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THE SIX SCURVIES

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A single nutrient deficiency can manifest itself in multiple ways due to the nutrient interrelationships on a cellular level and the enzymes that require these nutrients. Just as a single nutrient deficiency can result in a variety of symptoms, a single nutrient deficiency can be caused by more than one factor. As an example, manifestations of scurvy can be caused by several factors other than a vitamin C deficiency (vitamin C deficiency scurvy).

Copper deficiency - Scurvy

Scurvy-like symptoms are among the earliest signs of a copper deficiency that will affect the integrity of collagen and protein. A severe or chronic copper deficiency will eventually result in capillary fragility, aneurysms, and osteoporosis. Even though the symptoms are very close to those of a vitamin C deficiency, this type of scurvy will not respond to vitamin C or its co-factors such as bioflavonoids, etc. Actually, high vitamin C intake could worsen a copper-deficient scurvy condition since vitamin C is known to antagonize the mineral copper.

Copper excess - Scurvy

This brings us to the next scurvy condition associated with excess copper accumulation. Just as vitamin C is known to antagonize the mineral copper, copper in turn antagonizes or increases our need for vitamin C. Therefore, a person may be consuming adequate amounts of vitamin C from the diet and yet be experiencing signs of vitamin C deficiency. This would not be a classic scurvy condition since vitamin C is present in the diet, but could more appropriately be called a copper excess scurvy. These individuals require vitamin C in larger quantities than those with a low copper status.

Iron excess - Scurvy

The mineral iron is also antagonistic to copper. Excess iron intake or accumulation within the tissues can therefore contribute to a scurvy-like condition. Since vitamin C enhances the absorption of iron and antagonizes copper, vitamin C therapy is inappropriate.

Zinc excess - Scurvy

Zinc is antagonistic to copper on both the absorption and metabolic levels. Thus we can see the potential problem with giving too much zinc to those with a poor copper status in relation to zinc. Vitamin C therapy would be equally inappropriate.

Niacin excess - Scurvy

The vitamin niacin and the mineral copper are mutually antagonistic to each other as copper deficiency can be induced by large intakes of niacin. Excess copper increases the requirements for niacin and, as mentioned above, also for vitamin C. In people suffering from pellagra, copper retention and absorption increases.

It should also be noted that niacin is being promoted as having a cholesterol lowering effect, which it does. However, due to its copper- lowering effect, niacin can also contribute to hypercholesterolemia. A low copper status relative to zinc has been associated with a disturbance in the HDL/LDL ratio. Therefore, the use of niacin for hypercholesterol should be approached with caution if an individual's copper status has not been evaluated. This would be true of any substance that antagonizes the mineral copper, including vitamin C.

Conclusion

This is a brief example of how a single condition can be caused by several different factors. It also reveals the complexities of nutritional therapeutics and helps to explain the various contradictions in the nutritional field.

It is not uncommon to find patients with classical signs of a nutrient deficiency such as vitamin C. Yet vitamin C therapy may help some of those individuals, worsen others, and affect still others not at all.

Several years ago I was lecturing at a convention with over 300 people present. I asked questions regarding the therapeutic use of vitamin C. A large number of people raised their hands after I asked if vitamin C therapy had helped those with bleeding gums and excessive bruising. I then asked if anyone had noticed that the conditions did not improve or worsened with extra vitamin C intake. About a dozen people then raised their hands. Granted, this small group comprised only a small percentage of the audience, but it illustrates a very important point: Even though indiscriminate supplementation may adversely affect only a very small percentage of the general population, assessment of nutritional needs should be done prior to treatment.