MedicalXpress

Iron-fortified nutrition bars combat anemia in India

January 18 2017

An iron supplement bar given to anemic women in and around Mumbai, India, led to increased hemoglobin and hematocrit levels, reducing anemia with no reported side effects, according to a study by Duke University researchers and collaborators in India.

The study appears in the Jan. 18 edition of the *American Journal of Clinical Nutrition*.

Iron-deficiency anemia is the most common and widespread nutritional disorder in the world, and in India it affects more than 600 million people. India's high prevalence of iron-deficiency anemia is largely due to the local vegetarian diet. Iron-deficiency anemia can cause fatigue, pregnancy complications and heart problems. Iron supplement pills often have gastrointestinal side effects, so are an undesirable remedy for many people.

According to study authors, iron-fortified foods offer a more attractive alternative, but large-scale production and distribution have proven unsustainable.

Duke medical student and lead author Rajvi Mehta developed the supplement bar made with iron-rich natural, local and culturally accepted ingredients. The GudNesS bars contain the World Health Organization's daily recommended dose of iron. In 2011, Mehta worked with nutritionists and physicians in India to establish a social venture there called Let's Be Well Red (LBWR) to begin large-scale production of the

bars.

The study, conducted from March-August 2014 in Mumbai and Navi Mumbai, India, involved 179 anemic non-pregnant participants of reproductive age in 10 demographically diverse sites. The sites were then randomly placed in either a control group or an intervention group with the latter receiving one iron supplement bar daily for 90 days.

Each group underwent three blood tests during the 90-day follow-up period to measure their hemoglobin and hematocrit. It was a rare study to examine changes in hematocrit as an outcome in an Indian population.

"We are encouraged by the results of this study which show a positive connection between consuming an iron-fortified nutrition bar and a reduction in anemia prevalence," said Elizabeth Turner, study author and assistant professor of biostatistics and global health at Duke. "It appears to be a practical and well-tolerated solution to a significant health challenge in India."

Mehta is gratified that an idea she imagined as an undergraduate and brought to fruition by winning a $50,000 grand prize from a Duke start-up challenge as a medical student, now has clinical results that speak to its efficacy and potential. Mehta wanted to develop a solution that was simple and accessible. Let's Be Well Red is currently operating in three locations in India and produces 100,000 bars each year that it distributes throughout the country.

"Anemia is a debilitating condition that can have severe health consequences," said Mehta. "I am thrilled that my colleagues and I were able to develop a solution that has proven to be effective among a high-risk population. Making an impact in global health has long been a goal of mine."

More information: "Efficacy of Iron Supplement Bars to Reduce Anemia in Urban Indian Women: A Cluster Randomized Controlled Trial," Rajvi Mehta, Alyssa C Platt, Xizi Sun, Mukesh Desai, Dennis Clements, Elizabeth L Turner. The *American Journal of Clinical Nutrition*, January 2017. DOI: 10.3945/ajcn.115.127555

Provided by Duke University