

MULTIVITAMINS/MULTIMINERALS IN SWITZERLAND: CONSIDERABLE VARIETY IN COMPOSITION AND ADI COVERAGE

Nadège Droz and Pedro Marques-Vidal

¹ Institute of Social and Preventive Medicine (IUMSP), Faculty of Biology and Medicine, University of Lausanne, Switzerland

Aim

Multivitamin/multimineral (MVM) supplements are commonly consumed by the general population, but little is known regarding their composition and compliance with Swiss legislation.

Conclusion

There is a great variability regarding the composition and amount of MVMs available in Switzerland. Several MVM do not comply with Swiss legislations, which calls for implementation measures.

Methods

Information on the composition of vitamin/minerals supplements was obtained from the Swiss drug compendium, the Internet, pharmacies, parapharmacies and supermarkets. MVM was defined as the presence of at least 5 vitamins and/or minerals.

Results

Of the 254 vitamin/mineral supplements collected, 95 (37%) were considered as MVM. The most frequent vitamins were B6 (70 supplements, 73.7%), C (71.6%), B2 (69.5%) and B1 (67.4%); the least frequent were K (17.9%), biotin (51.6%), pantothenic acid (55.8%) and E (56.8). For each vitamin, about half of MVMs provided more than 150% of the ADI. Regarding minerals, the most frequent ones were zinc (63 supplements, 66.3%), calcium (55.8%), magnesium (54.7%) and copper (48.4%), and the least frequent were silicon (2.2%), fluoride (3.2%), phosphorous (17.9%) and chrome (22.1%). Only one out of four MVM contained iodine. For each mineral, about half of the MVMs provided between 50 and 150% of the ADI, but this value was lower for magnesium (15.4%) and calcium (20.8%). Few MVMs provided more than 150% of the ADI. Although few MVMs provided less than 15% of the ADI for vitamins, a considerable fraction did so for minerals (32.7% for magnesium and 22.6% for calcium).

CHARACTERISTICS OF AND VITAMIN/MINERAL PROVISION BY MULTIVITAMIN-MULTIMINERAL SUPPLEMENTS AVAILABLE IN SWITZERLAND.

	% of MVM containing	Amount \$ Median [IQR]	% RDA \$ Median [IQR]	<15% RDA	15-150% RDA	>150% RDA
Vitamins						
Vitamin A (IE)	34 (35.8)	2667 [1047 - 3500]	100 [32.5 - 131.2]	4 (11.8)	30 (88.2)	-
Vitamin B ₁ (mg)	64 (67.4)	2.3 [1.4 - 4.5]	205 [127 - 409]	-	30 (46.9)	34 (53.1)
Vitamin B ₁₂ (µg)	58 (61.0)	4.5 [2.5 - 10]	180 [100 - 400]	-	26 (44.8)	32 (55.2)
Vitamin B ₂ (mg)	66 (69.5)	2.2 [1.6 - 4.8]	157 [114 - 343]	-	33 (50.0)	33 (50.0)
Vitamin B ₆ (mg)	70 (73.7)	3 [2 - 6]	214 [143 - 429]	-	27 (38.6)	43 (61.4)
Vitamin C (mg)	68 (71.6)	100 [60 - 240]	125 [75 - 300]	2 (2.9)	37 (54.3)	29 (42.7)
Vitamin D (µg)	57 (60.0)	10 [5 - 15]	200 [100 - 300]	-	25 (43.9)	32 (56.1)
Vitamin E (mg)	54 (56.8)	17.5 [10 - 50]	146 [83 - 417]	-	27 (50.0)	27 (50.0)
Vitamin K (µg)	17 (17.9)	50 [27.5 - 100]	67 [37 - 133]	-	14 (82.3)	3 (17.7)
Niacin (mg)	61 (64.2)	20 [17 - 47]	125 [106 - 294]	-	37 (60.7)	24 (39.3)
Pantothenic acid (mg)	53 (55.8)	16.2 [6 - 23.5]	269 [100 - 392]	-	18 (34.0)	35 (66.0)
Folic acid (µg)	56 (59.0)	400 [200 - 600]	200 [100 - 300]	1 (1.8)	19 (33.9)	36 (64.3)
Biotin (µg)	49 (51.6)	150 [47.5 - 200]	300 [95 - 400]	1 (2.0)	20 (40.8)	28 (57.2)
Minerals						
Calcium (mg)	53 (55.8)	200 [122.5 - 500]	25 [15 - 63]	12 (22.6)	37 (69.8)	4 (7.6)
Magnesium (mg)	52 (54.7)	100 [50 - 187.5]	27 [13 - 50]	17 (32.7)	33 (63.5)	2 (3.9)
Iron (mg)	39 (41.1)	10 [5.6 - 14]	71 [40 - 100]	4 (10.3)	30 (76.9)	5 (12.8)
Copper (µg)	46 (48.4)	950 [115 - 1000]	95 [12 - 100]	12 (26.1)	27 (58.7)	7 (15.2)
Iodine (µg)	23 (24.2)	150 [75 - 150]	100 [50 - 100]	1 (4.3)	20 (87.0)	2 (8.7)
Zinc (mg)	63 (66.3)	10 [7.5 - 15]	100 [75 - 150]	3 (4.8)	38 (60.3)	22 (34.9)
Manganese (mg)	45 (47.4)	2.0 [1.0 - 3.3]	100 [50 - 165]	3 (6.7)	29 (64.4)	13 (28.9)
Selenium (µg)	38 (40.0)	50 [27.3 - 70]	91 [50 - 127]	1 (2.6)	28 (73.7)	9 (23.7)
Chrome (µg)	21 (22.1)	35 [25 - 50]	88 [63 - 125]	-	18 (85.7)	3 (14.3)
Molybdene (µg)	22 (23.2)	50 [45 - 100]	100 [90 - 200]	-	15 (68.2)	7 (31.8)
Fluoride (mg)	3 (3.2)	1.5 [0.4 - 3.5]				
Potassium (mg)	21 (22.1)	80 [28 - 190]	4 [1 - 10]	16 (76.2)	4 (19.1)	1 (4.8)
Phosphorous (mg)	17 (17.9)	125 [20 - 142]	18 [3 - 20]	8 (47.1)	9 (52.9)	-