

## Nutrition guides to cover health, safety

Traditionally, recommended dietary allowances, or RDAs, of numerous vitamins and minerals have embodied only what was necessary to replenish daily losses and to prevent nutrient deficiencies. Beginning this year, however, the RDA will be redefined to reflect amounts needed for optimum health. Expanded nutritional guidelines will also include maximum safe intakes.

The National Academy of Sciences' Institute of Medicine (IOM) plans to release the first set of updated guidelines for vitamins and minerals related to bone health—such as calcium, magnesium, and vitamin D—later this year, says Janet C. King, director of the U.S. Department of Agriculture's Western Human Nutrition Research Center in San Francisco and a member of IOM's Food and Nutrition Board.

King announced the new evaluation system this week at a meeting of the American Chemical Society in San Francisco.

The guidelines are "very important from the standpoint of public policy," says Marion Nestle, a nutritionist at New York (N.Y.) University, because of their widespread use in food planning. For example, food fortification, school lunch, and food assistance programs all rely on the RDAs. A single number for each nutrient isn't sufficient to serve all these functions, King says.

The new standards, to be known as dietary reference intakes, will consist of three numbers: the redefined RDA, an estimated average requirement, and an upper limit for safe intake. The average requirement meets the needs of half of the population, while the RDA, as before, encompasses 97 percent.

To determine these values, seven panels of scientists appointed by IOM will consider the roles nutrients play in preventing disease, something current RDAs don't account for. The lack of such information caused a "huge furor" among nutritionists when the most recent set of guidelines came out, in 1989, Nestle says.

The panels will also look at substances that do not fit the traditional definition of an essential nutrient but may be important for maintaining good health, such as the antioxidant beta carotene.

The popularity of dietary supplements spurred IOM to identify upper safe limits. Supplements and fortified food can add up to high intakes for certain nutrients, King says, and there may be only a narrow range of tolerance for those substances. The trace metal selenium, for example, can reduce the risk of certain cancers, but too much is toxic.

Although few substances are known to have any direct toxicity, Nestle says, some may upset the overall dietary balance—by inhibiting the absorption of another nutrient, for instance.

Some nutrients, such as thiamine and riboflavin, are so benign that an upper limit may not exist, says Annette Dickinson, director of scientific and regulatory affairs for the Council for Responsible Nutrition in Washington, D.C., a trade association of dietary supplement manufacturers. However, for many nutrients, scientists have almost no information on effects of high doses, she adds.

This lack of data is forcing the panels to make "informed guesses" on upper limits, King says. As a guide, the scientists are using amounts established by the Environmental Protection Agency to have no adverse effects and then building in a safety factor.

The seven panels, each responsible for a different group of nutrients, plan to release their recommendations over the next 4 years. The panel examining the B vitamins, folic acid, and choline has begun its review; the next to be convened will look at fat-soluble vitamins, such as vitamins A and E, and related substances.

"We've moved into a new era of nutritional sciences," King says, but one harkening back to the 1930s, "when we were simply trying to determine what the essential nutrients are."

— C. Wu