

## Protein Supplementation: What to know before you buy.

- First off understand that you **DO NOT** need protein powder.
- You can get all the protein you need in a balanced diet.
- If you are eating a balanced diet and still not reaching your recommended amount of protein (PRO) then you can start supplementing.
- Secondly, if you didn't already know, the supplement industry is unregulated by the US Food and Drug Administration (FDA).
- This means that anyone can buy bulk protein, bottle it, slap a label on it, and sell it... And people do.. A lot.

# PROTEIN

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- Protein (PRO) is a macronutrient, meaning it is required in significant amounts in the diet.
  - The other 2 macronutrients are Carbohydrates and Fat.
- Essential for building muscle, organs, and bone tissue.
- Basic Building Blocks are Amino Acids
  - There are 9 Essential and 11 Nonessential for life
  - Lots of research on if any one of the are better
    - The best amino acid for muscle growth and development is Leucine

# PROTEIN QUALITY

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- Whether the protein supplies the amino acids in amounts proportionate to the body's needs determines the **QUALITY**.
- High quality (complete) proteins include: fish, red meat, eggs, and dairy products.
- Low Quality (incomplete) include: Grains, beans, plant proteins (soy).
- Complementary Proteins include: Rice and beans, peanut butter and bread.
  - While incomplete by themselves, together provide all the essential amino acids.

# PROTEIN REQUIREMENTS

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- When estimating your protein requirements two key factors must be considered: caloric intake and biological value of the protein.
- Higher the value = lower the requirement
- The recommended amount for adults is 0.8g/kg of body weight. 10-15% of total calories
- For both endurance and resistance training athletes can increase the protein need:
  - Endurance = ~0.8g/kg – 1.4g/kg
  - Strength = ~1.4g/kg – 1.7g/kg

## PROTEIN REQUIREMENTS CONT.

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- **\*\*Protein consumed in excess of the amounts needed for the synthesis of tissue are broken down.**
- **The nitrogen is excreted as UREA in urine, and the remaining ketoacids are either used directly as sources of energy or converted to carbs or fat.**
- *So if you are already eating a balanced diet i.e. already getting enough PRO and you add in more PRO powder it literally does nothing for you.*

## PROTEIN SUPPLEMENTATION: REASON(S)? TO SUPPLEMENT

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- 1. Not getting enough from your diet
  - Really the one and only reason.
  - They are called supplements for a reason, they are meant to “supplement” your diet.
  - Fill the nutritional gaps you are missing
  - They are one piece of the puzzle.
  
- 2. Add Convenience
  
- !!You must have a sound diet before thinking about supplementing!!
  - A LOT of the time you can get the results you want if you simply change your diet first. Remember you are filling your nutritional gaps.

## WHAT TO LOOK FOR

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- Here are some of the top things you want to look for in a protein powder or drink.
  - 1. Protein amount per grams / serving
  - 2. Protein Quality
  - 3. CHO: PRO Ratio (CHO=Carbs, PRO=Protein)
  - 4. Fillers
  - 5. Digestibility
  - 6. Primary Source: Whey, Soy, Caesin
    - BCAA's?
  - 7. Certified Banned Substance Free

## What to Look for Cont.

- 1) Protein amount per grams / serving
- 20g/serving
  - 20-30g/serving is going to be ideal range.
  - Research has shown that anymore than this does not aid in helping the body repair muscle tissue after a workout.
  - This is not telling you how much to take in one day that will vary from person to person.
  - This tells you how much to eat or put in a shake at one time.
  - If the protein you have says there are 25 or 30 grams in one serving(scoop) then don't put in a full scoop.
  - This will also save you money in the long run.

## What to Look for Cont.

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- 2) Protein Quality
- I touched on protein quality on an earlier slide, however that was in regards to dietary protein.
  - What we are talking about now is the source of protein in your protein powder.
  - The important thing to remember is that **NOT ALL PROTEIN IS THE SAME!**
  - This leads into the fact that **high quality concentrated protein is not cheap**. There are no ways around it.
  - Cheap protein comes from cheap sources i.e. chicken beaks, feathers, and hair.
  - Those 5lb bags of protein for \$30... You don't want them..

## What to Look for Cont.

### 3) CHO: PRO Ratio

- The ratio of CHO to PRO is important because CHO's fuel the building of muscle tissue.
- The ratio of CHO:PRO is about 4g:20g, +/-2g for PRO, minimum of 4g of CHO.
- Especially if you are an athlete, you must also be taking CHO with your PRO, you will probably want a little more too.
- About 1.5g CHO/kg bw
- You need the CHO to fuel the muscle building process. You can't build muscle if your body is lacking the energy to build it.

## What to Look for Cont.

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### ● 4) Fillers:

- Fillers go under the category of PRO quality. Some companies will put “filler” proteins in their product to **raise the tested amount** of protein in their product.
- This means that while it says it has “x” amount of PRO it may be way less.
- Some fillers include: Taurine, Glycine, Creatine

## What to Look for Cont.

- 5) Digestibility / Bioavailability – on the box it says it has 20g of PRO, but how much of it are you actually absorbing??
  - Digestibility is very important when it comes to picking a PRO supplement.
  - If the PRO is not easily digestible by your body, you will not be absorbing all the PRO you think you are getting.
  - PRO's with high digestibility are egg, milk, and cheese, so finding a PRO that is metabolically balanced with any of these sources is a great choice.
  - This can be an issue on two fronts for some people who have sensitive stomachs and can have extreme flatulence, diarrhea, nausea and vomiting from some PRO.
  - Low quality PRO typically have low bioavailability.

## What to Look for Cont.

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- 6) Primary Source: Whey, Soy, Casein
  - The hands down winner for best protein is Whey.
    - It is the fastest digesting PRO, so taking it pre-, during, or post-workout is great.
    - Casein is a slow digesting PRO, still digesting 8hrs after consumption
    - Also you will want a PRO with some added branch chain amino acids or BCAA's
    - The hands down winner in the BCAA department is Leucine.
      - You will want about 2.5 – 4g of Leucine/serving

## What to Look for Cont.

- 7) Certified Banned Substance Free
- This is an easy one, especially if you are an athlete or potential collegiate athlete.
- Make sure the company is certified banned substance free.
- The NCAA has a list of about 200 substances that if found in your body during the time of competition you will be disqualified.
- Some companies will not have this testing done because it is expensive, however those are the companies you **DO NOT** want to get product from anyways.
- Also (and this is a big one) since supplements are not regulated by the FDA, they don't even have to put on their label everything that is in the product. Meaning if they are not certified, yet there are no known banned substances listed, they may still be in there.
- Another reason it is good to go with a reputable company.

# Protein Timing

- There are a couple of methods surrounding PRO timing (when you should drink your shake) and lots of research regarding it.
- Nutrient timing depends a lot on how much you workout.
  - Everyone is always in a different state of protein needs with a lot of variables to consider.
- Method #1: Drinking the PRO shake pre-, during, or post-exercise.
- Method #2: Drink the PRO shake at anytime during the day, making sure that you reach your level of PRO intake for that day.
- There is research that supports both methods.

## Protein Timing cont.

- As far as which method is better, there is no definite answer.
- Benefits for both include:
  - Pre – it is a beneficial to have free floating PRO in your bloodstream while working out.
  - During – Same benefit as pre-exercise. During a workout your body is breakdown muscle, so you might as well give it what it needs ASAP.  
\*\*my personal choice.
  - Post – This is the classic answer and has the same reasoning as during a workout.
  - Method #2 will work best for the athletes who have stomach issues handling PRO during a workout. This is something you may have to experiment with.

## Conclusion

- It is a lot to look for when choosing a product, but it is important because this is something you are putting inside your body, you have to know what is in it!
- If you are using protein in the right way, with a balanced diet, and it is within your budget, dietary protein supplementation is an effective way to enhance the ability of your muscles to repair themselves and grow.
- For more information or further questions
- Contact Tyler Summey at [tyler.summey@jfca.org](mailto:tyler.summey@jfca.org)
- *\*The information contained within this powerpoint is not intended to provide specific nutritional needs. Always talk with a doctor or a dietician before starting or making changes to your diet.*