CHICAGO - At least one in five U.S. children aged 1 to 11 don’t get enough vitamin D and could be at risk for a variety of health problems including weak bones, the most recent national analysis suggests.

By a looser measure, almost 90 percent of black children that age and 80 percent of Hispanic kids could be vitamin D deficient -- "astounding numbers" that should serve as a call to action, said Dr. Jonathan Mansbach, lead author of the new analysis and a researcher at Harvard Medical School and Children’s Hospital in Boston.

The findings add to mounting evidence about vitamin D deficiency in children, teens and adults, a concern because of recent studies suggesting the vitamin might help prevent serious diseases, including infections, diabetes and even some cancers.

While hard evidence showing that low levels of vitamin D lead to disease or that high levels prevent it is lacking, it’s a burgeoning area of research.

Exactly how much vitamin D children and adults should get, and defining when they are deficient, is under debate. Doctors use different definitions, and many are waiting for guidance expected in an Institute of Medicine report on vitamin D due next year. The institute is a government advisory group that sets dietary standards.

The new analysis, released online Monday by the journal Pediatrics, is the first assessment of varying vitamin D levels in children aged 1 through 11.

Previous studies in the journal this year found low levels were prevalent in U.S. teens, and also showed kids with low levels had higher blood pressure and cholesterol levels, and were more likely to be overweight.

The new analysis uses data from a 2001-06 government health survey of nearly 3,000 children. They had blood tests measuring vitamin D levels.

Using the American Academy of Pediatrics’ cutoff for healthy vitamin D levels, 6.4 million children -- about 20 percent of kids that age -- have blood levels that are too low. Applying a less strict, higher cutoff, two-thirds of children that age, including 90 percent of black kids and 80 percent of Hispanics, are deficient in vitamin D.

A Pediatrics editorial says the strongest evidence about effects of vitamin D deficiency in kids involves rickets, a bone disease common a century ago but that continues to occur.

Rickets can be treated and prevented with 400 units daily of vitamin D, the editorial says. The pediatricians’ group recently recommended that amount for all children, saying that most need vitamin supplements.

Mansbach says his study, funded by the National Institutes of Health, supports that recommendation.

Children can get 400 units daily by drinking four cups of fortified milk, or eating lots of fish, but many don’t do that.

The body also makes vitamin D when sunlight hits the skin, but many children don’t spend enough time outdoors. That’s one reason why lower vitamin D levels are found in children living in colder climates and those with darker skin, which absorbs less sunlight.