Scientists Create Mice That Produce Heart-Healthy

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HealthDay Reporter

WEDNESDAY, Feb. 4 (HealthDayNews) -- Scientists may have devised a wa the ability to produce heart-healthy omega-3 fatty acids on their own.

While the discovery has so far only been applied to mice, if it were transferr humans could one day be eating eggs, milk and meat fortified with these ac

"The actual translation of this mouse model to what could be available to hu established, but the principle of enriching the diet is one most of us in the c endorse," says Dr. Ronald M. Krauss, a spokesman for the American Heart A director of atherosclerosis research at Children's Hospital Oakland Research California.

Omega-3 fatty acids are known to prevent heart disease in humans but are microorganisms such as bacteria and algae. Humans get most of their omeg

"Fish get them from microorganisms [algae] and then we get them from fis X. Kang, lead author of a study appearing in the Feb. 5 issue of *Nature* and professor of medicine at Harvard Medical School. "That's the food chain."

The American Heart Association recommends eating fish twice a week to ge of omega-3 acids. Salmon and trout have particularly high amounts of these

Many farmed fish and livestock are fed special meals to make sure they get but this method is expensive and recent research has found that farm-raise levels of the chemical contaminant PCB. One way around these issues migh animals to produce omega-3 on their own.

Paradoxically, while mammals, including humans, have a paucity of omega- also have an abundance of omega-6 fatty acids -- or polyunsaturated fats -- health benefits.

"On the one hand, we have too much omega-6 and, on the other, too little convert to the other? That's the question," Kang says.

Kang and his colleagues reasoned that if they could transfer a gene from on microorganisms into a mammal, they might solve this human nutrition prob

To this end, they transferred a gene from a roundworm, which can produce own, into laboratory mice. The gene codes for an enzyme that converts ome omega-3 acids.

The mice appeared to stay healthy even in the absence of omega-3 from die tissue was also high in omega-3 acids.

By contrast, wild mice who received an identical diet were deficient in omeg

The next question is whether scientists can do this in farm animals, to produ eggs rich in omega-3 fatty acids.

"Now that we have had the success in the mice, then we are confident that livestock, and that's what we really want to do," Kang says. "That's the app technology in the future. We're trying to do this in fish."

However, the real obstacle may not be technology but public and political op

"We are not worried about the technical part. We can do that in the near fut "Politics and public opinion, that's the part we cannot control."

Still, Kang is optimistic.

"I think that this option is easier for the public to accept than any other gen because it increases their nutrients," he says. "It is unlike other methods th productivity or disease resistance. The overall chance looks good."

More information

For more on omega-3 fatty acids, visit the American Heart Association. The and Blood Institute has heart-healthy recipes.

SOURCES: Jing X. Kang, M.D., Ph.D., associate professor,r medicine, Harva Boston; Ronald M. Krauss, M.D., spokesman, American Heart Association, a atherosclerosis research, Children's Hospital Oakland Research Institute, Ca 2004, *Nature*