

# Vitamins in Daily Life

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**Abstract** Healthy food consists mainly of micronutrients, macronutrients and water. Macronutrients include carbohydrates, fats and proteins, and micronutrients are consisted of vitamins and minerals. These are important factors for optimal functioning of the human body. We analyzed 300 subjects from Brasov city (Romania) concerning their knowledge about the effects and consumption of vitamin supplements. Subjects were asked about use of vitamin supplements, the season in which they normally use them, products used, post-dose benefits and consumption in the future of vitamin supplements. We also present a list of mostly consumed vegetables and fruits. For different reasons, many people do not use the recommended daily intake of certain essential micronutrients. Nutritional supplements need to fill their deficit when the daily demand is not ensured through a balanced diet.

**Keywords** Vitamins, Nutrition, Healthy diet

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## 1. Introduction

Nutrition has become a big concern for many people in the last few years [1]. Intake of foods and food supplements for maintaining the health, for normal growth and development of children [2], in case of an increasingly urbanized population has become more and more important [3].

The quality of food and food supplements are important for animal and human health [4-7]. The benefits of plant food supplements [8-10] and vitamin supplementation [11-14] are indicated in recent studies, due to the increasing importance of this topic in daily life.

The role of vitamin D is important, but the quality and form that is on the market is not completely regulated in each country [15]. Research groups from UK, Canada and USA have analyzed media (print articles from elite newspapers) coverage of vitamin D in relation to its role in health and the need for supplements [16].

An international Network of Excellence EURRECA (The European micronutrient RE Commendations Aligned) explored an approach for setting micronutrient recommendations, which would address the variation in recommendations across Europe. The research groups developed the methodology framework for deriving and using micronutrient Dietary Reference Values (DRVs) (folate, iodine, iron, selenium, vitamin B12, vitamin D, and zinc) [17].

Other European study [18] provided an overview of the characteristics and usage patterns of plant food supplements (PFS) consumers in six European countries (UK, Romania, Italy, Finland, Germany and Spain). Data on PFS usage were collected in a cross-sectional, retrospective survey of PFS consumers using a bespoke frequency of PFS usage questionnaire.

In order to ensure the effective functioning of the EU internal market, providing as well as a high level of consumer protection, Regulation 1925/2006 [19] harmonizes data concerning the addition of vitamins and minerals and of certain other substances in foods. In this document a list of vitamins and minerals and a list of the sources of vitamins and minerals which may be added to foods were indicated. Regulation 1925/2006 has been aligned with the new Regulatory Committee procedure with Scrutiny by Regulation (EC) 108/2008 [20]. Vitamin and mineral substances may be considered for inclusion in the lists following the evaluation of an appropriate scientific dossier concerning the safety and bioavailability of the individual substance by the European Food Safety Authority (EFSA) [21].

In Romania, the Ministry of Health, issued a legislative document regarding food supplements in Romania in 2000. It is authorized to deal with notifications of food supplements whose ingredients are exclusively synthetic nutrients such as vitamins and minerals [22].

Because of the importance of this topic, this paper intended to determine the level of knowledge of Romanian people about vitamins (sources, role, period of consumption), as well as the top vegetables and fruits consumed by our tested group.

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## 2. Materials and Methods

This study regarding the intake of vitamin supplements was performed using participants that came as patients or for routine check-up to a family physician from Brasov (Romania) in the period of February-April 2011. Each second patient who entered in the physician's office was asked to fill a questionnaire with suggested answers. For people with less than 18 years old, the parents were asked to complete the questionnaire. It was not necessary to indicate the name and address of the participants, so their privacy and personal rights were respected, according with the ethical rules of an interview. Each participant received a specific number in the data collection, in order to be easier to correlate different answers.

## 3. Results and Discussions

From the 300 patients surveyed, 59% were female, 41% male, most of them were women aged 31-60 and fewest were men over 60, according to Table 1.

**Table 1.** The situation of persons surveyed by age group

Age group	Gender category		Total persons /age groups
	F	M	
< 18 years	29	35	64
18-30 years	42	31	73
31-60 years	80	38	118
> 60 years	27	18	45
Total	178	122	300

It was observed that more of the respondents consume

vitamin supplements comparing with those who do not consume them, especially in younger age groups (Table 2).

The possible explanation could be because the intake of vitamin supplements is common among children for prevention of respiratory infections and in the case of their entrance into community groups (nursery, kindergarten, school), and for their normal growth and development.

The study group was asked about the frequency of the consumption of vitamin supplements. The obtained results are shown in Table 3.

Among consumers of vitamin supplements, there was noticed that those from the group aged <18 years consume vitamin supplements several times a year, in contrast with the 18-30 age group, that mostly use them once a year. After that, with age advancing, the frequency of vitamin supplements use is increasing: age group >60 years and <18 years, predominantly consume vitamin supplements several times a year. Older persons increase the percentage of those who do not consume vitamins at all.

For the group involved in this study it was observed that 71.42% females declared that are consumers of vitamin supplements and respectively 65.50% from questioned males. According to age and gender categories, the percentage of vitamin supplements consumption is dominated by females, except the age group 18-30 years, when males consume more vitamin supplements (74% vs. 71%). The data shows that the age group under 18 years consumes the most vitamin supplements (83% of females, 77% of males), and advancing with age, the use of vitamin supplements by males is decreasing, while with the females in the age group over 60 years it has been noticed a "reinvigoration" of consumption of vitamin supplements, perhaps because of the concern over the common osteoporosis.

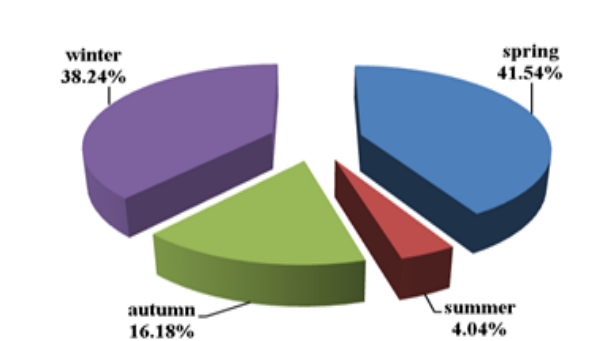
**Table 2.** Percentage of vitamin supplement consumption by age groups

Age group	Total persons	Consumers		Non-consumers		Ratio consumers/ non-consumers
		N	%	N	%	
<18 years	64	51	79.69	13	4.33	3.92
18-30 years	73	53	72.6	20	6.67	2.65
31-60 years	118	75	63.56	43	14.33	1.74
>60 years	45	27	60	18	6.00	1.50
Total	300	206	68.67	94	31.33	2.19

**Table 3.** Consumption of vitamin supplements

Age group	Total consumers	More than one time/year		One time/year	
		N	%	N	%
<18 years	51	30	58.82	21	41.18
18-30 years	53	20	37.74	33	62.26
31-60 years	75	34	45.33	41	54.67
>60 years	27	16	59.26	11	40.74
Total	206	100	48.54	106	51.46

Depending on the seasons, in spring the maximum consumption is registered (41.54%) while in winter (38.24%), autumn (16.18%) and summer (4.04%) it is clearly lower (Fig.1.).

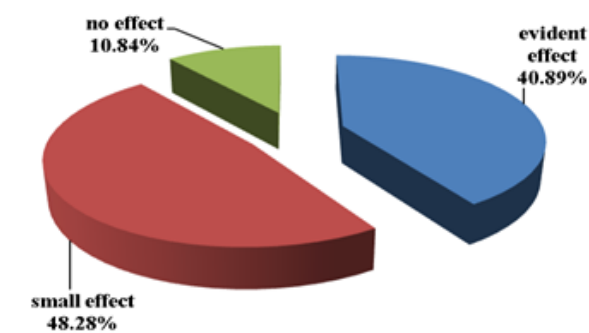


**Figure 1.** The consumption of vitamin supplements on different seasons

Of those surveyed, 47% confirmed the consumption of multivitamin supplements, 30% vitamin C supplements, 12% intake of vitamin B complex and 11% other types of vitamins.

Most of them have used vitamin supplements on physician recommendation (53%), 42% on their own initiative and 5% under the recommendation of a friend.

Most respondents stated a discreet effect after administration of vitamin supplements (48%) (Fig. 2).



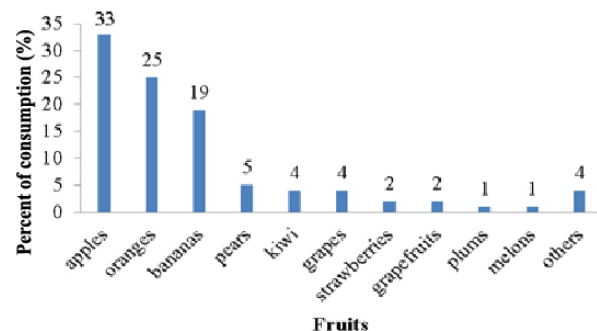
**Figure 2.** Effect after administration of vitamin supplements

The price of the vitamin supplements is estimated high by 52% and accessible by 48% of respondents. The study reveals that the most respondents (44%) think that vitamin supplements should be consumed at the same frequency, but quite a lot (35%) will consume them less frequently and only 21% will consume vitamin supplements more often. Perhaps this economic crisis mainly caused those answers, because of the decreasing of purchasing power, but the need for population health education must not be neglected, as well as awareness of the need to invest in preventive health of every person.

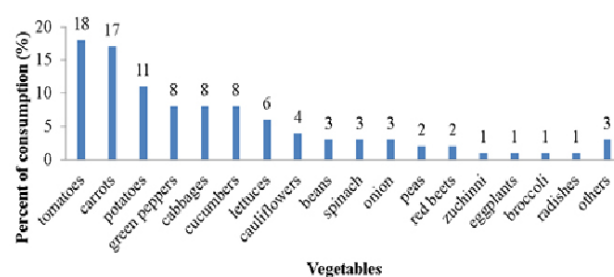
Presented here is a chart of favorite fruits consumed by the questioned people (Fig.3.).

Clearly in "top" there are apples, oranges, bananas. We notice that the study was conducted in late winter, which probably influenced the respondent's options by season fruits. Some vegetables are mainly preferred: tomatoes, carrots, potatoes, green pepper, cabbage, cucumbers (Fig.4).

For various reasons, many people do not consume the recommended daily intake of certain essential micronutrients, using different food and food supplements. Nutritional supplements are very important to fill their deficit when daily demand is not ensured through a balanced diet.



**Figure 3.** Top favorite fruits



**Figure 4.** Top favorite vegetables

## 4. Conclusions

For maintaining a good health, the education of the population for a balanced intake of vitamin supplements is essential. The role of mass media and family physician is very important to increase the level of knowledge of population concerning the relation between healthy nutrition and public health.

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