

Supplementary Materials

Multivitamin supplements are not superior to nutrition education in improving fat-soluble vitamin levels: A double-blind randomized controlled trial

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Supplementary Table 1. Health nutrition education content

	Benefits for your body	Symptoms of deficiency and excess	Food source
Vitamin A	Maintains normal vision and immune function; supports cell growth; enhances skin health; protects against infections	Deficiency: Night blindness, growth retardation or delayed growth, chronic gastritis, phrynodermia Excess: Hepatotoxicity, dizziness, nausea, miscarriage	Animal liver, eggs, milk, fish, red and orange vegetables
Vitamin D ₃	Promotes calcium absorption in the intestines; improves phosphate absorption in the kidneys; effectively prevents rickets, osteomalacia, and hypocalcemia in infants	Deficiency: Rickets, osteomalacia, poor bone mineralization, self-immune diseases, hypertension, heart disease, diabetes Excess: Hepatotoxicity, dizziness, nausea, miscarriage	Animal liver, egg yolk, lean meat, fish liver oil, seafood, dairy products, and fortified cereals
Vitamin E	Antioxidant, prevents oxidative stress; supports immune function; prevents blood clot formation	Deficiency: Hemolytic anemia, neurological problems; Excess: Hemorrhagic stroke	Nuts, wheat germ, soybeans, green leafy vegetables

Supplementary Table 2. Composition of the multivitamin supplement

	Unit	Dosage
Vitamin A	µg/Tablet	197
Vitamin D ₃	ng/Tablet	4.0
Vitamin E	mg/Tablet	5.1

The excipients of the multivitamin supplement include lactose, microcrystalline cellulose, silicon dioxide, and magnesium stearate

Supplementary Table 3. Comparison of pre- and post-intervention changes

Change in vitamin concentration [†]	Group 1 [‡] (n = 77)	Group 2 [‡] (n = 78)	p [§]
Vitamin A (ug/dl)	93.8±135	77.7±110	0.415
Vitamin D (ng/ml)	9.69±14.6	7.99±15.5	0.482
Vitamin E (mg/dl)	0.62±1.66	0.80±1.46	0.483

SD, standard deviation.

[†]Group 1, nutritional education + multivitamin supplement group; Group 2, nutritional education + placebo group mean ± SD

[‡]Student t-test.

[§]Data presented as mean ± SD