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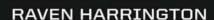
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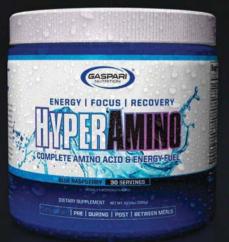


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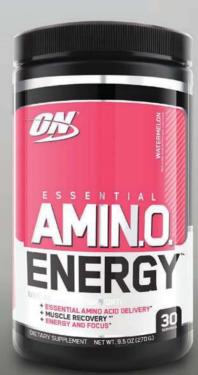
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BY JOE WUEBBEN | SUPPLEMENTS BY DWAYNE N. JACKSON, PH.D.

BODY SHOP

SUPPLEMENTS / NUTRITION & HEALTH / TRAINING



New Year's resolutions are in full swing, spring is around the corner and it's looking like you may be in the best shape of your life this coming summer. It's great to be motivated, but be careful. Due in part to sudden increases in physical activity once the holidays are over, every year fitness-oriented folks fall victim to sprains, strains and musculoskeletal injuries that derail progress for extended periods of time. The best way to protect yourself from athletic injuries is to avoid overtraining and incorporate warm-ups, stretching and cool-downs into your regular training days.

Beyond that, it's key to use a joint-protection supplement to support joint health and provide prophylactic defense against wear and tear. Many joint supplements are designed to promote collagen resynthesis/repair, as collagen is the major structural component of tendons, ligaments and cartilage. Exercise in and of itself promotes collagen incorporation into joints, ligaments and tendons; however, the risks of musculoskeletal injury are still higher in those who exercise regularly.

Recently, a team of scientists from the United States and Australia reported in the *American Journal of Clinical Nutrition* that consuming gelatin (a food derivative of collagen) and vitamin C preworkout increases collagen synthesis better than exercise

itself. In this registered clinical trial, eight healthy athletic male participants consumed either 5 or 15 grams of gelatin enriched with vitamin C (48 milligrams) one hour prior to intense exercise six minutes in duration.

The researchers found that supplementation with a gelatin/vitamin C preworkout drink did indeed increase blood serum levels of amino acids associated with collagen production (i.e., glycine, proline, hydroxyproline and hydroxylysine). In this case, the more, the better: Subjects who took 15 grams showed a two-fold improvement in collagen synthesis over placebo. Additionally, when engineered human ligaments were treated (in vitro) with extracted blood serum from the same subjects, there was a 50 percent increase in ligament collagen content and improved ligament function.

■ ACTION POINT: The amino acids glycine and proline are abundant in gelatin and collagen supplements. For preworkout joint protection, take in 15 grams of collagen or gelatin and 50 milligrams of vitamin C one hour prior to training. There are also many preformulated supplements that contain collagen and vitamin C in single dosing — just make sure that doses contain at least 15 grams of collagen.



JOLT OF LIGHTNING

That "energy drink" you buy at the convenience store may be good for a guick pick-me-up, but it's certainly not the most beneficial energy-boosting beverage out there. When you're ready for a drink that's scientifically formulated to boost performance and fat-burning while also increasing energy, look for one containing the following ingredients.

BCAAs: Branched-chain amino acids (leucine, isoleucine and valine) are one of the hottest supplements of the last decade due to their ability to aid muscle recovery, stimulate protein synthesis and blunt levels of the catabolic hormone cortisol. But BCAAs also provide an immediate energy source, a benefit most people aren't aware of.

Yerba Mate: Containing caffeine and xanthine alkaloids to provide sustained stimulant effects, verba mate is well known scientifically to enhance alertness and mental focus and even boost exercise intensity. It also has antioxidants that fight damaging free radicals in the body.

Green-Tea Extract: Aside from being one of the most well-documented fat burners known to man, green tea has been shown to increase energy levels and focus. Moreover, studies have shown that green-tea extract acts synergistically with other caffeine-containing ingredients such as yerba mate to further boost energy levels and fat loss.

Find all of these ingredients and more in BCAA-XL Energy by MHP.

PREWORKOUT POWER

GO TO THE DARK SIDE

Nitric-oxide-boosting supplements improve muscle blood flow, alucose uptake, mitochondrial energy production and contraction efficiency during exercise. Hence, major supplement companies include NO boosters in their preworkout formulations. The most popular NO boosters tend to include sources of nitrates (such as beetroot powder) or L-citrulline. However, recent research points to a tastier NO-boosting option, dark chocolate. It seems the cocoa from which it's made has abundant bioactive flavanols that promote increased NO bioavailability in the body.

In a study published in the Journal of the International Society of Sports Nutrition, nine moderately trained males underwent baseline testing: a cycling VO2-max test immediately followed by cycling at 80 percent of max for 20 minutes, followed by an all-out sprint for two minutes. Using a randomized crossover design, participants consumed either 40 grams of dark chocolate or white chocolate daily for two weeks, and then performed two more identical cycling tests (two weeks apart).

The results were pretty sweet (pun intended): When participants consumed dark chocolate, they worked at 21 percent and 11 percent greater workloads (for a given level of oxygen consumption) compared to baseline and white chocolate conditions, respectively. Moreover, dark chocolate consumption resulted in 17 percent and 13 percent greater distance covered during the all-out sprint cycling time trials compared to baseline and white chocolate.



EACTION POINT: This study illustrates that daily dark chocolate consumption can improve exercise endurance and performance. To reap these delicious benefits, add 1/4 cup of cocoa or cocoa powder (70 percent cocoa or greater) to your preworkout protein shake. For the sake of calories, we suggest using pure organic cocoa or cocoa powder rather than eating chocolate bars for NO boosting.

FIT LIST

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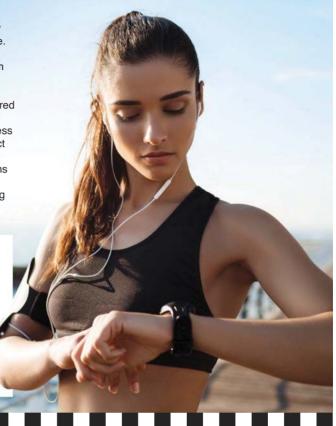


)) It's been 11 years since the American College of Sports Medicine began disseminating its annual "Worldwide Survey of Fitness Trends" to industry professionals around the globe. For its 2017 installment, more than 1,800 health and fitness authorities evaluated 40 different "trends" (distinguished from short-lived fitness "fads") and selected those they felt were gaining, and maintaining, the most traction among active individuals. Here are the 10 trends, ranked in order, that scored the highest.

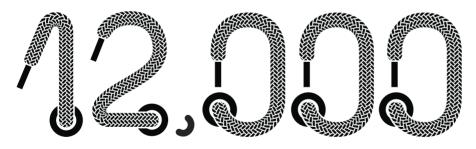
Electronic gadgetry ranked No. 1 - an indication that fitness buffs want to train smart as well as hard. Another notable fact is that group training ranked three spots ahead of personal training. Possible rationale here: Classes at commercial gyms as well as CrossFit have made exercising as a "community" more appealing, not to mention more economical considering personal training typically costs \$50+ an hour.



- 1. Wearable Technology
- 2. Bodyweight Training
- 3. High-Intensity Interval Training
- 4. Educated and Experienced Fitness Professionals
- 5. Strength Training
- 6. Group Training
- 7. Exercise Is Medicine
- 8. Yoga
- 9. Personal Training
- 10. Exercise and Weight Loss



NUMBERS DON'T LIE



Number of steps taken daily (on average) by successful "weight losers" - those who lost 30 or more pounds and kept it off for at least a year — in a study conducted at the Colorado School of Public Health and presented at the meeting of the American Public Health Association in late 2016. The experiment also included "normal weight" and "overweight" individuals; those folks walked an average of 9,000 and 7,000 steps per day, respectively.



The amount of moderate to vigorous physical activity performed daily by the weight losers, compared to 17 and nine minutes a day for normal weight and overweight individuals, respectively.



Less time spent sitting down per day by successful weight losers compared to overweight individuals.



(FREQUENTLY ASKED FOOD QUESTIONS)

Answered by the scientists at Examine.com, an unbiased, unaffiliated resource on all things nutrition and supplements

Q: I often have low energy during workouts but can't figure out why. Could my nutrition in the hours leading up to my workout be the cause?

Bad days at the gym should be the exception rather than the rule. If you're healthy and not sleep-deprived, nutrition could very well be the culprit behind poor workouts.

Many lifters think they're set if they've "eaten something" before a workout and have a protein shake ready for afterward. But what did they eat and when? Eat long before your workout and you might run on empty at the gym. Eat big just before your workout and you'll feel like napping throughout.

So what should you do? At the very least, make sure your glycogen stores are full. Glycogen stores get depleted even while you sleep. Eat adequate carbohydrates at breakfast, and again a couple hours before exercise. If you work out on an empty stomach, a sports drink will help, but it has its drawbacks. The sugar will first serve to replenish your glycogen stores, not to feed your muscles. And if you gulp the whole bottle before your workout, you can expect to crash a half-hour or so later.

If you lift first thing in the morning, sip a sugary drink throughout your workout (and get at least 20 grams of protein afterward). At any other time, make sure you already have some carbohydrates in your system via a meal consumed approximately two hours before your workout. This meal should contain "slow carbs" - those that get digested slowly, continuously top off your glycogen stores and provide an even source of energy.

The preworkout meal shouldn't be too heavy. It should get digested easily enough to pass into your intestines before you start working out: otherwise, you risk gastrointestinal discomfort, such as cramping or nausea. A light meal will also make sure there is chyme in your small intestine. Chyme is a mix of gastric juice and partly digested food that can enhance the absorption of preworkout supplements and reduce the chance that they could cause gastrointestinal symptoms.

- Kamal Patel, MPH, Examine.com Director

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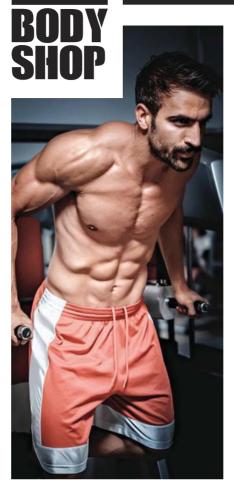
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TRAINING



DIPS

Simple solutions to exercise errors

The Flaw: Not matching your body position to your goal.

The Fix: If you're doing dips as part of your triceps workout, you shouldn't be leaning forward with your torso — that hits more of the chest. To target the tri's, keep your torso as close to vertical with the floor as possible. If you're doing dips in a chest workout, by all means lean forward.

The Flaw: Letting your elbows flare out. The Fix: Whether you're targeting the chest or triceps, your elbows should stay in fairly tight to your body. Not only is this a more powerful pressing position, but it also places less stress on the vulnerable shoulder joints.

The Flaw: Doing weighted dips when you probably shouldn't.

The Fix: Everyone likes the thought of dangling a 45-pound plate from a weight belt and banging out dips, but that doesn't mean everyone should do it. If you can't do at least 12–15 bodyweight dips, don't add weight. Once you can, add weight gradually; start with a 10-pound plate and go up from there as you get stronger.

TRAINING TIP

COMPOUND YOUR GAINS

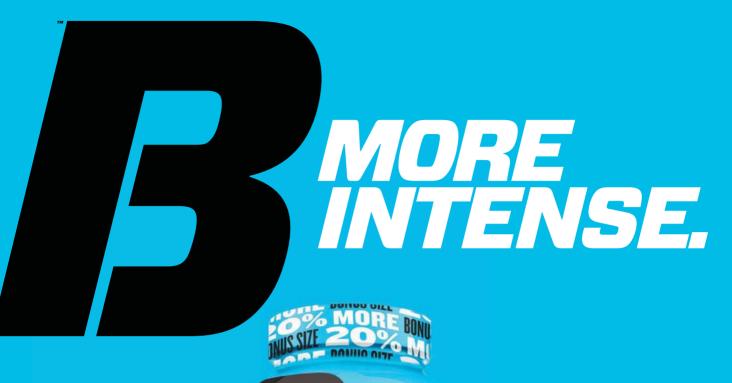
Provided your form is good and the weight's not too heavy, there's really no bad way to do supersets. Pick two exercises, do one set of each back-to-back with no break, rest one to two minutes, then repeat. You can superset different muscle groups — e.g., chest and back, biceps and triceps or even upper body and lower body. This is perfectly fine, but if your goal is to bring up a particular bodypart, consider supersetting two exercises that hit the same muscle group (originally termed a "compound set" by Joe Weider).

Brazilian researchers experimented with same-muscle-group supersets — quads and deltoids, specifically — in a recent study published in *The Journal of Strength and Conditioning Research*. Their results showed higher muscle damage and muscle activity in the targeted muscle groups when supersets involved two quad or delt exercises, versus when the supersets paired a quad and a delt move. In fact, muscle damage was still

present five days after the same-musclegroup superset workout.

TAKE-HOME POINT: For a particular muscle to grow bigger, damage needs to occur to that muscle, preferably through resistance training. As long as proper nutrition and supplementation is in place, the greater the damage, the more potential for growth there is. Thus, if you're looking to build more quad or delt size, same-muscle group supersets (compound sets) are a no-brainer. And there's no reason to believe this wouldn't apply to other bodyparts as well.

Appropriate exercise pairings for different muscle groups include: squats and leg extensions (quads); shoulder presses and lateral raises (delts); chest presses and cable crossovers (pecs); cable rows and straight-arm pulldowns (back); barbell curls and concentration curls (biceps); close-grip bench presses and cable pressdowns (triceps).





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Sidestep your strength limitations and squeeze more intensity out of each set with cluster training.

BY MICHAEL BERG, NSCA-CPT



e're about to tell you something shocking, but true: The typical workout "sets" you do are inherently

flawed. Yes, those 12 reps of whatever exercises you have on your agenda come with a limitation, one that can arguably reduce their effectiveness over time.

Not that traditional sets are useless — far from it. But they can be improved upon, at least on a controlled basis, with a technique borrowed from the strength-training realm: cluster sets.

Power and Performance

You may be wondering what limitation we're referring to. Consider a typical 12-rep set of dumbbell presses: Since you're aiming for that 12-rep sweet spot, you wouldn't use the 90-pounders you'd usually grab for heavy strength sets of four to six reps. Rather, you'd grab a moderately heavy weight, one that allows you to hit your target rep count without premature failure.

With cluster training, you can work nearer your max weight for more reps by using a heavier weight and breaking that 12-rep set into smaller, separate clusters of three reps each.

This increases the intensity of the set as a whole by engaging the maximum number of Type II fast-twitch muscle fibers possible with each rep. Between clusters, you'll take 10 to 20 seconds of rest to allow for a partial regeneration of your short-term energy stores before continuing.

"This technique is effective for developing your conditioning, lift timing and balance," says former competitor Daniel Camargo, a USA Weightlifting senior international coach, owner of Oly Concepts (OlyConcepts.com) and author of Olympic Weightlifting: Cues & Corrections (Catalyst Athletics, LLC,

2014). "It teaches your body to best utilize its energy systems — first the short-term 10-second boost of the phosphagen system, which can recover partially within seconds, then the glycolytic system, which taps stored energy in the muscles and liver for fuel." The better your body is at fueling your efforts, the more high-powered and efficient your performance will be.

Being able to lift heavier weight over more reps also challenges your ability to maintain form, according to Camargo, which in turn forges a strong mind-muscle connection.

One thing to remember about cluster training, however, is that it's not ideal if your goal is purely one-rep max strength. "To build pure strength, doing low reps — triples, doubles and singles — with as heavy a weight as possible is still the best method," explains Camargo.

Incorporating Clusters

If you want to try cluster training, choose an exercise to focus on and position it in the beginning part of your workout when you're freshest. Do several warm-up sets of that exercise, building up weight, then set the bar with your target cluster weight and begin.

Perform your first three reps with focus, then rack the weight and rest for 10 to 20 seconds. "If what you're attempting is relatively light, rest 10 seconds or less, just enough time to reset and lift again," says Camargo. "If it's heavy, I'd prescribe closer to 20 seconds." Once your rest time is up, pick up the bar and continue until you're done with your set. Rest 90 seconds to three minutes between sets of clusters and even add a little more weight if you can manage it.

SAMPLE CLUSTER WORKOUT: BENCH PRESS

| EXERCISE | SETS | REPS | INSTRUCTIONS |
|------------------------|------|-------------|--------------------------|
| Pec-Deck Flye | 2-3 | 15-20 | Warm-up |
| Barbell Bench Press | 3-5 | 10-15 | Warm-up |
| Barbell Bench Press | 3 | 3, 3, 3, 3* | Cluster sets |
| Incline Dumbbell Press | 4 | 8-10 | Pyramid up weight |
| Decline Dumbbell Press | 3 | 8-10 | Pyramid up weight |
| Parallel-Bar Dip | 3 | To failure | Lean forward to hit pecs |
| | | | |

You can also do 2-rep clusters or mix them up — for example, 3, 3, 2, 1, 1 reps.



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Craft a bigger, better back from top to bottom with this balanced attack.

BY MICHAEL BERG, NSCA-CPT



f your rear view is lacking size, shape and muscularity, it's time to face the truth — it's probably not genetics holding you back. It's effort.

Stimulating the back requires a ton of focus and hard work because the muscles on your flip side are designed for high leverage. Collectively, your rhomboids, teres major and minor, trapezius, latissimus dorsi and erector spinae can handle a lot of reps and some serious poundage but they have to be given an adequate challenge.

To implement visible and lasting change you need redoubled dedication and a plan of attack, like the one outlined here by fitness instructor Patricia Friberg, creator of the *Bottom Line & A Core Defined* and *Belly Beautiful* workout DVDs, who has also trained aspiring NFL players and NBA athletes seeking to improve their strength (patriciafriberg.com).

"This workout is for lifters who aren't seeing progress in their back," she explains. "It includes five proven exercises that target the key areas you'll want to improve, whether for bodybuilding or sport-oriented power."

1. Pull-Ups

"Arguably the top all-around bodyweight movement, the pull-up is one of the best ways to challenge the upper back and achieve that deep V shape," Friberg says. For best results, use the dead-hang starting position and "set" yourself by drawing your scapulae and shoulders down away from your ears, engaging the lats before each rep. Those struggling with reps or who are trying to perfect their form can use a superband to increase endurance and strength. Attach the band to the pull-up crossbar and step into it with one foot to provide some extra assistance in the lift.

2. Renegade Row

A functional-training favorite, this move requires that you hold yourself in plank as you do alternating one-arm rows, pummeling your back and core. Friberg's tips on form: Position your feet wider for added stability, press your shoulders down and away from your ears, tuck your tailbone slightly and push your heels toward the wall behind you to engage your glutes.

3. Barbell Deadlift

"This fundamental exercise will strengthen your back and legs," Friberg says. "If you use enough resistance to make it a challenge without breaking your form, it'll also help build lean muscle." Set up with your feet shoulder-width apart and hold the bar with a mixed grip. "Your spine should be neutral with your chin parallel to the floor," says Friberg. "Your shoulders should be open with the scapulae slightly retracted to avoid any rounding in the shoulders." Inhale and hold that breath to create intra-abdominal pressure to protect your core and spine as you perform the lift, then exhale as you reach the top.

4. Seated Unilateral Cable Row

Done with a D-handle, this row hits each side of the body separately. "[Unilateral training] helps alleviate strength imbalances between the right and left sides, while also hitting the spinal stabilizers, including the multifidus [muscles] that attach to the spinal column," says Friberg. To keep the focus on your back (and avoid pulling with your core and obliques), draw your shoulder blades together as you drive your working elbow back, keeping your shoulders square at all times.

5. Superman

This lower-back move is a great finisher, hitting the erector spinae, as well as the glutes and hamstrings. To get into position, extend your arms and legs so you form an X if viewed from above. "Flex your abdominals, drawing them gently inward and upward," Friberg instructs. "Then exhale as you raise your arms and legs off the floor. Turn your palms slightly inward to keep the shoulders and chest open."

ATTACK-YOUR-BACK WORKOUT

Do this workout once or twice a week. For the rows and deadlift, keep your reps in the eight to 12 range, that sweet spot for building lean muscle.

| EXERCISE | SETS | REPS |
|--------------------------|------|----------------|
| Pull-Up | 3 | To failure |
| Renegade Row | 3 | 8-12 each side |
| Barbell Deadlift | 3 | 8-12 |
| One-Arm Seated Cable Row | 3 | 8-12 each side |
| Superman | 1-2 | 5-7 |

Note: For the resistance exercises, pyramid the weight up from set to set, aiming for failure on the last set of each movement. More experienced lifters can add a fourth or fifth set as needed.

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GUY WALKS INTO A BAR

BY MIKE SALAZAR

ometimes you just want to go to the gym and get 'er done. In these instances, it's handy to have a fastand-furious one-barbell metcon in your back pocket. This three-move program saves time and space while working your body from head to toe and kicking your conditioning into high gear: Metcons like these are highly metabolic and can burn fat and calories for up to 72 hours postworkout. That's good news if you have aspirations of getting lean for summer.

THE PLAN

After a thorough, dynamic warm-up, perform these three exercises in order for the prescribed number of reps, doing as many rounds as possible in a 20-minute period. Use the same barbell for all three of the moves, loading it with anywhere between 55 to 95 pounds, depending on your strength level.

Work quickly and smoothly using good form, and try to go as long as possible without putting the bar down to challenge both your grip and your mental fortitude. If you do need a break, try to take it between your cleans and sumo deadlift high pulls.

When you're done, mop up your sweat pond and make note of the total number of rounds plus reps you completed. Each week try to beat that number for great conditioning, or add a little more weight to build more lean muscle.

20-Minute AMRAP:

- 5 Barbell Thrusters
- 7 Hang Power Cleans
- 10 Sumo Deadlift High Pulls

BARBELL THRUSTER

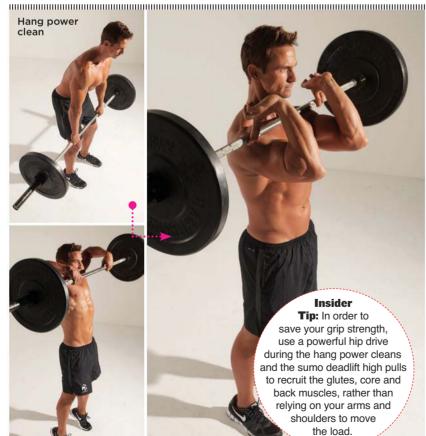
Hold a barbell with an underhand grip in the racked position — resting across your front delts and clavicle, elbows lifted high in front of you. Keeping your chest lifted and your weight in your heels, squat down until your hip crease goes below your knees or lower if possible. Drive through your heels and explode upward coming to full extension with your knees and hips; continue that upward momentum and press the barbell overhead.

HANG POWER CLEAN

Hold a barbell in front of your thighs with a shoulder-width, overhead grip. Kick your hips back and slide the bar down to a point just above your knees, shoulders retracted, spine neutral. Then quickly extend your knees and hips in an explosive motion, pulling the bar straight up along the front of your body as you shrug your shoulders and come up onto your toes. As the bar reaches shoulder height, drop down, catching the bar across your shoulders and clavicle and flipping your elbows underneath in the racked position. Extend your knees to finish.

SUMO DEADLIFT HIGH PULL

Stand with your feet wide apart and vour toes underneath a loaded barbell. Grab the bar with an overhand, hip-width grip and, keeping your back straight and your shoulders over the barbell, lower your hips to load your hamstrings and glutes, making sure they're higher than your knees. Begin your pull by explosively extending your knees and hips, bringing the bar upward in a straight line, then continue that upward momentum by driving your elbows skyward and raising the bar to chin height. Reverse the steps to return back to the start. ■





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PHYSICS AND THE FARMER'S CARRY Picking up heavy stuff and moving it from here to there is one of the most powerful exercises you're *not* using.

BY JUSTIN GRINNELL. CSCS



n the last couple of years, the loaded carry (aka the farmer's carry) has exploded onto the functional fitness scene. Well, as much as such a bland exercise can "explode." Picking something up and carrying it from point A to point B, then putting it down again, isn't even remotely earth-shattering in terms of movement originality, yet these days everyone from bodybuilders to CrossFitters to elite athletes are hauling heavy stuff back and forth across the gym floor as part of their regular protocol — traps bursting, necks bulging and hearts racing.

True, our bodies were made to lift and carry heavy things, and feats of strength such as farmer's carries were staples of the strongmen of yore. Even legendary strength and conditioning coach Dan John touts the loaded carry as one of the most functional and fundamental movement patterns around. "It does more to expand athletic qualities than any other single thing I've attempted in my career as a coach and an athlete." says John, All-American discus thrower and Olympic lifter. "And I do not say that lightly."

Get a Farmer's Physique

The modern-day loaded carry involves picking up a weight and walking with it for a set time and/or distance. The object itself might change — a pair of dumbbells or kettlebells, a sandbag. a stone, even cinder blocks — but the challenge remains the same: moving something heavy and unwieldy as efficiently and quickly as possible.

Although it sounds simple, adding a carry to your protocol can fill a lot of gaps in your training, notably grip strength, shoulder and core stability, posture, work capacity and muscular tension - physical qualities that have waned as of late, perhaps since the world is less manual and more sedentary. And because they create high levels of muscular tension in multiple muscle groups at once, loaded carries stimulate a larger hormonal response, flooding your body with muscle-building testosterone and growth hormone. And conditioning — forget about it — the prolonged time under tension improves physical per-

formance and mental fortitude like nothing else.

Carries at Work

The loaded carry is the star in these workouts and is garnished with complementary exercises for a well-rounded, full-body program with a focus on strength and size. Follow this workout for six weeks to reconnect to that brute strength within.

WORKOUT 1

| EXERCISE | SETS | REPS | REST (MINUTES) |
|---------------------------------------|------|-----------|----------------|
| Barbell Squat - tri-set with - | 3 | 10 | 2 |
| Dumbbell Row - and - | | 10 | 2 |
| Incline Dumbbell Bench Press | | 10 | 2 |
| Kettlebell Swing - superset with - | 3 | 10 | 2 |
| Farmer's Carry | | 40 meters | 2 |

WORKOUT 2

| EXERCISE | SETS | REPS | REST (MINUTES) |
|---|------|--------------------|----------------|
| Barbell Front Squat - tri-set with - | 5 | 5 | 3 |
| Chin-Up - and - | | 5 | 3 |
| Barbell Push-Press | | 5 | 3 |
| One-Arm Overhead Carry - superset with - | 5 | 50 meters each arm | 1 |
| Suitcase Carry | 5 | 50 meters each arm | |
| Hammer Curl - superset with - | 3 | 5 | 1 |
| Lying Dumbbell Triceps Extension | | 5 | |

WORKOUT 2

| EXERCISE | SETS | REPS | REST (MINUTES) |
|--|------|---------------------------------|----------------|
| Deadlift | 5 | 3 | 4 |
| Incline Dumbbell Press - tri-set with - | 3 | 8 | 1 |
| Inverted Row - and - | | 8 | 1 |
| Goblet Squat | | 8 | 1 |
| Farmer's Carry | 1 | As far as possible in 5 minutes | As needed |

Notes

- Perform tri-sets in a circuit fashion, resting as needed. Complete all tri-sets before moving on.
- Rest at least one day between workouts. For example, do a Monday/Wednesday/Friday or Tuesday/Thursday/Saturday split.
- Start with a moderately heavy weight and build when appropriate.

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Miraculously improve your squat mechanics and counteract the negative effects of sitting with these five simple moves.

BY STEPHANIE RING, NASM-CPT, CFL-2

ave vou ever watched toddlers play with their favorite toys? You were probably jealous at the ease with which they could execute and hold prefect squats — ass-to-grass, chest up, knees out and heels down. You then realize that at some point in the last 20 or 30 years, you yourself somehow lost that ability.

The squat is one of the most functional movements humans can perform: We squat to pick something up, we squat to sit down and we even squat to stand up. But modern life with all its sedentary tendencies has altered our biomechanics and as a result our squatting prowess has suffered. But as they say, that which is lost can be found, and your now-imperfect squat can become perfect once again with some dedicated mobility work targeting the hamstrings and hip flexors.

Sitting is the biggest culprit when it comes to stealing your gold-star squat faculties. First and foremost it limits your range of motion by putting the hamstrings in a shortened state for hours at a time. Then, when you go to squat, your lower back will round as the hamstrings pull the pelvis under — a dangerous position for your spine when top-loaded with a barbell. Prolonged sitting also causes your hip flexors to shorten, and during a squat they pull your pelvis downward, shifting your weight forward onto your toes rather than your heels where it belongs.

These five exercises help lengthen your hamstrings and hip flexors as well as your glutes and quads for good measure — putting everything back into balance and rejigging your squat mechanics to once again be proper, safe and effective. Perform these moves daily, breathing in and out through your nose slowly, and

holding each pose (on each side) for up to a minute.

THE MOVES Standing Forward Fold

Stand with your feet hip-width apart, arms at your sides. Hinge from your hips and fold forward, knees straight but soft. Shift your weight onto your toes and send your tailbone up, letting the weight of your head and upper body pull you lower with each breath.

Pyramid

Step your feet apart about three feet, right foot forward, with your arms at your sides and your legs straight. Press down into your right big toe and square your hips, then fold forward and place your hands on your right

shin or on the ground if flexibility allows. Hold and breathe.

Extended Low Lunge

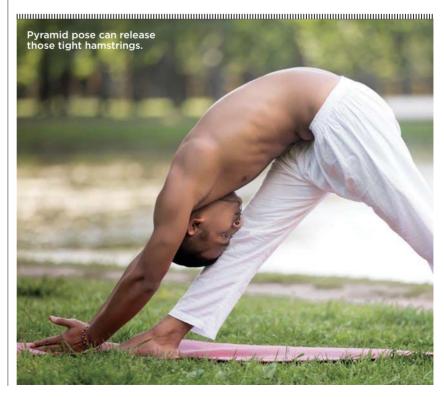
Step your right foot forward and lower your left knee to the ground to come into a lunge, right knee over your ankle. Tuck your tailbone and relax your hips to find the stretch in the front of your right thigh. Keeping your shoulders and hips square, reach your left arm overhead and lean to the right.

Lizard

Kneel on the floor then step your right foot forward, knee over toes. Place your hands on the floor inside your right foot and extend your left leg behind you so it's straight with your foot up on your toes. Lower your hips down as your reach your chest forward and up and breathe deeply.

Twisted Monkey

From the Lizard pose, turn the toes of your right foot outward slightly and let your right knee fall away from your chest. Then bend your back knee and grab your left foot with your right hand, drawing your left heel toward your left glute. Hold here and breathe deeply. Note: If you can't grab your foot, wrap a band or strap around your ankle and use that as a lever. ■





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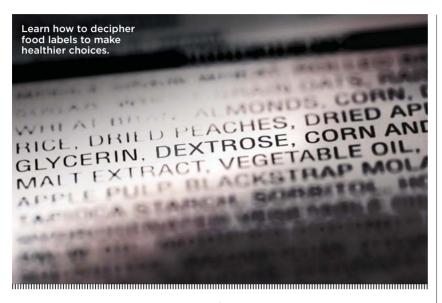




CRACKING THE CODE: NUTRITION LABELS

Understanding these 8 key values will change the way you shop.

BY JILL SCHILDHOUSE



ver notice that one person at the grocery store who's intently reading the back of each can, box and package before deciding whether to place it in the cart or shove it back on the shelf with a hint of repulsion? That, my friends, is someone who has unlocked one of the great mysteries of life: how to decipher a nutrition label.

"Food labels are hard to understand because there is a lot of information on them," says Jennifer Christman, RDN, LDN, clinical nutrition director at Medifast. "However, the label only gives the information, but does not tell the consumer how to interpret it. The information is there, but if you don't know what you are looking at, it's worthless."

Fear not — we've got your crash course in nutrition labels 101 right here. Sure, your next food shopping outing might take a bit longer than usual, but soon it will become second nature.

Serving size. This is the first thing to examine when comparing two items. Is this a serving size you would typically consume? If the serving sizes are the same on the two different products, next you can compare nutrients.

Are calories lower in one versus the other? "If you are comparing spaghetti sauce, for instance, I would look at sugar and sodium content and choose the lower of the two," says Christman. "If you are looking at cookies, I may choose the lower calorie and fat cookies for the same serving size. And if you are comparing two yogurts, you may want to choose yogurt with less added sugar, but higher in calcium."

Daily Value. Beware of the tricky DV numbers — they represent the percentage for various nutrients in a serving of the food, based on a 2,000-calories-a-day diet. Since individuals require different calorie levels, Daily Value percentages may be hard to interpret if one product has a vastly higher or lower calorie count per serving. You'll need to do some math to figure out how they stack up against your usual or desired caloric intake.

Low-fat or reduced fat. These words, while great marketing gimmicks on foods like cookies and peanut butter, should immediately raise a red flag (not the false hope that you can double your consumption).

"These food items may be lower in fat; however, they end up being higher in added sugar," says Christman. "The new food labels set to launch in 2018 will help to address some of this confusion by changing serving sizes and addressing added sugars."

Total fat grams. While it's important to look at total fat grams, Christman is less concerned about heart-healthy mono- and poly-unsaturated fats, than saturated fats, which can raise LDL (bad) cholesterol levels.

Sugar. Beyond the nutrition label, take a closer look at the listed ingredients to avoid high amounts of added sugar. Typically foods that end in "ose," like fructose, dextrose, maltose and sucrose, are synonyms and contribute to added sugar.

Salt. Avoid excess sodium added to foods. Hidden sources of sodium include baking soda, baking powder, monosodium glutamate (MSG), disodium phosphate or salt. If you're focusing on limiting sodium in your daily intake, look for foods with a daily value of 5 percent or less per serving. Higher sodium foods will be 20 percent or more.

Carbohydrates. This includes all sugars and fiber, so focus on natural sugars and higher-fiber foods. For example, when purchasing bread, look for bread made from whole grains with 3 grams or more of fiber per slice.

Positioning matters. When looking at ingredient lists, items appearing first occur in larger quantities. Ideally, when eating whole foods, this isn't as much of an issue. But, when consuming more processed or packaged foods take a closer look at the ingredient list. Avoid foods with refined grains, added sugar or sources of sodium listed among the first few ingredients.



NEW LOOK!

POSTURE PERFECT

Sideline that slouch with these five moves that target your upper posterior chain to help you stand taller and lift heavier.

BY JENESSA CONNOR, CPT

ince the average American spends around 13 hours a day sitting, having a spine like a question mark punctuated by a concave chest and rounded shoulders is typical for the 9-to-5 desk jockey. Such habitually poor posture can actually alter the length of your muscles.

"The muscles in the front side of vour body tend to get shortened and the muscles and tissues in the back side tend to get lengthened," says C. Shante Cofield, DPT, and founder of TheMovementMaestro.com. This is especially true of the upper body, which is the primary culprit in the daily slouch-a-thon. Strengthening the upper part of your posterior chain the erector spinae, latissimus dorsi, deltoids, trapezius, rhomboids and levator scapulae — can help straighten you out, correcting imbalances and improving performance.

"Better alignment means a better length/tension relationship of the muscles on either side of the joint, which means you can produce more force," says Cofield. More force means heavier weights lifted, faster development and increased overall calorie burn.

It also does wonders for your posture, making it easier to hold what Cofield calls a "confident position": shoulders back, chest up and ears in line with the shoulders. Adopting proper posture elongates you, making your belly look flatter and your waistline appear trimmer.

Ready to stand tall? Use these moves for perfect posture in the gym and out of it.

Pull-Up

Why: Strengthens all the back muscles and rear delts, helping straighten you up from head to hips.

Performance Benefit: Helps train you to get the bar off the ground faster and more efficiently during moves such as snatches and cleans.

How: Take an overhand grip on the pull-up bar with your hands a little wider than shoulder-width apart. Draw your shoulder blades together, then drive your elbows down and back to pull your chin up toward the bar. Pause briefly then lower slowly to the start.



Seated Cable Row

Why: Isolates the upper back and counteracts a rounded thoracic spine.

Performance Benefit: Strengthens the muscles that power a barbell clean from the floor to your shoulders, which means you'll be able to get under the bar that much faster.

How: Sit in the machine with your knees slightly bent and hold a V-handle with your arms extended. Keeping your torso upright (don't lean back), drive your elbows back and squeeze your shoulder blades together to bring the handle in toward your abdomen. Slowly return to the start.

Banded Pull-Apart

Why: Trains scapular retraction, opening and lifting the chest.

Performance Benefit: Promotes a straight-back posture, which is essential for proper deadlift form.

How: With palms facing down, grip a lightweight resistance band and hold it at chest height with your hands shoulder-width apart. Keeping your arms straight, retract your shoulder blades and open your arms to the sides, pulling the band apart as far as you can. Pause briefly then return slowly to the start.

Dynamic Blackburn

Why: Strengthens the erector spinae, putting a jutting chin (caused by overstretched muscles in the back of the neck) back in place.

Performance Benefits: Strengthens the muscles that help you hold and stabilize a front rack position for squats and thrusters.

How: Lie facedown with your arms behind your back, resting the backs of your hands on your glutes. Lift your head and shoulders off the ground and keep them raised as you bring your arms forward, parallel with the ground. As they come overhead, turn your palms to face downward and touch your thumbs together. Return to the start to complete one rep.

Foam Roller Angel

Why: Stretches tight pectorals and encourages a neutral spine, counteracting question-mark posture.

Performance Benefits: Positions shoulders properly for correct setup position of big barbell lifts and presses.

How: Lie faceup with a foam roller positioned lengthwise under your spine, neck and head. Extend your arms to the sides, palms facing upward, and allow your shoulders and chest to open. Slowly move your arms in a "snow angel" movement from your hips to overhead, then back to the starting position.

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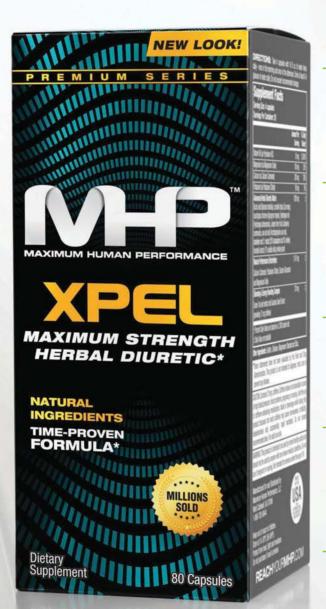
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NEWEST PRODUCTS GAT Sport recently launched ready-to-drink Nitraflex and PMP preworkout 10-ounce bottles for even easier graband-go consumption. In response to its consumers' desire for products that are free of artificial ingredients (flavors, colors and dyes), the company's new Muscle Martini Natural highperformance amino acid powders are a great postworkout recovery option. In 2016, GAT Sport launched Men's Multi + Test, a men's multivitamin that offers testosterone support. Finally, it has added a new stimulant-free. creatine-free version of PMP for those looking for an effective preworkout without those ingredients or for those who work out at night.

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COMPANY MISSION GAT Sport provides effective, great-tasting sports nutrition products that satisfy a serious workout enthusiast's daily needs that deliver results.

GOALS FOR 2017 "Current explosive growth has GAT Sport wisely reinvesting in fundamentals to keep it firmly on course and rocketing ahead," says Mark Post, vice president of GAT Sport. "Some examples include ongoing infrastructure expansion, software upgrades companywide, more core staff with substantial industry experience, expanded key product clinical studies, aggressive new product launches, increasingly targeted datadriven marketing, and custom content shared across social and digital platforms as never before."

SNEAK PEEK GAT Sport will be launching a new protein cookie for fitness enthusiasts. Stay tuned!

ALL ABOUT THE ATHLETE "GAT Sport has been moving to more transparent and effective dosed formulas to address consumer needs better,"

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AMERICA'S FITTEST
COUPLE WINNERS CHRIS
AND CAROLYN HASLEY
share how this challenge
has made them stronger,
fitter and better partners.

BY MAUREEN FARRAR • PHOTOGRAPHY BY IAN SPANIER

A GROWING BODY OF RESEARCH SUGGESTS THAT THE COUPLE THAT SWEATS TOGETHER STAYS TOGETHER.

It makes sense, right? No matter what you're doing, having a shared goal and someone to help you be accountable can keep you focused and on track. Having a partner who is interested in the same things that you are can bring — and keep — you closer as a couple. And being able to share successes and struggles with each other can be a bonding experience.

That's certainly the case of America's Fittest Couple winners Chris and Carolyn Hasley. In fact, in their household, fitness is a family affair. The parents of three children — Julia, 8; Meredith, 4; Joe, 2 — say that being active is a major part of family life. "The kids always hang out with us in our home gym while we train," says Carolyn. "In between sets and exercises we usually include them in some activities or try to teach them the workouts. There really is no better warm-up or cool-down than a disco dance party or a few silly games of Duck-Duck-Goose and Ring Around the Rosie."

The Fit Life

Before signing up for the America's Fittest Couple Challenge, the Hasleys, who are both high school teachers, weren't strangers to fitness. Both led active lifestyles since childhood — Chris played basketball and baseball, and Carolyn was a swimmer and ran track — and fitness was what eventually brought them together. "When we first met, we were both teachers at the same school," says Carolyn. "I knew he did triathlons and I thought, I should hit him up for some advice on how to do them and how to train." They've now been married for almost six years.

The couple became interested in America's Fittest Couple Challenge after focusing on triathlons last year. They thought they had lost too much muscle and believed that the Challenge, featuring Chris and Heidi Powell's program, would be a good antidote.

However, adjusting to the newness of the plan was itself a challenge at first. "Everything was so detailed and laid out perfectly, which helped tremendously, but until we got into the swing of things, it was tough coming to terms

with scheduling, learning the workouts and getting familiar with the recipes," recalls Carolyn. Most of the struggle seemed to stem from the fact that the Challenge started during their second week back to school after summer break.

The couple was surprised by the amount of food the program allowed for. "I usually never eat so many carbs and see success. I've never carb cycled like this, but I was surprised by how easy it was," says Carolyn. Chris agrees. "I was able to control my eating habits throughout the challenge and I was able see my abs for the first time in my life!" he exclaims.

"We doubted it early on," Chris admits, "because there was a lot of food, but it totally came through." The pair didn't take shortcuts. "We always followed the recipes to a T. We ate exactly what the program suggested with the exact his-and-her serving sizes," Carolyn assures us.





Although Sundays were deemed "off" days by the Powells, the Hasleys continued to eat clean, choosing foods that they liked from the previous week and cheating with the occasional treat meal or dessert.

As for the training portion of the program, the Hasleys never skipped a single workout. They appreciated the ability to complete them in less than an hour, an essential element for these busy parents. "The metcons alone were timesaving, yet they were as effective as some of the cardio sessions we were used to doing," Carolyn says. "We never thought we would see these kind of results in only 60 days!"

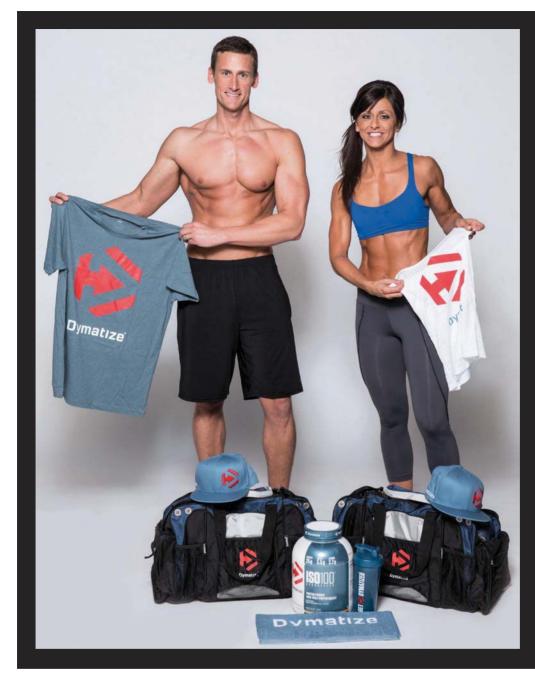
The Hasleys were happily surprised by changes other than the physical ones after completing the Challenge. "Not only can I do several heavy weighted pull-ups now, I can willingly say no to Pop-Tarts," says Chris, laughing. And aside from upping her multitasking skills, Carolyn can now do more than 40 military-style push-ups.

Teamwork

Chris and Carolyn set their sights on winning — "Someone had to be America's Fittest Couple Challenge winners, why not us?" asks Carolyn. That kept them focused, and they relied on each other for motivation to see the program through. "We had a silent agreement — I wasn't going to snack on foods off the plan because I knew Chris wasn't, and vice versa," Carolyn asserts. "We weren't going to skip a workout because







Muscle & Performance. in partnership with Dymatize, brought you the 2016 America's Fittest Couple Challenge. In addition to being featured on the cover. Chris and Carolyn Hasley won a one-year supply of Dymatize products, including a variety of flavors of Dymatize ISO100 as well as apparel. Plus, they won a trip to Maui!

Each of the five runner-up teams got a case of Dymatize IS0100.

we were tired; we just knew we had to do it." And having a huge support system outside of their immediate family bolstered their commitment to being successful. "Words cannot describe how blown away we were by the flood of people who showed us support!" says Carolyn. Family, friends, students in their tight-knit community and even the school superintendent got behind them. In fact, when M&P asked if the couple had any reservations about their students and the district finding out about the Challenge, the answer was, "We had a plan. If we made Top 20 — and that was our goal — we would go to the superintendent and get his seal of approval. And we did. He was so supportive. He asked where he could vote!"

So what's next for these two? Carolyn is working on expanding her own fitness business, starting with online coaching. She's helping people balance fitness, family, food and career. They would eventually like to move out of their basement gym and transform their bonus room into

their dream gym where they could start personal and group training sessions in their home.

"I feel so blessed in this amazing life Chris and I are building together. When we are apart we are pretty ordinary, but together I know we are extraordinary. I'm so thankful every day for his love and support. I don't know where I would be today without him!" says Carolyn, holding back tears.

"I never thought in a thousand years that I would have accomplished a feat such as this challenge, but I came to find out that it is possible with Carolyn by my side. She is truly my inspiration and driving force in all aspects of my life," Chris says. ■

TRAINING THROUGH The America's **Fittest Couple** Challenge was

BY MAURA WEBER

a way for these top finishers to get stronger together.

IN AUGUST 2016, JUSTIN LYNCH PROPOSED to childhood friend Melissa Abella, and the couple was excited to do the America's Fittest Couple Challenge together as a way to get ready for their wedding and married life. "This was an amazing opportunity to work together, hold each other ac-

JUSTIN LYNCH & MELISSA ABELLA Hometown: Porterville.

California Ages: 32 (him), 33 (her) **Occupations:** Personal trainer (him), director of sales (her) **Heights:** 6'1" (him), 5'3" (her) Old weights: 176 (him), 142 (her) New weights: 171 (him), 132 (her)

countable, support each other and push each other to new limits," says Abella. "Toward the end of the Challenge we joked, 'Who needs premarital counseling when you're doing this?"

The two had different training goals, with Lynch wanting to add muscle and Abella striving to lose body fat. "There was room for much improvement for each of us," says Abella. They were active with shar-

ing their journey on social media and got a lot of motivation from their followers. "We started getting an outpouring of love and support from new friends, old friends and family," she says. "For this reason, we didn't want to ever give up."

Abella appreciates the depth of understanding that she and Lynch earned during their workouts together. "I've been a single mom for the past nine years, and finding a good friend to be my life partner and going through an experience together like this really made me appreciate the man that I am about to call my husband," she says.





MICHAEL WARNER AND AMANDA CHU spend their days at the gym working as personal trainers, then they spend their evenings together working out. They undertook the America's Fittest Couple Challenge as a way to liven things up. "We used the Challenge to implement new routines as well as provide a fun way to work together as a couple," says Warner. "We wanted to see how far we could push ourselves, together."

The results were just what they hoped for. "We were both able to beat our previous personal records in our compound lifts. For Amanda it was deadlift and squat, and for me it was front squat," says Warner. "One of the greatest feelings is seeing each other excel and becoming stronger than we previously were."

Having Chris and Heidi Powell as mentors added an extra

element for Warner and Chu. "They are incredibly motivating," says Warner. Now that Warner and Chu have gotten a taste of what prepping for a physique competition is like, they're eager to take the next step. "This was our first competition we started as a couple. but it's certainly not our last," he says. "Our next goal is to compete together in an NPC show in 2017."

MICHAEL WARNER **& AMANDA CHU**

Hometown: Sunnyvale, California Ages: 29 (him), 27 (her) **Occupations:** Personal trainers Heights: 5'7" (him), 5'4" (her)

Old weights: 165 (him), 128 (her) New weights: 170 (him), 124 (her)





CARLIN & ERIN CONN

Hometown: Calgary, Alberta, Canada Ages: 41 (him), 40 (her) Occupations: Residential construction supervisor (him), artist (her) Heights: 6'1" (him), 5'8" (her) Old weights: 221 (him), 179 (her) New weights: 197 (him), 159 (her)

THE PAST FEW YEARS

have been stressful for the Conn family. "The day our son Chaney was born, we found out I had stage 3 testicular cancer, and a year and a half later, our son Slater was diagnosed with autism spectrum disorder," explains Carlin. When they learned about the Challenge, they decided it was iust what they needed. "We thought it would be exciting to be trained by Chris and Heidi

Powell. We felt like we were a bit stuck in a rut and weren't making time to exercise," says Carlin.

The Conns worked out at home in what they call their Muscle Basement. "We were a bit surprised at how much we could accomplish with limited equipment," says Carlin. "Also, we're setting a good example for our sons."

The supportive nature of the Challenge was perfect for the Conns. "We joined the Facebook group and got a lot of strength from being connected with so many great people," says Carlin. "The stories were a big source of inspiration and provided some humor, too." The result was very satisfying for the couple. "There is no denying we were a bit fragile going into the Challenge, but now we feel stronger physically and emotionally."





WHEN IT CAME TO SIGNING UP for the America's Fittest Couple Challenge, Matt and Stefanie Wolff had different motivations. "A few years ago I had moved up a couple of pant sizes and my current pants were getting too tight," says Matt. "I specifically remember thinking I needed to go shopping for bigger





pants, and in the middle of that thought I had an epiphany that maybe that was not the best solution." He started making healthier choices and took up weight training for the first time with the Challenge.

Stefanie's desire to get fit stemmed from her experience of four pregnancies. "Each time I got pregnant I got hyperemesis gravidarum and my body would fluctuate between

MATT & STEFANIE WOLFF

Hometown: St. Albert, Alberta, Canada Ages: 38 (him), 34 (her) Occupations: Plumber (him), homemaker (her) **Heights:** 5'7" (him), 5'4" (her) Old weights: 159 (him), 137 (her) New weights: 151 (him), 131 (her)

losing a huge amount of weight in a matter of weeks to gaining even more weight," she says. She started slow with exercise and is very happy with the results. "We have some pretty amazing kids and I love that I am able to keep up with them," she says.

With Matt as the driving force behind getting the workouts done and Stefanie in charge of meal prep, the Wolffs followed the Powells' routine to a T and love the results. "This program helped us grow individually and also as a couple," says Stefanie.

ANTHONY MALDONADO 8 **CARMEN PACHECO**

Hometown: Brooklyn, New York Ages: 31 (him), 43 (her) **Occupations:** Fire safety director (him), independent contractor (her) Heights: 5'9" (him), 5'2" (her) Old weights: 254 (him), 108 (her) New weights: 199 (him), 106 (her)

that she wasn't always convinced she and her fiancé, Anthony Maldonado, would finish America's Fittest Couple Challenge. "It was very hard to manage work, meal plans. family and workouts every day, but we are not quitters," she says. Going into the program, both of them wanted to get into better shape and focus on their goals. "I was going to the gym on and off, but whatever I was doing was definitely not

CARMEN PACHECO SAYS

doing much," says Pacheco. For Maldonado, the program helped him break bad habits. "It made me more aware of bad eating habits and gave me new ways to change up old routines," he says.

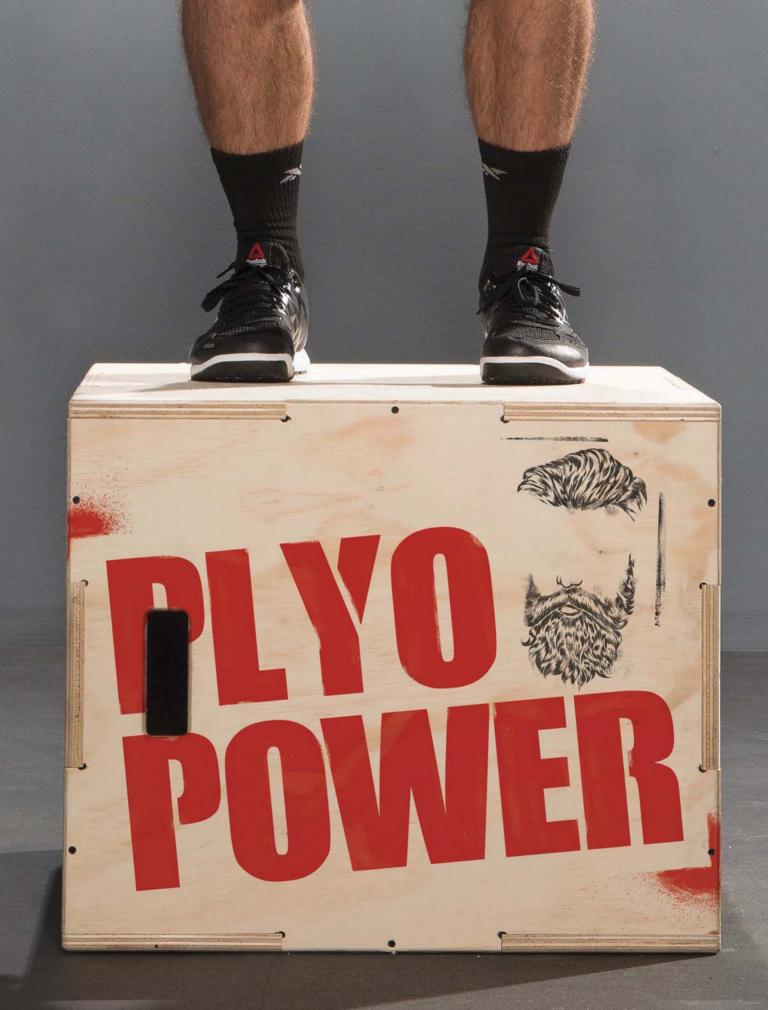
Both of them experienced huge gains in their ability to perform fundamental exercises. "I could not even finish one push-up when we started, now I can do 20 in a row effortlessly," says Pacheco. For Maldonado, burpees were the true measure of his

progress. "I died after five burpees on day one. Now I can do them for several minutes with energy to spare," he says.

Pacheco and Maldonado love the results in their physiques as well as their relationship. "The Challenge was difficult but it brought us closer, so close that a baby was conceived before the program was over," she says. ■







DITCH THAT STALE CARDIO ROUTINE AND TORCH FAT IN A WHOLE NEW WAY — MINIMAL EQUIPMENT REQUIRED.

those monotonous contraptions.

ure, we all appreciate machines like the treadmill, elliptical, bike and rower, and today's expertly engineered iterations are smooth, easily adjusted and provide a wealth of feedback. Some days you can't imagine your training routine without them. But other days? Ugh ... we'd rather swallow a heaping scoop of dry protein powder than to set one foot on one of

Fortunately, machines are only one way to skin the cardio cat, and this program is just the alternative to save your sanity and shred you up like nothing else. With the expertise of James Pratt, training director of TEST Sports Clubs and the TEST Football Academy based in Martinsville, New Jersey, you'll learn to how harness the power of plyometrics and generate maximum burn in 20 minutes or less.

FIRE UP FAT LOSS

Generally speaking, plyometric exercises are bodyweightonly movements done with a high level of force and explosiveness. This triggers your fast-twitch muscle fibers to activate, burning first through your stored ATP (adenosine triphosphate) and carbs (glycogen), and leaving only your fat stores as potential fuel.

"Due to the intense nature of plyometrics, we can expect a lactate accumulation in the musculature responsible for the performance in each of our explosive sets," Pratt says. That lactate helps prompt a more significant growth-hormone release, tapping body fat as part of the repair process.

Plyometrics also work similarly to high-intensity interval training to target body fat: By cycling between intense, higher-rep activities with short rest periods, you work closer to your upper heart-rate threshold. "The higher an individual's heart rate gets, the more calories they will burn," says Pratt. "Working up to approximately 90 percent of their max heart rate [during intervals] challenges athletes to a respectable level of exhaustion without hindering their ability to continue." And keeping your recovery heart rate around 70 percent of max means you're working at an average of about 80 percent of max throughout the session, "which is a greater average than the typical steady-state session of 65 to 70 percent," says Pratt.

And afterward: "The excess postexercise oxygen consumption — the calories burned after training — has been shown by science to be greater in high-intensity interval training than lower-intensity steady state cardio," says Pratt.

THE PLYO **BURN-ZONE WOR**

For this workout, designed by TEST Sports Training Director James Pratt, you'll want a stopwatch, a clock or watch with a second hand, or a timer app on your phone.

After a five-minute warm-up that includes cardio, light calisthenics and/or low-key plyometric movements, choose one move from each category and arrange them in a circuit. Begin at the top of each minute and perform each exercise for 15 seconds all-out, then take 45 seconds of active rest during which you walk around and shake things out before hitting it again, hard. Repeat that circuit for four or five rounds, making for a total of 16 to 20 minutes of work.

| PLYOMETRIC Type | EXERCISE | ALTERNATIVE EXERCISE |
|-------------------------|--|---|
| Lower-Body Linear | Squat Jump Broad Jump | Hurdle Jump Split Jump Box Jump Single-Legged Box Jump Step-Up Jump |
| Upper-Body Push/Pull | Clapping Push-Up Medicine-Ball Slam | Medicine-Ball Push-Press Throw Medicine-Ball Overhead Soccer Throw |
| Lower-Body Lateral | Lateral Bound Lateral Box Jump | Lateral Squat Jump Lateral Bench Jump Lateral Hurdle Jump |
| Rotational | Medicine-Ball Rotational Throw Medicine-Ball Rotational Slam | Perpendicular Rotational Throw Perpendicular Step Rotational Throw |

LOWER-BODY LINEAR MOVES

*****Squat Jump

Stand with your feet about shoulder-width apart, knees slightly bent, hands in front of you. Keeping your chest up and back flat, squat down until your thighs approach parallel then explode upward as high as possible, leaving the ground as you reach your arms overhead to gain height. Land softly, compressing with your knees and hips and going right into the next rep.







As a bonus (as if one is even needed), sports performance is enhanced by regular plyo training as well. "Power development is critical for sports performance," Pratt says. "In the range between absolute speed activities like sprints and maximum effort strength training, plyometrics are a great mid-range training option, improving both speed and strength qualities."

THE PLAN

This high-intensity plyometric program designed by Pratt exclusively for *Muscle & Performance* takes advantage of all this science and targets your body from top to bottom.

The moves are split into four categories representing the four basic areas of movement: lower-body linear, upperbody push/pull, lower-body lateral and rotational. For each workout, select at least four moves, using a minimum of one from each category to prevent monotony while working as many muscle groups as possible each session, thereby making each workout metabolically intense.

Once selected, arrange the moves in a circuit, hitting each one all out for 15 seconds, then recovering for 45 seconds. This relentless pace in effect transforms normally anaerobic exercises into aerobic ones that require oxygen to fuel their

longer-term energy needs, creating a metabolic — fat burning — effect. And because 45 seconds is not nearly enough time for your body to completely recharge its ATP stores, your body turns to stored carbs and fat as fuel.

"Effort determines success in this routine," Pratt insists. "In a true plyometric exercise, we're giving maximum effort to each repetition, which by nature can only be sustained for a shorter period of time." So jump as high as you can, bound as far as possible, and throw that medicine ball with as much force as you can muster.

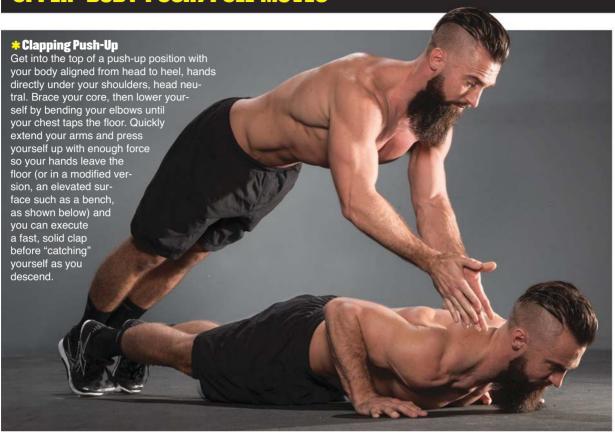
"In an all-out-effort scenario," says Pratt, "you should not have to work longer than 10 seconds to achieve a heart rate close to 90 percent.

"In round one, pay attention to the amount of time it takes to recover. If the [work-to-rest] ratio is too difficult, decrease the work by two to three seconds and add that time to the rest. Do the opposite if it is too easy. No matter what, don't decrease effort — I'd rather you rest longer to give all-out effort than rest less and give submaximal effort."

The harder you work, the better your results and the closer you come to shredding up. "Plyometrics give us an incredible heart-rate response in a very short period of time," Pratt says. "It isn't too difficult to argue that it is the most efficient means to burning calories and losing fat."



UPPER-BODY PUSH/PULL MOVES









* Medicine-Ball Slam Hold a medicine ball at your chest with both hands, feet about hipwidth apart. Reach the ball up overhead, coming up onto your toes; then throw the ball straight down to the floor, using your entire body and core to generate maximal downward force. Immediately pick it up and repeat.





LOWER-BODY LATERAL MOVES



*****Lateral **Box Jump**

Stand sideways to a knee-high box with your feet shoulderwidth apart, arms at your sides. Bend your hips and knees partway to load up, reaching your arms back, then explode upward and sideways, swinging your arms forward and landing softly and squarely on the box. Continue moving laterally, jumping down lightly onto the other side of the box. Repeat, alternating directions.











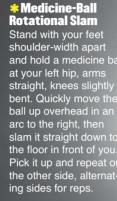
***Lateral Bound**

Stand sideways to an open floor space with your feet hip-width apart, knees slightly bent, arms in the athletic "ready" position. Pushing off with your outside foot, explosively extend your lower body and leap laterally as far as you can. Land softly and immediately go into the next rep moving in the opposite direction.

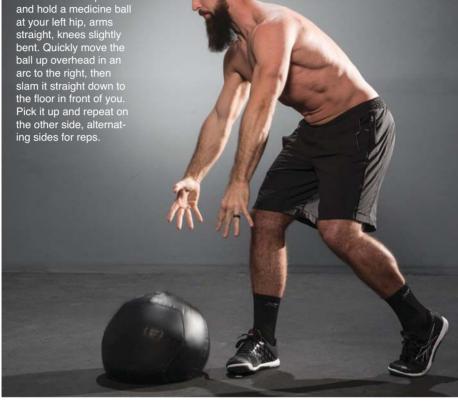
ROTATIONAL MOVES

For moves that use a medicine ball, either a reactive (bouncy) or non-reactive (soft) ball will work. Just be aware of the rebounding potential of your reactive ball and adjust your position so you can catch it properly (without hitting yourself in the face).















* Medicine-Ball **Rotational Throw**

Stand sideways to and a couple feet away from a wall. Hold a medicine ball at your chest with both hands, elbows down. Rotate your shoulders and hips away from the wall, pivoting on your toes, and bring the ball down to your outside hip. Immediately rotate back toward the wall, extending your arms and releasing the ball at shoulder level. Catch the ball as it bounces back, and quickly rotate away again, going into the next rep. Do all reps to one side before switching. As you improve, try to blend the reps together smoothly.

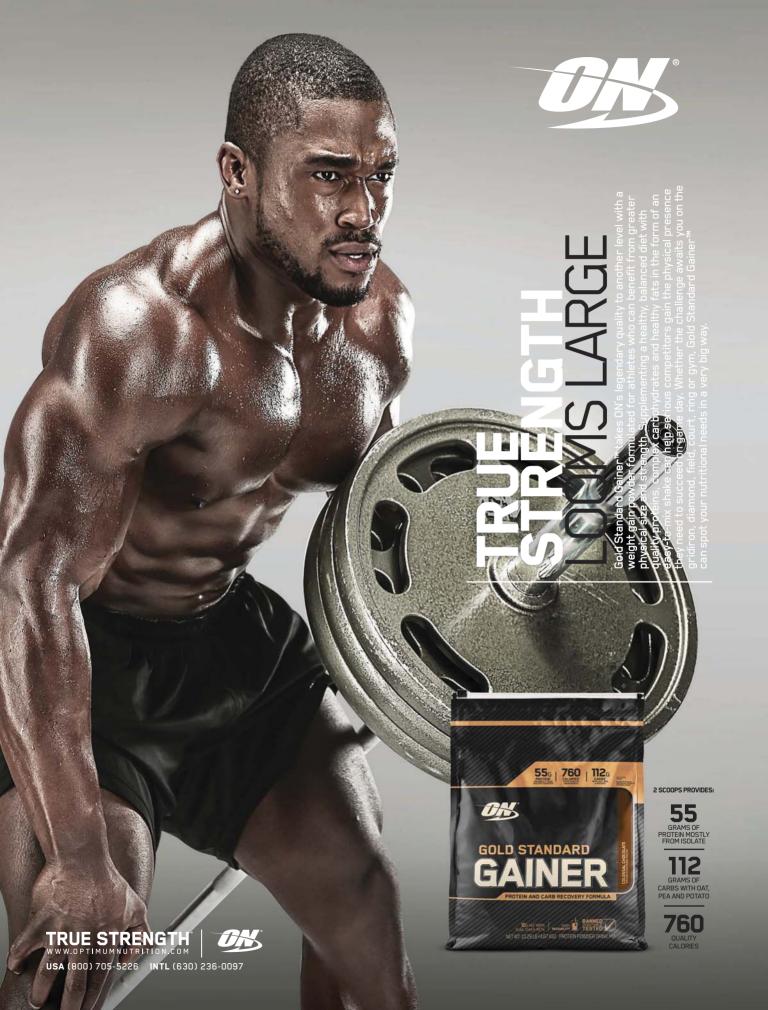
SUPPLEMENT

If losing fat and building lean muscle are your goals, these three supplements could help improve your plyometrictraining results:

Branched-Chain Amino Acids: These critical nutrients help maintain a positive intramuscular nitrogen balance during workouts, while also aiding in the recovery and repair processes postworkout. Options that also provide glutamine, another recovery staple, include Inner Armour's BCAA Peak or Amino Blitz Peak.

Protein Powder: Protein is the building block of lean tissue. After training, consider a blend that includes both fastdigesting whey isolate and slower-digesting casein, which provides a steadier stream of nutrients for several hours.

Fat-Burning Formulations: These products usually include caffeine and green-tea extract, both of which have been shown in studies to increase energy and boost calorie burn.







MANY WORKOUT FANATICS SPEND COUNTLESS HOURS TRAINING TO GET AS FIT AS POSSIBLE, BUT THEY DON'T STOP AND TAKE THE TIME TO MONITOR THE TREMENDOUS STRESS THEY ARE PLACING ON THEIR BODY.

Pulling all those heavy deadlifts or performing frequent high-intensity interval training sessions will eventually burn you out, leading to overtraining and injury that can take months for a complete recovery.

Trainers should heed the advice of eight-time Mr. Olympia Lee Haney, who once famously quipped, "Stimulate, don't annihilate." But getting a dedicated athlete to take some necessary downtime is next to impossible. Fear not, though: You can integrate some of these tools into your recovery protocol and achieve your personal best in the gym and beyond.

HRV

One simple and accurate way to monitor the stress being placed on your body during heavy training is heart-rate variability. According to Gabriel Rodriguez, the run apparel category manager for Under Armour, and a former All American athlete, Division I track coach and Mount Washington Road Race record holder, "Using HRV to monitor fatigue is still in its infancy stages, but it shows tremendous promise as an effective overtraining tool."

HRV is measured as the time gap between your heart beats, and they will vary as you breathe in and out. It sounds counterintuitive, but if those gaps are identical between each beat, it's thought to be unnatural. But if those gaps vary, it's healthier because it means the heart is pumping as needed (as opposed to monotonously working). The more relaxed your mind and body, the more variability you will have between heartbeats.

So how does this benefit you? HRV data can be used to help predict important issues like the level of fatigue incurred from previous workouts, poor hydration levels, as well as excessive stress due to performance anxiety and nervousness. Although, there are numerous other factors that affect HRV, including age, gender, genetics, body position, time of day, temperature, humidity, altitude and hormonal status, this information can be used to make decisions on how you should train (or not train).

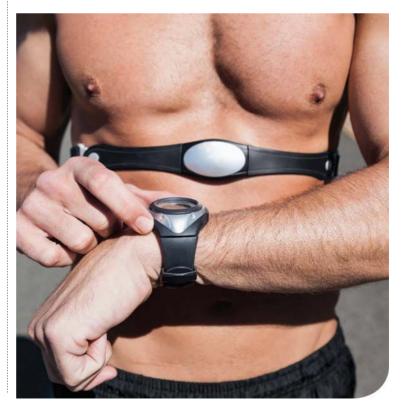
Scientific research has increasingly linked higher HRV values to good health and

Many negative health outcomes are associated with poor heart-rate variability, including diabetes, obesity, hypertension and other cardiovascular diseases. improved fitness while, conversely, research has shown that stress, fatigue and burnout cause decreased HRV levels. The best way to measure HRV is with an EKG machine in a lab setting, but in case that's not an option, there are several helpful apps such as ithlete (myithlete.com/ithlete-pro/).

Personal experience as an elite runner has taught Rodriguez that using heart rate alone to monitor workout intensity can be extremely difficult in many instances. But by adding HRV into the mix you can provide some muchneeded sensitivity to the amount of stress being placed on your body, making for a more complete picture of your current training program's effectiveness. "It's important to develop an overall baseline with your workouts so you can learn how to properly use the HRV data," says Rodriguez. "Then you can adjust your training schedule to achieve maximum results."

The best time of day to record HRV is right when you wake up, since time of day, meals, movement and mood can all affect the measurement. Over time you'll see trends and patterns in your HRV and can properly schedule intense workouts, deload weeks and rest days with accuracy and forethought.

Rodriguez sums up by saying that using HRV as a measure of overtraining can be extremely helpful, but he thinks that combining HRV with the social media aspect of workout trackers like MapMyRun could provide even greater feedback and support of your training and overall performance.





Flex Your Mental Muscle

Not all stress is bad. Stress is what you apply to your muscles in order to break them down then build them up again stronger. But there's a fine line between the right amount of stress and pushing things too far, because while you're stressing your muscles in order to make them grow you're also stressing your nervous system. Too much stress can affect your sleep, your immune system and even your heart. Not to mention, it can be detrimental to your athletic performance.

On the flip side, a moderate amount of stress is OK, even healthy. Moderate, short-lived stress can improve alertness, boost performance and even sharpen memory. The key is to manage your stress response more efficiently and learn how to control your overall stress levels to make them work for you. Creating a system that will help you better handle stressful situations is one of the most important skills you can develop.

A study from the University of Maryland tested the emotional resiliency of football players to uncover the relationship between stress and performance with functional magnetic resonance (MRI technology that measures brain

activity). The results showed that experienced athletes process information in a more efficient and automatic manner when compared to the more novice players. (The theory is that experienced athletes have better control under stressful situations than novice players.)

A technique called cognitive reappraisal allows an athlete to positively reframe his thoughts, helping neutralize the negative impact caused by the stress of competition while expanding his comfort zone in difficult situations. By seeing problems as opportunities a player can bounce back and recover from almost anything,

As simple as it sounds, the key message of the study is that mental toughness comes from thinking like an optimist. People who don't give up easily have a habit of interpreting setbacks as temporary and changeable. Learning how to positively analyze your beliefs and emotions regarding failure, and to avoid describing them as permanent and out of your control, are all characteristics of mental toughness.

In addition, another pillar of psychological strength is the ability to resist catastrophic thinking, or the tendency to assume the worst in every stressful situation. Individu"A growing number of studies show that you can use such specialized stress reducing skills to help control your mind," says Dr. Lew Lyon. Deep breathing and meditation are two important techniques that can help reduce your response to stress.

als who learn to fight back against negative thoughts by searching for a more positive spin, while also making sure to reflect and act on genuine concerns and problems, are more resilient to stress.

Lew Lyon, Ph.D. and vice president of Sports Medicine at MedStar Health, which treats pros on teams including the Baltimore Ravens, Washington Capitals and Washington Wizards, advises his athletes to practice techniques such as **progressive muscle relaxation** (you focus on slowly tensing and then relaxing each muscle group). He also suggests **guided imagery** (a technique in which you form mental images to take a visual journey to a peaceful, calming place or situation) to help reduce the stress of competition and prevent burnout.

"A growing number of studies show that you can use such specialized stress reducing skills to help control your mind," says Lyon. **Deep breathing** and **meditation** are two important techniques that can help reduce your response to stress.

The most productive way to think about stress is to learn how to gain control over the moment. Being in control of the moment is a very important part of whether or not you will feel stressed by a specific event. If you can learn how to feel that you're in control of a stressful situation, you can help reduce your overall stress response (see the sidebar Zoned Out).

Biomarker Analysis

One of the more revolutionary new tools in the athlete's recovery arsenal is biomarker analysis. Biomarkers (science-based blood analytics that are linked to injury, wellness and performance) are used to monitor and predict health states in individuals. Every biological system (for example the cardiovascular system, metabolic system or the immune system) has its own specific biomarkers. Many of these biomarkers are relatively easy to measure and form part of routine medical examinations. For example, a general health check may include assessment of blood pressure, heart rate, cholesterol, triglycerides and fasting glucose levels. Body measurements such as weight, body mass index and waist-to-hip ratio are routinely used for assessing conditions such as obesity and metabolic disorders.

Biomarker analysis is now being used by many top pros to help keep them at peak performance levels. Brian Moore, Ph.D., the founder and CEO of Orreco, a pioneer in the field of sports and data science, says that in any sport the trick to optimizing performance comes down to finding the right balance between load or stress and your recovery. Finding and maintaining that balance is unique to each individual, and it can becomes more

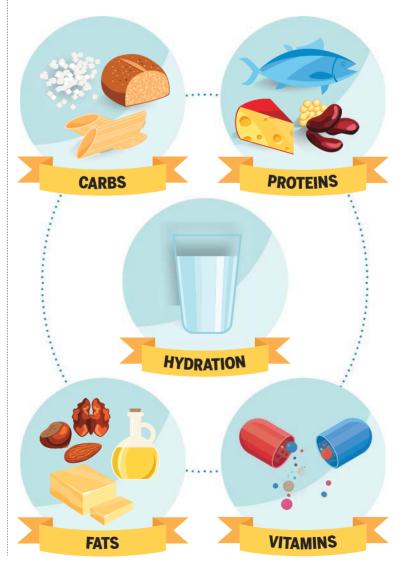
One of Dr. Andy Barr's important "three pillars" of high performance deals with an athlete's nutritional status including proper hydration; adequate carbohydrate, protein, and fat intake; and essential vitamins and minerals such as vitamin C and

magnesium.

complex for people who are also balancing the demands of family and full-time jobs.

"Ultimately, biomarkers are influenced by issues such as liver function, hormonal imbalances, thyroid problems and muscle tissue damage," says Andy Barr, DPT, the owner of Innovate Performance in Los Angeles.

That's why one of Barr's important "three pillars" of high performance deals with an athlete's nutritional status including proper hydration; adequate carbohydrate, protein, and fat intake; and essential vitamins and minerals such as vitamin C and magnesium. When an athlete's profile starts to show specific biomarkers of fatigue and overuse such as high levels of white blood cells, Barr might add omega-3 supplements to his or her diet to help reduce the amount of inflammation in the body. In addition, Barr states, "A good probiotic is imperative for preventing leaky gut syndrome that can cause all sorts of inflammatory issues throughout the body."





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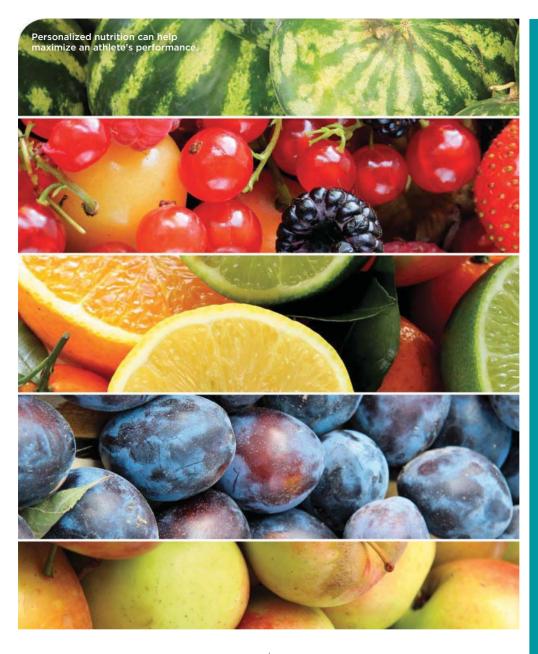
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Orreco is now developing an app for use in the consumer market. Moore sees a bold vision ahead, "With Fitbit, Jawbone, Garmin, you have all these [fitness tracker] platforms. They're collecting the data and they'll visualize that very nicely. I think we've got to transition from 'wearable' to 'actionable." That's why Moore believes that his company's unique cognitive technology that offers personalized recommendations on an athlete's overall training routine, will help maximize performance and minimize injury to a degree never seen before. "Orreco is using cognitive analytics to better equip athletes, coaches and teams with the critical information they need," says Moore. "With this information they can make better informed decisions about training and performance."

Overall, Barr recommends that to keep your body in proper balance your diet should consist of fruits and vegetables from the colors of the rainbow that are high in free-radical-fighting antioxidants.

The Road Less Traveled

Accepting the fact that recovery is demonstrably more important than training is a hard pill for many of us to swallow. But if you learn to listen to your body and begin to adopt some of these cool tools of trade, you may see big changes in your training and performance. The better we sleep, eat and reduce the stress in our lives, the better our ability to quickly recover from hard workouts and produce that ultimate performance.

70NFD OUT

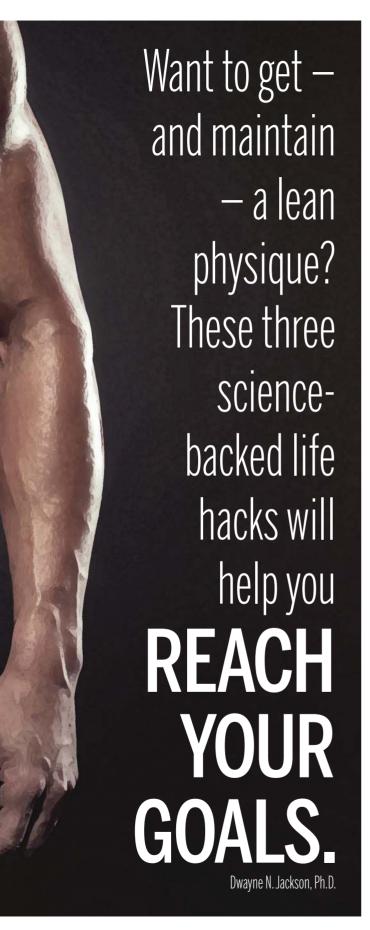
Research conducted at UCLA suggests that meditating can help thicken the brain and strengthen the connections between brain cells, improving the brain's neuroplasticity or the ability to adapt to environmental stressors. Meditation also allows you to calm your mind down from those all-consuming negative thoughts that you have bouncing around in your head on a daily basis.

Agata Anthony is a busy Fortune 500 executive at GE Healthcare as well as a competitive age-group athlete who works hard to balance her training and racing with frequent international business trips. She uses the Headspace app (Headspace.com) to help her perform guided meditations in an effort to reduce stress and keep her mind and body running at peak efficiency. "While meditation in theory should be rather simple, and not require special equipment or technology, I found that having a well-designed app available on my phone, which I have with me at all times. helps with motivation and structure. Starting out with 10-minute sessions is pretty easy and doesn't feel overwhelming," says Anthony,

In addition to Headspace's free Take 10 program, the full app has packs designed for specific purposes. Those include sportspecific meditation packs addressing focus, competition, motivation and training, as well as health-themed packs to help users take active part in managing their well-being and includes meditations specific to cancer, depression, stress, self-esteem and more.







or most of us, the fitness lifestyle is a means to feeling great, living longer and looking fantastic. One of the best ways to achieve these life milestones is to stay lean and muscular all year long. Unfortunately, for many, being lean and muscular is a fleeting condition that is reserved for a few months in the summer.

The best assurance for a successful and lifelong body transformation is to make permanent (healthy) changes to your diet, modify your daily bad habits, participate in daily vigorous exercise and use key supplements aimed at supporting your transforma-

tion goals. In this article we present three science-based life hacks — and their supporting supplements — geared toward helping you achieve and maintain a lean and muscular physique for life.

LEAN LIFE HACK #1: SLEEP WELL

The importance of sleep in health and fitness cannot be overstated. During slow wave (deep) sleep the body releases an abundance of growth hormone, which repairs and builds lean mass while promoting fat loss. While sleepdeprivation can blunt GH release and negatively impact your physique, recent evidence illustrates that sleep quality also impacts hormones associated with hunger and satiety (the feeling of fullness), especially when dieting. According to the data, sleep deprivation when dieting dysregulates the release of peptide hormones ghrelin and glucagon-like peptide 1 in the gut. As such, sleep-deprived men tend to have higher levels of ghrelin (a peptide that makes you feel hungry) in the morning than women. In contrast, sleepdeprived women tend to have lower levels of GLP-1 (a peptide that makes you feel full) in the afternoon. The takehome message: If you are dieting, maintain a normal sleep schedule of eight to 10 hours per night and you will find it easier to eat less.

MELATONIN Melatonin is an endogenous compound that's synthesized by the pineal gland and is traditionally used as a supplement to effectively facilitate sleep. However, research from scientists at Baylor University (Waco, Texas) has shown that melatonin not only induces deep sleep, but also dramatically increases GH secretion. Furthermore, the effects of melatonin on GH secretion are even greater after training. Melatonin's sleep-inducing and GH-releasing properties make it the perfect bedtime supplement for athletes looking to get lean and stay lean.

DOSAGE: Studies have shown that doses in the range of 1 to 5 milligrams work best, with the latter promoting the greatest GH release.

MUCUNA PRURIENS Mucuna pruriens has been shown to enhance the nighttime release of growth hormone.

M. pruriens comes from an ancient Indian herb called

velvet bean, which when ingested has been shown in many published investigations to elevate L-dopa (the precursor to dopamine). Several studies have illustrated the remarkable effects of *M. pruriens* on dopamine release in healthy and diseased people. Dopamine is a key player in the signaling for GH release by inhibiting hypothalamic somatostatin secretion, which leads to greater release of GH by the pituitary gland.

DOSAGE To support your nocturnal GH surge take approximately 2,000 milligrams of high-quality M. pruriens (standardized to 15 percent L-dopa) immediately before going to bed.

LEAN LIFE HACK #2: CONSUME AN ABUNDANCE OF PROTEIN

Most protein recommendations are based on anecdotal evidence, so some dietitians and physicians question the efficacy of eating ultrahigh amounts of protein while trying to lose fat. However, a study published in Medicine & Science *in Sports & Exercise* tells us that resistance-trained athletes should consume at least 2.3 grams of protein per kilogram of bodyweight per day in an effort to preserve lean mass while dieting and training.

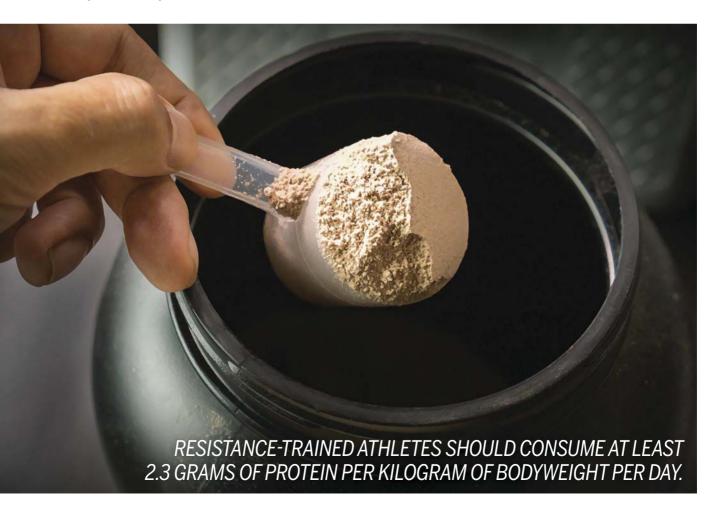
WHEY PROTEIN ISOLATE Whey protein isolate ingestion promotes a rapid and robust flood of amino acids

into the bloodstream. The physique-enhancing benefits of whey protein are highlighted in a clinical trial published in the Journal of Nutrition and Metabolism, in which subjects who took a whey protein supplement while undergoing a calorie-reduced diet retained twice as much lean mass and burned off nearly twice as much fat mass as the control group (with the same diet). As well, it has been shown in other research that drinking a whey protein shake before a meal stimulates post-meal hormones that control satiety and regulate blood-sugar levels.

DOSAGE: For a daytime protein boost, mix 10 to 20 grams of whey protein isolate or a whey protein blend with 8 ounces of water and drink it 20 to 30 minutes prior to breakfast and dinner.

MICELLAR CASEIN In contrast to whey protein supplements, ingestion of micellar casein promotes a modest, slow and sustained (approximately 7 hours) elevation in blood aminoacid levels. This unique feature of casein contributes to an increase in protein synthesis and a marked (approximately 34 percent) decrease in muscle breakdown. These properties make micellar casein especially useful prior to bedtime and during periods when frequent protein consumption isn't possible.

DOSAGE: For a sustained nocturnal protein boost, consume 40 to 50 grams of high-quality micellar casein protein 30 minutes before bedtime.



SUPPLEMENTING WITH GREEN-TEA EXTRACT CAN HELP STOKE YOUR FAT-BURNING FIRE.



LEAN LIFE HACK #3: MAXIMIZE METABOLISM

When it comes to lifelong fitness, keeping your metabolism elevated is imperative. In addition to our suggestion that you boost your metabolic rate with exercise, we also suggest drinking four liters (about a gallon) of cold water per day. This not only keeps you hydrated, but also provides a decent kick to the metabolism. In fact, drinking 500 milliliters of cold water increases metabolic rate by about 30 percent for about 30 minutes, which equates to a total of about 25 calories burned! In males, water-induced thermogenesis is accomplished by burning fat, whereas females burn more carbohydrates. Based on this research, you can expect to burn about 200 extra calories per day if you drink four liters of cold water daily, which seems a lot easier than doing more cardio!

Studies have repeatedly done edly demonstrated that during exercise there's a transient decrease in muscle carnitine content, which correlates highly with a decrease in fat burning as exercise prevails. Research indicates that increases in skeletal muscle total carnitine content (e.g., via acetyl-L-carnitine supplementation) results in greater

fat-burning effects and decreased carbohydrate usage, even during rest when there's high carbohydrate availability. This is good in that fat is utilized as energy before carbohydrates. As such, it has been suggested those who use L-carnitine supplements burn greater amounts of fat during exercise than those who don't.

DOSAGE For best results, take 1.5 to 2 grams of acetyl-Lcarnitine between meals.

GREEN-TEA EXTRACT In a double-blind and placebo-controlled

study, published in the Journal of the International Society of Sports Nutrition, scientists from the UK reported that green-tea extract supplementation enhanced total fat oxidation during cycling exercise by almost 25 percent, with no changes noted in those who took the placebo. Furthermore, they measured greater body-fat loss and a 10.9 percent improvement in exercise performance in those who took GTE versus those who took the placebo.

DOSAGE: To get 25 percent more fat burning from your workout sessions, take 500 to 1,000 milligrams of green-tea extract standardized for epigallocatechin gallate (aka EGCG) two or three times per day. For best fat-burning effects, always take one dose 30 minutes prior to doing cardio. ■

FINAFLEX STIMUL8 MUSCLE



ongratulations! You made it into the gym today. However, as we all know, getting there is only half the battle. Now ask yourself whether you are going to redefine yourself today or just go through the motions. If you are serious about making gains in the gym, you should be taking a preworkout supplement. Stimul8 Muscle is a brand-new, complete preworkout just launched by Finaflex. Stimul8 Muscle is designed to increase muscular performance during workouts, and it works on the first dose. If you are already taking a preworkout, you are making the right choice. But how does yours measure up to Stimul8 Muscle?

These are the three ingredients that make Stimul8 Muscle so effective:

1. CAFFEINE This is an essential all-encompassing ingredient that has been used for generations. Caffeine has been proven to increase strength, boost energy and delay fatigue. But too much caffeine can leave you in a nervous, jittery state of mind and body. Stimul8 Muscle contains an ideal and optimal dose of caffeine in each capsule, which is equivalent to a strong cup of your favorite coffee (without the cream and sugar).

2. CARNOSYN (BETA-ALANINE) Do you feel that tingle? That is CarnoSyn acting to improve your workout. Betaalanine has been proven to increase muscle strength and muscle endurance, delay fatigue and enhance exercise training. Stimul8 Muscle contains the ideal amount of CarnoSyn in every dose, delivering endurance and the ability to push through even the fiercest sets of your workout routine. Now you are feeling the burn!

3. PEAK ATP Here is where the similarities between most other preworkouts and Stimul8 Muscle end. This third ingredient is only found in select dietary supplements on the market today and Stimul8 Muscle is one

Peak ATP is a clinically validated and patented form of adenosine 5'-triphosphate (ATP) disodium shown to improve body composition and athletic performance by increasing muscular excitability, blood flow and recovery. Levels of ATP in the blood are responsible for controlling muscle excitability, directly stimulating growth within the muscles. Peak ATP increases the body's levels of extracellular ATP. As a result, it enhances muscular growth, power and strength, while improving recovery — allowing athletes to push themselves further. Importantly, Peak ATP is the only form of oral ATP delivery shown to enhance athletic performance and body composition. ■

STIMUL8 MUSCLE COMBINES THREE FUNDAMENTAL INGREDIENTS (CAFFEINE, CARNOSYN AND PEAK ATP) AND MORE INTO ONE GREAT-TASTING PREWORKOUT. PICK YOURS UP AT THE VITAMIN SHOPPE TODAY.

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MuscleTech VaporX5 Next Gen ▶

The biggest name in preworkout is back. MuscleTech researchers reinvented the preworkout category again. VaporX5 Next Gen is the most complete five-in-one preworkout formula available. It delivers unparalleled energy, extreme muscle pumps and performance, a surreal sensory experience plus scientifically validated muscle-building power! This intense formula has everything you could possibly want in a preworkout and nothing you don't. VaporX5 Next Gen delivers uncompromising potency and power for your best workouts ever.



POWER & PERFORMANCE

◀ MRI NO2 Full Cycle

MRI's NO2 Full Cycle has a new look and an enhanced formula. NO2 Full Cycle is the very epitome of musclepumping, nutrient-flooding, nitric oxide-inducing supplementation. It is formulated with key ingredients to unlock unprecedented vasodilation, athletic performance, strength, efficient workout recovery and now antioxidants to help protect cells.



Kill Cliff Recovery Drink is the perfect choice after a long workout, long night out or whenever you need to get back to full speed. It's a tasty and lightly carbonated blend of B vitamins, ginger extract, green-tea extract, plant enzymes, electrolytes and other functional ingredients. No artificial colors or flavors. Sugar-free, gluten-free and only 15 calories per can. Go to killcliff.com, #KILLTHEQUIT.



■ GAT Sport PMP

PMP preworkout's clinically tested formula provides strength results the first time you train with it. PMP is creatine-free and comes in stim or stim-free varieties, which makes it ideal for training any time of day. Both bring extremely focused sessions, rapid massive vascular pumps and peak muscle-performance gains. It's designed for athletes to take their training to the next level.



Inner Armour Isolate Zero ▶

Inner Armour has done it again. Inner Armour's Isolate Zero is thirst-quenching, protein-loaded, musclebuilding deliciousness. Isolate Zero brings together superior 100 percent whey protein isolate in an incredibly light formula with the best taste you have ever had in a protein. It contains 20 grams of protein, zero sugar, zero fat and zero lactose, but it's 100 percent amazing. Lighten up and enjoy Isolate Zero.



■ Betancourt Nutrition Lean Gainz

Lean Gainz combines food sources of protein (whey and beef isolate) and high-quality carbohydrates (quinoa, buckwheat, bran, brown rice bran and pea starch) to support lean muscle growth in athletes and bodybuilders. It's perfect for meal replacements or as a between-meal boost, and Lean Gainz can help you bulk up and replenish nutrients after hard workouts.



Nubreed Nutrition's Helix BCAA is one of the besttasting branched-chain amino acid products available. Featuring an impressive 10:1:1 ratio of leucine, isoleucine and valine, high-quality electrolytes, alphahydroxyisocaproic acid and agmatine, it is a must-have intraworkout recovery drink.





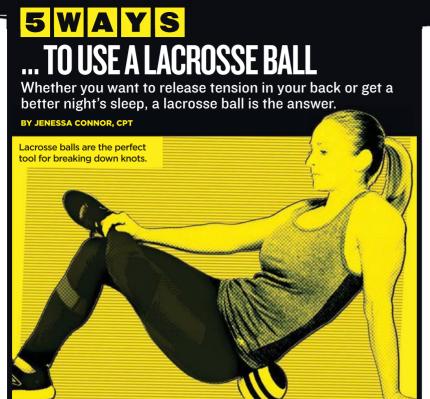
Dymatize ISO100

ISO100 has what your body needs to build and repair muscle faster. Each serving delivers 25 grams of pure and fast-digesting hydrolyzed 100 percent whey protein isolate, 5.5 grams of branched-chain amino acids, 2.7 grams of leucine, and not much of anything else. It is free of gluten and lactose, with only one gram or less of sugar and fat. ISO100 quickly replenishes amino acids, making it ideal to use throughout the day, such as first thing in the morning to stop catabolism or right after an intense workout to aid in muscle recovery. ISO100 is available in several delicious flavors including birthday cake, fudge brownie and cinnamon bun.

Optimum Nutrition Cake Bites >

Optimum presents a deliciously whipped highprotein snack with 20 grams of protein and just 5 grams of sugar per three-cake serving. Tempting Cake Bites make any day feel like a cheat day. ■





your own bodyweight can come pretty close. This technique, called selfmyofascial release, targets those trigger points, helping break up and loosen adhesions to improve mobility and decrease pain. Position the ball under the affected muscle and roll around

until you find the tenderest spot. Hold

here and use your bodyweight to press

against the ball, relaxing and breathing

Sometimes it's not enough

hit isolated areas. Not sure where to start? Here are five ways you can use a lacrosse ball to improve mobility and performance while also relieving aches, pains and even insomnia.

ecently, the lacrosse ball has

ball makes an excellent tool for a num-

ber of reasons: It's cheap, accessible

and small enough to carry around in a gym bag. And, unlike rollers and

wands, which apply pressure to a rela-

tively large surface area, the lacrosse

ball can be used in a targeted way to

rolled off the playing field and

into your gym. A companion to

the foam roller, this hard rubber

PULL THE TRIGGER

Ideally, all the structures of the body - skin, bones, muscles and connective tissue - should slide easily over and around each other. But injury and repetitive movements create inflammation in the soft tissues, causing the formation of adhesions, aka knots.

Although nothing breaks up a knot like the elbow of a well-trained massage therapist, a lacrosse ball and

RELEASE FOR ROM

deeply for 30 to 90 seconds.

to smash a muscle into submission, especially when your aim is improved range of motion. In these instances, combining SMR with slow movement — otherwise called active release — can help. According to research published in the Journal of Physical Therapy Science, people with prolonged neck pain and stiffness were able to significantly increase their range of motion with twice-weekly sessions of active release in only three weeks time.

To do active release, find the tender spot in your muscle and press your bodyweight into the ball, as with SMR.

Hold that pressure as you move your limb through its full range of motion. For example, place a ball between the leg of a squat rack and your shoulder/ pec connection. Press into the ball as vou move your arm up, down, side to side and around in a circle

RELAX THE BACK

The back is a constant source of tension, and tightness here can affect your posture and performance in and out of the gym. Unfortunately, massaging the muscles on either side of your spine can be a tricky affair, since you can't really roll a rock-hard rubber ball along the tender nubs of your spine.

Time to MacGyver it: Tape two lacrosse balls together into a peanut shape. Lie on the ground and place the balls under your back so your spine rests in the space between them. Roll up and down along the spine for 60 to 90 seconds after a workout, or after a long day of sitting.

SANDWICH AND SAY AHH

On Tuesday you crush your pullup workout; on Wednesday you can't open a jar of pickles. Sound familiar? To relieve achy forearms and a fried grip, place one lacrosse ball on a table and position your forearm over the top of it, palm facing up. Place a second ball on the opposite side of the arm, so your arm is sandwiched in between the two balls, and use your free hand to press down firmly. Hold the balls in place as you flex, twist, turn and stretch your wrist for 30 to 90 seconds, then reposition the balls and repeat.

SLEEP SOUNDLY

You know you should prioritize rest and recovery, but sometimes it's tough to turn off the lights (and your brain). Gentle SMR can help activate the parasympathetic nervous system, decreasing your heart rate and relaxing your muscles as you enter "rest and digest" mode. While maintaining a passive, restful position (sitting or lying down), roll the ball gently over and underneath tense muscles, breathing deeply and letting your muscles relax and release for several minutes.



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