

MSU study

Body can beat zinc deficiency

Zinc deficiency can ruin the body's natural immunity to disease, but new research at Michigan State University indicates immunity can be restored simply by returning to a proper diet.

"We knew lack of zinc made the body vulnerable to disease," explained Dr. Pamela J. Fraker, immunologist with the MSU Department of Biochemistry. "What we needed to find out was: 'Is a child locked into permanent bad health?'"

"We've been pleased to find that the body's immune system quickly repairs itself without resorting to drugs or abnormally high amounts of zinc — just a return to adequate zinc in the diet."

THE IMMUNE system in humans and animals produces specialized cells which ingest and inactivate invading disease organisms. The blood and other body fluids also dissolve foreign bacteria.

When zinc is absent from the diet, that immune system quickly deteriorates.

"This has only been known for a few

years," Ms. Fraker said. "Even now, we're still reaching an awareness of how much damage can be caused by even marginal zinc deficiency."

Nutritionists recommend about 18 milligrams of zinc a day for adults, but this requirement varies drastically between individuals, Ms. Fraker feels.

Zinc deficiency often occurs in the Midwest, where much of the population relies heavily on a diet of cereals, without enough meat or milk, the MSU researcher said. "It can be found anywhere diets are inadequate," she added. "You rarely find someone malnourished only in zinc."

Ms. Fraker's work with zinc was started at the urging of MSU's Dr. Richard W. Luecke, also a professor of biochemistry, known for his study of the effects of trace elements in nutrition.

"FOR YEARS physicians and clinicians have known that malnourished children are more vulnerable to disease," Ms. Fraker noted. "It doesn't even help to vaccinate these children."

Her work on recovery of the immune system uses mice, since it would be impossible to do a controlled experiment on dietary deficiency in humans. "But I'd be shocked if the findings with these lab animals didn't apply to humans," she said.

In a side-by-side comparison, one group of mice was given adequate amounts of zinc in their food, the other group a diet adequate in everything but zinc.

With young adult mice — the equivalent of 10- to 16-year-old humans — "we found a very rapid degeneration of most branches of the immune system in the zinc-deficient animals," Ms. Fraker said.

"But we found that even an animal close to death could be quickly brought back by feeding it an adequate diet. Complete return to normal immunity levels occurred in as short a time as 12 days."

With neonates — the equivalent of newborn children — "the zinc-deficient animals also repaired. It doesn't take only four days flat," Ms. Fraker said. "There was also a tantalizing period

of about two days during the recovery where the previously deficient neonate's immune capacity was almost double normal. We're studying that phenomenon now."

SINCE the drastic effects of zinc deficiency have only recently been documented, dietary problems are not limited to the poor, Dr. Fraker pointed out.

In some parts of the world "it is still not uncommon to leave trace elements out of baby formula... or intravenous fluids." There have also been problems with synthetic foods, where the manufacturer added essential vitamins and amino acids but never realized the importance of trace elements, Ms. Fraker said.

She has just received a three-year \$73,000 grant from the National Institute of Child Health and Human Development, to continue study of dietary zinc.

The American Medical Association has also invited her to help prepare information that could be used as guidelines on what to look for in malnourished patients.

YES

NO

Drain Commissioner George Kuhn

(above) got a \$6,000 salary increase

recently, but it wasn't

that easy. Although

Lillian Moffitt (left),

R-Birmingham, was

one of those who

voted in favor of the

hike, Lawrence Pernick

(right), D-Southfield, had

other ideas.

Kuhn gets salary hike from sewer budgets

By TOM LONERGAN

A \$6,000 salary increase for Drain Commissioner George Kuhn was approved 17-9 last week by the Oakland County Board of Commissioners.

The increase brings the elected official's salary to nearly \$44,000, an increase of nearly 16 percent. It will be funded from the budgets of six federally-backed sewer projects under way in the county. The projects are also financed by county bond revenues.

Kuhn, of West Bloomfield, is in charge of the projects whose budgets total between \$150 million and \$200 million. They include sewer main construction in West Bloomfield and Avon townships.

Kuhn was selected as manager of the projects by the county board. His supporters said the raise was in recognition of Kuhn's additional duties. Kuhn has been in charge of some of the projects for the past two years, said Chief Deputy Drain Commissioner Robert Fredericks.

Fredericks said the sewer project budgets include money for administration.

Kuhn is also administrator of the Southeastern Oakland County Sewage Disposal System for which he receives \$1,200. Before last week's raise, Kuhn's salary was \$37,975. He's also a member of the county Parks and Recreation Commission which pays \$35 a meeting.

REPUBLICAN COMMISSIONERS G. William Caddell of Walled Lake, Henry Host of Troy, John McDonald of Farmington, Joseph Montante of West Bloomfield, John Peterson of Rochester, Lillian Moffitt and Robert Page, both of Birmingham, and Democrat Alexander Pernick of Southfield voted for Kuhn's raise.

Voting no were Ralph Moxley, R-Birmingham, Robert Gorsline, R-Milford, Lawrence Pernick, D-Southfield, and six other Democrats. Commissioner Paul Kasper, R-Bloomfield Hills, was absent but supported the raise last Wednesday as a member of the personnel committee.

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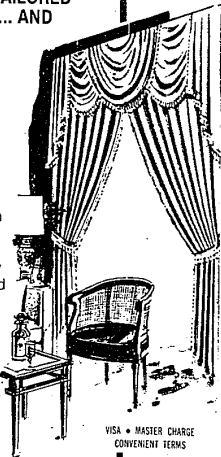
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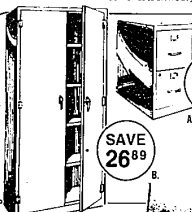
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