

Multivitamins and minerals (MVM) and multivitamins (MV) are dietary supplements that can help avoid chronic disease.

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Introduction

Since the early 1940s, when the first multivitamin/mineral (MVM) and multivitamin (MV) nutritional supplements became available, people have been taking them. MVMs are very popular supplements, with one-third of all people in the world taking one, and one-quarter of children and adolescents taking one [1].

There is no standard or regulatory specification for MVM and MV supplements, such as what nutrients they must contain or in what levels. As a result, these phrases relate to items with a wide range of components. Manufacturers choose the combinations and quantities of vitamins, minerals, and other substances in these products, which are referred to as multis and multiples.

The National Academies of Sciences, Engineering, and Medicine's Food and Nutrition Board (FNB) establishes RDAs and AIs. RDAs are the average daily amounts of key nutrients required to meet the needs of virtually all healthy people. These figures differ depending on age, gender, and nutrition. When there is insufficient information to generate an RDA, the FNB establishes AIs for nutrients; intakes at this level are assumed to ensure nutritional adequacy. The Food and Drug Administration (FDA) in the United States provides DVs to assist consumers in comparing the nutritional content of foods and dietary supplements in the context of a whole diet. For adults and children over the age of four, the FDA establishes a single DV for each nutrient, which is usually one of the highest RDAs or AIs for that vitamin. The maximum daily intakes likely to induce adverse health consequences are established by the FNB for various nutrients. The risk of harmful consequences increases when intakes reach the UL [2].

Another issue for this product category is that many dietary supplements, despite containing a range of vitamins and minerals, are not classified as MVMs. A product combining vitamins C and E, selenium, zinc, and beta-carotene, for example, would be labelled as an antioxidant formula rather than an MVM.

Furthermore, when evaluating the possible health impacts of these products, researchers define MVMs differently (or not at all) in their studies.

In an evidence-based examination of the function of MVMs in chronic disease prevention, the Agency for Healthcare

Research and Quality classified MVMs as products that contain at least three vitamins and minerals in levels below the UL but no botanicals, hormones, or medications. One group of researchers classified MVMs as stress-tab-type, therapeutic-type, and one-a-day-type, implying that these products included MVs as well. Another group defined MVMs as items that contain all 12 vitamins as well as 10 minerals. Some studies of dietary supplements use the generic word multivitamins to refer to items that contain and do not contain minerals. MVs and MVMs are defined differently, include different examples, and inquire about different goods in various government surveys of dietary supplements and popular food-frequency questionnaires.

Because different studies do not employ items of similar content, the investigation of MVMs' possible health implications will be further complicated by varying definitions of MVMs and manufacturers' capacity to adjust the composition of their products. The results of research on the advantages (or hazards) of MVMs are highly dependent on the combinations and levels of nutrients in the MVMs employed, and the findings are not generalizable to the vast array of MVMs on the market [3].

Health and MVMs

MVMs are used for a variety of purposes. This section reviews the evidence for using MVMs to boost nutrient intake, promote health, and prevent chronic disease. Increase nutrient intakes with an MVM improves nutrient intakes and assists people in obtaining appropriate amounts of vitamins and minerals when food alone is insufficient [4].

RDAs and AIs for nutrients are amounts of intake to consume on average each day from the diet, according to the FNB. The FNB makes no mention of whether or how vitamin supplements can compensate for dietary deficiencies. Nonetheless, some consumers see MVM use as a sort of dietary or nutritional insurance, a term pioneered by Miles Laboratories in the 1940s to promote its One-A-Day line of vitamin supplements.

MVMs can also make it more likely for users to consume more nutrients than the ULs. MVM users who additionally take single vitamin and mineral supplements are more prone to consume excessive amounts of nutrients.

Several studies show that MVMs can be used for nutritional insurance by some people while also having the potential to contribute to excessive intake by others [5].

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