Vitamins And Dietary Supplements: Too Much Of A Good Thing?

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Vitamins and dietary supplements (VDS) continue to soar in popularity, both in developing markets like the Middle East and Africa and mature ones such as Asia Pacific.

While the category generally faces fewer regulatory restrictions than over-the-counter (OTC) products, there are growing concerns about the way consumers regard VDS and health risks associated with their usage.

Euromonitor International discusses the implications of recent research related to these issues.

VDS background

Over the period 2006-2011, VDS grew at more than twice the rate of OTC treatments, at CAGR 3.2% in constant terms versus 1.4% for OTC, according to Euromonitor International data. This brought global sales of VDS to US$84.2 billion in 2011, or just 10% shy of the OTC total of US$93.9 billion. With this disproportionate growth expected to continue over 2011-2016, the VDS-OTC gap will narrow to less than 5% in 2016, with VDS and OTC sales of US$98.5 billion and US$103.2 billion, respectively.

Several factors support this growth. Ageing populations increasingly turn to VDS for preventive care, while marketing and consumer education campaigns emphasize general health and wellness. In addition, rapid urbanisation fosters more sedentary lifestyles and unhealthy diets, raising the appeal of VDS as a quick nutritional fix. Moreover, laxer regulatory oversight and â€œall-naturalâ€• branding approaches lead consumers to perceive VDS as safer and free of side effects compared to OTC products. These assumptions may not, however, be wholly accurate.

The World Health Organization (WHO) in conjunction with the Food and Agriculture Organization (FAO) of the United Nations set standards for human vitamin and mineral intake, with the most recent iteration of these guidelines released in 2004. Individual countries may use these recommendations as-is or refine them with population-specific data.

For example, the Institute of Medicine produces its own framework for individuals in the US and Canada. The WHO and the FAO define a micronutrient requirement as â€œan intake level which meets specified criteria for adequacy, thereby minimizing risk of nutrient deficit or excess.â€• Observed symptoms of diseases stemming from nutritional deficiency can help shape lower limits, but data on excessive nutrient consumption tend to be more limited. Thus, the WHO/FAO sets upper limits (ULs) for some micronutrients, but due to lack of information, these thresholds are not based on traditional toxicology standards of â€œno observed [adverse] effects.â€• In essence, determination of ULs is currently more art than science, and true vitamin and mineral toxicity levels are not yet known.

Determining how much is too much

Given the ambiguity surrounding ULs and the characterization of VDS as safe and natural, it is unsurprising that many people approach taking VDS with a â€œcan't hurt, might helpâ€• mentality. Unfortunately, there is a growing body of evidence showing that overdoing it on certain nutrients can indeed be harmful. One of the key components of this is that, with the uptick in VDS use, more and more people are getting vitamins and minerals from both food and non-food sources, making it harder to monitor actual intake.

In fact, a study in the November 2011 American Journal of Clinical Nutrition, which surveyed nearly 9,000 US adults, found that supplement users consume more minerals from their diets than non-users, increasing the risk of conditions such as kidney stones, which are associated with high calcium consumption.

A study in the May 2012 Heart also raised concerns about calcium supplements. Researchers followed almost 24,000 subjects in Germany for ten years and discovered that those taking calcium supplements were 86% more likely to have a heart attack during the study. While this relationship was not causal, the association was strong enough to prompt the authors to suggest that dietary consumption may be a preferable calcium source.

A few other studies focus on dangers related to excess vitamin D. Research presented at the American Heart Association Scientific Sessions in November 2011 showed that patients with excess levels of vitamin D have a 2.5 times greater risk of developing atrial fibrillation, a condition that affects heartbeat and can cause blood to pool and clot, compared to those with normal levels.

Another study appeared online in January 2012 in The American Journal of Cardiology. Researchers at Johns Hopkins University analysed data from more than 15,000 adults and found that vitamin D supplementation decreased blood levels of C-reactive protein, or CRP, an indicator of inflammation linked to cardiovascular disease. After a certain level,

however, additional vitamin D actually increased CRP levels. Most troublingly, this threshold was at the lower end of the â€œnormalâ€• range for vitamin D. A study appearing online in May 2012 in The Journal of Clinical Endocrinology and Metabolism found a similar relationship between vitamin D deficits and surfeits.

Dutch researchers examined over 245,000 people and found a reverse J-shaped association between blood levels of vitamin D and mortality rates (i.e. both low and very high levels of vitamin D were linked to a greater risk of death).

Vitamin E and selenium may be harmful at high doses as well. A study of more than 35,000 men in the October 2011 Journal of the American Medical Association found that those taking vitamin E had a 17% higher risk of developing prostate cancer versus those receiving a placebo; the vitamin E dosage was 400 international units (IU) compared to the Institute of Medicine recommended daily intake of 33 IU.

According to a study in The Lancet in February 2012, selenium supplements, which may prevent some cancers and delay cognitive decline, may also increase the risk of developing Type 2 diabetes when taken at higher doses.

While more research is necessary in all of these cases, the bottom line is that â€œtoo much of a good thingâ€• is an adage that does indeed apply to vitamin and mineral supplements. Just as not all OTC treatments are for everyone, VDS products require a great deal more individual selectivity. It is possible that regulators will take a more active role in guiding this process in the future, but it would behove VDS manufacturers and marketers to get involved, too.

Consumers are clearly eager to incorporate VDS into their health and wellness routines, but scientific reports on health risks may scare people away when taken out of context. If producers can help educate people on choosing the products they truly need and using them properly, it would go a long away in supporting future VDS growth.

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