A Weighty Issue

When athletes want to gain weight to meet performance goals, they require careful guidance to avoid packing on pounds of unhealthy fat.

By Ingrid Skoog

Ingrid Skoog, MS, RD, CSSD, is a sports dietitian in Eugene, Ore., specializing in performance nutrition for collegiate and elite athletes. She can be reached at: ingrid.skoog@oregonstate.edu.

Gaining weight isn't difficult. Our country's obesity rate, currently over 30 percent, provides ample evidence of that. But when athletes want to gain weight, obesity isn't what they have in mind.

Adding muscle mass, sometimes called "positive weight gain," without accumulating fat in the process is much more challenging. Popular fitness magazines and Web sites often tell athletes the secret is in special supplements, protein powders, and high-energy shakes. Yet while some of these products may be helpful, they're only a small part of the picture.

If an athlete wants to add mass to improve their sport performance, do you know how to advise them? An optimal strategy involves paying careful attention to meal planning, body composition, and training demands. Healthy weight gain is a long-term goal that requires serious commitment over an extended time period, with plenty of opportunity for pitfalls along the way. But with the proper guidance, any athlete can increase their size and strength.

CONTROLLING FACTORS
Besides the most obvious things--nutrition and training habits--several other factors determine how easy or difficult it is for an individual to gain weight. Here's a brief summary of three key players.

Body type. You can't change your DNA. I have talked with many people whose body type and genetic makeup undermine their goal of getting six-pack abs or gaining 20 pounds of muscle mass.
There are three main body types, each with its own unique characteristics that affect weight gain:

*Endomorphs* have stocky builds, and usually see rapid improvements in strength when training. They tend to gain both muscle mass and body fat more easily than other body types, but due to their higher body fat levels they may have a harder time achieving visible muscle definition.

*Ectomorphs* have tall, naturally thin and lean bodies. These are the people who seem able to eat anything and everything without gaining weight. Due to their long bones, they have longer muscles and often struggle to achieve large changes in muscle size and girth. They can and do still gain strength, but they don't add muscle mass as easily as other body types.

*Mesomorphs* typically have wide shoulders, large chests, narrow waists, more muscle definition, and the sort of body shape and proportions traditionally seen as most desirable. These individuals have the best of both worlds--they tend to gain muscle easily while being less prone to packing on body fat.

Knowing and understanding an athlete's body type will help you talk with them about setting realistic goals. It will also help them to view progress toward weight goals realistically--two athletes with different body types shouldn't expect the same gains just because they perform the same workouts and share similar eating habits. But they can both improve fitness level and overall strength with a comprehensive strategy for diet and training.

**Hormones.** The most important members of this category are testosterone, growth hormone, estrogen, progesterone, insulin, glucagon, cortisol, leptin, and ghrelin. They all influence the body's ability and predisposition to gain muscle mass and body fat. Their exact mechanisms are diverse and very complex, but for our purposes, it's sufficient to say that anabolic and catabolic hormone levels increase and decrease according to stage of physical development, age, nutritional status, and stress level.

Males have the most success gaining muscle mass in their late teens and early 20s, when anabolic hormones like testosterone and growth hormone are elevated. Females in that age range have an advantage in adding muscle mass as well, but it's less pronounced. That said, in my experience it is most often male athletes who are interested in making large gains in mass to enhance sport performance.

**Timing.** This may be the most overlooked of all factors related to successful and healthy weight gain. Before an athlete makes a serious attempt at adding mass, you should discuss these five questions with them:

• Do you have the time and motivation to commit at least six months of consistent hard work to reach your goal?
Throughout that time, will you have consistent access to resources (lifting facilities and control over food quality and quantity) to support your goal?

Is your goal healthy and realistic?

Will reaching your weight goal help you achieve the performance improvement you want?

If a coach is involved, does he or she agree that gaining this amount of muscle mass is an appropriate goal for your sport and position?

For a plan to succeed, the answer to all those questions must be yes. If not, this isn't the right time to pursue weight gain. Otherwise, we can move on to the next steps in creating a plan.

CRITICAL COMPOSITION
Before we talk about eating, it's important to first determine the athlete's baseline body composition. There are several good methods for determining body comp. A BodPod or hydrostatic weighing test are two very accurate methods, but aren't always readily available. A seven-site skinfold test using Harpenden, Lange, or AccuFitness calipers can work well--AccuFitness also offers digital body fat calipers. Other options include bioelectrical impedance or a body comp scale, but research has shown these methods to be less reliable.

There are several reasons why an initial body comp test and regular follow-ups are important during a period of planned weight gain. The extra calories that the athlete will consume are almost certain to produce weight gain--body comp will reveal whether it's the kind of weight they want. For instance, if an athlete isn't following his dietary plan carefully but still sees higher numbers on the scale, he may think he's doing fine, even if he's actually gaining adipose tissue (fat) and little or no muscle.

Likewise, some athletes with higher initial body fat see no progress on the scale in the first several weeks of a quality training and nutrition program aimed at weight gain. This is because they're simultaneously gaining muscle tissue and losing fat, so their overall body weight barely moves. Body comp tests will show that they're still making good progress and just need to be patient and stick to the plan--the weight gain will come eventually, and the strength gains have already begun.

One other reason body composition is such a valuable tool during planned weight gain is that it helps guide nutrition strategies. For example, if someone starting a weight gain program is very lean--say, with less than eight percent body fat for males or 16 percent for females--they're actually better off gaining a small amount of body fat along with the muscle mass. This is because individuals with very low body fat probably already have energy expenditure greater than energy intake due to existing dietary habits, activity level, and metabolism. Such an energy deficit (too few calories coming in) while training will result in difficulty
gaining significant muscle, and even worse, possible muscle loss as the body becomes "starved" for energy.

Meanwhile, people in the healthy initial body fat range of around eight to 15 percent for males and 16 to 24 percent for females probably have energy intake fairly well matched to expenditure. These individuals are in the best position to gain muscle mass without additional body fat. Their bodies can draw on fat stores as needed to cover some of the energy costs of exercise, but they don't have excess fat standing in the way of their health and performance goals.

For males with body fat levels above roughly 20 percent and females above 25 percent, it may be best to follow a weight loss plan to decrease body fat before focusing on significant muscle growth, because the stress of strength training for hypertrophy on already overloaded joints could increase injury risk. Plus, adding extra muscle to a body that's already laden with heavy fat stores can result in a slower, less responsive athlete with decreased overall performance in their sport. In these cases, it's wise to seek personalized advice from a registered dietitian (RD) or physician who specializes in sports nutrition before proceeding.

LET'S EAT
Calories are the currency of weight gain, and the body needs regular fueling throughout the day to support muscle growth. But this is an area in which many athletes are inconsistent, negligent, or downright lazy. The busy schedules of today's high school and college student-athletes often provide an easy excuse for going long periods of the day without taking in any calories at all, and this must be discouraged when seeking weight gain.

Nutrition planning is most effective when tailored to an individual athlete's needs, training habits, schedule, and other unique factors. But here are some basic points of advice that can help you advise them properly:

• Eat small meals every two to three hours throughout the day.
• You should never feel hungry. If you do, you've gone too long between meals.
• Don't drink a lot of liquid at meals, as this fills you up faster and displaces whole food.
• When drinking between-meal liquids, choose high-calorie shakes or healthy beverages that contain calories, such as chocolate milk, fruit juices, and vegetable juices, instead of water.
• Start eating early--have breakfast before 9 a.m. This will allow you to take in more energy in the form of a mid-morning snack before lunch in the early afternoon.
• Plan ahead and be prepared by having an ample supply of food available at all times.

As for the composition of meals, there is no universal secret to eating for weight gain--the standard rules of healthy food selection apply, with a greater emphasis on choosing calorie-dense options over lower-calorie "fillers." For example, a salad of fresh veggies is very healthy, but to boost the calorie content of a salad,
a weight-gaining athlete should be encouraged to add cubed cheese, lean meat, croutons, dressing, and perhaps almonds or walnuts. Likewise, a baked potato at dinner should never be eaten plain--add fixings such as low-fat chili or refried beans, low-fat sour cream, and grated cheese.

In terms of more specific advice, guidelines vary based on the athlete's initial body fat as determined by the body comp test. Those in the aforementioned lowest range (below eight percent for males and 16 percent for females) should focus on adding more unsaturated fats to their diet in addition to carbohydrates and protein. They should include higher-fat snacks throughout the day, such as trail mix, mixed nuts, sandwiches with mayo, and tortilla chips with guacamole.

Athletes in the middle range of body fat (eight to 15 percent for males and 16 to 24 percent for females) should increase total calorie intake mainly by upping their consumption of complex carbohydrates and lean proteins. They don't want to take in lots of extra fat, but shouldn't look for non-fat options either--for instance, a turkey or chicken burger on a whole wheat roll is a better choice than regular ground beef on a white roll, and great snack choices throughout the day include milkshakes, fruit smoothies, and bagels with light cream cheese. (See "Sample Menu" below for an entire day's food choices for athletes with low and medium-range body fat.)

As mentioned earlier, those with high body fat (above 20 percent for males and 25 percent for females) should receive individualized attention before actively attempting to gain weight. In most cases, they'll want to bring their body fat into a healthier range before adding significant muscle mass.

Gaining "positive weight" is one of the most challenging goals for a competitive athlete to achieve. It involves increasing overall food intake and usually accompanies heavy strength training, so carelessness can easily result in too much fat in the daily diet or too few calories to support the high activity level. But with proper planning and regular monitoring of body comp progress, athletes can eat smart, lift hard, and get bigger.

Sidebar: SAMPLE MENU
The menus below provide one day of optimal food intake for an athlete with low body fat (less than eight percent for males and 16 percent for females) and one day of intake for an athlete with body fat in the healthy "middle range" (eight to 16 percent for males and 16 to 24 percent for females).

LOW BODY FAT

BREAKFAST: 1,200 calories

2-3 egg omelet with lean ham and grated cheese
2 large pieces of toast with margarine and jam, honey, or peanut butter
2 cups of 2% milk
Banana

*MID-MORNING SNACK*: 700 calories
Peanut butter and jelly sandwich
Large fruit juice

*LUNCH*: 900 calories
Large bean, chicken, and rice burrito with cheese and salsa
Tortilla chips with guacamole
Vegetable or fruit juice

*AFTERNOON SNACK*: 400 calories
1/2 cup of mixed nuts

*DINNER*: 800 calories
Lean roast beef
Rice with seasoning and margarine
1 cup of steamed carrots
2 cups of 2% milk

*LATE-NIGHT SNACK*: 400 calories
Bowl of granola with milk and fruit
Total: 4,400 calories

**MIDDLE-RANGE BODY FAT**

**BREAKFAST:**
1,000 calories

2 cups of fruit and nut granola mixed with 2 cups of 1% milk

Banana

**MID-MORNING SNACK:**
700 calories

Peanut butter and jelly sandwich

2 cups of 100% fruit juice

**LUNCH:**
700 calories

Whole wheat pasta with meat sauce

Side salad with croutons and light dressing

**AFTERNOON SNACK:**
300 calories

Fruit and yogurt smoothie

**DINNER:**
800 calories

Baked chicken pieces

Baked potato with fixings

1 cup of steamed carrots

2 cups of 1% milk

**LATE-NIGHT SNACK:**
300 calories

Low-fat cottage cheese and fruit
Total: 3,800 calories
(Note: Serving sizes can be reduced as needed for female athletes.)

Sidebar: COMMON MISTAKES
When athletes struggle to achieve weight gain goals, it's often because they made one of these mistakes:

• **Too little fiber.** Some athletes stay away from whole fruits, vegetables, and grains when trying to gain weight, assuming that these foods are relatively low in calories and/or fat. As a result, they end up without enough fiber, which can lead to constipation.

• **Too much protein.** Protein-rich foods promote satiety, which basically means they more quickly signal the brain that the stomach is full. They also take longer to break down during digestion, which delays the onset of subsequent hunger. Taken together, the result is decreased overall calorie intake. Encourage moderation in protein consumption, and remind athletes that feeling full doesn't necessarily mean they have consumed enough energy to fuel muscle mass gains.

• **Too few carbs.** During periods of weight gain, around 50 to 65 percent of overall energy should come from carbohydrates, but some athletes still remember the anti-carb craze of a few years ago and mistakenly think "carbs = fat."

• **Taste fatigue.** Athletes who rely on "weight gainer" products such as high-protein shakes tend to get tired of them quickly. Such shakes can be a great choice for a between-meal calorie boost with a good mix of carbs, protein, and a little fat, but encourage athletes to switch up their choices--a shake as a snack one day, a sandwich or bowl of granola the next.

• **Sleeping in.** Believe it or not, this is sometimes an athlete's biggest barrier to successful weight gain. Getting up late simply pushes breakfast back to lunch, lunch to dinner, and dinner to a late-night snack. It's much more difficult to spread energy intake evenly throughout the day and to support the critical periods before and after strength training when an eating schedule is "running late."

• **Overdoing fast food.** Athletes may hear the advice to increase their calorie intake as an invitation to hit the drive-thru early and often. Remind them that not all calories are created equal, and the highly processed, nutrient-poor options available at many fast food windows won't provide the quality carbs and protein they need to support muscle growth.

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