



Lecture 74:

Nutritional Approach to Vegetarian Athletes

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Vegetarianism:

- **Vegetarianism is common among athletes.**
- **Vegetarianism does not prevent from excelling in sports, yet achieving to optimal performance would be difficult due to some nutritional deficiencies.**
- **A vegetarian diet does not guarantee a physical advantage neither.**

- **Vegetarian:** eat veggies, eggs, and dairy products and no meats.
- **Semi – Vegetarian:** may include fish or chicken.
- **Ovo – Vegetarian:** they include eggs, but not dairy products.
- **Lacto – Vegetarian:** they include dairy products, but not eggs.

- **Vegans:** veggies only and no animal based foods at all.
- **Pescetarians:** vegetarians that eat fish, but other meats.



Problems with Vegetarianism:

- 1) The main concern is the **compositions of macronutrients** rather than total calories intake.
- 2) They become somehow carbohydrate overloaded.

- **3) In general, they may be deficient in Protein, Vitamin B12, Iron, Zinc, and Calcium.**
- **4) They are prone to:**
 - **anemia.**
 - **nagging injuries.**
 - **weak immune system.**
 - **overtraining syndrome.**
 - **stress fractures.**
 - **menstrual irregularities in females.**

Dietary Assessment Before Giving Advices:

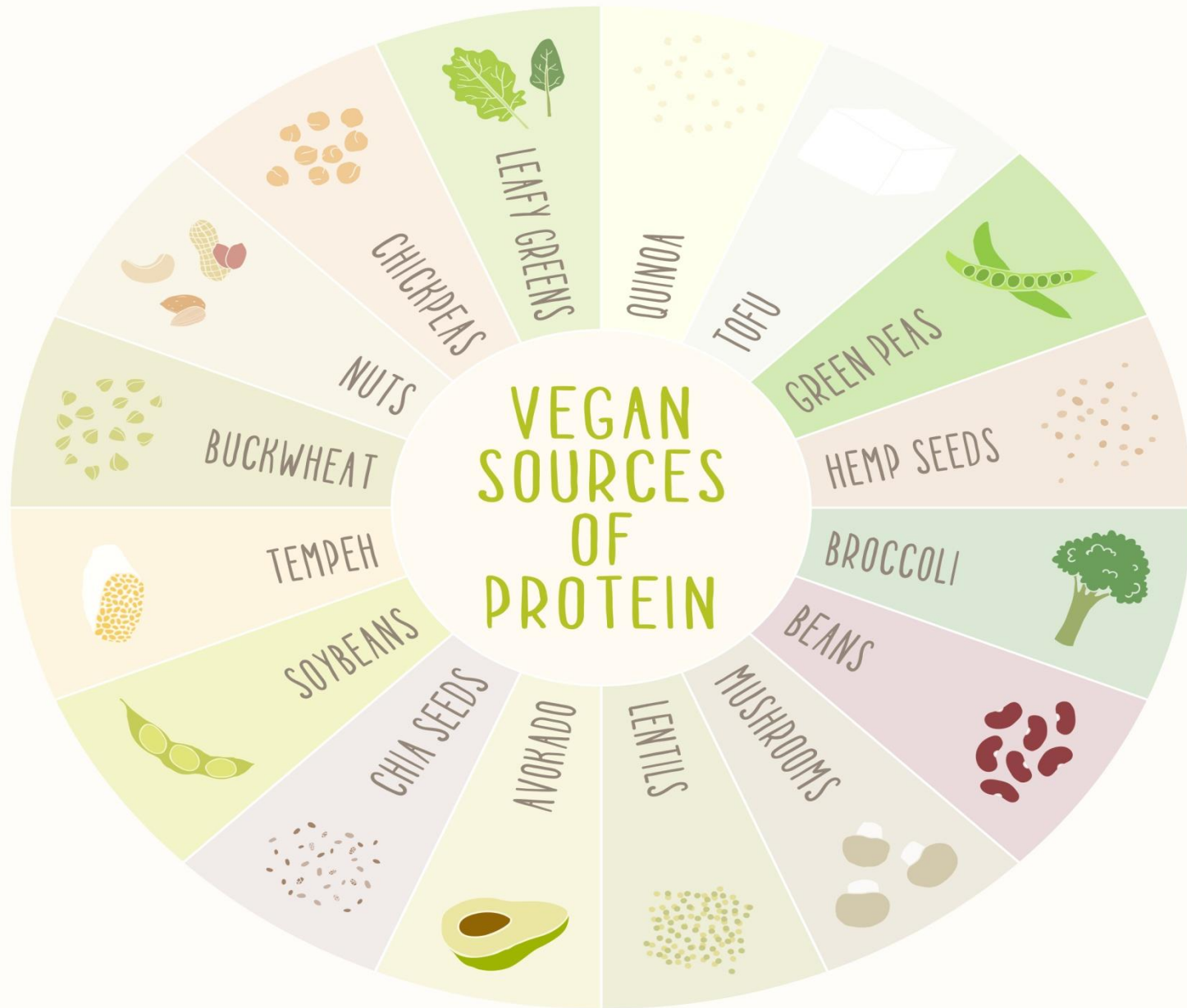
- A complete assessment is required.
- You need to know two important things about them:
- **1)** whether they are vegetarian, semi-vegetarian, vegan, or pescetarian.
- **2)** if she/he is a recreational exerciser or professional athlete (endurance versus strength).

Protein Intake in Vegetarians:

- **The biggest challenge in vegetarians is to get enough protein.**
- **The main sources of protein for them would be seeds, nuts, beans, soy, tofu and sometimes eggs and dairy products.**
- **As we discussed before, plant-based proteins are NOT complete proteins, except soy.**

Protein intake in athletes:

- Endurance: 1.4 gr/kg/day
- Ball sports: 1.6 gr/kg/day
- Strength: 2 gr/kg/day



- **Failure to get adequate protein for their sports.**
- **And if they do, the protein does not support muscle growth, as it is mostly incomplete protein.**
- **Though soy is complete protein, its bioavailability is low (74 vs 154 for Whey isolate).**

- **Beans:** high in carbs too.
- **Seeds and nuts:** high in fats too.
- **Soy:** low in biologic value.



How to fix it:

- Explain to your athlete how important is to get proper amounts of essential amino acids.
- Encourage them to take **Whey Protein powder**.
- Add **Spirulina**.

Vitamin B12 in Vegetarians:

- **The most important missing micronutrient is vitamin B12.**
- **Almost all vegetarians are B12 deficient unless they get it from external sources, either as a pill or an injection.**

- Even though **spirulina**, **soy**, and soy products such as **miso** and **tempeh** have been touted as a source of vitamin B12, but it is biologically in an **inactive form** that the body cannot easily consume it.



- **Vegetarians and vegan should be checked regularly for their blood levels of B12.**
- **It is suggested that vegetarian athletes supplement themselves with B12 (injection is better than oral form).**

Zinc Intake in Vegetarians:

- **Vegetarians especially vegetarian athletes are prone to zinc deficiency for the following reasons:**
- **1) Inadequate dietary intake.**
- **2) Exercise especially intense training depletes the body from zinc.**

- **Performance Daily Intake (PDI) of zinc for athletes is 30 – 300 mg a day.**
- **Insufficient intake of zinc weakens the immune system and delays recovering from incurred sports injuries.**
- **For vegetarian athletes: 50 – 100 mg a day.**
- **Maximum daily dose is 200 mg.**

Iron Intake in Vegetarians:

- **Iron deficiency anemia** is common among vegetarian athletes especially female athletes.
- The iron in vegetables is non – heme, which has a poor absorption.
- Anemia affects negatively athletic performance.
- Vegetarian athletes need iron supplementation.

Calcium Intake in Vegetarians:

- **Vegans, pescetarians, and ovo – vegetarians are particularly at risk for inadequate calcium intakes.**
- **Though vegetables such as spinach and collard greens are high in calcium, they are high in oxalate too, which inhibits the absorption of calcium.**

- **Vegetarians and especially vegans require calcium supplementation.**



Essential Fatty Acids Intake in Vegetarians:

- The best food source of essential fatty acids is fish.
- Expect **pescetarians**, all vegetarians and vegans are deficient in essential fatty acids and they require supplementation.

Homework:

- **1) Describe the issues with vegetarians.**
- **2) Describe how you correct protein intake in vegetarians.**

