



# **Food For Thought Teacher's Guide**

**by Linda S. Eck, M.B.A., R.D.**

# FOOD FOR THOUGHT STUDY GUIDE

by Linda S. Eck, M.B.A., R.D.

## INTRODUCTION

FOOD FOR THOUGHT will give you plenty to think about and discuss. The video considers U.S. beef consumption; cattle feeding; energy and water use; soil and land conditions; and the environmental issues of deforestation and methane production.

Today, Americans eat more meat per capita than any other people in the world. Although the U.S. has 1/15 of the world's population, it eats 1/3 of its meat. Beef has always been American's favorite meat. The amount of protein consumed is frequently double, triple, even quadruple the amount needed in a single meal. The fat content easily adds up to half the total calories consumed instead of the recommended 30 percent of calories. If some is good, more is not better in this case.

Livestock production and meat consumption have become the center of controversy in many discussions of the world food crisis. On one side livestock are depicted as providing an unnecessary luxury food item and are considered an important factor contributing to future food shortages. Data used to support this viewpoint can be quite convincing.

On the other side of the controversy are experts who argue that efficient use of grazing animals does not pose a threat for future food supplies. Cattle make land that is not suitable for anything else, about 75 percent of all the land on earth, useful for mankind. Livestock production may even increase the yield of high-grade protein and byproducts extracted from renewable sources.

Much controversy surrounds the current method of raising beef in the U.S. Cattle convert grain into protein inefficiently. However, they are well-equipped to convert many fibrous plants (grass, wood pulp) that are inedible for humans into protein that we can eat. Therefore, many people object to the current practice of feeding cattle grain - which would be better used to feed the world's hungry people - and recommend instead that cattle be pastured on grasslands. Such ecological considerations have attracted considerable attention in light of Third World food shortages.

Publicity has been directed at the health hazards associated with eating large amounts of beef, especially high incidence of heart disease. A high intake of marbled beef, fried foods, and high fat processed foods contributes to diets high in fat. Especially problematic are the high levels of cholesterol and saturated fats that have been linked to cardiovascular disease.

A significant number of Americans are changing their eating habits due to health concerns related to heart disease, cancer, obesity, high blood pressure and diabetes. Food habits commonly adopted include decreased beef, milk and egg consumption. The impact of consumers' dietary changes is evident in the host of new products boasting labels stating "low cholesterol" or "low fat".

One way Americans are reducing their health risks is through the use of vegetarian diets. Vegetarian diets are high fiber, low fat and are linked to decreased rates of heart disease, cancer, and obesity. Cholesterol is derived from animal sources. Animal foods are limited in the vegetarian diet. However, fat is found in both animal and plant sources.

There is a wide variety of vegetarian dietary practices. Some people eat fish but no meat, others eat poultry but no red meat. Some vegetarians eat such large amounts of dairy products that the fat content of their diet is close to that of avid meat eaters. Some vegetarian diets may not provide adequate amounts of protein, vitamin B-12, vitamin D, calcium, zinc and iron.

## GLOSSARY

**arteriosclerosis** – condition characterized by a thickening and hardening of the walls of the arteries and a resultant loss of elasticity.

**atherosclerosis** – a type of arteriosclerosis in which lipids, especially cholesterol, accumulate in the arteries and obstruct blood flow.

**cholesterol** – a soft, fat-like substance found in all your body's cells. It is an important part of a health body because it is used to form cell membranes, certain hormones and other necessary tissues. The most concentrated sources are egg yolks, organ meats, fatty meats and whole milk dairy products.

**cholesterol free/no cholesterol** – on a food label this term means a product with less than 2 mg. cholesterol per serving.

**complementary proteins** – two or more proteins whose amino acid assortments complement each other in such a way that the essential amino acids missing from each are supplied by the other.

**essential fatty acid** – a fatty acid that the human body cannot manufacture and that must be supplied by the diet, as it is necessary for growth and maintenance.

**fat** – an organic compound whose molecules contain glycerol and fatty acids; fat insulates the body, protects organs, carries fat-soluble vitamins, is a constituent of cell membranes, and makes food taste good.

**fatty acid** – a simple liquid - containing only carbon, hydrogen, and oxygen - that is a constituent of fat.

**high-density lipoprotein (HDL)** – a lipoprotein that acts as a cholesterol carrier in the blood; referred to as “good” cholesterol because relatively high levels of it appear to protect against atherosclerosis.

**hypertension** – a condition in which a person has a higher blood pressure than that judged to be normal.

**lacto-vegetarians** – vegetarians who consume milk, but no eggs or meat.

**lipid** – broad term for fat or fatlike substances in the body or in food that are insoluble in water.

**lipoprotein** – compound composed of a lipid (fat) and a protein that transports both in the bloodstream.

**low cholesterol** – on a food label this term means a product has less than 20 mg. cholesterol per serving.

**low-density lipoprotein (LDL)** – a lipoprotein that acts as a cholesterol carrier in the blood; referred to as “bad” cholesterol because relatively high levels of it appear to enhance atherosclerosis.

**low fat** – on a food label this term means a meat or poultry product (except ground beef) has not more than 10 percent fat. In milk and most milk products the term means the product contains a fat content of 0.5, 1.0, or 2.0 percent.

**monounsaturated fat** – found in olive oil, rapeseed (canola) oil. May be as effective as polyunsaturates in lowering cholesterol levels.

**obesity** – abnormal amount of fat on the body. This term is usually not employed unless the individual is from 20-30% over average weight for his or her age, sex, and height.

**omega-6 fatty acids** – found in vegetable oils such as safflower oil, sunflower seed oil, soybean oil and corn oil.

**omega-3 polyunsaturates** – found mostly in deep sea fish.

**ovo-lacto-vegetarians** – vegetarians who eat eggs and milk, but avoid meat.

**polyunsaturated fat** – includes both omega-6 fatty acids and omega-3 polyunsaturates.

**saturated fat** – the main dietary culprit in raising blood cholesterol. It can come from both animal and plant sources. Fats from animal sources include such items as

suet, lard, butter, chicken fat. Coconut oil, palm oil and palm kernel oil are plant sources of saturated fat. Saturated fats increase the amount of cholesterol carried in the general circulation. Saturated fat tends to be hard at room temperature.

**triglycerides** – a type of blood fat that provides the body's major source of energy from fat and is the body's main storage form of energy.

**vegans** – strict vegetarians who exclude all animal products from their diets.

## **ADDITIONAL RESOURCES – PERIODICAL OR PAMPHLETS**

12 Myths & Facts About Beef Production. National Cattlemen's Association.

Are Vegetarians Healthier Than the Rest of Us? Bonnie Liebman. Nutrition Action, 10:8-11, June 1983.

Rainforests and the Hamburger Society. James D. Nations and Daniel I. Komer. The Ecologist, Vol. 17, No. 4/5, 1987, pp. 161-167.

Profit By Appointment Only. Joel Salatin. The New Farm, September/October 1991, pp. 8-12.

ABCs Of Rotational Grazing. Darrell L. Emmick. The New Farmer, May/June 1991, pp. 22-23, 42 and July/August 1991, pp. 26-28.

Nutrition and Your Health: Dietary Guidelines for Americans. Third Edition, 1990. U.S. Dept. of Agriculture.

## **ADDITIONAL RESOURCES – BOOKS**

Diet and Health Report. 1989. National Research Council of the National Academy of Sciences.

The Surgeon General's Report of Nutrition and Health. 1988. U.S. Public Health Service.

The Nutrition Debate: Sorting Out Some Answers. Joan Dye Gussow and Paul R. Thomas. 1986. Bull Publishing Company.

The New Laurel's Kitchen: A Handbook for Vegetarian Cookery and Nutrition. Laurel Robertson, Carol Flinders and Brian Ruppenthal. 1986. Ten Speed Press.

Diet for a Small Planet. Frances Moore Lappé. 1982. Ballantine Books.

The Vegetarian Handbook: A Guide to Vegetarian Nutrition and Foods. Rodger Doyle. 1979. Crown Publishers.

Issues in Nutrition for the 1980s: An Ecological Perspective. Allice L. Tobias and Patricia J. Thompson. 1980. Wadsworth Health Sciences Edition.

The Cultural Feast - An Introduction to Food and Society. Carol Bryant, Anita Courtney, Barbara Markesbery, Kathleen DeWalt. 1985. West Publishing Co.

Empty Breadbasket? - The Coming Challenge to America's Food Supply and What We Can Do About It. The Cornucopia Project. 1981. Rodale Press.

Earth Keepers: Environmental Perspectives on Hunger, Poverty and Injustice. Art and Jocele Meyer. 1991. Herald Press.

## **ADDITIONAL RESOURCES - ORGANIZATIONS**

American Dietetic Association, 216 W. Jackson Blvd., Suite 800, Chicago, IL 60606-6995.

Seventh-Day Adventist Dietetic Association, P.O. Box 75, Loma Linda, CA 92354

American Heart Association - local chapter

American Cancer Society - local chapter

American Diabetes Association - local chapter

Vegetarian Resource Group, P.O. Box 1463, Baltimore, MD 21203.

Center for Science in the Public Interest, 1875 Connecticut Ave., NW, #300, Washington, D.C. 20009.

National Live Stock and Meat Board, 444 North Michigan Ave., Chicago, IL 60611.

National Cattlemen's Association, 1301 Pennsylvania Ave., N.W., Suite 300, Washington, D.C. 20004-1701.

## **DISCUSSION QUESTIONS**

1. What is the role of agriculture in the U.S. economy?
2. Can we continue to eat the current amount of animal protein in our diet, considering economic, environmental, nutritional and health issues?
3. Can new sources of protein be found that will meet the body's needs?
4. Is a vegetarian diet or a meat based diet healthier?
5. Is a vegetarian or meat based diet better for the environment?
6. What role do Central America's rainforests play in our lives?
7. What is the greenhouse effect? How is it involved with food production.
8. What is deforestation? How does that impact on the environment?
9. What are the different types of vegetarian diets and what nutrients, if any, need special attention?
10. What is the effect of a meat centered diet and a vegetarian diet in diseases such as heart disease, cancer, obesity, high blood pressure, diabetes?

## AREAS TO EXPLORE

1. Interview a person who has been following a vegetarian diet for more than five years. Find out what kinds of foods they eat and how they are prepared.
2. Learn more about vegetarian diets by trying some different foods.
3. Find out about ways to conserve topsoil.
4. Find out how governmental regulations effect beef production.
5. Examine your own diet and evaluate what you actually eat during one week. What changes are you willing to make to respond to current ecological issues?
6. Find out why irrigation is used and what is involved in irrigating a field.
7. Make a list of foods high in vitamin B12, iron and zinc that a person on a non-red meat diet should consume in order to obtain adequate amounts of these nutrients.
8. Find out about the occurrence of heart disease, cancer, high blood pressure, diabetes, and obesity in people consuming a meat based diet and a vegetarian diet.
9. Invite a Registered Dietitian (R.D.), Cooperative Extension Agent, Department of Environmental Resources (DER) official, or farmer to talk to the students about their concerns.
10. Have students research both sides of this issue and then have a debate on this topic.

## RELATED BULLFROG FILMS

FAT CITY (28 min.) A look at the causes of, and research being done on obesity.

GROWING PAINS (26 min.) David Bellamy examines the world hunger problem and finds that there **could** be enough to go around.

DIET FOR A SMALL PLANET (28 min.) Francis Moore Lappé shows how combining complementary proteins in non-meat foods can give complete protein and free up food for the rest of the world.

Bullfrog Films  
Oley, PA 19547

