



Welcome to YOUR November edition of FIT NEWS!

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Client of the month! Alisha Bush

Name: Alicia Bush

Age: 30

FIT Member since: April, 2005

Goal: Get lean, Get Fit.

Results: 102 pound weight loss

Likes: Running outside, teaching her students, training at FIT.

Dislikes: "chick-flicks"

PR 500 meter row: 1:54.1

PR Chin-ups: Level 12 for 2 reps.

Key to her success: "Being Disciplined, being focused"

Alicia started at FIT from an act of kindness. She was given a gift certificate to FIT from one of the parents at her school. The parent and long time member of FIT wanted to help Alicia get the professional direction and encouragement she would need to reach her goal. Beginning with 10 sessions Alicia was off to a good start. She was walking on the treadmill for up to 30 minutes a night and eating smaller, healthier meals.

Alicia has made tremendous progress over the last eight months and will continue to lose the last 18 pounds of her target weight loss. Alicia follows a very sensible nutrition plan, never letting herself skip a meal. She tries to use



"common sense" when eating out and enjoys discovering new, healthy recipes.

Alicia's transformation has been spectacular. Every week when she walks through the door she seems like a new person.

[Click here to see other FIT outstanding achievers!](#)

Hyperstrike allows you to take your FIT Training Program with you!

As FIT nears its 5th anniversary, we would like to thank you for being a client and to tell you how much we value the trust you place in us as your fitness coach and training partner. We'd also like to tell you how we are always thinking of more ways to empower you to reach your goals.



Beginning this month we will be rolling out a very special extension of FIT, an online training and coaching application. The trainers at FIT have great experience and knowledge helping clients like you achieve your goals. We've been working with clients from our current facility for over 4 years and we are excited to reach out into the community, spreading the message of FIT.

To be one of the first members to experience the benefits of online coaching please register at:
www.focusedtrainers.com/hyperstrike

Once inside you will be able to:

- Create your personalized training program
- View exercise animations to reinforce proper technique
- Find articles written by certified trainers on fitness, nutrition and sport
- Track your progress online
- Put your workout on your iPod video player

We look forward to seeing you online at
www.focusedtrainers.com/hyperstrike.

[Click here to try FIT and Hyperstrike now!](#)

Ask the FIT Experts! Johnny Nguyen, FIT Exercise Science Director

Question:

I read in some magazines that the more muscles I build the higher my resting metabolic rate, but I also read in other magazines that this increase in muscle mass does little for my metabolic rate. I'm confused. Can you clear it up?

Answer:

Many of us have been told that building muscles can increase resting metabolic rate, which helps burn more calories while we're simply lying around, and so armed with barbells, dumbbells and fancy machines we've been pumping away for every body part we can name and even those we can't.

We feed our muscles the right proportion of carbohydrates, protein and fats, and every pound of muscle that we gain requires at least a couple of months of hard work. The average male is lucky to gain eight pounds of muscles in a year – that is, if he weight trains four or five days a week on a split program, eats six meals per day, consumes a large number of calories, supplements with adequate proteins, recovers thoroughly, and lives a relatively stress-free lifestyle conducive to building muscles. The average female, with a far lower level of the anabolic hormone testosterone as compared to that of the average male, is lucky to build even half the amount of muscles achieved by her human counterpart.

And yet we place such a holy emphasis on muscle mass as the savior of our fragile svelte from the forbidden excess. Can a few extra pounds of muscle really help fight off fat and save us from obesity? The increase in resting metabolic rate from additional muscle mass is still unquantifiable, but what's more interesting is that there is no conclusive evidence that additional muscle mass can even raise metabolic rate. This is a fundamental area that scientists have examined for a long time – it certainly is not a novel concept – and yet no clear answer can be produced. Intuitively, though, we would think that a person with more muscles burn more calories at rest, however the relationship between muscle mass and metabolism is complicated and still not fully understood, and a claim that increasing muscle mass produces a higher resting metabolic rate is premature and likely to be wishful.

So, emerging from the clash between science and intuition, we can assume that adding muscle mass might at best burn a few more calories a day – so few that we might consider it a transient love affair with hope, rather than practicality. Because what if we bust our butts for two months to gain



that pound of muscle yet decide to eat that moist caramel-drizzled chocolate cake that pairs so well with a glass of port on Saturday night? Of course, birthday celebration comes to us just once a year, but we'll probably "celebrate" endless of other occasions throughout the year for the rest of our lives. After all, most of us just want to live a normal life, which (if we're fortunate) often presents us the wonderful opportunities to taste the delectable foods that we were put on earth to enjoy. Should we then build a hundred pounds of muscle mass to combat the caloric intake? How much muscle can we reasonably build? How much do we want? How much is even healthy? How much muscle can even rev up our resting metabolic rate? According to the science, we will have to walk around like gorillas, if we want our resting metabolic rate to have a remote chance at burning off that chocolate cake.

Let's look at what the research says, or doesn't say, about exercise and metabolism.

Resting metabolic rate, the energy required to keep you alive even while you're just lying still, accounts for approximately 60% to 75% of total daily energy expenditure. The thermic effect of feeding, the energy required to digest and absorb food, accounts for about 5% to 10%. Finally, the energy required in physical activity, the thermic effect of activity, comprises approximately 20% to 30% of daily energy expenditure.

As we can see, resting metabolic rate is the largest component in daily caloric expenditure, so that an increase in this area can result in a favorable shift in energy consumption, possibly directing weight loss. Studies of exercising subjects indicate a short-term elevation of metabolic rate in response to a single exercise bout – generally termed the excess post-exercise oxygen consumption, or EPOC. This EPOC appears to have two phases, one lasting less than 2 hours, and the second lasting up to 48 hours. The long-held belief that chronic resistance exercise can elevate resting metabolic rate through increased muscle mass probably emerged from studies that suggest this effect; however, many other studies fail to find the same thing. Data concerning long-term effects of exercise on resting metabolic rate are potentially confounded by studies not leaving sufficient time after the last exercise bout for the termination of the EPOC – in other words, the findings of a higher metabolic rate can simply be a result of the EPOC still in effect from the last exercise session, and misinterpreted as an increase in resting metabolic rate. Additionally, many other studies suggest that the increase in metabolic rate is likely a result of an acute effect of a single bout of exercise, and less likely from chronic adaptation of exercise (Speakman, 2003; Bullough, 1995; Sale, 1995).

This should not be taken to mean that muscle mass is unimportant. Its existence is the very blessing that keeps us moving. Without it we become less physically active, which means we burn fewer calories. Its strength, power and endurance allow us to move with vitality, work with purpose, fidget with attention, and dance with grace (or not). And it can very well be that any increase in caloric expenditure outside of the gym is a reflection of us moving more as a result of our muscles becoming stronger. Whether muscle mass can increase resting metabolic rate enough to meet the practical purpose of weight loss is still unknown, but it is a fact that exercise exerts a thermic effect that lasts for hours beyond the bout. For those of us who want to improve body composition, we should continue to move as often as we can, and with as much intensity as we're able to, because we must remember that the thermic effect of activity comprises 20% to 30% of our daily calorie expenditure. This, therefore, is the area that we should focus on and push hard in the gym, and then sit back and enjoy the EPOC – that state of increased calorie burning – that spills over to the next 48 hours of our lives outside the gym.

To push this thermic effect of activity, we should choose exercises that are whole-body and intensive, such as squats, Deadlifts, Olympic-style lifts, sprinting and jumping. Not only do these exercises allow us to stoke the metabolic furnace, they also make us more athletic people, so that we tend to move better and with more vitality in everything we do. That is what revs up the metabolic rate!

For a list of references, or if you have questions regarding this article, please email me at Johnny@focusedtrainers.com

Johnny Nguyen

About the author:

Bachelor of Science, Sports Medicine
USA Weightlifting Club Coach
Speed Agility Conditioning Lvl. 1
Certified Personal Trainer - NASM

Graduated from Averett University in Virginia, BSc. Sports Medicine, emphasis in Athletic Training. Member NSCA. Continuing education through different workshops and seminars, ranging from rehabilitative exercises to strength and conditioning.

After college Johnny worked in a Sports Medicine/Physical Therapy clinic for several years in Northern Va. and as a trainer in a private setting. He moved to the Bay Area in 2000.

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FIT Nutrition Update! Scott Kolasinski, FIT Metabolic Science Director

What should I eat after my workout?

I was posed with this question approximately one month ago. It's a very good question that I will try to answer as simply and concisely as possible.

The objective of the post-workout meal is to...

- Replace muscle glycogen (i.e. energy) stores
- Increase protein synthesis
- Decrease protein breakdown

Following your workout, muscle energy (i.e. glycogen) stores are low and protein synthesis is stimulated from the trauma induced by exercise. In order to accelerate our recovery, we need to provide our bodies with the raw materials necessary for repair: carbohydrates and protein. It's been shown that rapidly absorbed high glycemic sugars replenish muscle glycogen better than those that are slowly released into the blood.

Also, it's been shown that proteins that are absorbed quickly into our blood stream, like whey protein and the many versions of it, will stimulate protein synthesis to a greater extent than slower absorbed proteins. According to the research, a protein called whey hydrolysate is absorbed the fastest than other forms of whey (such as whey concentrate or whey isolate).

Protein synthesis is enhanced when rapidly absorbed carbs are added to a protein drink consumed after a workout versus ingesting only carbs alone. So these carbs not only help with glycogen restoration, but direct muscle growth as well.

To put it all together then, your "post-exercise meal" following a weight training session should be eaten within 30 minutes or as soon as possible after your workout. Have a liquid meal that consists of about 0.8 g maltodextrin/kg body weight (0.32g/lb) and 0.4 g/kg body weight (0.16g/lb) whey hydrolysate. This will replenish your energy stores quickly and start the repair process of your muscles. The timing of having this meal is critical. Notice I suggest having a liquid versus whole food meal because it has been shown that liquid meals consisting of these types of carbs and protein are absorbed faster and create a better hormonal environment for optimal recovery. Therefore, you can get those big guns that you have always been wanting quicker than not eating a post-workout meal.



Today on our market it is easy to find post-exercise meal recovery formulas that have these types of proteins and carbs available in one product, so ask your local nutrition retailer which are made with this profile and try the taste of them. Hopefully, you can find one that will satisfy that part of the puzzle also.

A readily available and accessible alternative is low-fat chocolate milk. It does not have the "scientifically optimal" ingredients, but it does have a quickly absorbed form of carbs (sucrose or sugar) and some protein. Make sure to have the low-fat version because the extra fat will slow the absorption of the carbs and protein. You want a high insulin spike in your bloodstream.

Recently more research is indicating that following events that last greater than an hour, the body optimally restores lost glycogen when carbohydrates and protein are provided together in a solution in a 4:1 or 3:1 carbohydrate:protein ratio versus carbs alone. Therefore, following endurance-type workouts requires 1.2 g carbs/kg bodyweight with the same amount of protein as described above. Some products on the market that come prepared with this ratio but vary in the type of whey protein are Endurox R4 TM by Endurox and RecoveriteTM by Hammer Gel.

Following ingesting your post-workout meal, eat a similar meal consisting of a variety of whole-foods between 2-4 hours. This meal should also have a similar amount of carbs (0.8 g/kg body weight) and proteins (0.4 g/kg bodyweight) while being low in fat.

Summary

Ideally, 0.8 g carbs/kg bodyweight and 0.4 g protein/kg bodyweight for strength and power training, and 1.2 g carbs/kg bodyweight for endurance events. There you have it. These recommendations may be considered the most basic of all of the post-workout meals because of its simplicity and lack of additional amino acids or supplements. According to the research, the above recommendations will put you ahead of the game from anybody who does not have a post-workout meal. Whether or not additional supplements such as creatine, vitamins, minerals or amino acids such as leucine would be of benefit is outside the scope of this article, but may be mentioned in a later article. Nevertheless, you will recover better, build muscle and perform better the next time you step into the gym with the above recommendations.

For a list of references or if you have any questions about this article, please email me at scott@focusedtrainers.com. Until next time...

Scott Kolasinski

About the author:

Masters in Science, Exercise Science
Certified Strength Conditioning Specialist
International Sport Sciences Association

Scott graduated from Miami University (in Ohio) with a B.A. in Microbiology. By divine intervention and being bored out of his mind, he saw the light, and received his Masters degree in Exercise Science from the University of Toledo. While in graduate school, Scott had a graduate assistantship as a Strength and Conditioning coach at the high school level, and he was an Exercise Specialist in a clinical exercising facility.

He has had extensive experience with developing exercise programs for individuals of all age groups and various pathologies. After moving to California, Scott was the Strength and Conditioning coach of St. Lawrence Academy in Santa Clara and he volunteered as an Assistant Strength Coach at San Jose State University. He enjoys working with clients who work hard with a competitive attitude.

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Treating Sprains & Strains with Massage! Angelo Dela Cruz

Just about anyone who is actively mobile has most likely experienced "pulling a muscle" or over-twisting a knee or ankle. These are extremely common injuries that involve tearing the tissue fibers of muscles, tendons, or ligaments. Less severe injuries result in a small amount of tearing while more severe injuries implicate near or complete rupture of the fibers of any given muscle or ligament. Oftentimes, strains and sprains may arise simultaneously in the same area of the body. Fortunately, simple therapeutic modalities can be applied to speed recovery and rehabilitation and prevent further injury.

When muscle, its fascia (connective tissue covering), or tendon is torn, similar to a rope that is frayed, it is termed a strain. When a muscle is stretched too quickly out of its normal range of motion or when a muscle is lengthened and then suddenly contracted with enough force, it can cause a strain. A hard impact or blow can also tear muscle and fascia, but generally not often referred to as a strain . In addition to being torn in the belly or mid-portion of a muscle, strains commonly occur where the muscle and tendon meet (myotendinous junction) and where the tendon and bone meet (tenoperiosteal junction).



Hamstrings are a common site of strains, especially in sports and activities where running is involved. Low back strains can happen when lifting heavy objects poorly or even from standing most of the day on a regular basis. Other common strains are in the neck, upper and middle back, groin, and calf muscles.

Tendons are continuations of the fascial coverings of muscle and transmit the forces of a contracting muscle to the bones giving the body mobility. Since the myotendinous and tenoperiosteal junctions are less elastic than muscle, they are usually the weaker portions of a muscle-tendon unit and more prone to injury. The specific condition of inflammation of a tendon due to acute tearing or a tendon that is "rubbed raw" from overuse is called tendonitis. Tendonitis occurs frequently in the shoulder, elbow, hip, thigh, knee, Achilles tendon, and wrists.

Ligaments are short and dense connective tissue that connects a bone to one or more other bones. Ligaments do not have the ability to contract and are responsible for keeping bones close together to provide passive stability, guide joint movements, and prevent any excessive joint motion. An injury to a ligament is called a sprain. Probably the most common sprain in the body is at the lateral (outer side) ankle, and also often happens in the knee, low back, shoulder, and wrists.

The first sign of a strain and sprain is usually pain, swelling, and heat in the area of injury, however, this may not be so apparent for mild injuries. With severe injuries, if there is a popping sound at the time of the injury, bunching up of muscle, or no weight can be tolerated on the joint, one should seek the care of their doctor. Also, if you think that there may be a fracture involved or the swelling does not decrease in a few days, it would be a good idea to check in with your physician. Typically, for strains, using the muscles may be painful and limited and a dull ache or stiffness may be present. For moderate strains, there may also be some bruising. It may take one to 4 weeks to recover from a strain and several more weeks for tendon injuries. Due to the lack of blood supply to ligaments, sprains take much longer to heal, from several weeks to one year or more. Swelling occurs more rapidly with sprains and the joint may feel unstable.

During a strain or sprain, blood and lymph vessels are broken creating inflammation that functions to stimulate new cells and fibers for repair. The inflammation and swelling is also the body's natural way to provide a brace for the injured area. The pain that is felt is due to the increased pressure on nerves caused by the swelling. In addition, the chemical reactions of inflammation can be irritating to sensory nerves and add to the pain. Pain

signals the body to tighten certain muscles and inhibit (weaken) others in order to prevent further damage.¹

These automatic reactions are beneficial, but can also be detrimental if prolonged. The swelling will start to choke off oxygen and nutrition to the injured area and even start to damage healthy cells. Also, your body will learn how to compensate for the injury, for example, walk with a limp. The longer the body is limping, the more challenging it becomes to "unlearn" to not limp. As this progresses, the muscles and other connective tissue will further lose their normal operating positions. If the inflammation is chronic, your nervous system may "develop the habit" of feeling pain consistently and even though the injured tissue may be healed, moving may produce the sensation of pain.²

In order to minimize these effects, it is best to stop the activity that caused the injury and apply ice as soon as possible. Remembering and applying the acronym "M-I-C-E" can be very helpful for the acute care of strains and sprains:

M – MOVE the injured area slowly and gently within a pain-free range of motion. This will help to prevent adhesions³, improve repair⁴, provide metabolic waste elimination, and decrease the amount of deconditioning.

I – ICE the affected area for 20 minutes every couple of hours that you are awake until the heat and swelling is decreased. If the area is painful at rest, continue to ice until this resolves. Icing has analgesic effects and will help to decrease the pain. If the skin starts to turn white, stop icing immediately as this would signify frostbite. If you have a history of vascular disease or diabetes, it is important to talk your physician about icing.

C – COMPRESS the swollen area to control the swelling. Elastic bandages or air casts can be used. If more pain is experienced after applying compression, loosen the wrap as this indicates that it is too tight.

E – ELEVATE the area above the level of the heart to promote draining and prevent pooling of fluid.

During the recovery process, if one has to remain fairly active it can be helpful to use tape or a brace to provide support to the injured area. However, it is important to recognize that this is beneficial in the short-term. If a brace is used too long it will further weaken the area. A better way to go is to develop a natural brace; that being your muscles.

To help in the prevention of strains or sprains, one can take part in a proper strength training and flexibility program to

develop the suitable conditioning of muscles. Due to being less elastic, tight muscles are in fact functionally weaker and are more prone to injury. It is also a good idea to use appropriate equipment and apparel and get advice on proper technique and form for the specific actions related to your sport or activity. And if one is feeling fatigued, disengaging from the activity or sport will decrease the probability of hurting oneself and/or others.

To allow for a more complete treatment, care, and prevention of strains and sprains, one can seek the help of a massage or manual therapist trained in advanced soft tissue therapy, such as a Hendrickson Method Therapist. During the acute stage, the therapist can assist in quickly reducing the swelling and pain. They can also stimulate regeneration of muscle and connective tissue for faster healing and work to increase the pain-free range of motion to lessen atrophy and deconditioning. As the injury heals, muscle and other connective tissue fibers can be brought back to their more normalized positions and neuromuscular functions. This will help to ensure proper rehabilitation and keep the body functioning in a more optimal form.

Angelo Dela Cruz CMT

For questions regarding this article or an appointment, please email me at Angelo@focusedtrainers.com

Material and citations are derived from *Massage for Orthopedic Conditions* by Dr. Tom Hendrickson, 2003.

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[For referances click here.](#)

Trainer Spotlight! Jen Pleimann

Jen Pleimann

BS, CPT
Bachelor of Science, Psychology
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Jen graduated from the University of Wisconsin-Madison with a B.S. in Psychology in 2005. She worked for the UW Division of Recreational Sports training students and alumni and also teaching spinning classes. Jen is a certified personal trainer through Ace and is currently studying for the CSCS. She spent last summer in San Diego working at a fitness and weight loss camp for teens and adults. She enjoys working with individuals of all ages.

Jen has just completed the New York Marathon, and hopes to win the race in 2006. If she is not running, she enjoys swimming, hiking and just about anything out doors.

[To schedule a session with Jen please contact:
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