

## L I F E S T Y L E

ADVENTIST  
Review

online edition



# SAVE YOUR LIFE WITH WATER

*New research reveals that water  
may prevent heart attacks.*

**N**OT DRINKING ENOUGH WATER HAS been previously linked with several physical ailments, such as constipation, kidney stones, overeating, and dry eyes, mouth, and skin, but never before has it been linked to coronary heart disease. However, in a press conference held April 25 researchers at Loma Linda University (LLU) revealed that drinking high levels of water can significantly reduce the risk of coronary heart disease.

The results of the researchers' study, published in the *American Journal of Epidemiology* (vol. 155, no. 9), show that drinking high amounts of plain water is as important as exercise, diet, and not smoking in preventing coronary heart disease.

"Basically, not drinking enough water can be as harmful to your heart as smoking," warns Jacqueline Chan, Dr.P.H., principal investigator and lead author of the article.

Chan and Synnove Knutsen, M.D., Ph.D., second author, department chair of epidemiology and biostatistics, School of Public Health, found that California Seventh-day Adventists who drink five or more glasses of plain water a day have a much lower risk of fatal coronary heart disease compared to those who drink less than two glasses per day.

The study, "Water, Other Fluids, and Fatal Coronary Heart Disease," indicates that whole-blood viscosity (thickness), plasma viscosity, hematocrit, and fibrinogen—which are considered independent risk factors for coronary heart disease—can be elevated by dehydration. Neither total fluid intake nor intake of other fluids combined showed this reduced risk. Instead, for women, high intake (five or more glasses a day) of other fluids showed a greatly increased risk of

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coronary heart disease.

Coffee, soda, milk, and caffeinated soda did not show any statistically significant heart benefits. Most other fluids are considered high-energy drinks. The initial effect of these types of fluids is actually to draw water from the blood, because they cannot be digested until their concentration is reduced to be similar to that of blood. This causes at least a temporary increase in blood viscosity, thus increasing the risk of blood clots.

Water, however, is absorbed immediately, thus hydrating the blood system. Drinking high amounts of water, then, thins the blood, reducing the risk of blood clotting, which could lead to heart attacks.

"People need to be made aware that there is a difference, at least for heart health, whether they get their fluids from plain water or from sodas," says Chan.

Though more research is needed to confirm the findings, Chan and Knutsen have already adjusted the figures to account for other potential factors in heart disease fatalities, such as age, smoking, calorie intake, exercise, blood pressure, and socioeconomic status.



"When we tested to see if these protective effects from water might really have come from some other factor, we tested more than 11 risk factors, but the benefit of water remained," shares Chan.

Other risk factors included education, nuts, meat, whole-wheat bread, and hormone replacement therapy in women.

The water study is part of the original Adventist Health Study, which began in 1973. Both researchers are also coinvestigators for the new Adventist Health Study. The study was done on more than 20,000 non-Hispanic Whites living in Seventh-day Adventist households. According to Knutsen, there is no reason to believe a similar study of different populations wouldn't reveal similar results.

"Thinking logically, we would expect the general population to show the same results," responds Knutsen. "They all have a similar physiology." Other risk factors for coronary heart disease discovered in the Adventist Health Study have also been found to be risk factors in the general population—namely meat intake, and not eating enough nuts, whole grains, and legumes.

While it is true, according to 1976 data, that Seventh-day Adventists drink more plain water than the general public (average intake of four and a half glasses per day compared to more than two and a half glasses), this indicates that increases in water intake would actually benefit the non-Adventist population as a whole even more.

The results from this study demonstrate that by drinking more plain

water, healthy people-without any history of heart disease, stroke, or diabetes-reduced their risk of dying from a heart attack by half or more. This is as much as or more than if they had adopted any other well-known preventive measure, including stopping smoking, lowering cholesterol levels, increasing exercise, and maintaining ideal weight.

In fact, the degree of benefit from drinking plain water surpasses that of drinking a moderate amount of alcohol and taking aspirin, with none of the adverse side effects (social or physiological). Drinking moderate doses of alcohol or taking aspirin have each previously been identified with helping to reduce the risks of coronary heart disease.

Because drinking more plain water is a simple lifestyle change that anybody can do, this simple practice has the potential to save tens of thousands of lives each year with minimal cost.



## Water Consumption Tips

Knowing when to drink water throughout the day is almost as important as actually drinking water.

The most crucial time to drink water is when you wake up in the morning. This is the time when our bodies are most dehydrated.

The usual practice is for people to drink coffee and orange juice first thing in the morning. However, both beverages are known to cause at least a temporary increase in blood viscosity at a time when the blood is most viscous. The result is an increase in heart attacks in the morning. An easy way to combat this is to begin each day with a glass or two of water.

You should drink water throughout the day, but pay special attention to keeping your body hydrated before you work out. Hydration is also important during your workout. After your work out is the most important time to rehydrate your body to replenish the water your body has used.

For men, six to 12 eight-ounce glasses of water are recommended each day, while for women, four and a half to nine eight-ounce glasses of water are recommended.

According to Chan, this is the first study to record the association between high water intake and reduced risk of coronary heart disease. The study is significant news in the battle against coronary heart disease. Nearly 530,000 people died from coronary heart disease in 1999. More than half of those people had no previous symptoms of heart disease.

"This study needs to be replicated, and if similar results are found, then this would be the cheapest and simplest method of preventing coronary heart disease that could be imagined," adds Gary Fraser, M.D., Ph.D., cardiologist at the LLU International Heart Institute and principal investigator for the new Adventist Health Study.

The water study is supported by a grant from the National Institutes of Health and is part of the Adventist Health Study, which was designed to test the effects of lifestyle on the risk of coronary heart disease and cancer.

In 1976 more than 34,000 White non-Hispanic California Seventh-day Adventists completed a detailed lifestyle questionnaire. Then researchers studied from that sample more than 8,000 men and 12,000 women who reported no history of heart disease, stroke, or diabetes and were at least 38 years old. For six years beverages consumed by individuals were documented per day, week, and month. Water intake was reported by the glass, per day (eight-ounce serving).

During that time 246 coronary heart-related deaths were reported among the

participants.

The study showed that men who drank three or four glasses of water per day had a 40 percent reduction in risk of coronary heart disease, while women who drank the same number had a 43 percent risk reduction, after taking into account the risk factors as previously mentioned.

Male participants who drank five or more glasses of water a day showed a 62 percent reduction in risk, while women who drank the same amount of water had a 39 percent risk reduction, after taking into account the risk factors as previously mentioned.

News coverage of this study has been widespread. Articles have been written in the *Riverside Press Enterprise*, the *San Bernardino Sun*, brief mentions in *The Wall Street Journal* and *Investor's Business Daily*, and several Web sites, including ABC News. The story was picked up by both Reuters and the Associated Press. Radio and television interviews on this subject have been numerous, with radio health programs demonstrating a great interest in the effects of water on the well-being of their listeners.

At the time this issue of *Scope* went to press, *Newsweek* and *Allure* magazines were working on articles relating to the water research as well. Not surprisingly, interest among the bottled water community has been widespread. The International Bottled Water Association made a presentation to a group of physicians including representatives from the American Medical Association and the American Heart Association. At the time of the original study, however, bottled water had not reached the proportions of popularity that it currently enjoys and was not factored into the study.

"Our study could not show if one type of water was better than another," details Chan.

Currently Chan is researching whether drinking large amounts of water has an effect on fatal strokes. Preliminary data suggest that patients who have a physician-diagnosed stroke or heart disease have a reduced risk of fatal stroke if they drink more water.

"If you don't have heart problems, water can help reduce your risk of a fatal heart attack, and if you do have heart problems, or have had a stroke, preliminary results indicate that water can reduce your risk of fatal stroke," says Chan. "Either way, everyone benefits."

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