



LOMA LINDA UNIVERSITY

Adventist Health Study-2  
Loma Linda, CA 92350 USA

ADDRESS SERVICE REQUESTED

Non Profit Organization  
U.S. Postage  
**PAID**  
Ft Worth TX  
Permit No. 3310

Contact AHS-2 at 1-800-247-1699 or [www.adventisthealthstudy.org](http://www.adventisthealthstudy.org)

**Address Correction** : Please correct any mistakes or changes in your name and address and return this complete panel to Adventist Health Study-2.

Please PRINT clearly

FIRST NAME			MIDDLE INITIAL			LAST NAME		
STREET						APT#		
CITY		STATE		COUNTRY		ZIP/POSTAL CODE		
EMAIL ADDRESS						TELEPHONE		

## Are Hidden Sugars Sneaking into Your Diet?

Sugars occur naturally in good foods such as fruit. However, in our modern world, most of the sugar in our diets comes from being mixed into many items we purchase at the market including cereals, soft drinks, desserts, jams, bread, fruit punch, yogurts, doughnuts and ice cream. It may be called dextrose, corn sweetener or high fructose corn syrup, but it's sugar.

*We don't need that extra sugar for our bodies to work properly. Extra sugar contains calories that provide no nutrient value. And these calories end up being deposited as fat in all of the wrong places.*

That extra sugar also contributes to more than unsightly obesity. There has recently been renewed interest in sugar as one cause of the obesity epidemic. It is possible, though unproven, that sugar intake may also change metabolism of other calories so that they are more likely to be deposited in your body as fat. This in turn leads to fat deposited around



internal organics, high blood pressure, type 2 diabetes and other risk factors for heart disease.

The American Heart Association recommends limiting your daily intake of extra sugar to no more than 100 calories for most women and 150 calories for most men. Six teaspoons of sugar contains about 100 calories. They report that the average American consumes more than double this amount—about 360 calories from sugar each day. One can of a typical non-diet soda contains about 130 calories. A plain cake doughnut —75.

What can you do to avoid excessive sugar intake? Read nutrition labels. Check the number of sugar grams. Avoid brands that place honey, corn or maple syrup or words that end in -ose at the top of the ingredients list. Reduce by half the amount of sugar you put on your cereal or use in baking. If you buy canned fruits, buy those in natural juice or canned with water. Simple changes can make a big difference.

*Article adapted from Loma Linda University Health Wellbeing, December 2013-January 2014.*



**New scientific insights about diet and health and many other issues are being uncovered because of your participation in the AHS-2 study.**

## Because of You, This is the Year

It is somewhat sobering to realize that it is now nearly 12 years since our first members enrolled, and 6 years since the last member enrolled. By now we have more than 70 published reports in the peer-reviewed medical literature, some of which are of interest to all, and others that are much more technical in nature. We have brought you some of the general interest pieces in the past and again some new items in this newsletter. Yet, the major



**Gary E. Fraser, MD, PhD**  
Director  
Adventist Health Study

questions that motivated the study are not yet answered. You may recall these had to do with the effects of diet on risk of cancers of the prostate, colon/rectum and female breast. After this lapse of time, this is the year (2014-2015) that we will be working on these important reports. By now, enough new cancers have developed (a great stress for those unfortunate study members, of course), so that we can move ahead with definitive analyses. You will not find these data yet in this newsletter, but they should appear next year.

Another significant development has been the extension of the study beyond cancer as a disease event. Pilot work has begun, and in some cases grant applications have been submitted, to look at Parkinson's Disease, the beginning symptoms of dementia (mild cognitive impairment), and the early stages of congestive heart failure. We have also begun work to look carefully at gene expression in a selected sample of study members. This is looking for patterns in the expression of thousands of genes, comparing a small group of vegans, pescovegetarians and nonvegetarians. Hopefully the results will be interesting.

As you receive your small questionnaires every 2 years, it is of great importance that we in turn receive them back. Included in these are important updates on your health and a few other selected questions. Of course, we supplement this information with data from cancer registries, and on rare occasions, ask your permission to retrieve medical records to make sure that the diagnoses are sound.

The challenge to keep in contact with you is an ongoing problem, as people move and change phone numbers. Please be sure to check the back page of the questionnaire and confirm that our records of your address, phone number and email address are still correct.

We do hope that you continue to value your membership in AHS-2. This year the study made some news headlines from an article in the prestigious medical journal *JAMA* about the health experience of vegetarians (Dr. Mike Orlich, one of our Post-Doctoral Fellows, was the first author). Probably there will be more of this, so keep your ear tuned! It could not have been done without your participation also.

Best wishes for 2014 and may God bless you with good health.

## Are vegans and lacto-ovo vegetarians (\*LOVs) at risk of vitamin B12 and vitamin D deficiency?

### ► Vitamin B12 deficiency is a world-wide problem

Red meats, poultry and fish are good sources of vitamin B12. Because vegans and LOVs consume very little or no animal products, many physicians and scientists worried that they may be at higher risk of having a vitamin B12 deficiency.

### ► Vitamin D deficiency is widespread

Especially in the Northern Hemisphere in winter, many people do not get enough sunlight, which is the major source of vitamin D. The food with the highest amount of vitamin D is fish. Since vegans and LOVs do not eat fish, there was a concern that these individuals would exhibit vitamin D deficiency. Thanks to your participation and the participation of many others in the AHS-2 study, what have AHS-2 researchers found out?

### ► Good News

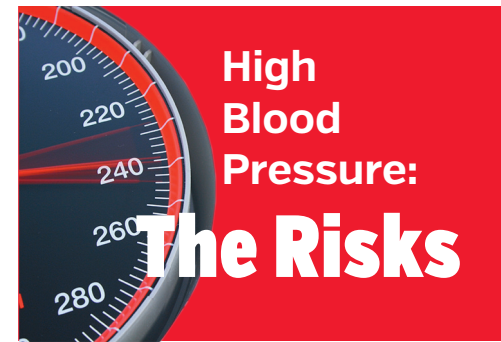
Vegans and LOVs were NOT at higher risk of vitamin B12 deficiency than non-vegetarians. AHS researchers think one reason is because the vegans and LOVs were encouraged to take B12 supplements.

### ► More Good News

Vegans and LOVs were NOT at high risk of vitamin D deficiency. AHS-2 researchers think it is because you get enough sunlight, the fortification of commercial foods, and vegetarians got the message to take vitamin D supplements.

\*A "LOV" is a lacto-ovo vegetarian who includes milk and eggs in their diet.

High blood pressure (hypertension) can cause a number of serious health issues. It can increase your risk of stroke and other types of heart disease. It can also damage your eyes and kidneys. Unfortunately, in many cases, the cause of high blood pressure in an individual may not be known. But there are some things over which you have control which



can increase your chances of developing high blood pressure. These things are called risk factors. There are risk factors over which you have no control and there are risk factors which you can do something about.

The risk factors you can't change include your racial background, family history

and age. For example, African Americans develop high blood pressure more often and at an earlier age than Caucasians. There are also risk factors which you have the ability to control, and if you do the right things, this will lower your chances of developing high blood pressure. These risk factors include:

### Being overweight

Excess weight puts strain on your heart, raises the level of total cholesterol in your blood and lowers the level of "good" cholesterol (HD or high density cholesterol). If you lose as little as 10 to 20 pounds, this can make a significant difference in your blood pressure.

### Eating too much salt

Diets containing excess amounts of salt cause excess fluid to be retained in the body. This places a burden on your heart. This risk factor can be reduced if you limit your intake to around 1500 milligrams or about ½ teaspoon of salt a day. Read the labels on the foods you typically eat which have the potential to contain increased amounts of salt. Those foods would include tomato sauce, powdered broths and soups, soy sauce and salad dressings, cheese, snack foods such as pretzels and popcorn, and any pickled food, such as dill pickles. Look for the amount of salt or sodium on the label.

### Not getting enough exercise

An inactive lifestyle makes it easier to become overweight and thus increase the chances of high blood pressure. The amount of physical activity needed is not excessive. Something on the order of 2-3 hours a week of brisk walking can make a significant difference.

High blood pressure can be dangerous to your health. Some risk factors for this health problem can be influenced by taking some of the simple steps noted here.

*Adapted from a portion of an article in the November 2013 issue of Heart Insight, a publication of the American Heart Association. Cited by permission.*

**AHS study participants are important for the information they already have provided to researchers. But your continuing participation is even more critical in the future as new investigations with great promise of uncovering exciting new insights about the relationship between diet and health are anticipated.**

Here are only a few of the important studies that are just beginning:

**Gene Expression:** It has recently been understood that perhaps even more important than which genes we have, is the control or expression of those genes. Moreover, there is clear evidence that the way we live our lives, physical activity, what we eat, and other factors, affect gene expression. Indeed many of the medicines that are swallowed act primarily by up-regulating or down-regulating the activity of our genes. So we wonder whether the relatively large differences in diet between vegans, pesco-vegetarians and Adventist non-vegetarians may also alter gene expression. Such a study is getting under way at AHS.

**Congestive Heart Failure:** Congestive heart failure (CHF) is an increasingly common affliction as the population lives to be older. The two most common causes of CHF are coronary artery disease, and the heart disease often associated with poorly-controlled high blood pressure. In addition, there are a large number of less common or rare causes. But both of these two common causes are greatly affected by lifestyle. So in a pilot study in collaboration with the Loma Linda University International Heart Institute, 200 study members are attending clinic and undergoing echocardiography and other testing. When this pilot study is completed, an investigation which will include a much larger number of AHS-2 participants is planned.

**Dietary Factors in Parkinson's Disease:** An AHS-2 researcher will examine the possibility that certain dietary patterns, especially those that include various types of

antioxidants, may influence the onset of Parkinson's disease (PD). Compared to the general United States population, dietary intake of foods containing high levels of these antioxidants is a characteristic of Seventh-day Adventists. If the proposed project does find that certain components or pattern of diet, and specifically a plant-based diet, are protective in PD, it would serve not only as confirmatory of some prior studies, but would also have implications for clinical practice by providing a basis for recommendations aimed at disease prevention.

**Diet and Mental Function:** Another research project at AHS-2 just getting underway will look for ways in which your diet can protect you against the loss of memory and other types of mental function as you get older. An earlier study with a limited number of people has suggested that memory in older adults can be improved by adding walnuts to ones diet. The results of these kinds of studies are often not able to provide conclusive information because of the

relatively small number of individuals that participated. However, the very large cohort of participants in the Adventist Health Study-2 is an ideal group to examine the effects of a plant-based diet on memory and other mental functions. The principal investigator for both the Parkinson's disease and diet and mental function study will be Nicole Gatto, MPH, PhD, Associate

Professor in the Departments of Epidemiology, Biostatistics and Population Medicine in the School of Public Health, Loma Linda University.

### Lifestyle, Religion, and Usage of Health Care Services:

Another AHS-2 research project being initiated will investigate the usage of health care services (e.g. hospitalization) among older United States Seventh-day Adventists which can be obtained by examining Medicare data. This study is being conducted by Sherma Charlemagne-Badal, PhD, an AHS-2 researcher involved with the Biopsychosocial Religion and Health Study (BRHS). The BRHS aims to understand what specific aspects of religion, life stressors and other health behaviors account for better or worse health and trace some of the biopsychosocial pathways to health. AHS-2 data has heretofore not been linked to health services data and thus it has not been possible to answer a number of important questions about lifestyle, religion and race. The aim of this study is to determine how these factors in a Seventh-day Adventist population interface with health service use.

