

## The Nutrients We Need: RDA vs. TUL

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We're all well-aware of the obesity epidemic we face in the U.S. Even [childhood obesity](#) is becoming a crisis, affecting 33 percent of children over the age of 15. Of course, this leads to increased risk of heart disease, high cholesterol, high blood pressure and diabetes; the major killers in our society.

Another problem we face is that while our food is calorie-rich, it is nutrient-poor. Vitamins, minerals and beneficial fats are hard to find in our immediate-food-gratification lives. We can easily go to a fast-food restaurant and for a few dollars, consume more than 2,000 calories - and yet not even get the minimum daily nutrients we need. You can see how this spirals into a nation of disease created foremost by excess calories, but also by nutrient deficiency.

### RDA vs. TUL

Just about everyone is familiar with the RDA (Recommended Dietary Allowance). We look at ingredient labels to see how close we're getting to the RDA per serving of our favorite foods. Some foods even market that they contain 100 percent of the total amount of various nutrients. (Cereal is a good example.) But what is RDA really? This is the *minimum* amount of each nutrient that 97.5 percent of the population needs to prevent disease. Let's look at the spectrum of how much of a vitamin we *really* need.

One on side, we have the bare minimum to prevent disease: the amount of [vitamin C](#) we need to prevent scurvy, the amount of [B vitamins](#) we need to prevent beriberi (a nervous system ailment), the amount of [vitamin D](#) we need to prevent rickets, etc. On the other side is the toxic limit, the amount of each particular nutrient that can cause us harm. But what about the middle? In between barely enough and too much is a healthy dose, the amount of a nutrient that keeps us feeling great, happy and healthy.

The ingredient lists on food labels are confusing. Many people think that anything over 100 percent of the RDA is too much. That's absolutely false. Remember, RDA is the bare minimum, and in no way is making you feel good. This applies to multivitamins as well; that 100 percent just prevents illness - it helps keep you from feeling bad.

Don't you want to feel healthy? Don't you want to feel vibrant? What happens if you forget to take your vitamin or don't eat enough that day? You may go below that bare minimum line. Let's aim for the middle; let's aim for feeling happiest and healthiest. Let's be safe, so that we don't consume toxic doses, but let's do more than just enough.

TUL is the Tolerable Upper Limit, the amount that we can safely consume on a daily basis without becoming toxic. We rarely get anywhere near this dose unless we are consuming tons of supplements. We do need to be safe, so let's explore the ranges of nutrients that will make us feel the best; more than the minimum, but less than what could make us sick.

Addressing Deficiencies

Many of our patients are extremely deficient in micronutrients, especially the ones that nourish the nervous system. Make sure that they are taking high-dose B vitamins, magnesium and fish oil daily. These are the most important, and usually are most deficient in patients with neurological problems.

Bowel problems can easily be adjusted with mineral intake. Calcium and iron constipate; magnesium and potassium loosen stools. Also monitor zinc/copper balance. In a healthy person, they should be given a 10:1 ratio of zinc to copper, but many people are toxic in copper and need zinc supplementation to balance things out.

There are many excellent laboratory tests that can analyze body nutrient levels. Keep in mind that plasma mineral testing, such as a comprehensive metabolic panel, generally shows mineral deficiencies when they are extreme. Many nutrients are needed within the cell, especially magnesium and potassium, and their extracellular levels are always maintained by homeostasis. An intracellular nutrient analysis is most accurate to assess body levels.

### Educate and Inform

The next issue with our patients is compliance. While we can analyze what they need and make recommendations, they are the ones who need to open their mouths and swallow the foods or supplements. They are the ones who have to say no to the fast-food drive-thru and eat fruits and vegetables instead. Education and *docere* is most important, so each patient understands why their body needs zinc to boost the immune system, vitamin A to act as an anti-viral, etc.

As a doctor, it's your job to help your patients avoid chronic disease. What if you could decrease hypertension with magnesium, and decrease diabetes with chromium, and improve hypothyroid with iodine? The answer is, you can.

### Recommended Daily Allowance (RDA) Vs. Tolerable Upper Limit (TUL) For Select Vitamins And Minerals

VITAMINS				
	RDA Female	TUL Female	RDA Male	TUL Male
Vitamin A	700 mcg	3,000 mcg	900 mcg	3,000 mcg
Beta-Carotene	8,400 mcg	None	10,800 mcg	None
Vitamin C*	75 mg	2,000 mg	90 mg	2,000 mg
	*(Only causes loosening of stools at maximum dose)			
Vitamin D**	200-600 IU	2,000 IU	200-600 IU	2,000 IU
	**(New research suggests 10,000 IU daily as a new TUL; not officially adopted)			
Vitamin E	15 mg	1,000 mg	15 mg	1,000 mg
Vitamin K	90 mcg	None	120 mcg	None
Vitamin B <sub>1</sub>	1.1 mg	None	1.2 mg	None
Vitamin B <sub>2</sub>	1.1 mg	None	1.3 mg	None
Vitamin B <sub>3</sub> ***	14 mg	35 mg	16 mg	35 mg
	*** (60 mg of tryptophan will produce 1 mg niacin)			
Vitamin B <sub>5</sub>	5 mg	None	5 mg	None

Vitamin B <sub>6</sub>	1.5 mg	100 mg	1.7 mg	100 mg
Folate (B <sub>9</sub> )	400 mcg	1,000 mcg	400 mcg	1,000 mcg
Vitamin B <sub>12</sub>	2.4 mcg	None	2.4 mcg	None
Biotin	30 mcg	None	30 mcg	None
Choline	425 mg	3,500 mg	550 mg	3,500 mg
MINERALS				
	RDA Female	TUL Female	RDA Male	TUL Male
Calcium	1,000 mg	2,500 mg	1,000 mg	2,500 mg
Chromium	25 mcg	None	35 mcg	None
Copper	900 mcg	10,000 mcg	900 mcg	10,000 mcg
Fluoride	3 mg	10 mg	4 mg	10 mg
Iodine	150 mcg	1,100 mcg	150 mcg	1,100 mcg
Iron	18 mg	45 mg	8 mg	45 mg
Magnesium****	320 mg		420mg	
	****(Excess magnesium orally will cause loosening of stools)			
Manganese	1.8 mg	11 mg	2.3 mg	11 mg
Molybdenum	45 mcg	2,000 mcg	45 mcg	2,000 mcg
Phosphorus	700 mg	4,000 mg	700 mg	4,000 mg
Selenium	55 mcg	400 mcg	55 mcg	400 mcg
Zinc	8 mg	40 mg	11 mg	40 mg
Potassium	4,700 mg	None	4,700 mg	None
Sodium	1,500 mg	2,300 mg	1,500 mg	2,300 mg
Chloride	2,300	mg 3,600 mg	2,300 mg	3,600 mg

Source: National Academy of Sciences.

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