Calcium Guards Against Hypertension

Everyone knows the mineral calcium can help keep bones strong. A new study suggests this nutrient may also help prevent high blood pressure, a disorder that strikes an estimated 63 million people in the United States.

This is not the first time scientists have looked at calcium's role in hypertension. Previous research has shown that calcium supplements help lower blood pressure in some people with established hypertension (SN: 12/14/85, p.372).

However, James H. Dwyer of the University of Southern California School of Medicine in Los Angeles and his colleagues took a different tack in their study. They wanted to find out whether calcium could prevent high blood pressure from developing. Dwyer reported the group's findings this week at a meeting of the American Heart Association in New Orleans.

The California team studied 6,634 men and women who had participated in an epidemiologic study called the National Health and Nutrition Examination Survey I, which began in 1971 and ended in 1984. None of the participants suffered from hypertension at the study's start.

Dwyer and his colleagues discovered that many of the volunteers developed hypertension during the study. The team also calculated how much calcium participants consumed daily, based on dietary questions they answered when they entered the study.

To gauge the impact of calcium on the development of hypertension, the team relied on a statistical analysis: They discovered that people who consumed at least 1 gram of calcium per day lowered their risk of high blood pressure by about 12 percent.

Three servings of dairy products contain about 1 gram of calcium, notes Gregory D. Miller of the United Dairy Industry Association in Rosemont, Ill. Other foods rich in calcium include leafy green vegetables, such as kale and broccoli, and fortified orange juice, he adds.

Certain participants seemed particularly apt to profit from a calcium-rich diet: The team observed that moderate drinkers who ate at least a gram of calcium each day reduced their risk of developing hypertension by 20 percent. Moderate drinking is defined as imbibing alcohol less frequently than once a day.

"If you drink alcohol every day, your calcium intake won't do any good," adds Dwyer, who notes that alcohol interferes with the body's absorption of calcium and thus may block the blood-pressure-lowering benefits of this nutrient.

People under age 40 reaped even greater benefits from calcium. Those who ate a diet with more than 1 gram of calcium per day lowered their risk of hypertension by 25 percent. Dwyer believes the mineral may not moderate full-blown high blood pressure but, if taken early in life, may help keep the disorder at bay.

"Increasing calcium intake during childhood may prevent, or at least delay, the development of hypertension," he says. Dwyer's team is conducting a study to see if calcium supplements can ward off hypertension in a group of black teenagers who are at risk of high blood pressure.

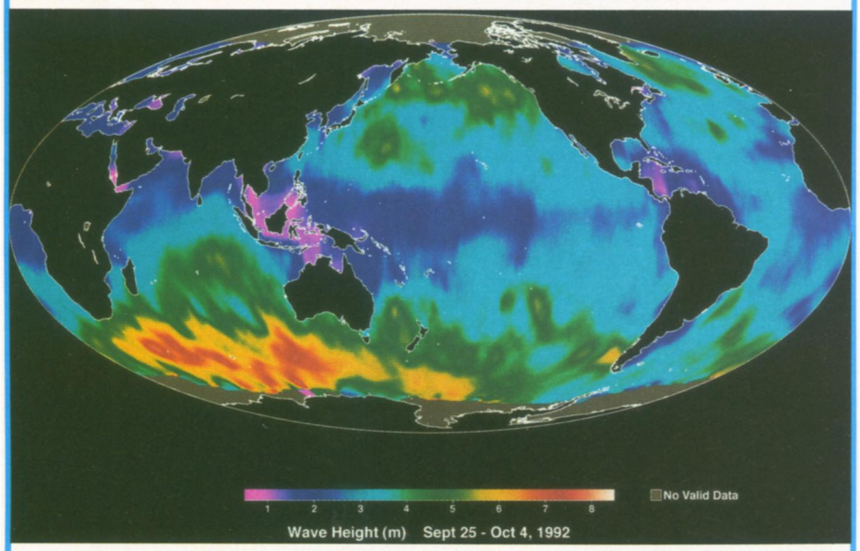
The researchers also found that thin people got good value out of a high-calcium diet. Relatively lean people decreased their hypertension jeopardy by 18 percent.

The new study fits with previous research showing that calcium supplements prevent preeclampsia, a type of high blood pressure that can develop during pregnancy. In addition, Miller's research with laboratory rats showed that animals bred for hypertension did not develop the disorder when given calcium supplements.

The California study showed that people who were lean, under age 40, and moderate drinkers enjoyed the greatest risk reduction of all: By eating foods that contained at least 1 gram of calcium per day, they reduced their risk of high blood pressure by 40 percent, Dwyer says.

"If you could reduce the incidence of hypertension by 40 percent, it would have an enormous public health impact," he notes. *– K.A. Fackelmann*

Satellite above watches waves below



NASA

Scientists created this map of global wave heights from data gathered by the TOPEX/Poseidon satellite, a joint French-U.S. project and part of NASA's ongoing Mission to Planet Earth. The satellite, fired into orbit Aug. 10 aboard an Ariane 4 rocket launched from the Guiana Space Center in Kourou, French Guiana, will observe the world's oceans continuously for three to five years. Scientists will use the data it gathers to improve long-range weather forecasting and clarify the ocean's role in global climate dynamics.

The colors in the photograph above reflect the dominant wave heights detected by TOPEX/Poseidon's instruments. The splash of red and yellow in the southern hemisphere, for example, indicates that 18- to 26-foot-high waves were common in that region during the 10 days it took TOPEX/Poseidon to sweep the globe with its microwave pulses.

TOPEX/Poseidon is the first satellite dedicated solely to oceanographic research since NASA's 1978 Seasat mission. Its instruments will enable oceanographers to map ocean surface features, globe-circling currents, and continent-size circulation patterns with unprecedented accuracy.

These worldwide, long-term measurements are invaluable to researchers who study the dynamics of the Earth's oceans, says Jurrie van der Woude of NASA's Jet Propulsion Laboratory in Pasadena, Calif.

"Oceanographers have studied the seas from ships, but that only gives you a snapshot," van der Woude explains. "Spacecraft like [TOPEX/Poseidon] provide a long-term, coherent, panoramic picture of all the oceans."