Gut microbes may be engineered to fight vitamin deficiency

It’s easy to forget how horrifying the effects of a vitamin deficiency can be. Each year, up to 500,000 children in the developing world go blind from lack of vitamin A, half of whom will then die within 12 months. The molecule that could save their lives is so well-studied and abundant, yet we haven’t figured out how to get it to them.

Could the answer be bacteria that permanently reside in their guts, making a continuous supply of it?

New Scientist reports on an intriguing new study from Loredana Quadro at Rutgers University. Quadro’s team took a gene from a bacterium that naturally makes beta-carotene—a molecule that gets metabolized into vitamin A in the body—and put it inside a different strain that naturally colonizes the guts of mice. The genetically engineered strain was allowed to grow inside mice, and within two weeks, beta-carotene was coursing through their blood.

The idea of turning our gut microbiota into a vitamin factory is not so outlandish. In fact, it already happens. The majority of our vitamin K, which is essentially for blood to clot, comes not from food but from gut bacteria. That’s why antibiotics can cause a vitamin K deficiency. The vast numbers of bacteria in our guts can also synthesize vitamin B12, folic acid, and thiamine. Instead of capsules of vitamin B12, we could one day pop a probiotic pill that makes care of our vitamin B12 needs forever.

Read full, original article: Could Genetically Engineered Bacteria in Your Colon Replace Vitamins?