from American sheep infected with scrapie. In England, presumably scrapie-infected cows go mad, twitching and kicking into a near rabid frenzy. But in the U.S., scrapie-infected cows in this experiment instead became lethargic and staggered to their deaths like downer cows do, supporting the belief in a form of BSE native to the United States.

Despite this evidence, if downer cows can be kept alive long enough, they can be used directly for human consumption in the United States without being first tested for mad cow disease. If the animal dies before it can be killed in the slaughterhouse, the carcass is melted down in a process

called rendering into products like animal feed or pet food. Downed animal protection legislation might help restrict the use of downed animals for human consumption by ensuring the cows are humanely euthanized instead of oftentimes literally dragged to market.

In contrast, in Europe all "fallen stock" are tested for mad cow disease. For example, in Switzerland, some 14,000 cows were identified and tested last year as "high risk/fallen" out of a total of about 800,000 slaughtered. By comparison, the U.S. identified and tested only about 2,000 downers — out of a total 36 million slaughtered here. If the United States tested the same proportion of cows that the Swiss do, we would be testing 630,000 cows per year. Also, the lesions found in the suspected strain of mad cow disease in the United States are more subtle and may need even more rigorous testing than Europe. If the U.S. government and the American cattle industry are somehow so sure that we don't have mad cow disease in this country, why don't they adequately test for it? As Dr. Gambetti says, "If you ignore it, it won't go away. If anything, it will increase."

A quiz to determine if you are avoiding aging

	Yes	No
(1) Do you eat five different kinds of vegetables or fruits daily?	☐	☐
(2) Do you have a balanced diet and drink enough water daily?	☐	☐
(3) Do you get enough sleep and have enough stamina daily?	☐	☐
(4) Is your blood pressure normal?	☐	☐
(5) Do you do more than 30 minutes of aerobics three times a week?	☐	☐
(6) Do you have a good digestive system and normal bowel movements?	☐	☐
(7) Is your weight within its ideal range?	☐	☐
(8) Is your life free from stressful situations?	☐	☐
(9) It is better to quit smoking and drinking alcohol. Have you stopped smoking for more than 5 years?	☐	☐
(10) Are you always in a good mood and do you have good relationships with others?	☐	☐

Verse of Transference

May the merits and virtue accrued from this work:

- *Eradicate the karmic hindrances that were made in past and present lives.*
- *Enhance one's bliss and wisdom, and develop one's good consciousness.*
- *Exterminate the three poisons of greed, hatred and ignorance, and the disasters of wars, plagues and starvation.*
- *Allow people to achieve the utmost in loyalty, obedience, courtesy and humility.*
- *Give peace and happiness to all the writers, reviewers and readers of this book, as well as its financial supporters and distributors, and their families, and allow the deceased to be transcended.*
- *Make the environment appear without natural disasters.*
- *Allow the nation's citizens to enjoy peace and healthiness.*
- *Cause sentient beings in the Dharma realm to vow to be reborn in the Western Pure Land of Ultimate Bliss.*

As this is a Dhamma text,
We request that it be treated with respect.
If you are finished with it,
Please pass it on to others or
offer it to a monastery, school, or library.
Thanks for your co–operation.
Namo Amitabha!

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