

## Vegetarian diets

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Speaking of vegetarian diets in the context of this master, we do not intend to indicate a plan to follow, but rather a stimulus to go deeper in its benefits and risks in the different stages of life: pregnancy, lactation, childhood, adolescence, adulthood and advanced age. The important aspect of following a vegetarian diet is that it is well planned in order to prevent nutrient deficiencies.

When one speaks of vegetarian diets, we must know that in this term usually different types of diets are included:

- Ovo-lacto-vegetarians. In addition to vegetables, they eat ingest milk, lactic derivates and eggs.
- Lacto-vegetarians. They ingest vegetables, milk and derivates.
- Strict vegetarians and vegans. They only eat vegetables and legumes.
- Other types. Macrobiotic, frugivore, crudivore, hygienics, etc.

In general, vegetarian diets are one more part of a certain lifestyles which are complemented with cultural, religious, philosophical and economics beliefs.

From a nutrition point of view, they must stay aware of certain deficiencies that can appear according to the type of restrictive diet. By restricting a certain type of food (e.g.: meat and fish) with frequency leads to nutritional deficiencies, especially in iron and vitamin B12.

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Nutritionally, vegetarian diets are characterized fundamentally by:

1. Consumption of carbohydrates
2. Elevated consumption of fiber (sometimes up to 100% more than the recommended amount)
3. Very little consumption of fat and cholesterol.
4. Adequate protein consumption, but with proteins of lesser quality.
5. Elevated consumption of some vitamins and antioxidants present in vegetables and a lack of other vitamins (vitamin B<sub>12</sub> and some oligoelements).

In these vegetarian diets the following points must be carefully watched:

**Energy:** A sufficient caloric value for your age, sex, and physical activity, given that these are frequently not met. In these cases, the consumption of dried fruits and nuts, marmalades, and high caloric fruits (avocados, figs, etc.) are recommended.

**Proteins:** Assure sufficient protein consumption. As such, this requires combining cereals with milk or milk derivatives or also with legumes. No food with vegetable origin is rich in all the essential amino acids, therefore in order to meet the recommendations made by nutrition committees it is necessary to consume higher quantities. It is extremely important to be vigilant in strict vegetarian diets, as it is difficult to meet all the needs and is necessary to take supplements.

**Vitamins and minerals.** The nutrients at risk in the following segment are:

**Calcium:** Ovo-lacto-vegetarians generally consume an adequate or high intake of this mineral, not only due to the high consumption of milk and derivatives, but also because the absorption of calcium in vegetable foods is quite good.

**Iron:** The intake of this mineral is adequate, however, the bioavailability of iron from vegetables includes a difficulty in absorbing this mineral. In general, in the vegetarian

diet it is known that the absorption of ingested iron is not higher than 5-10 %. The combined ingestion of iron-rich vegetables with foods rich in tannins (tea), or with lactic products, or coffee, or fiber, or other foods rich in phytates (whole grains, legumes) causes that the absorption is either cancelled out or very diminished. On the contrary, the consumption together with Vitamin C favors its absorption.

**Vitamin B12:** Among vegetables, the only food that covers the needs of this vitamin is food yeast cultivated in a medium rich in Vitamin B12. Foods supplemented with this vitamin can be found in the market.

In general vegetarian diets have two great advantages to be highlighted: Lower mortality for ischemic cardiopathy, lower prevalence of obesity, lower incidence of certain cancers and lower incidence of Diabetes mellitus.

**In conclusion:**

Regarding Positive Aspects: It provides lower quantity of AGS, CT and animal protein and sodium (positive aspects), it provides lower quantity of Carbohydrates, Fiber, Mg, Potassium, Vitamins K, B9, C, E, antioxidants (carotenoids...), it provides lower level of contaminants, dioxins, polychlorinated biphenyl, polybrominated diphenyl, hexachlorobenzenes, naphthalenes, Cadmium, Mercury, Lead, etc

Aspects to pay attention to: it provides lower quantities of proteins, vitamin D, calcium, iron, iodine, zinc and vitamin B<sub>12</sub> (possible deficiencies).

Finally the American Dietetic Association affirms that adequately planned vegetarian diets: are healthy, nutritionally adequate, provide benefits for health in the prevention and treatment of certain illnesses.

Well planned vegan, lacto-vegetarian, and ovo-lacto-vegetarian diets are appropriate for all ages of the life cycle, including pregnancy and lactation.”  
ciclo vital, incluyendo el embarazo y la lactancia.”