Genetically modified carrots provide more calcium

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A specially developed carrot has been produced to help people absorb more calcium. Researchers at Texas A&M AgriLife's Vegetable and Fruit Improvement Center studied the calcium intake of humans who ate the carrot and found a net increase in calcium absorption. The research, which was done in collaboration with Baylor College of Medicine, means adding this carrot to the diet can help prevent such diseases as osteoporosis.

"If you eat a serving of the modified carrot, you'd absorb 41 percent more calcium than from a regular carrot," said Dr. Jay Morris, lead author on the paper, a post doctorate researcher at Baylor College of Medicine in Houston.

The finding will be reported in the *Proceedings of the National Academy of Sciences* online edition Jan. 14.

"The primary goal was to increase the calcium in fruit and vegetables to benefit human health and nutrition," Morris said. "Fruit and vegetables are good for you for many reasons, but they have not been a good source of calcium in the past."

Morris, who worked on the study while earning a doctorate at Texas A&M University, said fruits and vegetables play a role in good bone health for other reasons.

"We believe that if this technology is applied to a large number of

different fruits and vegetables, that would have an even greater impact on preventing osteoporosis," he said.

For this study, the researchers provided the carrots to a group of 15 men and 15 women. The people were fed either the modified carrots, called sCAX1, or regular carrots in the week one. On a second visit two weeks later, they were fed the other type of carrot.

Urine samples were collected 24 hours after each feeding study to determine the amount of specially marked calcium absorbed, Morris explained.

The study group also was evaluated for their normal absorption rate to compare with the rate of absorption from the calcium-enhanced carrots, he said.

He said both men and women absorbed higher amounts of calcium from the modified carrots. But the technology needs to be available in a wide range of fruits and vegetables so that people can get the calcium benefit.

"The daily requirement for calcium is 1,000 milligrams, and a 100 gram serving of these carrots provides only 60 milligrams, about 42 percent of which is absorbable," he noted. "A person could not eat enough of them to get the daily requirement."

But if vegetables and fruits could be bred to contain more calcium, then a diet that includes a variety of these produce might come closer to providing necessary calcium, Morris said.

"Increased fruits and vegetables (in the diet) are better for a myriad of reasons," he said.

Source: Texas A&M University