FAIRBANKS — Diabetes seems to afflict more northerners than those living near the equator, making some researchers think exposure to sunlight plays a role in the disease.

In a new study, scientists at the University of California, San Diego found that cases of type I diabetes, in which the body doesn’t make enough insulin, increase with latitude. They recommended children one and older who live about 30 degrees from the equator receive supplemental vitamin D3 during the winter to reduce their risk of childhood diabetes. The California researchers include Sharif Mohr and Cedric Garland, and their study appeared in the online version of the journal Diabetologia.

“This is a very interesting finding,” Abel Bult-Ito, a professor of biology with the University of Alaska Fairbanks Institute of Arctic Biology and Department of Biology and Wildlife, wrote in an e-mail. “It does not surprise me that there is a latitudinal
trend in a lot of diseases, including diabetes. The light-dark cycle is very important in synchronizing the circadian or biological clock, and having that disturbed at high latitudes, because of near constant light or near constant dark periods, can increase the risk for disease, such as seasonal affective disorder and sleep disorders.”

Exposure of skin to sunlight is the source of up to 95 percent of vitamin D that circulates within the body, according to Mohr and Garland. Performing sort of like plants that convert sunlight to sugars, our skin transforms strong sunlight to vitamin D3, and it doesn’t overdose, shedding the excess.

Those living in the tropics get sufficient doses every day of the year, if they spend some time in direct sunlight. For about half the year, the sun angle over Alaska is so low, we can’t get enough radiation for our skin to create vitamin D3.

“Homebound individuals, people living in northern latitudes such as in New England and Alaska, women who wear robes and head coverings for religious reasons, and individuals working in occupations that prevent sun exposure are unlikely to obtain much vitamin D from sunlight,” wrote a researcher for the National Institutes of Health.

The authors of the recent study said that children in mid-latitudes should get five minutes of sun exposure at midday in summer and about 10 minutes exposure in spring and fall to help jumpstart the skin’s production of vitamin D3. Northern children should take 1,000-2,000 IU (international units) of vitamin D3 per day, they recommended.

“That seems reasonable to me and brings their vitamin D level up to those seen
around the equator,” Bult-Ito wrote.

Though diabetes is on the rise in Alaska Natives, they have relatively low levels of the disease compared to American Indians in the southern and southwest U.S.

“Alaska Native peoples who eat a predominantly traditional diet do not have vitamin D deficiencies, probably because of dietary intake and their bodies may be able to retain vitamin D more efficiently,” Bult-Ito wrote. “That would be additional evidence for the importance of vitamin D because Alaska Native peoples used to have very low diabetes rates.”

Bult-Ito takes vitamin D supplements and thinks all northerners could benefit from additional vitamin D.

“I would say that one study to show a link between vitamin D and diabetes is not enough to state that all infants and children should take vitamin D supplements to decrease their risk for diabetes,” he wrote. “However, vitamin D is important for other reasons as well, such as bone and brain health, and combined with the low sun exposure in Alaska, vitamin D supplementation would be a good thing for us.”