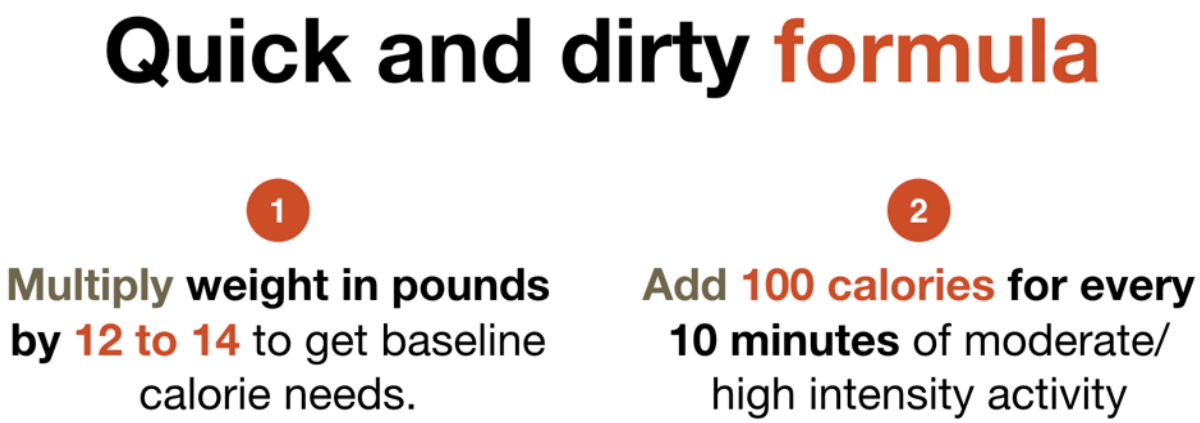
Nutrition: Paleo for Athletes - Part 1

Hey, everyone, in this presentation we're going to talk about special considerations for the Paleo diet for athletes. Athletes' nutritional needs are different from the average person. Many recreational athletes following a Paleo diet are at risk for undereating. In other words, they don't get enough calories, or they may not get enough of a certain type of macronutrient, like protein, carbohydrates, or fats, or they might not get enough micronutrients, like vitamins and minerals. This presentation will cover the most important aspects of athletes' diets, and keep in mind as we go through this that individual needs will vary depending on their sport or athletic activity, as well as their overall health status and goals.



Let's talk about calories first. You can use a standard formula that includes activity factor to determine the optimal calorie intake for each person that you're working with. Clinical examples of these kinds of formulas include the Harris-Benedict Formula or the Mifflin-St. Jeor Formula. For a quick and dirty approximation, you can multiply weight in pounds by 12 to 14 to get a baseline range of calorie needs, and then you would add 100 calories to this number for every 10 minutes of moderate- to high-intensity activity.

If you go under that number, then you're actually going to engage hardwired survival mechanisms that will push back or fight against the weight loss efforts. Total calorie intake is the most important determinant of muscle growth—it's even more important than protein or carbohydrate intake, which is what is talked about most often—and in my clinical experience, inadequate calorie intake is extremely common in the Paleo community, so you really have to pay attention to your athlete's overall diet and calorie intake if you want to help them to optimize their performance.

Higher protein intake beneficial for **athletes**
(build muscle and/or lose fat)

At least **0.8 grams of protein** per pound of body weight for **optimal muscle synthesis**

Benefit at **0.9-1.4 grams of protein** per pound of body weight for **protein intake**

Recommend **25-35%** **of calories** from protein for athletes
(over 200 grams per day on a higher calorie diet)

Let's talk a little more about protein. Higher protein intake is definitely beneficial for most athletes, especially those looking to build muscle and/or lose fat. The evidence supports at least 0.8 grams of protein per pound of body weight for optimal muscle synthesis. Some studies have shown benefit at 0.9 to 1.4 grams per pound of body weight for protein intake. I recommend a range of 25 to 35 percent of calories from protein for athletes. I think using a percentage of calories is more useful because it takes into account the different weight of the person that you're working with, and if you calculate this out, if you first calculate their optimal calorie intake based on the formula I just gave you a couple slides back, and then you calculate 25 to 35 percent of those calories, you'll find that that can be well over 200 grams of protein a day on a higher-calorie diet.

Athletes should aim for a minimum of four ounces of animal protein per meal, which is approximately a palm-sized portion. Many athletes will need a fourth meal and/or protein-dense snack in order to hit that higher protein goal, and for breakfast they're also going to need something more than a couple of eggs. Eggs are fantastic, very healthy, and they should be included in the diet, but they're not super-high in protein, so in order to reach these protein targets, your athletes will need to consume something like fish in addition to the eggs, or steak in addition to the eggs, in the morning, or they'll have to use protein powders as well, which we're going to talk about next.

Protein powder can be a helpful adjunct to boost protein intake. When you're talking about 200 grams of protein a day, it can be difficult to reach that target just by eating animal protein alone. I

recommend a protein powder called Pure Paleo by Designs for Health. It's a complete protein that's made from beef, it's well-tolerated by most of my patients, and it has the advantage of having protein from glycine, which protects against the possible harmful effects of eating too much methionine, which is an amino acid that comes from lean protein sources. Pure Paleo contains about 21 grams of protein per serving.

Hydrolyzed collagen is another popular protein powder. It's not a complete protein, but it provides important amino acids and it also balances the effect of high intake of methionine from eating muscle meat, so if your athletes are eating a lot of protein from chicken and beef and fish and things like that, and they're not eating significant amounts of bone broth or other sources of collagen, then hydrolyzed collagen should definitely be part of their routine to balance out that methionine intake. Hydrolyzed collagen has another benefit in that it's easy to mix into hot beverages and cold liquids.

Many athletes tolerate high-quality whey protein. Whey stimulates insulin production and therefore may further boost muscle growth. Whey also has the advantage of increasing glutathione levels; in fact, it's one of the better supplements for glutathione, people that need it. So as long as the person tolerates whey and doesn't have a sensitivity to it, then whey can be an excellent choice as well.

Pea protein is acceptable, but I would say it's not optimal for most people, and I would suggest avoiding soy and egg white protein powders due to issues with intolerances and allergies.

Now let's talk a little bit about carbohydrates. This is, of course, one of the most controversial components of diets for athletes.

Certain sports and activities certainly benefit from higher carbohydrate intake. Explosive, power-based activities utilize more glucose, so examples of this would be tennis, volleyball, baseball, boxing, CrossFit, heavy weightlifting, sprinting, or martial arts, whereas endurance activities rely more upon fatty acids, so examples of this would include distance running, cycling, cross-country skiing, or triathlons.

Some activities rely on both endurance and explosive movement, so examples of these would be football, soccer, basketball, lacrosse, and rugby. Unless a sport is completely endurance-based, most athletes will require a moderate to high carbohydrate intake. Some endurance athletes can thrive on low-carb or ketogenic diets, and of course, individual results will vary and experimentation is key, so we all have heard of exceptions to the rule. I'm giving you guidelines here, and if you do some research you'll find that there are athletes who are performing explosive activity and doing a low-carb diet and thriving. You'll also find the opposite, people who are doing endurance activities and doing a really high-carb diet, and they're thriving as well. So, these guidelines are what will work for most people. There are always outliers, and this is where experimentation comes in and is so important.

The ideal carbohydrate range for most athletes is 20 to 50 percent of calories in their diet, but if they are doing more intense, explosive activity, you'd want to up that range to maybe 40 to 50 percent of calories from carbohydrate.

Let's talk a little bit about pre- and post-workout nutrition. The most important determinant of muscle building, as I mentioned earlier, is total calorie intake, that's number one. Number two would be protein intake throughout the day. Meal timing can also give athletes an advantage.

Fasted training at high intensity may cause increased muscle breakdown and impair recovery, so consuming carbohydrates 30 to 45 minutes pre-workout can help to increase muscle building; it has an anabolic effect. The post-workout anabolic window may extend up to three hours post-exercise, so I think from what I've seen in the research and working with athletes, a pre-workout meal and snack is more important than doing a post-workout meal immediately after the workout. Most people are going to eat within three hours of their workout afterwards, so what you want to emphasize more is consuming carbohydrates 30 to 45 minutes pre-workout if your patient is concerned with building muscle.

The ideal pre-workout meal would contain about 30 grams of carbohydrate and 15 grams of protein. Of course, this will vary depending on the weight of the person that you're working with, and their activity. But examples would include a half a sweet potato plus two ounces of beef jerky, one banana plus two hard-boiled eggs, or one-and-a-half cups of pineapple plus one cup of Greek yogurt. So remember that the average person doesn't need a pre-workout meal or post-workout meal for lower-intensity exercise, especially if the goal is weight loss or leaning out. So if someone just wants to get more lean, working out in a fasted state and not eating immediately after the workout is a better choice.