



**Cookin' up Fitness®**

Cultivate, Coach, Cook & Connect

## Welcome to Week 4 **Protein WISE**

### **Introduction:**

Arguably, protein (PRO) is the most renowned macronutrient, known for its essential function in building muscle and keen ability to suppress appetites. However, did you know PRO performs other important roles which are essential to life and physical performance? Proteins are enzymatic catalysts which speed up chemical reactions in the body, antibodies which serve as our immune defenders, regulators of fluid and acid/base balance and transporters of oxygen, waste products, fats, some vitamins and electrolytes. Quite frankly, protein is *GOAT!* In this module, participants will learn about high biological value protein foods and how much to consume each day for optimal performance.

### **Background:**

Carbohydrates and fats are the body's *primary* sources of fuel. For this reason, we address those nutrients first so you are familiar with the amount of energy your body needs from these nutrients. Protein is not meant to be a primary source of fuel rather it is utilized for building muscle and serving other more important purposes in the body. Consuming more protein than your body uses will NOT result in larger muscles but larger body fat stores. This is why the amount of protein consumed each day is specific to your body composition, age, and activity performed.

**PRO Basics:** Proteins are organic compounds which are made from amino acids (AA's). There are 22 *proteinogenic* (protein-building) AA's which form a variety of different and complex protein chains called peptides. The body is made up of 100,000 different proteins and there can be 100 to 10,000 AA's in a protein sequence. It is estimated that our bodies turn over approximately 200 grams of protein each day. However, most people should *NOT* eat 200 grams of protein/day because our bodies make a good portion of the AA necessary to construct proteins. These AA's are referred to as *non-essential* (NEAA) because they don't come from food. *Essential* AA's (EAA) must come from food because our body can't not make them from other compounds. There are 9 EAA, the rest are NEAA or "conditionally" essential. Conditionally refers to a NEAA which is turned over at a higher rate during stress and illness. Athletes often supplement glutamine which is a conditionally NEAA to enhance muscle glycogen resynthesis. Unfortunately, there is little evidence to support that glutamine supplementation is effective.

Protein comes from both animal and plant food sources however, the amount that is digested and turned over in the body for utilization differs according to the food consumed. The most common measure of protein quality used today is the Protein digestibility Corrected Amino Acid Score (PDCAAS). Foods are measured on a scale of 1 (highest) to 0 (lowest) in terms of EAA utilization. A list of these foods has been provided at the end of this module.



#### Week 4 Focus:

1. Review **PRO** results from week 1 food log and compare results to recommendations  
*(We encourage participants to continue to log food into the USDA SuperTracker 3 to 4 days each week to evaluate changes and make adjustments)*
2. Calculate **PRO** fueling needs based on individual sport/activity
3. Learn about HBV protein food sources

**Week 4 Challenge:** Meet **PRO** goal within 5 to 10% of recommended range

**Connect:** To connect with us, follow us on Instagram. Direct message (DM) us for general questions about the Nutrition Basic Training program.

**Coach:** Individual coaching is available upon completion of this Nutrition Basic Training Program. Please eMail a brief note regarding the coaching or culinary service you are requesting.

**Week 4 Instructions:** This week each participant will complete 4 steps. First you will detect imbalances in **PRO (g)** then begin to modify diet based on **SportFit** recommendations. See below for those step-by-step instructions.

**Week 4 Tip:** Use the information in this module to improve your nutritional fitness. You might find our protein recommends are higher or lower than your usual intake. Trust us and the research! You might just discover changes in your performance you had not imagined were possible.



**Step 1: Go to USDA SuperTracker, pull the Nutrients Report and Review Results for PRO intake.**

**Instructions:** Go to the **USDA SuperTracker**, select “**My Reports, Nutrients Report**” and enter the date range of the food and beverage intake recorded from past week. Then select create report. You will see a report that looks similar to that shown below.

**Nutrients Report**

Get your average intake of nutrients (for example, calcium, sodium, vitamin D) for any time period you choose. See which of your food selections were highest or lowest in a nutrient by clicking the heading.

Export Report As: PDF, Excel, Word

You will need the free Adobe Acrobat Reader plug-in to view and print the exported PDF files.

View Report from: 01/05/17 thru 01/05/17 Create Report

**KCSnyder's Nutrients Report 01/05/17 - 01/05/17**

Your plan is based on a 2000 Calorie allowance.

Nutrients	Total	Average Eaten	Status
Total Calories	2000 Calories	1789 Calories	OK
Protein (g)***	46g	86 g	OK
Protein (% Calories)***	23% Calories	19% Calories	OK

→ Review the average amount of **PRO (g)** consumed over the 3 to 4 day period. You will compare this number to your personalized **PRO (g)** goal calculated in **Step 2** shown below.

**Step 2: Calculate PRO (g) Goal**

Table 1: Select Sport/Exercise	PRO Factor (PF)
<b>General Activity/Training:</b> 60 minutes/3 to 5 days/wk. <b>Adults ≥ 60 years old</b> →	0.8 to 1.0 g PRO/kg/day 1.0 to 1.2 g PRO/kg/day
<b>Moderate to High Intensity Sports (MHIS):</b> soccer, hockey, tennis, basketball, swimming, sprinters (runners, cyclists, swimmers) <b>Low Endurance/High Precision:</b> baseball, golf	1.0 to 1.5g PRO/kg/day
<b>High Endurance Sports:</b> tri-athletes, distance runners/swimmers, road cyclists, ultra-athletes	1.3 to 1.8g PRO/kg/day
<b>Strength Building or High Volume Intensity Training:</b> weight lifting, competitive wresting, martial arts, gymnastics, figure skating	1.6 to 1.7g PRO/kg/day

Note: Adapted from: Sports Nutrition, A Practice Manual for Professional 4th Ed. Dunford, 2006, Sport Nutrition: A review of the latest guidelines for exercise and sport nutrition; Afr J Clin Nutr 2013;26(1):6-16

**Part 1:** Calculate your individualized PRO (g) goal using the table above

Step 1: Convert pounds to kilograms (take your body weight (lbs.) / 2.2) = kg body weight

Step 2: Kg body weight x **PF** (select from Table 1) = PRO/g goal

(NOTE: Transfer this number to the PRO (g) section of your SportFit Nutrition Plan)

**Example: Female 125 lb. Field Hockey Player**

Calculation 1: 125 lbs. / 2.2 = 56.8 kg

Calculation 2: 56.8 kg body weight x **MHIS PF** (1.0 to 1.5g) = 57 to 85g/day



**NEW LABEL / WHAT'S DIFFERENT**

Servings: larger, bolder type

New: added sugars

Change in nutrients required

Nutrition Facts	
8 servings per container	
<b>Serving size</b> 2/3 cup (55g)	
Amount per serving	
<b>Calories</b> 230	
	% Daily Value*
<b>Total Fat</b> 8g	10%
Saturated Fat 1g	5%
Trans Fat 0g	
<b>Cholesterol</b> 0mg	0%
<b>Sodium</b> 160mg	7%
<b>Total Carbohydrate</b> 37g	13%
Dietary Fiber 4g	14%
Total Sugars 1g	
Includes 0g Added Sugars	20%
<b>Protein</b> 3g	
Vitamin B-2 10%	
Calcium 20%	
Iron 45%	
Potassium 6%	

Serving sizes updated

Calories: larger type

Updated daily values

Actual amounts declared

New footnote

Image reprint: U.S. Food & Drug, Changes to the Nutrition Facts Food Label, web, 22 November, 2016.

How do these goals translate to the food I eat?

Total PRO goal (from example above)  
57 to 85 g/day

If you consumed 1 servings of the food shown on the left, you'd consume 3 g of your protein budget for the day.

Click on the link below to receive guidance on how to read a food label  
<http://www.fda.gov/Food/IngredientsPackagingLabeling/LabelingNutrition/ucm274593.htm>

### Step 3: Adjust intake to meet PRO (g) goal and review High Quality PRO foods sources

Below you will find 2 Tables: 1) High Quality PRO Food List and 2) Quick Guide to estimate PRO (g) content in food

#### Instructions:

Step 1 of the **Protein WISE** challenged you to review PRO (g) intake. Now it's time to determine if you're consuming the right amount of high quality PRO sources. Use the guides below to adjust eating habits toward your goal.

#### Total PRO (g)

→ If the total PRO (g) intake is too high or too low use **Tables 1 & 2** to assist you in adjusting portion sizes and selection of high quality protein foods



<b>Table 1 High Quality Protein (PRO) Food List</b>	
<b>Protein Digestibility Corrected Amino Acid Score (PDCAAS)</b>	<b>(1 highest to 0 lowest)</b>
Cow's milk, Egg white, Casein & Whey protein, Tofu, Textured Vegetable protein	1
Beef, Poultry, Fish, Soybean protein (concentrate)	0.80 to 0.92
Chickpeas, Soybeans, Black beans, Legumes, Peas	0.70 to 0.80
Hemp seeds, Broccoli/ Vegetables, Potato, Fresh fruits, Kidney beans	0.60 to 0.70
Cereals, Peanuts, Rice, Wheat bran	0.50 to 0.60
Dried fruit, Whole wheat pasta, Sundried tomatoes	0.40 to 0.50

Note: Adapted from Pump up Your Protein Chart <http://www.honesthealthnews.org/2015/07/03/part-iii-pumping-up-protein-foods-to-choose-facts-to-use/>

<b>Table 2 Quick Guide to Estimate PRO (g) Content in Food</b>					
<b>Grains</b>	<b>Serving Size</b>	<b>PRO (g)</b>	<b>Lentils, Beans, Peas, &amp; Nuts</b>	<b>Serving Size</b>	<b>PRO (g)</b>
Barley, pearled	1 c cooked	4	Black Beans	1 c cooked	16
Buckwheat or whole wheat Pancake	4" diameter	2 to 3.5	Pinto, Navy, Kidney Beans	½ c cooked	7
Bulgur	1 c cooked	6	Soy Beans, <i>shelled Edamame</i>	½ c cooked	8
Long grain or brown rice	1 c cooked	4.8	Green Peas		7
Oats	½ c Raw	13	Lentils	½ c cooked	9
Quinoa	1 c cooked	8	Tofu	3 oz.	12
Sprouted Grains	1 c	8	Almonds & Mix nuts	1 oz.	6
Wheat Germ	1 oz.	6	Cashews	¼ c	5
Whole Grain Pasta	1 c cooked	7	Peanuts	¼ c	8
Whole Wheat Bread	1 slice	2-3	Peanut butter	2 tbsp.	8
<b>Dairy</b>	<b>Serving Size</b>	<b>PRO (g)</b>	<b>Meat/Poultry Fish</b>	<b>Serving Size</b>	<b>PRO (g)</b>
Egg	1 whole	5-7	Beef Jerky	1 oz.	13
Cottage Cheese	1 c	27	Steak or lean Pork Chop	3 oz.	23-26
Greek Yogurt	6 oz.	17	Chicken Breast	3 oz.	24
Cow or Soy Milk	1 c	8	Turkey Breast	3 oz.	18
Almond Milk	1 c	2	Tuna, Salmon, Halibut, Tilapia, Sardines	3 oz.	20-25
Coconut or Rice Milk	1 c	0.3 – 0.7			
Dried Fruit	¼ c	1	Vegetables	Vary	1 to 3

Note: Adapted from: USDA Food Composition Database. <https://ndb.nal.usda.gov/ndb/search/list>

**Note:** The above table is a “quick guide” to illustrate the content of PRO (g) in typical servings of food. The best way to align PRO (g) goals to actual intake is to log in the USDA SuperTracker for the duration of this program. This will allow you to gain confidence in knowing the right amount PRO (g) to eat each day as well as the PRO content in the foods you typically consume.



#### Step 4: Transfer results to the **SportFit Nutrition Plan**

**Congratulations!** You have officially completed the macronutrient portion of your personalized nutrition plan. Transfer PRO (g) nutrient goal calculated in **Step 2** above to week 4 of the **SportFit Nutrition Plan**. Once you have completed this program you are eligible to enroll in our **SportFit Cookin' Program**. In **SportFit Cookin'** you will learn how to prepare and incorporate the foods we recommend in to your daily diet. Next week we will learn about hydration and put the final touches on your nutrition plan.



## Resource List

### Web Based

American College of Sports Medicine [www.acsm.org](http://www.acsm.org)  
Academy of Nutrition and Dietetics [www.eatright.org](http://www.eatright.org)  
2015-2020 USDA Dietary Guidelines for Americans [www.health.gov/dietaryguidelines/](http://www.health.gov/dietaryguidelines/)  
National Agricultural Library, U.S. Department of Agriculture [www.nutrition.gov](http://www.nutrition.gov)  
USDA Food Composition Database. <https://ndb.nal.usda.gov/ndb/search/list>  
Honest Health News: <http://www.honesthealthnews.org/2015/07/03/part-iii-pumping-up-protein-foods-to-choose-facts-to-use/>

### Peer Reviewed Evidence Based

1. American Dietetic Association. *Sports Nutrition. A practice manual for professionals* (4th edition). United States Library of Congress Cataloging-in-Publication Data. 2006
2. Clark, N. Sports Nutrition Guidelines. *American College of Sports Medicine*. Spring 2011. [https://www.acsm.org/docs/fit-society-page/2011springfspn\\_nutrition.pdf?sfvrsn=0](https://www.acsm.org/docs/fit-society-page/2011springfspn_nutrition.pdf?sfvrsn=0)
3. Nutrition for Athletes. Nutrition Working Group of the International Consensus of Conference held at the IOC in Lausanne in October 2010. Updated April 2012. [http://www.olympic.org/documents/reports/en/en\\_report\\_833.pdf](http://www.olympic.org/documents/reports/en/en_report_833.pdf).
4. Dunford M. *Sports Nutrition. A Practice Manual for Professionals. 4<sup>th</sup> Edition*. United States of America. Library of Congress Cataloging-in-Publication Data. 2006
5. Jeukendrup, A., & Gleeson, M. *Sport nutrition: An introduction to energy production and performance (2nd edition)*. Champaign, IL: Human Kinetics; 2010
6. Jeukendrup A. Nutrition for endurance sports: Marathon, triathlon, and road cycling. *Journal of Sports Sciences*. 2011; 29(S1): S91-S99.