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If a man does not keep pace with his companions,
Perhaps it is because he hears a different drummer.
Let him step to the music which he hears,
However measured or far away.
-- Henry David Thoreau

"Simplicity vs. Individuality": *An Essay on Science and Vitamins*

Science is Repeatable. A cornerstone of science is repeatability. Being able to repeat an observation over and over makes things much simpler and creates confidence in the correctness of the observation. And scientific experience has shown that the greatest ideas are usually the simplest ones. In fact, bias in favor of simplicity and repeatability is so strong that scientists tend to believe they were mistaken if they can't repeat their observations.

Individuals are not Repeatable

But what about events that occur only once, and never again? These are essentially beyond the ken of current science. Repeatability makes things simple, predictable. This type of simplicity is destroyed by the uniqueness of the individual. Recognizing the tension between predictability and individuality, is helpful in getting a proper perspective on many things. This is particularly true where people are involved. Each is a unique and special case. Our differences are in some ways more important than our similarities. Both play a role in our need for vitamins.

Vitamin Science

Vitamins are chemicals that our bodies need in order to properly convert our food into energy (and for some other purposes). For example, vitamin B1 (thiamin) is an essential catalyst for one of the dozens of steps needed in the conversion of sugar into carbon dioxide, water and energy. Since the process is rapid and the vitamin is not destroyed, it can be reused many, many times. Nevertheless, even though only a very small amount is needed it does gradually wear out and need to be replaced. This means that we need to eat a little every day. Question: How much do we need every day?

The amount recommended by the United States government for daily consumption (USRDA) is based partially on the observation that as a person increases the amount of a vitamin they are eating, at some point any further increase results in an equal increase in the amount of the vitamin "spilled" in the urine. Evidently the body is getting all it can use and any additional amounts simply create additional work and stress for

the kidneys. In order to allow for some margin of error, the actual recommended amount is high enough to be adequate for nearly everyone.

Two Problems

1. National nutrition studies have repeatedly shown that about half the people in the United States get less than the recommended daily amount (USRDA) of one or more nutrients. And about one out of five have diets that are seriously deficient.
2. The recommended daily amount is necessarily based on scientific and repeatable data. It should be adequate for most people but is almost certainly not adequate for everyone.

Three Possible Solutions

1. Adequate amounts of all nutrients are readily available in the marketplace. Therefore, public nutrition could be improved by persuading the public to eat the "right" foods. Steady efforts along this line for many years have had a limited effect on improving national nutrition.
2. Find out what people are eating and then put missing nutrients in those foods. This approach (called fortification or enrichment) has been a tremendous success in reducing or eliminating many nutritional deficiencies. But it is of little value to those unique individuals who don't eat "what people are eating." In other words, their diet and/or needs are not the same as the masses.
3. An individual can insure their own adequate nutrition by intelligent selection of their diet from local supermarkets and restaurants. This can be supplemented by various vitamins or minerals to meet specific personal needs. Since intelligent knowledge or personal needs is difficult and costly to come by, use of multivitamins/mineral supplements can provide general nutrition insurance for the individual.

All three of the above solutions are being pressed by various sectors for solution of the first problem – social nutrition. And all three have definite merit and contribute to the solution. However, only the third solution addresses the second problem – personal nutrition. The first two solutions are based on simple "scientific" data that applies to the masses. It also applies to us individually since we are members of the masses. But our uniqueness as individuals makes the third solution prudent.

Whether in nutrition or other matters, the safest course is always to accept personal responsibility for the solution of personal problems. Society may not get its act together in your lifetime, but you can contribute the most, and benefit the most, from individual action.