

FUEL ■ Build muscle by knowing what type of protein to eat—and *when* to eat it By Eric Butterman

Protein by the Hour



Your muscles will become rock around the clock when fed the right protein.

When you're trying to add muscle, protein is as important as any barbell or training partner—perhaps even more so, because you grow between workouts. But just as with comedy, romance or hitting the boss up for a raise, timing is everything.

"Timing your protein intake for before and after your workouts heavily impacts your fitness goals," says Peter Lemon, one of the world's leading authorities on protein metabolism, who has a doctorate in exercise physiology and teaches at the University of Western Ontario in Canada.

For someone just trying to stay in good shape, consuming half a

gram to three-fourths of a gram of protein per pound of body weight is recommended. If you're trying to put on muscle mass, you should shoot for one gram per pound of body weight. Any more than that, however, is "a complete waste of time," says Phil Goglia, a certified nutritionist and the author of *Turn Up the Heat*.

To help you optimize your

growth, we've come up with the best type of protein to eat depending on the hour of the day.

7 A.M. CRACK AN EGG

Eggs have long been associated with breakfast, but not always with lean muscle growth. "People used to believe that egg whites caused water weight gain and were an incomplete protein source," says Goglia. "Research has shown that neither is true."

Goglia suggests whipping up six egg whites for a high-protein, low-fat meal that continues to repair the muscle damage from the previous evening's workout.

Keep in mind that there are only about 16 calories per egg white. That's not a lot considering that four calories constitute one gram of protein. Six egg whites give you 99 calories and 21 grams of highly available protein. For a hearty breakfast, scramble in one egg yolk (this improves the amino-acid profile of your egg protein) with some mixed vegetables and chicken breast or turkey, and have a slice of whole-wheat toast on the side.

Six egg whites and one yolk: 162 calories, 2g carbs, 24g protein, 5g fat
With 3 oz. chicken and ½-cup vegetables: 326 calories, 7g carbs, 52g protein, 8g fat

10 A.M. POWER UP

Sometimes lunch has to be a little later, but you still need your protein a little earlier. Get out the protein powder, advises Lemon.

"One advantage of a powdered drink," he says, "is that some people can only ingest so much solid food, and protein shakes are an easy way



to provide the daily protein grams necessary for growth.”
 Meal-replacement products such as Lean Mass Matrix by ProLab or the classic Myoplex are loaded with protein and contain only a moderate amount of carbs. MRPs are mostly made up of whey, a high-quality, fast-acting protein. Whey provides a quick surge of amino acids to your muscles that diminishes soon after, so make sure to eat again in three hours.
One package original Myoplex: 240 calories, 24g carbs, 42g protein, 2g fat

1 P.M. | GET FISHY
 With a midday workout looming, Goglia recommends salmon because its omega-3 fatty acids can help boost your energy. Unlike heavier types of protein, fish won't give you that bloated feeling that can compromise a training session.
6 oz. salmon: 350 calories, zero carbs, 38g protein, 21g fat

Numico, an interdisciplinary research organization.
 The idea behind loading up on preworkout protein (Stout recommends 10 to 20 grams) is that once you begin taxing your muscles, they're already swimming in aminos. Take anything that is comfortable for you to train on, such as half a protein bar (Grow! or Premier Eight), a few slices of turkey, a cup of yogurt or a large glass of milk.
12 oz. nonfat milk: 128 calories, 18g carbs, 13g protein, 1g fat
2 oz. turkey breast: 63 calories, 2g carbs, 12g protein, zero fat

6:30 P.M. | POSTWORKOUT RECOVERY
 “Protein is crucial after a workout because you need to replenish those muscles,” Goglia says. “When you don't give your body a protein fix, you're only getting half the benefit of your workout.”
 After a training session, you need a fast-acting protein such as

turkey-breast patties (whichever you didn't have for lunch) or opt for the mother of all proteins, red meat. “Unfortunately, red meat can be very high in fat, so I wouldn't recommend it for those trying to lose weight,” warns Goglia. “But it's still one of the best foods for gaining muscle.” Make sure your beef is the leanest cut available, such as sirloin or the low-fat Belgium Blue beef.
4 oz. raw Belgium Blue beef: 160 calories, zero carbs, 25g protein, 7g fat

11 P.M. | LAST CHANCE
 Eating a late-night snack is a good habit if you're trying to put on muscle, and foods that contain the slow-digesting protein casein are great choices for preventing the body from cannibalizing its own muscle tissue.



When casein enters your gut, it becomes a thick, gel-like substance that delivers a slow but constant release of

PROTEIN PICKS

While protein helps develop muscle, some protein sources are layered with saturated fat that can eventually do great damage to your health, says Phil Goglia, certified nutritionist and founder of the nutritional consulting firm Fitness Concepts. “Make sure you look at factors other than the muscle you have to gain,” he says. “Your father may have been strong at 50, but that means little if he had a cardiac arrest at 55.” Be sure you know the good protein from the bad.

GOOD SOURCES	BAD SOURCES	GOOD SOURCES	BAD SOURCES
Skinless chicken breast	Fried drumsticks and chicken wings	99 percent fat-free ground turkey	Fried catfish
Nonfat cottage cheese	Hot dogs	Skim milk	Dark-meat turkey
Belgium Blue beef	Fried calamari	Turkey jerky	Dark-meat chicken
Grilled shrimp	Fried shrimp	Tuna	Bacon
Skinless turkey breast	New York steak	Salmon	Sausage
Extra-lean pork loin	Pork chop	Halibut	Ribs
Egg whites	Whole milk	Ostrich	Salami
Protein powder		Bison	Porterhouse steak

4 P.M. | PREWORKOUT FUEL
 Not eating after a workout will impair your muscle growth. However, researchers are starting to put extra importance on a preworkout dose of protein.
 “People are always psyching themselves up before workouts when they should be psyching up their amino acids,” says Jeff Stout, Ph.D., a scientist for

whey to generate optimum muscle growth. Goglia recommends having a shake that combines whey protein (such as Nitro-Tech or Designer Protein), one tablespoon of peanut butter, fruit, water and ice.
Protein shake: 320 calories, 18g carbs, 40g protein, 12g fat



8 P.M. | SEEING RED
 For your evening meal, grill some salmon or

amino acids to your muscles. Since your muscles have hours to kill before breakfast, this gradual flow of nutrients helps nourish them while they wait. Skim milk and nonfat cottage cheese (which both are about 80 percent casein and 20 percent whey) are good sources, as are protein powders rich in casein, such as Micellean by VPX and Grow!
1 cup nonfat cottage cheese: 160 calories, 10g carbs, 28g protein, zero fat □