



# MYTHS AND LEGENDS OF PLANT BASED DIETS - WHAT CONSUMERS NEED TO KNOW

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TWEET [@DIETITIANBYTES](#)



# PLANT-BASED DIETS & CONSUMERS

- What is a plant-based diet?
- Is plant-based better than eating meat?
- What are the nutrients of concern?
- Tackling the misinformation...



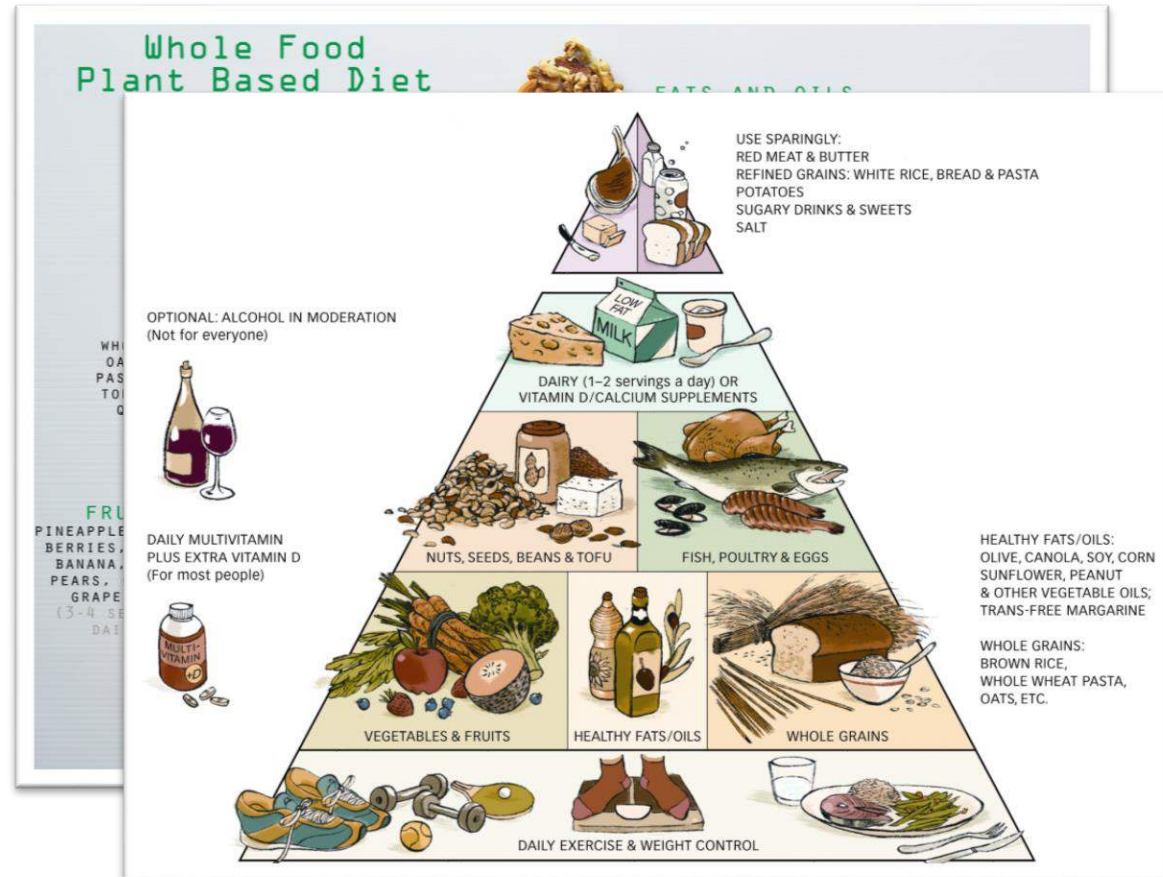
# WHAT IS PLANT-BASED DIET FOR CONSUMERS?

- Vegan ✓
- Vegetarian ✓
- Pescatarian ✓
- Flexitarian ✓
- Meat eating with lots of vegetables ✓
- Mediterranean ✓
- Meat eating with potatoes ✗
- Carnivore ✗



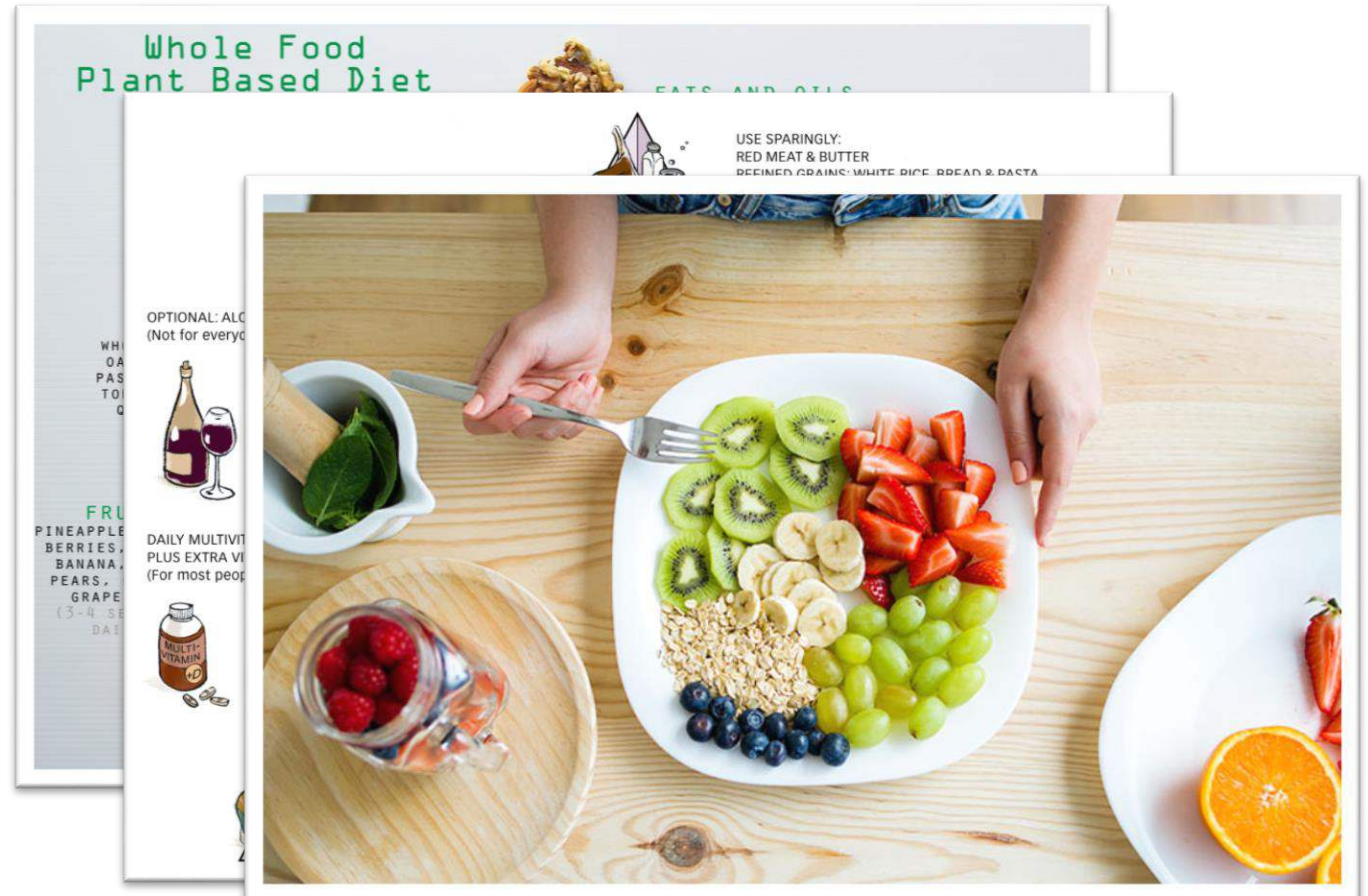
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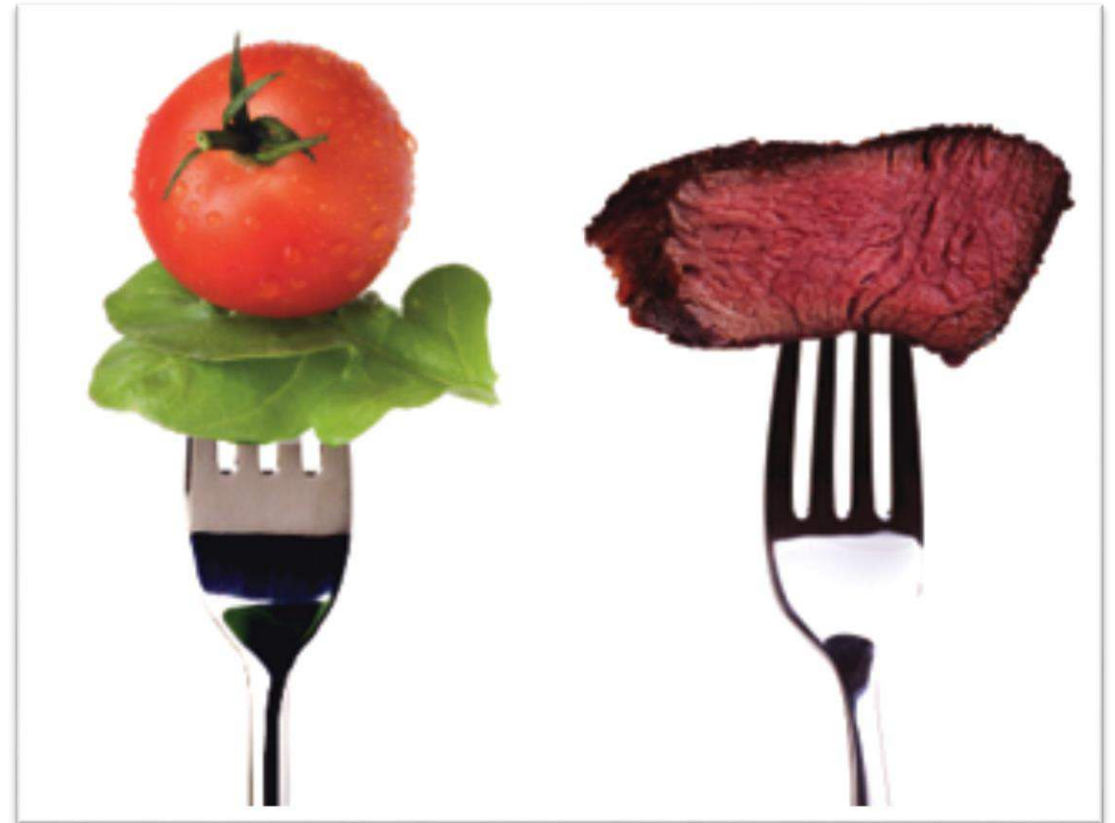


# PLANT BASED DIET OR MEAT EATING – WHICH IS BEST?

- EPIC-Oxford (which studied) found no significant difference in mortality between British Vegetarians, Vegans and Meat Eaters.
- Adventist Cohort:Vegetarian and Vegan reduced mortality compared to meat eating within study period

# PLANT-BASED & MEAT EATERS: WHICH IS BEST?

- **Obesity & Weight**
- Lower Body Weight (1-2kg/m<sup>2</sup>)
- Vegans have lower body weight than vegetarians
- **EPIC-Oxford: BMI**
  - Meat eaters: 24.2 Vegans: 22.5
  - Vegetarians & pescatarians intermediate
  - High protein and low fibre main factors
- **BUT...**
- These differences are seen in Western vegetarians and vegans; not in other populations
- How many of the benefits of a vegan diet are due to differences in weight?





# DIABETES – TYPE 2

- Type 2 DM seems to be **reduced** in vegans and vegetarians
- **7<sup>th</sup> Day Adventists** show up to 38-61% reduction in risk of DM in vegetarian; 47-78% in vegan
- **Indian Migration Study** showed no difference
- **BUT**
- Type 2 DM is strongly linked to obesity
- Studies typically follow self-reported diabetes
- Need studies with medically identified diabetes cases

Reverse  
Diabetes?



# CARDIOVASCULAR DISEASE

- **Vegans** typically have reduced CVD
- **Adventist Cohort** showed vegan males had 42% reduced CVD mortality during study period
- **EPIC Oxford:** Risk of hospitalization & death from IHD up to 23% lower in vegans & vegetarians **BUT** no significant difference in death from circulatory diseases
  
- **Why?**
  
- **Lower Weight**
  - Obesity is a risk factor for CVD

- **Cholesterol**
  - Total cholesterol is lower in vegans, largely due to lower LDL
  - Differences in cholesterol may lead to 24% reduction in CHD in life-long vegetarians and 57% in life-long vegans
  - Indian Migration Study: reduced cholesterol & triglycerides in vegetarians
  
- **Lower Blood Pressure**
  - EPIC: Hypertension lower in vegans; attenuated by adjusting for BMI
  - Indian Migration Study: lower hypertension but by <1mm Hg
  - Adventist Cohort: 55% lower risk in vegetarians & 73% lower risk in vegans

Main benefit likely due to reduced cholesterol

# STROKE

- Second most common cause of death worldwide
- Stroke mortality is **not different** between vegans, vegetarians and meat eaters
- **Why?**
- Unsure but lower intakes of B12 may be a factor



# CANCER

- **Do vegans get less cancer?**
  - Very mixed results
  - Overall cancer risk **may be lower** in vegans and vegetarians
- **The EPIC Study showed:**
- Overall slight reduction in cancer risk
- **Increased in vegetarians and vegans**
- Colorectal (lower in pescatarians)

- **Reduced in vegetarians & vegans**
- Stomach
- Lymphatic
- Multiple Myeloma
- Pancreatic (also lower in meat eaters compared to fish eaters)
- **No difference in vegetarians & vegans**
- Prostate
- Breast
- Lung cancer (lower in meat eaters)

- Overall, lowest cancer risk seen in pescatarians especially for breast and colon
  - Trend towards reduced malignancies in non-meat eaters (not significant)

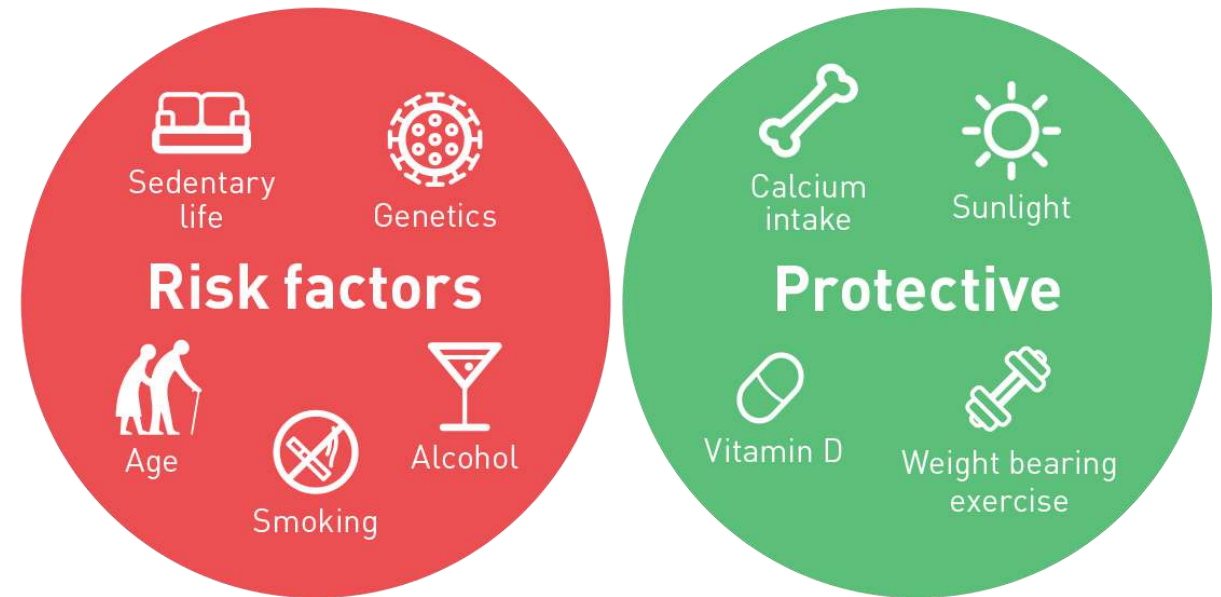
# CANCER

- **Adventist Cohort (2014)**
- Significant difference in death from all cancer in vegans & vegetarians -14% in vegans; 9% in vegetarians **but** not significant for vegetarians
- **48% reduction** in death from **breast cancer** in vegans and vegetarians

- **24% reduction** in **gastrointestinal cancers**; not significant for vegans
- **73% increase in urinary tract** cancer in vegans
- Risk reductions were higher across all measures in **male** vegetarians and vegans compared to female

# BONE HEALTH

- EPIC: Vegans had **30% higher** rate of **fracture** compared to meat eaters (self-reported)
- Consuming **525mg calcium/day** sufficient protection
- **50% of vegans** not meeting EARs in UK (6% of meat-eaters)
- 7<sup>th</sup> Day Adventist: Increased **wrist fractures** in women and increased **hip fractures** in men and women.



Bone mineral density shown to be lower in vegans in some but not all studies.

# OTHER DISEASE

- **Diverticular disease**
  - 31% Lower in vegetarians and vegans; 72% lower in vegans
- **Cataracts**
  - 26% lower risk (EPIC) in vegans
- **Kidney Stones**
  - 31% lower risk in vegans and vegetarians
- **Arthritis**
- Increased in meat eaters: 31% higher



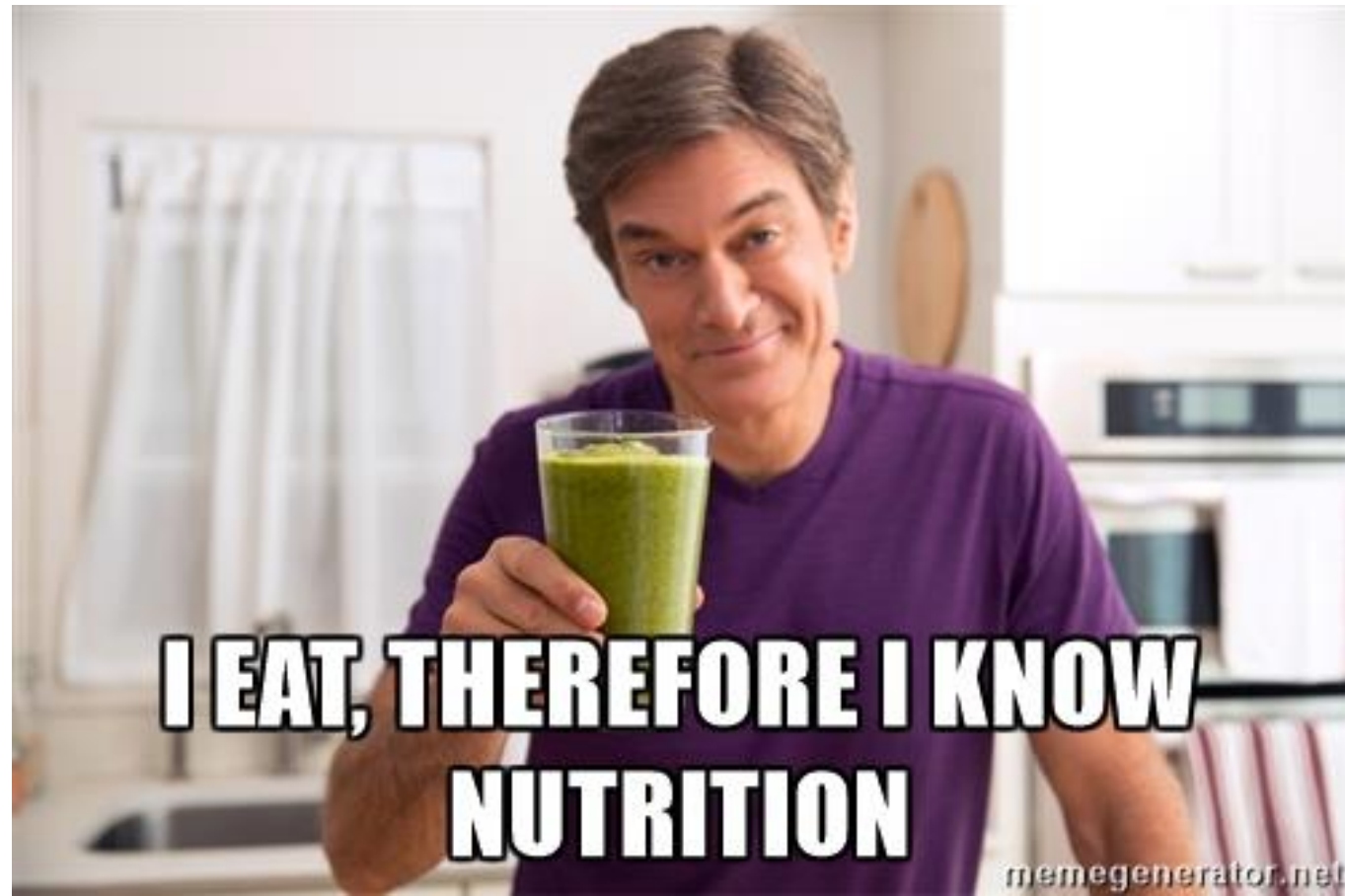
# APPLYING THE DATA

- There is **not a large body of evidence** comparing meat eaters to vegetarians and vegans
- Current results suggest a **benefit** in some diseases: **heart disease** and some **cancers**
- Results on **all-cause mortality** are very mixed

- **Concerns?**
- Lower weight alone impacts cancer; heart disease; diabetes
- No studies **separate healthy meat eaters** from unhealthy meat eaters

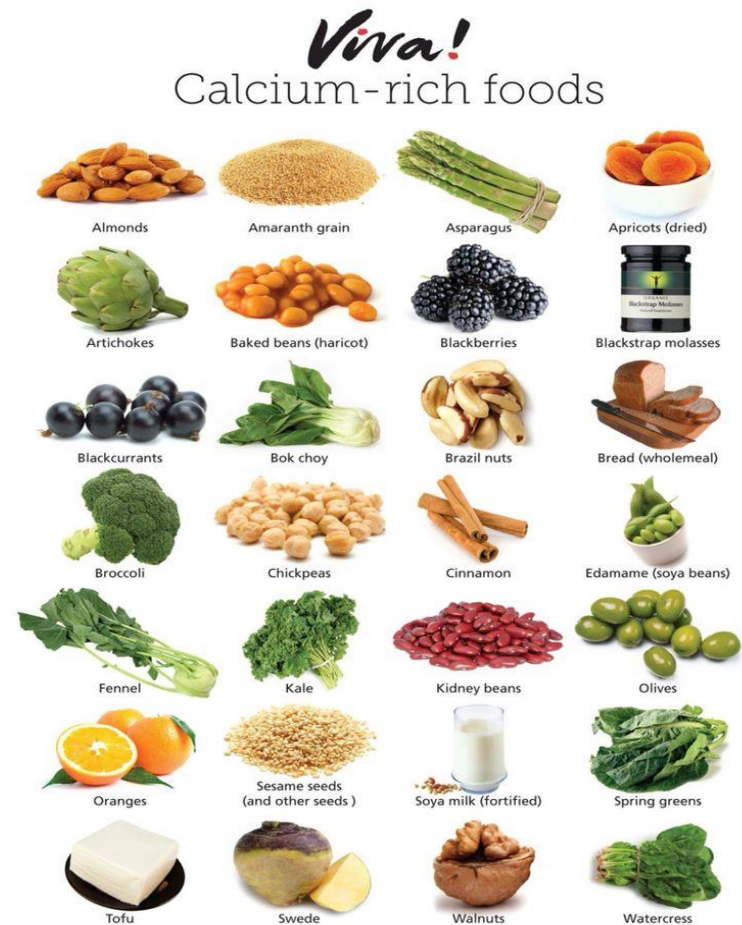


## SPECIFIC NUTRIENTS: CHALLENGES & MYTHS



# SPECIFIC NUTRIENTS: CALCIUM & BONE HEALTH

- Vegans have lower bone density and higher fracture rate
- Vegans eating adequate calcium (over 530mg/d) do not seem to be affected
- Protein & Vitamin D may also be a factor in fracture risk



# Viva!

## Calcium-rich foods



Almonds



Amaranth grain



Asparagus



Apricots (dried)



Artichokes



Baked beans (haricot)



Blackberries



Blackstrap molasses



Blackcurrants



Bok choy



Brazil nuts



Bread (wholemeal)



Broccoli



Chickpeas



Cinnamon



Edamame (soya beans)



Fennel



Kale



Kidney beans



Olives



Oranges



Sesame seeds  
(and other seeds)



Soya milk (fortified)



Spring greens



Tofu



Swede



Walnuts



Watercress

- 200ml glass of milk has 240mg calcium
- 200ml glass fortified soya milk has 240mg calcium
- **How much equals 1 glass of milk?**
- 100g Tofu
- 100g Almonds
- 340g kidney beans (1 400g tin has 240g of beans)
- 200g kale
- 300g of olives
- 530g turnip
- 600g black berries
- 700g broccoli

# HOW MUCH BROCCOLI?



# HOW MUCH BROCCOLI?



- This is a 340g bag of broccoli
- To reach 531mg of calcium, you would need to eat **4.5 bags per day**
- To reach 800mg, it's **7 bags**. Per day.

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Broccoli



Cashews



Fennel



Garlic



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Sesame (and other seeds)



Tofu



Swede



Spinach



White beans



Walnuts



Watercress



Calcium



Almonds



Ama



Artichokes



Baked b



Blackcurrants



B



Broccoli



C



Fennel



K



Oranges



Ses



Tofu



Swede



Collards



Edamame



Hemp seeds



Kale



Walnuts



Watercress



Tofu



Watercress

# CALCIUM WITHOUT DAIRY



ALMONDS



BUTTERNUT SQUASH



BROCCOLI



CHIA SEEDS



FIGS



COLLARDS



KALE



PLANT-BASED MILK

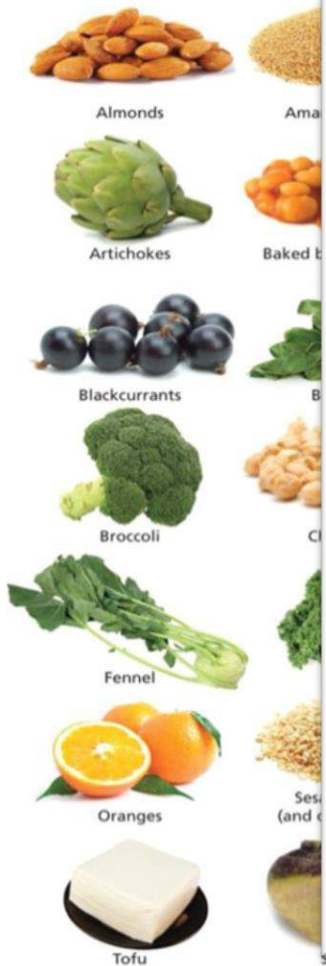
[www.viva.org.uk](http://www.viva.org.uk)

ONE GREEN PLANET  
unleash your green monster



# CALCIUM WITHOUT DAIRY

Calcium



## Vegan Sources of Calcium



www.blackgoingvegan.com

www.viva.org.uk

KALE  
PLANT-BASED MILK  
ONE GREEN PLANET  
unleash your green monster

# VITAMIN B12

- Almost no B12 in plant foods
- Up to 62% of vegans may be deficient in B12 (ranges from 25% to 86%)
- Between 11% and 90% of pregnant vegan women
- **Must supplement or eat fortified foods**
- Some seaweed contains Vitamin B12  
but frequently as analogues
- Gut bacteria are not a source
- Soil is not a source

www.peacefuldumpling.com/vitamin-b12-eat-your-dirt

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FOOD, HEALTHY EATING


## Eat Your Dirt: Natural Vitamin B12 And Where To Find The Best B12 Supplement

by Claire-Marie Harris | Thursday, August 10, 2017

0 SHARES | 1K f | 1K t | 1K g | 1K p

This article was originally published on October 22, 2013.

There are a lot of misconceptions and rumors floating around out there about how vegans get their protein, iron and Vitamin B12. While I could go on all day about the health benefits of a plant based diet and how eating whole, vegan foods can supply almost all the nutrition a person's body needs not only to survive, but thrive, let's focus on one little vitamin that is essential to our survival and one that creates a big stir when it comes to vegan misconceptions: Vitamin B12, and where to find the best B12 supplement.



**MEET THE AUTHORS**

Sharon Pare  
Vegan or Divorced: What's Worse In The Dating World?

# VITAMIN B12

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www.peacefuldumpling.com/vitamin-b12-eat-your-dirt

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FOOD, HEALTHY EATING

## Eat Your Dirt: Natural Vitamin B12 And Where To Find The Best B12 Supplement

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Many people believe that B12 only comes from animal flesh and animal secretions (i.e. cow's milk, chicken eggs...), when in fact it is solely bacteria-based. Fungi, animals and plants are incapable of producing B12 on their own and must obtain it from outside sources. B12 is synthesized by bacteria and is therefore found in areas of bacterial growth, namely dirt and soil. Humans have been getting their B12 from the dirt for hundreds of thousands of years by eating plants that still had bits of soil on them. Today, however, we wash our fruits and veggies so well (and understandably so) that we no longer consume dirt or proper levels of B12. That's where B12 supplements come in. B12 is easily produced through bacterial fermentation and can be safely made into a daily supplement.

So here's where it gets tricky for some: If we have to take supplements, then isn't a vegan diet unnatural? Whether you get your B12 from a pill or from eating meat, you are most likely taking supplements, and here's why: Animal flesh and secretions have B12 in them because it is produced in the gut by naturally occurring bacteria and when animals naturally ingest dirt as they graze in fields. As the animals ingest the dirt, their bodies use the B12 and allocate it around the body. When you eat their bodies, you also eat the B12 and anything else stored inside of it (including all the bad stuff—fat, cholesterol, toxins, hormones and antibiotics!) That being said, today's meat industry has animals locked and caged inside warehouses (yes, some of which are labeled "organic", "free-range" and "grass-fed") and feeds the animals mixtures of corn and various byproducts and hormones which contain no natural B12. Like us, these animals need B12 to survive and therefore are given B12 as part of their supplements, which then ends up in their milk, muscles and eggs. Doesn't it seem easier, more humane and more natural to just take a little bacteria-based pill yourself?

OB5

What's  
ing World?

# SEAWEED IS A POOR SOURCE OF B12

ritics

START...

FOOD x

seaweed

Seaweed, nori, dried, raw

Analysis and literature sources

EXPORT TO

MY FOODS MY RECIPES

MY FOODS & RECIPES RAW

VEGETABLES-GENERAL

VEGETABLES & ALGAE RECIPE

VEGETABLE DISHES

seaweed, nori, dried, raw

seaweed, wakame, dried, raw

seaweed, Kelp, raw

seaweed, kombu, dried, raw

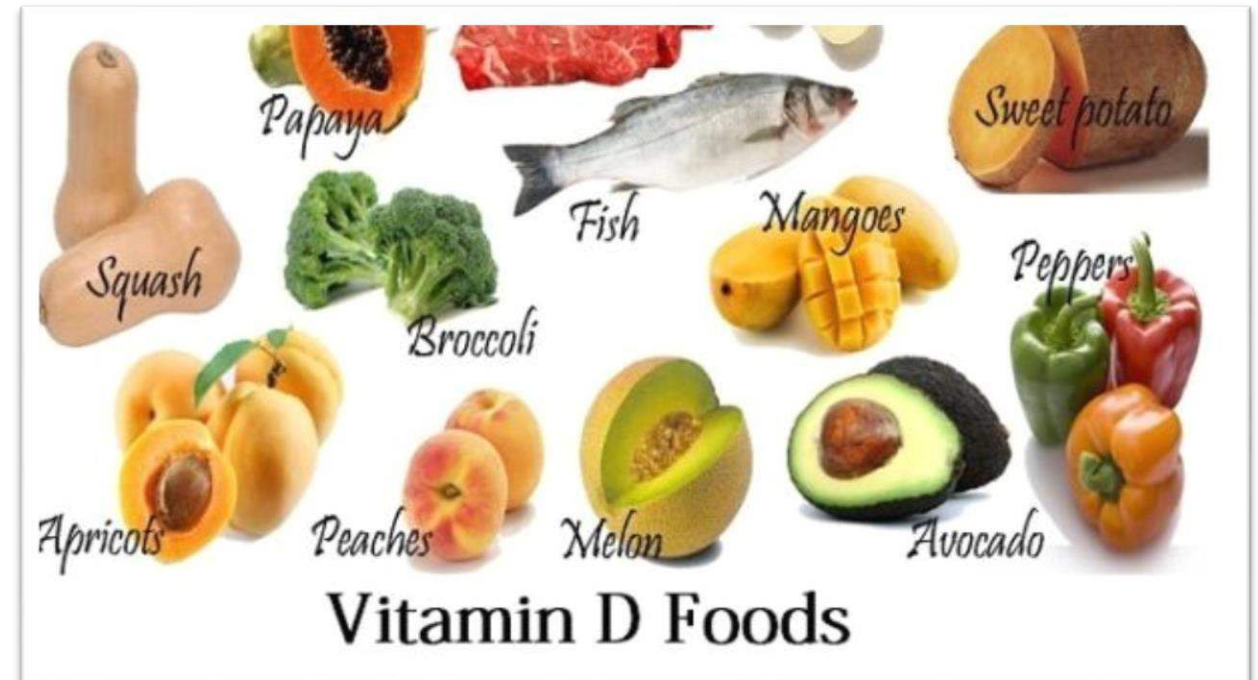
Food detail per 100...

Energy		Lipid Components		Vitamins	
Energy(Kcal) 7% RI	136kcal	Saturated Fat 2% RI	0.4g	Vitamin A (ret eq) 310% RI	2480ug
Energy(Kj) 7% RI	577kJ	Monounsaturated fat 0% RI	0.1g	Retinol	0ug
Macronutrients		cis-Mono		Carotene	0ug
Carbohydrate	0g	Polyunsaturated fat 4% RI	0.7g	Vitamin D	0ug
Protein 61% RI	30.7g	Omega3(n-3)		Vitamin E	
Fat 2% RI	1.5g	Omega6(n-6)		Vitamin K <sub>1</sub>	0ug
Water	8.7g	cis-Poly		Thiamin (B <sub>1</sub> ) 22% RI	0.24mg
Water from Drinks		Trans-fatty acids		Riboflavin (B <sub>2</sub> ) 96% RI	1.3mg
Alcohol		Cholesterol	0mg	Niacin total (B <sub>3</sub> )	
Carbohydrate		Minerals & trace elements		Niacin	5.5mg
Starch	0g	Sodium 33% RI	790mg	Tryptophan	
Oligosaccharide		Potassium 142% RI	2840mg	Pantothenic Acid (B <sub>5</sub> )	
Fibre 178% RI	44g	Chloride		Vitamin B <sub>6</sub> 5% RI	0.07mg
NSP	44g	Calcium 54% RI	430mg	Polates (B <sub>9</sub> ) Total	
Sugars	0g	Phosphorus 50% RI	350mg	Vitamin B <sub>12</sub> 1100% RI	27.5ug
Glucose	0g	Magnesium 3% RI	12mg	Biotin (B <sub>7</sub> )	
Galactose	0g	Iron 140% RI	19.6mg	Vitamin C 18% RI	14mg
Fructose	0g	Zinc 64% RI	6.4mg	Other	
Sucrose	0g	Copper 160% RI	1.6mg	GI (estimated)	0
Maltose	0g	Manganese 300% RI	6mg	GL	0
Lactose	0g	Selenium		Caffeine	
		Iodine 980% RI	1470ug		

- Levels of B12 vary enormously
- Most are analogues of B12 which do not function as B12 in the body and may adversely affect B12 function

# VITAMIN D

- Not an issue in countries with lots of sunshine...
- 30-80% of Irish Adults are deficient in vitamin D or borderline
- **Vitamin D in Food**
- Oil-rich Fish
- Eggs
- Grass fed beef
- **Supplementation** with vitamin D may be necessary – check blood levels



- foods
- 800 iu
- vegetarian
- calcium
- plant
- sources
- supplement
- vegan diet
- non gmo
- deva vegan
- drops
- liquid vitamin
- capsules
- iron
- tablets



5 Ways to Increase Your V...  
peta.org



Vitamin D Foods for Vegetarians - YouTube  
youtube.com



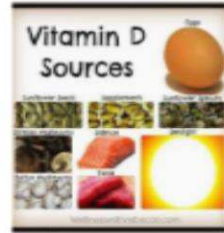
Vegan Vitamin D – Vegan Enthusiasts  
veganenthusiasts.com



Amazon.com: DEVA Vega...  
amazon.com



non-animal sources of iron, c...  
pinterest.com



76 Best Vitamin D the Suns...  
healtheducationarticles.com



Sources of Vitamin D for Vegans - H...  
heycare.com



What is Vitamin D and Vitamin D Defi...  
samedaysupplements.com



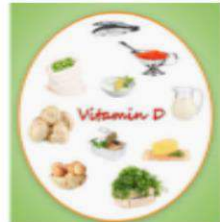
Vitamin D Foods for Vegetarians: 11 Foods for Bette...  
foodsforbetterhealth.com



Vegan Vitamin D: How To Get Enough On...  
happyhappyvegan.com



My Top 4 Sources of Vitamin D As a Raw Vegan -...  
therawadvantage.com



Nutristart  
nutristart.com



Country Life Vegan D3  
integraloganaturalfoods.com



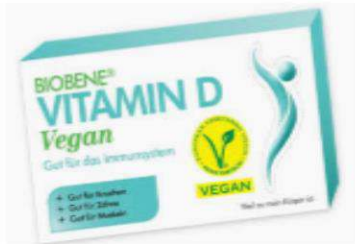
D Complex Vegetarian TM  
theherbprof.com



Source Naturals Vegan Tru...  
ebay.com



Vegan Vitamin D3 Capsules b...  
veganessentials.com



Vitamin D Vegan, 60 capsules - BIOBENE - Vit...  
vitalabo.com



Vegan Vitamin D-3 | BeStrived  
poxcasult.wordpress.com



Amazon.com: Deva Vegan Vit...  
amazon.com



Super Herbal Foods - Vitamin D  
superherbalfoods.com



5 Ways to Increase Your Vitamin D Intake | P...  
peta.org



Pure Food Vitamin D3 | Whole Earth & Sea  
wholeearthsea.com

- foods
- 800 iu
- vegetarian
- calcium
- plant
- sources
- supplement
- vegan diet
- non gmo
- deva vegan
- drops
- liquid vitamin
- capsules
- iron
- tablets



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Vitamin D Foods for Vegetarians - YouTube  
youtube.com



Vegan Vitamin D - Vegan Enthusiasts  
veganenthusiasts.com



Amazon.com: DEVA Vega...  
amazon.com



non-animal sources of iron, c...  
pinterest.com



76 Best Vitamin D the Sun...  
healtheducationarticles.com



Sources of Vitamin D for Vegans - H...  
beycare.com



What is Vitamin D and Vitamin D Defi...  
samedaysupplements.com



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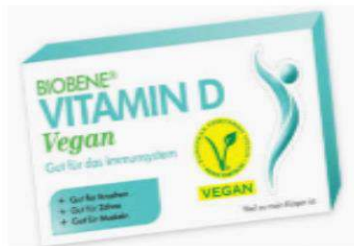
D Complex Vegetarian TM  
theherbprof.com



Source Naturals Vegan Tru...  
ebay.com



Vegan Vitamin D3 Capsules b...  
veganessentials.com



Vitamin D Vegan, 60 capsules - BIOBENE - Vit...  
vitalabo.com



Vegan Vitamin D-3 | BeStrived  
poxcaatl.wordpress.com



Amazon.com: Deva Vegan Vit...  
amazon.com



Super Herbal Foods - Vitamin D  
superherbalfoods.com



5 Ways to Increase Your Vitamin D Intake | P...  
peta.org



Pure Food Vitamin D3 | Whole Earth & Sea  
wholeearthsea.com

# OMEGA-3 : EPA, DHA & ALA

- **Nuts and seeds** are good sources of the omega-3 ALA
  - EPA & DHA are found mainly in **fish, grass fed beef and dairy**
  - **DHA** is essential for development of the **central nervous system** and **brain** development during pregnancy and childhood
  - EPA and DHA may also play a role in helping to prevent **Dementia**
- Although humans can **synthesize** EPA and DHA from ALA, we have a very limited capacity
  - Vegans have **lower levels of DHA** in breastmilk and infants born to vegan mothers have lower DHA status
  - **Algae**, especially supplements are a source of **DHA**
  - We need **further studies** on the potential impact of lower DHA consumption on brain function and nerve development.



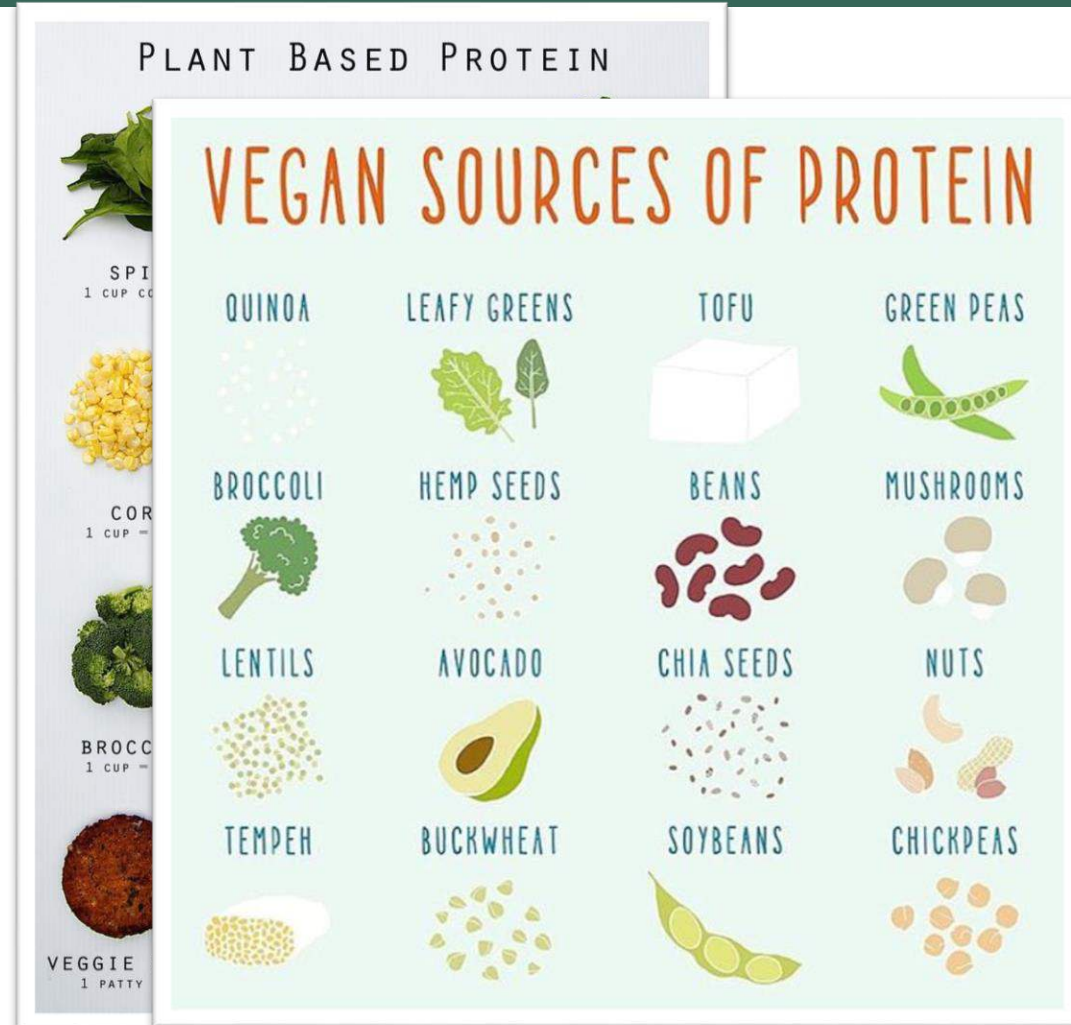
# PROTEIN AND IRON

- Well-Planned vegan diets have adequate **protein and iron**
- Generally need advice to have protein at **every meal**
- Main problem is **misinformation** on protein content of food

PLANT BASED PROTEIN		
 SPINACH 1 CUP COOKED = 5g	 EDAMAME 1 CUP = 17g	 KALE 1 CUP = 3g
 CORN 1 CUP = 4.6g	 CAULIFLOWER 1 CUP = 2g	 PEAS 1 CUP = 9g
 BROCCOLI 1 CUP = 2.5g	 MUSHROOMS 1 CUP = 5g	 ASPARAGUS 1 CUP = 4.3g
 VEGGIE BURGER 1 PATTY = 13g	 AVOCADO 1 AVOCADO = 4g	 SWEET POTATO 1 CUP = 2.3g

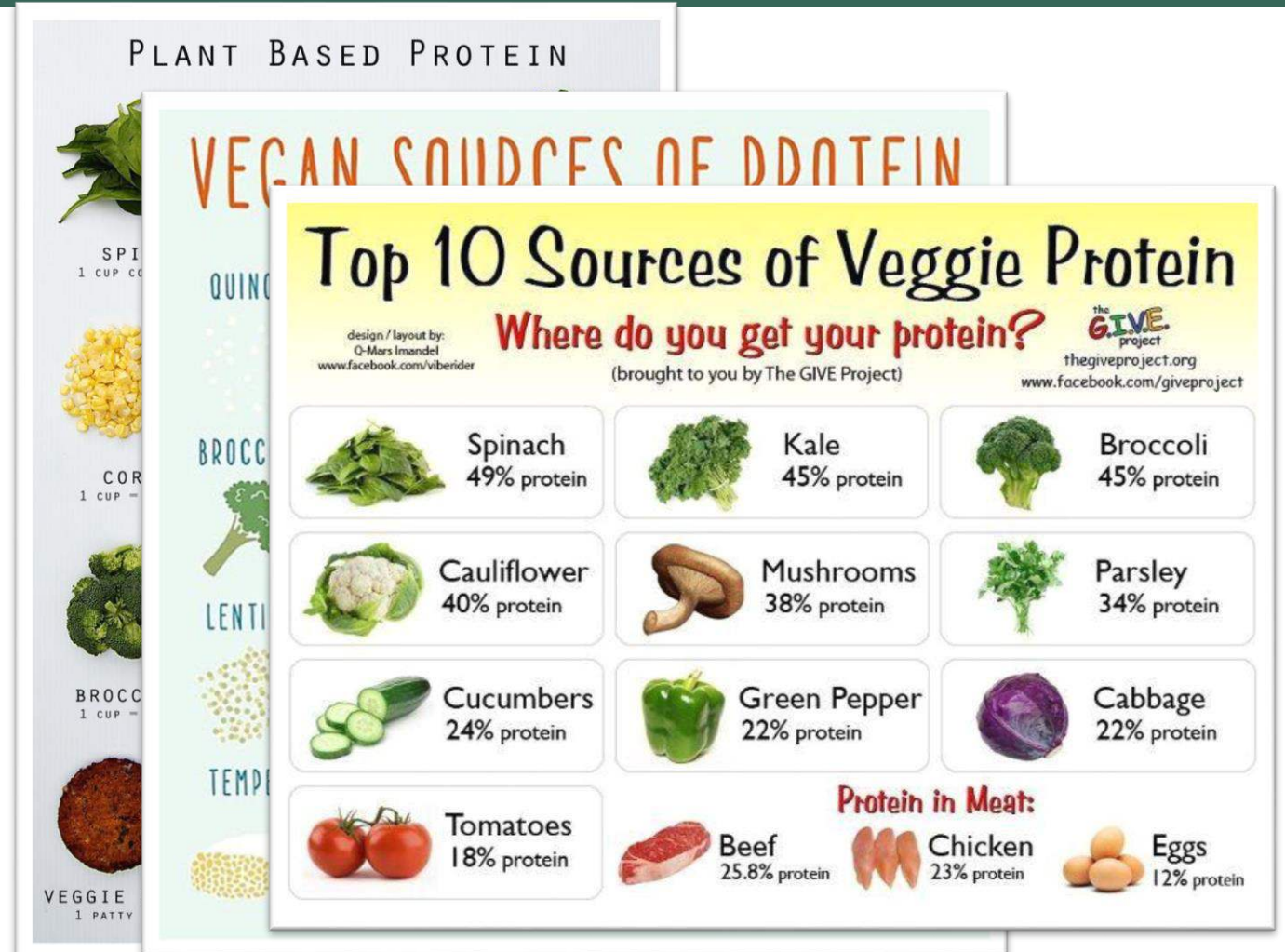
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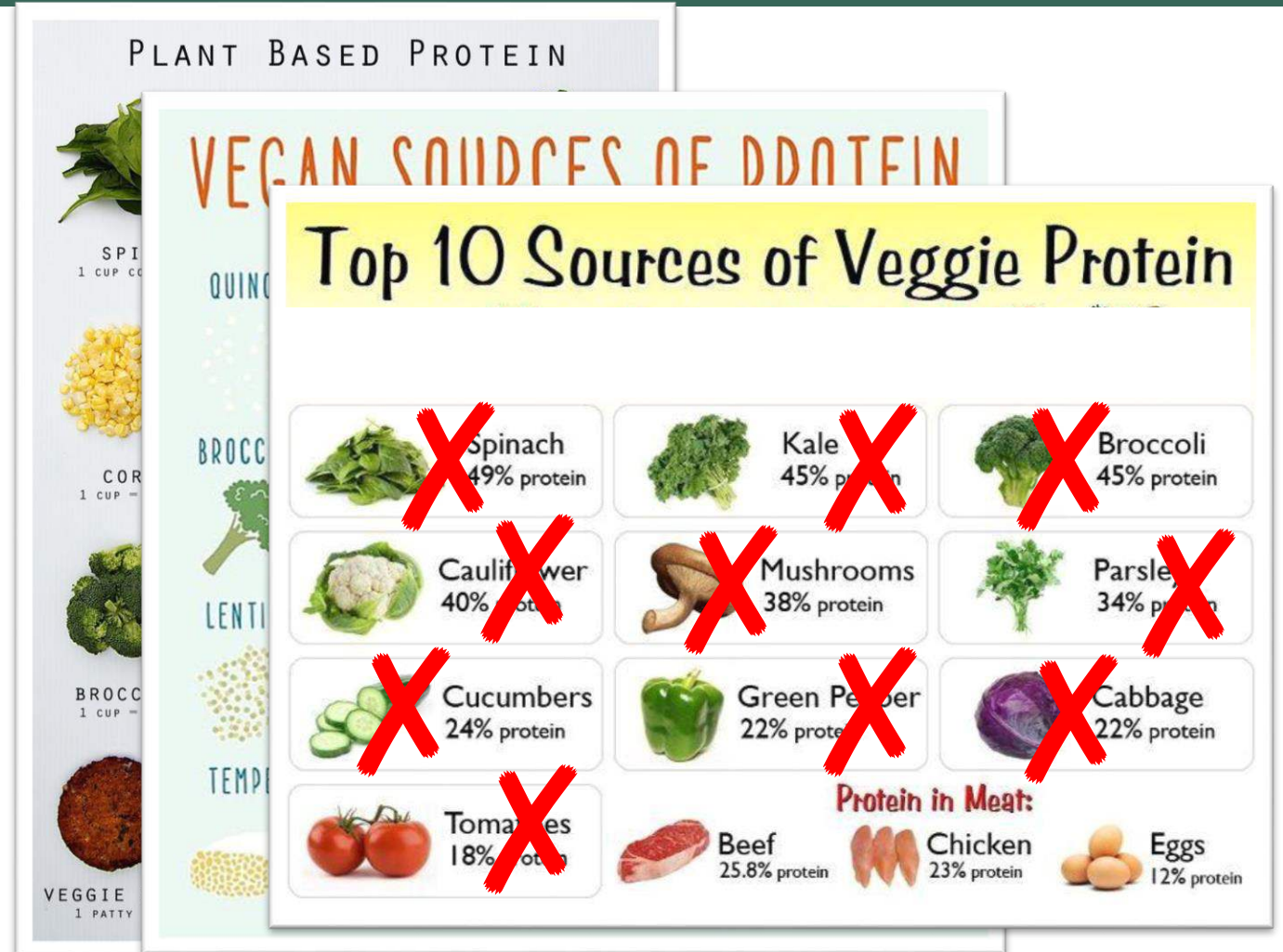
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# TALKING ABOUT PLANT-BASED EATING

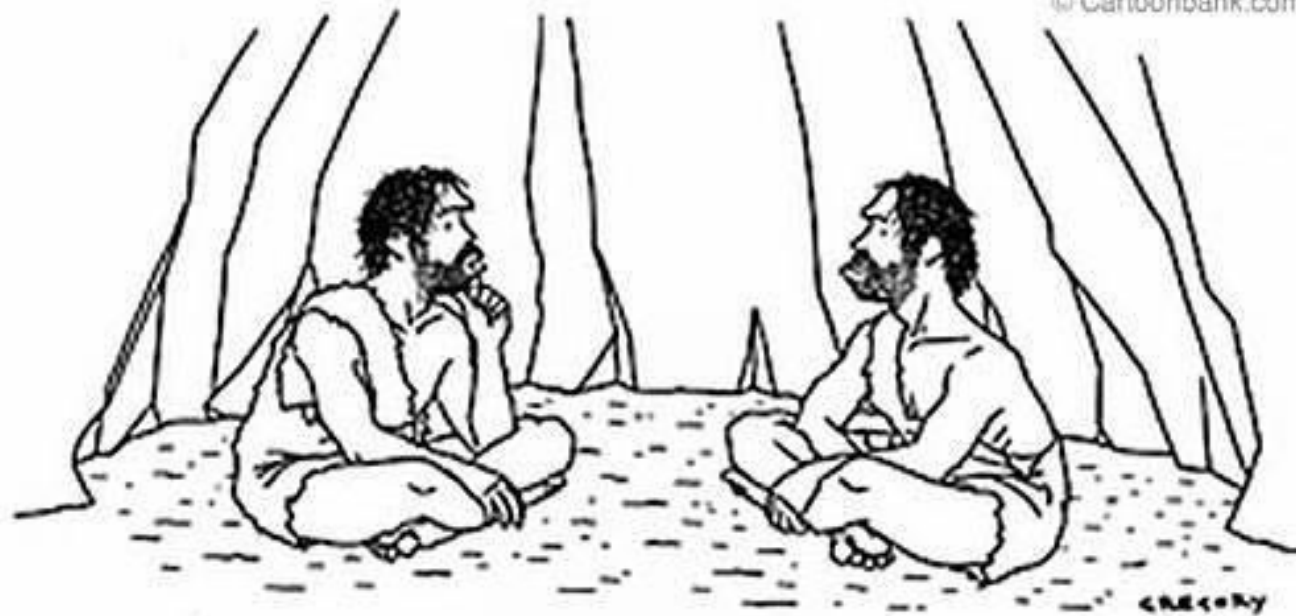
- Vegans typically **smoke less**, have higher **socio-economic** class, higher **education** and are more “**health conscious**”
- In studies “**Meat Eaters**” include healthy & unhealthy meat eaters
- Both **meat eating** and **plant-based** eating can be very healthy
  - Poor Information is a key issue
- Lead people to good sources of nutrition information
- Be aware of the misinformation they have already received

- 1. Who is telling me this?**
- 2. How does he or she know this?**
- 3. Given #1 and #2, is it possible that she or he is wrong?**
- 4. If answer to #3 is "yes," find another, unrelated source.**
- 5. Repeat until answer to #3 is "pretty f—ing unlikely."**

**UNTIL PROCESS IS COMPLETE  
ASSUME BULLSHIT**



THANK YOU



© Cartoonbank.com

*“Something’s just not right—our air is clean, our water is pure, we all get plenty of exercise, everything we eat is organic and free-range, and yet nobody lives past thirty.”*