



VEGGIE MOUTH

Vegan and vegetarian diets are becoming increasingly more common whether it is for financial, ethical or health reasons.

What are the effects on our oral health when eschewing animal products out of our diets?

What is a vegetarian?

The practice of abstaining from meat consumption. It can also include abstaining from eating all animal products including eggs and dairy.

Common deficiencies in Vegetarians

Iron RDA*- 8 mg (males)
18 mg (females)

Vitamin B12 RDA* 2.4mcg

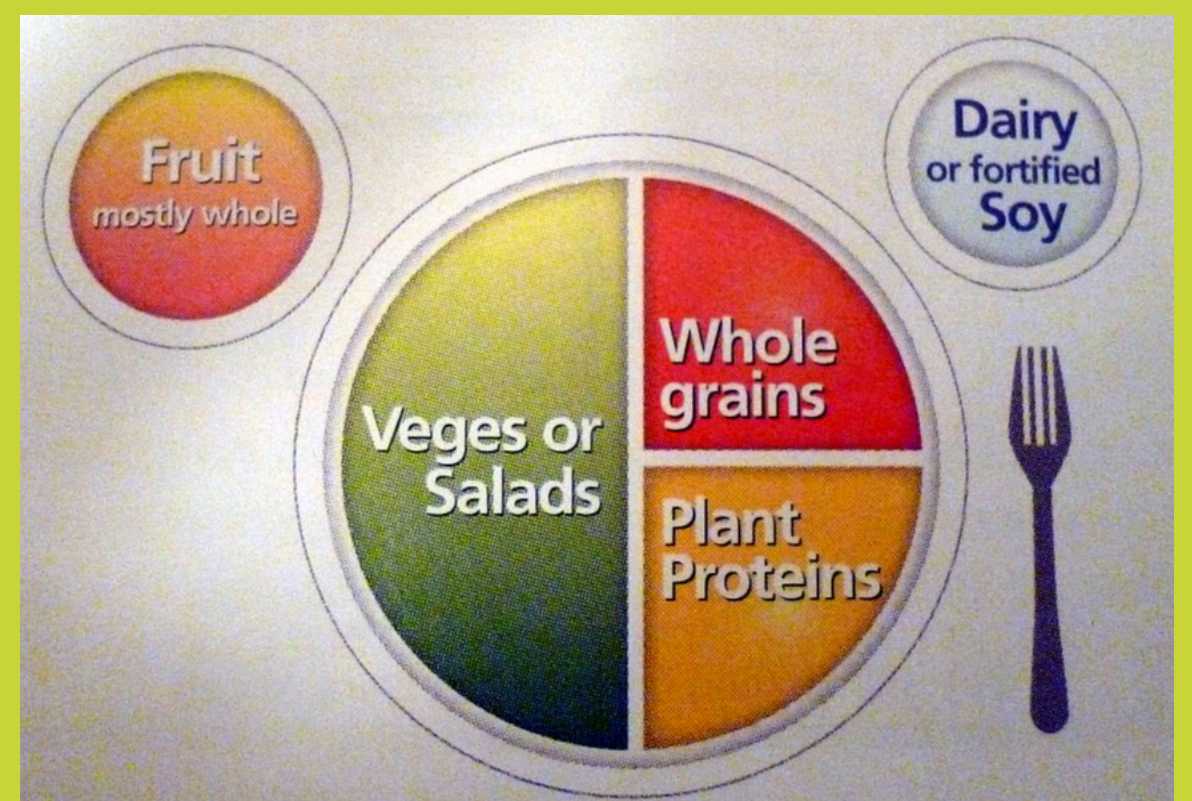
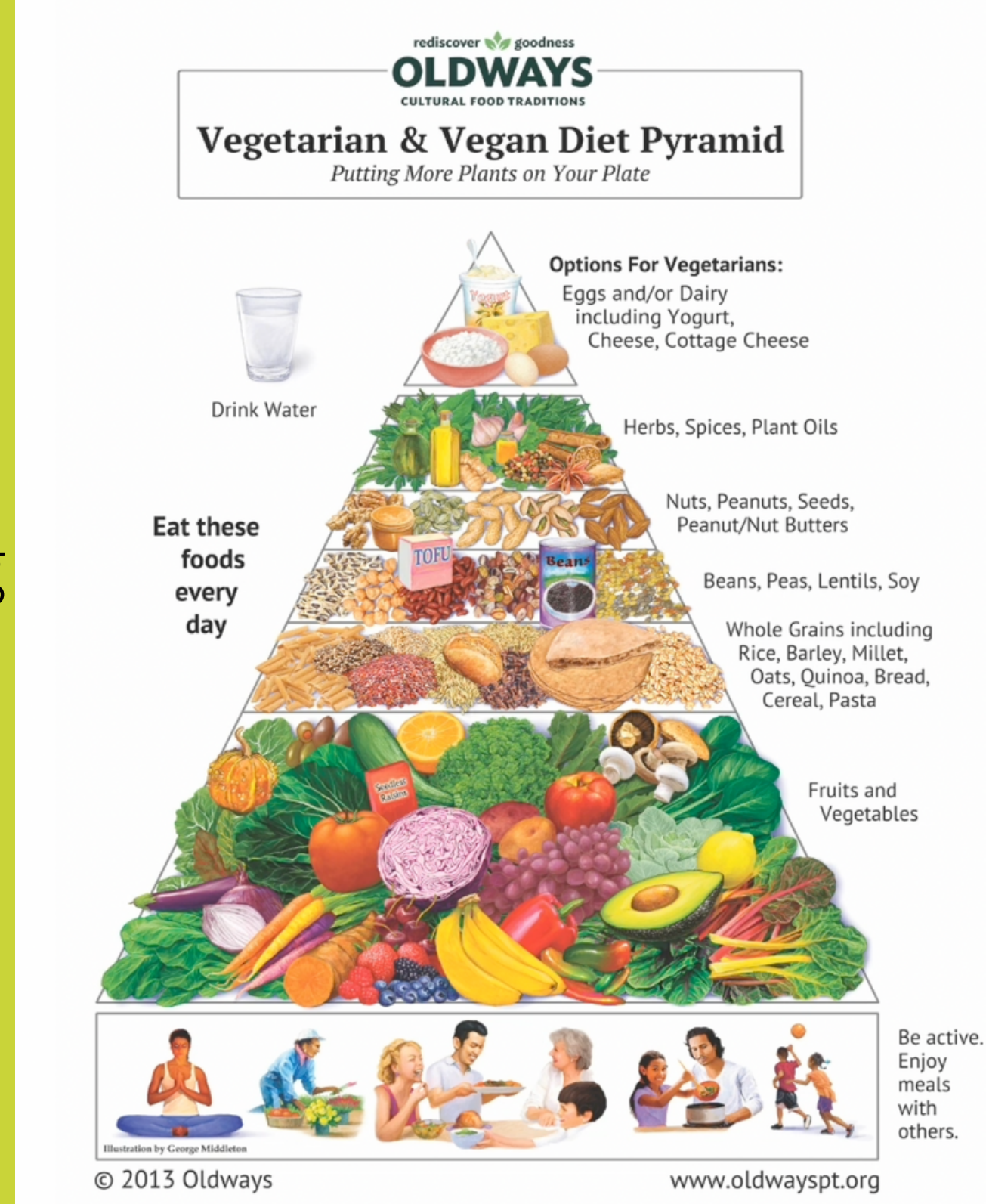
Vitamin D RDA* 15 mcg
(600 IU)

Omega-3 RDA*- ALA 1.6 (males)
1.1 (females)

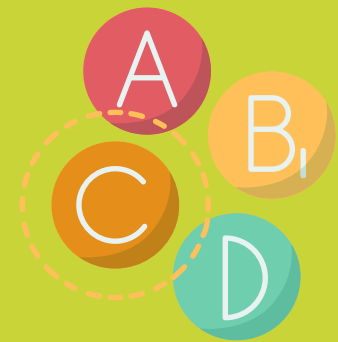


**Nutrition and
oral health go
together like
peas and
carrots.**

-Sara Karlin,
DDS.



Vitamins and Minerals



Iron

Role in the body: Transfer of oxygen from the lungs to the tissues. Needed to make hemoglobin, myoglobin, and some hormones.

Oral complications: Anemia, pallor of lips and gingiva, glossitis, angular cheilitis, and candidiasis.

Supplemental sources: Red kidney beans, chickpeas, edamame, whole grains, fortified cereals, green vegetables, dried apricots, and raisins



Angular Cheilitis

Vitamin B12

Role in the body: Formation of red blood cells, cell division, and nerve structure and function.

Oral complications: Glossitis, glossodynia, recurrent ulcers, cheilitis, dysgeusia, lingual paresthesia, burning sensations, and pruritus.

Supplemental sources: Nutritional yeast, fortified cereals, milk, yogurt, and cheese.



Glossitis

Vitamin D

Role in the body: Increases intestinal absorption of calcium and phosphate, and is needed for bone growth.

Oral complications: Dental caries, enamel hypoplasia, weak or brittle teeth, bone resorption, premature tooth loss.

Supplemental sources: Wild mushrooms, egg yolks, fortified margarine and cereals, and cheddar cheese.



Enamel Hypoplasia

Omega-3

Role in the body: Starting point for making hormones that regulate blood clotting, contraction/ relaxation of artery walls, and inflammation.

Oral complications: Dry, cracked, and flaky lips.

Supplemental sources: Flaxseed, chia seeds, beans, walnuts, and edamame.



Dry Lips

Conclusion



Area of concern for vegetarians → possible link to dental erosion due to increased oral acidic conditions of eating more raw fruits and vegetables than other types of diets.



Patients should be made aware of the acidic content of certain plant based foods.

Plant based diet → greater consumption of macro and micronutrients that contribute to preventing periodontal disease due to anti-inflammatory properties of nutrients that decrease periodontal tissue inflammation. Some anti-inflammatory nutrients include:

- Vitamin A: carrots, broccoli, yellow/ red/ green leafy vegetables
- Vitamin C: citrus fruits, brussel sprouts, kale
- Vitamin D: plant based oils, nuts and seeds, dark leafy greens
- Polyphenols: tea, spices, berries
- Polyunsaturated fatty acids (ex: omega 3): flaxseeds, chia seeds, plant oils
- Fiber: brown rice, nuts, berries



Regardless of what diet a person chooses to follow, what's most important is a balanced and diverse diet. One that utilizes less processed foods and more fresh foods.



References

Kim, J., Kim, M. J., & Kho, H. S. (2016). Oral manifestations in vitamin B12 deficiency patients with or without history of gastrectomy. BMC oral health, 16(1), 60. <https://doi.org/10.1186/s12903-016-0215-y>

Karlin, E., & Karlin, S. (2021). A palette of plant-based dietary patterns: How do they impact dental health?: Continuing education course. Country. Retrieved May 9, 2022, from <https://www.dentalcare.com/en-us/professional-education/ce-courses/ce659>

Vitamins and minerals. NAL. (n.d.). Retrieved May 9, 2022, from <https://www.nal.usda.gov/legacy/fnic/vitamins-and-minerals>

Omega-3 fatty acids and plant-based diets. Physicians Committee for Responsible Medicine. (n.d.). Retrieved from <https://www.pcrm.org/good-nutrition/nutrition-information/omega-3>

Omega-3 fatty acids: An essential contribution. The Nutrition Source. (2019, May 22). Retrieved from <https://www.hsph.harvard.edu/nutritionsource/what-should-you-eat/fats-and-cholesterol/types-of-fat/omega-3-fats/>

Lord, N. (2021, November 22). Omega-3 deficiency: Causes & symptoms - health centre by Manual: Medical Information, reviewed by experts. Health Centre by Manual | Medical Information, Reviewed by Experts. Retrieved from <https://www.manual.co/health-centre/daily-health/omega-3-deficiency>

NHS. (2020, August 3). Iron Vitamins and Minerals. NHS choices. Retrieved May 9, 2022, from <https://www.nhs.uk/conditions/vitamins-and-minerals/iron/>

Petre, A. (2020, January 14). 6 good sources of vitamin D for Vegetarians. Healthline. <https://www.healthline.com/nutrition/vitamin-d-foods-for-vegetarians>

Rowdon, L. J., & Ward, W. E. (2021, October 8). A plant-based diet and Periodontal Health. Oral Health Group. Retrieved from <https://www.oralhealthgroup.com/features/a-plant-based-diet-and-periodontal-health/>

Staff, H. E. (2021, January 6). Cracked lips. Healthgrades. Retrieved from <https://www.healthgrades.com/right-care/skin-hair-and-nails/cracked-lips>

Uwitonze AM, Rahman S, Ojeh N, Grant WB, Kaur H, Haq A, Razzaque MS. Oral manifestations of magnesium and vitamin D inadequacy. J Steroid Biochem Mol Biol. 2020 Jun;200:105636. doi: 10.1016/j.jsbmb.2020.105636. Epub 2020 Feb 18. PMID: 32084549.

*RDA's (Recommended Dietary Allowances)

is the amount of a nutrient that is consumed in order to meet the requirement of ~97-98% of a healthy persons. Amounts on this poster reflect the RDA's for adults between the ages of 19-50 years old as outlined by the USDA.