LESSON 4: “DEFICIENCIES & SUPPLEMENTS ON A PLANT-BASED DIET”
The importance of vitamin and mineral intake.

Whether you’re vegan or not, nutrient deficiencies should always be taken seriously as they can have severe consequences. While a whole food plant-based diet, rich in fresh fruits and vegetables, whole grains, beans and some nuts and seeds can go a long way, understanding where certain vitamins and minerals come from, and how to ensure you are getting an adequate supply is essential to optimum health and happiness. 

PROTEIN

Yes, we need protein, but not nearly as much as we think we do. Plus, protein can be found in practically everything, even fruit. Ironically, we eat animals for their high protein content, but never wonder where the animals we eat got that protein in the first place. What do cows eat? Grass. If a cow can get her protein from grass, surely we can get ours from plants too and just cut out the middle man, right*? If you think about it, that’s like wanting to eat a piece of cake, asking your friend to eat the cake and then eating your friend. Sounds absurd, doesn’t it? Well, that’s exactly what we’re doing when we’re eating animals to obtain the nutrients they themselves obtained from plants.

*note: I once mentioned this in an Instagram post and someone commented saying that it was not OK to compare cows to humans because even if we have some similarities, our anatomies and digestive systems are too different from each other. I just want to clarify that when I make that comparison, my intention is to make people realize that since animals get their protein from plants, it seems evident that meat and other animal products cannot be the only source of protein found in nature. The question of whether or not our anatomy corresponds to that of an herbivore is indeed more complex, which is why we’ll address it in tomorrow’s lesson in more detail (alongside more information on protein).
Here are some great vegan protein sources:

- lentils
- tofu
- black beans
- quinoa
- amaranth
- soy milk
- black eyed peas
- broccoli
- asparagus
- green beans
- almonds
- spirulina
- green peas
- hemp seeds
- oatmeal
- pumpkin seeds
- chia seeds
- tempeh
- tahini
- nutritional yeast
- hemp milk
- spinach
- chickpeas
- peanut butter
CALCIUM
In the book *The China Study*, T. Colin Campbell explains that our bodies’ pH levels need to remain alkaline. Unfortunately, most foods we consume, especially animal products, are highly acidic. The good news is that our bodies have found a way to balance this acidity out. The bad news is that they do so by taking minerals stored in our bones.

Did you know that the areas in the world where people consume the most dairy products are also the areas where the most people suffer from osteoporosis? By consuming animal products for their high calcium content, you may actually be losing more calcium than you’re getting. Luckily, you don’t need to rely on animal products for calcium.

Here are some vegan sources of calcium:

- Kale
- Collard Greens
- Blackstrap Molasses
- Tempeh
- Turnip Greens
- Fortified non-dairy milk
- Hemp milk
- Fortified orange juice
- Tahini
- Almond butter
- Great Northern Beans
- Soy beans
- Broccoli
- Raw fennel
- Blackberries
- Black currants
- Oranges
- Dried Apricots
- Figs
- Dates
• Artichoke
• Roasted sesame seeds
• Adzuki beans
• Navy beans
• Amaranth

B12
A vitamin B12 deficiency is something that should not be taken lightly. It is also something that doesn’t only affect vegans. As a matter of fact, many non vegans are B12 deficient, while there are vegans who have B12 levels that are perfectly fine.

Here are some important things to know about B12:

• The water-soluble vitamin B12 is actually a bacteria produced by microorganisms and can be found in the soil fruit trees and vegetables grow in. One of the ways people used to get their ratio of B12 was by eating unwashed fruits and vegetables. Nowadays we’re so concerned with cleanliness that we often wash our produce (which, if it’s not organic, I’d recommend you keep doing!) and thereby also wash off the B12. While you might get some more B12 if you stop washing your organic produce, I wouldn’t advise relying on that as your only source as you can never be sure how much you are actually getting.
• While it is true that animal products contain B12, they often get it because their food is enriched with B12 supplements by the farmers.
• B12 is stored in the body for years, so even if you were to become deficient, you wouldn’t notice any symptoms for at least a couple of years. Plus, if you get tested at the beginning of your vegan journey and you are indeed deficient, that means that you already were before going vegan.
• We can only absorb very small amounts of B12 at a time (about 3 micrograms), so taking a 1,000 microgram tablet won’t necessarily mean you’ll get more of it.

• There are actually plant-based B12 sources like nutritional yeast, spirulina and seaweed. There are, however, doubts as to whether or not absorption is ideal.

• Many foods are enriched with B12. You can find it in the ingredient lists of mueslis, granola bars, plant-based milks and puddings etc... In my opinion, there are two options: either get tested and if you are not deficient just keep getting tested every one or two years to make sure everything is OK. If you are deficient, get a B12 supplement or regular B12 shots. Again, this is not a vegan problem, but a general problem! The difference is that as vegans, we are more aware of the problem. Many non-vegans have a B12 deficiencies and don’t even know it, some even die from it. The second option is not to get tested (the only truly conclusive tests are actually very expensive) and take a supplement just to be on the safe side. I took a supplement for the first year of being vegan, the I stopped for a year before starting to take one again. At this point, I’d rather be safe than sorry, although I know some vegans who don’t supplement and are perfectly fine, even after years of being vega. After going some research, I decided to take a sublingual vegan Methylcobalamin B12 supplement (I order it from a brand called DEVA). I have tried B12 patches too and heard they’re quite effective, but I prefer the sublingual supplement for practical reasons. Just keep in mind that a B12 deficiency is not something to be taken lightly. Some vegans may not want to take any supplements just to prove that a plant-based doesn’t equal deficiencies, but, like I mentioned, vitamin B12 deficiencies are by far not exclusive to vegans. Everyone should be concerned about them.

Here are some links if you want to learn more about B12:

“What every vegan should know about vitamin B12”

“Vitamin B12 – Are you getting it?”

“Vitamin B12 in the Vegan Diet”
VITAMIN D

There is Vitamin D2 and D3. D3 is the type we absorb the best and the ideal source for it is sunshine. If at all possible, try to get direct daily exposure to the sun daily to avoid a vitamin D deficiency. If you live in a place where the sun shines a lot, you won’t even have to think about it. If, on the other hand, you live in a colder climate, you might want to think about supplementing. Supplementing per se, if done the smart way, if by no means a negative thing, nor does it prove that vegans are more prone to deficiencies since these deficiencies are not exclusive to vegans. If anything, as a vegan you are more aware of your nutritional needs and can therefore prepare more adequately. Most people living in a cold climate should be taking a vitamin D supplement during the winter. There are plenty of vegan D2 supplements, but I would recommend getting a D3 supplement instead. The problem with D3 supplements is that they commonly come from animal sources like sheep’s wool.

Vegan D3 is very rare, but it does exist. These are the best two supplements I’ve found:

- Vitashine’s D3: http://vitashine-d3.com
- Dr. Green’s Vitamin D3: http://juicepress.com
OMEGA 3 FATTY ACIDS

While Omega 3 fatty acids can easily be found in vegan foods, we should note that the omega 3 - omega 6 ratio is important, as explained by plenteousveg.com:

“Luckily, it is pretty easy to meet Omega 3 recommendations. Foods such as oils, nuts and seeds are very high in Omega 3. However, the problem with a lot of these foods is that they are also high in the other type of essential fatty acid: Omega 6.

Omega 6 inhibits the conversion of Omega 3 into DHA and EPA. So, the Omega 3 from foods like walnuts (2542mg Omega 3 but 10666mg Omega 6) or sesame seeds (105mg Omega 3 but 5984mg Omega 6) may not be adequate sources of Omega 3 for conversion into DHA and EPA.

Note that getting enough Omega 3, DHA and EPA isn’t just a concern for vegetarians. The Standard American Diet (appropriately called SAD) is low in Omega 3 while simultaneously very high in Omega 6.

One report found that Americans are consuming 10 to 20 times more Omega 6 than Omega 3! Most health experts recommend keeping Omega 3 to Omega 6 rations at 1:4. However, some experts recommend keeping the ratio at 1:1.

Some foods (most notably cold-water fish) contain DHA and EPA. However, there are very few vegetarian sources of DHA and EPA (algae being the main one).

To meet DHA and EPA recommendations, vegetarians and vegans should strive to exceed the RDA for Omega 3 while simultaneously keeping their Omega 6 intake low.
With this in mind, we’ve compiled a list of the best vegan sources of Omega 3. All of these foods also have low Omega 3 to Omega 6 ratios:

- Flax seeds
- chia seeds
- Hemps seeds
- Mustard Oil
- Seaweed
- Beans
- Winter Squash
- Leafy Greens
- Cabbage Family
- Berries
- Wild Rice
- Herbs and Spices
- Mangoes
- Honeydew Melon
IRON
Beans and dark green leafy vegetables are great sources of iron, in fact, they are even better on a per calorie basis than meat. Iron absorption is increased significantly by eating foods containing vitamin C along with foods containing iron.