Wellrounded Athlete
Ultimate Recovery Protocol

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“There is no such thing as over-training...only under-recovery”

- Unknown

While this may be slightly exaggerated, most people are FAR below their true recovery potential. Recovery is not a passive process and it isn’t something that happens at a fixed rate. Our recovery is influenced by a huge number of inter-related variables...and many of these are under our control. **The purpose of this ebook is simple: to give you proven tools to maximize your recovery so you can train with more frequency, volume, intensity, complexity, and/or any combination of those.**

**Considerations:** Recovery is a complex-multifaceted topic. This recovery protocol uses many different techniques to optimize recovery from each training session. It should be performed once per day at the designated times.

I am a firm believer that **everything you DO, FEEL, or EXPERIENCE, speaks directly to your cells and influences your epigenome.** Every second of every day we are talking to our cells.

You might ask HOW?
- The quality of air, water, and food we ingest
- What we put on our skin
- How we train/practice
- How we move throughout the day

Speaking to our cells properly, especially before, during, and after our training session(s) is critical to maximize performance.

In this same vein, I want to emphasize the importance of a proper warmup and cool down. This is you telling your body, “Hey, we’re about to do this specific thing, and it’s going to be really difficult so get ready.”

If you don’t tell your body to prepare for it, the result will likely be more musculoskeletal damage from training, and prolonged recovery (or injury).
Likewise, when the training session is over, you need to let your body know: “Hey, that’s over. Let’s start winding down, get rid of any junk, and start healing so we can do it better next time.”

Now, don’t confuse what I’m saying here: A healthy, mobile body shouldn’t require an excessive warm up. Mother nature didn’t care if our ancestors could warm up before a lion started chasing them. A street thug doesn’t care if you haven’t warmed up before he snags your backpack and runs. But whenever there’s the option to warm-up, you should. And the option is almost always there for most people.

Another consideration: Sitting KILLS you (and your recovery). If Abraham Lincoln is a metaphor for your recovery, John Wilkes Booth is a metaphor for sitting. If you have any hope of maximizing your recovery, you MUST sit less. (Tip: Squatting is the new sitting)

*In the five steps below, I’ll show you exactly what I do before, during, and after every movement session. I’ll also share exactly WHEN to do it, and tell you WHY (with research to back it up).*

I hope you find this information useful and applicable to your training.

**Step 1: 10-20 minute general and specific warmup**
*When:* Immediately before training session.
*Why:* Proper warmup helps prevent injury ([study](#)) and prepares all of the systems and tissues of the body for training. It also activates the muscle and tissue of the body that might otherwise limit your performance in that training session ([study](#)).

**Step 2: 10-20 minute active cool down**
*When:* Immediately after training session.
*Why:* An active cool down flushes the metabolic waste from the tissues and helps signal to the body and mind that the stressor is over and it can begin shifting into “rest and digest” mode by lowering resting heart rate and increasing cardiac vagal tone - a physiological index of stress ([study 1](#), [study 2](#)).

**Step 3: 30-50 grams whey protein, 3-5 grams glutamine, 3-5 grams BCAAs, 1-3 g Fish oil**
*When:* As soon as possible after training.
*Why:* This is a powerful anabolic cocktail to fuel cellular recovery. Whey protein speeds tissue repair and accelerates recovery ([study](#)). Protein consumption is necessary to maximize the adaptive response from the musculoskeletal system ([study](#)).

  Glutamine is the most abundant free amino acid in the human body and is critical for immune function. Healthy immune function is a basic requirement for muscular adaptation
(hypertrophy, strength, speed, etc.), and ensuring adequate levels of this vital amino acid is key to the adaptation process (study).

Training increases the demands of BCAA’s in skeletal muscles. Supplementing with BCAA’s pre- and post-workout will decrease exercise-induced muscle damage, and promote protein synthesis (study).

Fish oil reduces heart rate and oxygen consumption during training while still allowing for the same level of performance (study). Another study showed that increased concentrations of omega-3’s in the muscle cell walls made the tissue more elastic, flexible, and reduced the chance of physical damage to muscle tissue during exercise. If that wasn’t enough, the same study showed that people with higher levels of omega-3 had reduced DOMS, and better quality of life.

**Step 4: 15-30 minutes of meditation with relaxing music and diaphragmatic breathing**

*When:* Ideally, this is done IMMEDIATELY after training to trigger the parasympathetic nervous system and signal to your body to begin recovery. Also very effective immediately before sleep. Realistically, this step is best done after step 3, but before you drink your AA Blend in step 5.

*Why:* Meditation and diaphragmatic breathing has antioxidant properties, helps clear lactic acid, reduces cortisol, and increases melatonin (study). The right music aids in recovery from cardiovascular, musculoskeletal, and psychological fatigue (study).

   *This study* showed that, “Music can reduce sympathetic nervous system activity, decrease anxiety, blood pressure, heart and respiratory rate and may have positive effects on sleep via muscle relaxation.”

**Step 5: AA Blend (Antioxidants-Adaptogens)**

- 4-6 oz tart cherry juice
- 2-4 oz blueberry juice
- 1-2 scoops green antioxidant blend
- 1 tsp ginger powder
- 1 tsp turmeric powder
- 1/2 tsp ashwagandha powder
- 1/4 tsp black pepper
- 400-600 mg chelated magnesium

*When:* 30 minutes after step 3, so the dairy from the whey protein will not interfere with absorption of antioxidants and other nutrients.

*Why:* Antioxidants and adaptogens are essential for recovery and adaptation to the stresses of training.

   Tart cherry juice is rich with antioxidants and anti-inflammatory properties and has been shown to reduce muscle pain, muscle damage, and decrease strength loss after hard training sessions (study 1, study 2).

    Blueberries have a similar effect; they up-regulate the body’s adaptive processes, and help accelerates the recovery of peak muscle strength (study).
A broad spectrum antioxidant may not directly increase performance but is more of a strategy to improve longevity and reduce collateral damage from training [study 1, study 2].

Ginger is a potent adaptogen and anti-inflammatory. It has been shown to reduce muscle pain after exercise-induced muscle damage [study 1, study 2].

Turmeric is in the same family as ginger and has similar anti-inflammatory, and pain-reducing properties. It also stimulates myogenesis (muscle growth and regeneration) in muscle tissue [study 1, study 2].

Black pepper increases the bioavailability of turmeric by over 2000% [study]. It also increases bioavailability of resveratrol, polyphenols, CoQ10, beta-carotene, and likely many more substances [source]. It plays an important role in stimulating the digestive enzymes of the pancreas, and increasing digestive capacity.

Ashwagandha “possesses anti-inflammatory, anti-tumor, anti-stress, antioxidant, immunomodulatory, hemopoietic, and rejuvenating properties. It also appears to exert a positive influence on the endocrine, cardiopulmonary, and central nervous systems [study].” It can also improve speed, and muscular strength in the legs and increase neuromuscular coordination [study].

Athletes participating in strength sports are especially vulnerable to magnesium deficiency [study]. If you are magnesium deficient, this vital mineral that governs over 300+ enzyme reactions throughout the body will improve performance. Magnesium has a positive influence on anabolic hormone status, and you’re deficient, your recovery will be impaired [study]. 77% of women and 72% of men in France are magnesium deficient [study], and an estimated 75%+ of the population in the US is deficient [source].

**Tip:** DO NOT regularly rely on NSAIDs (non-steroidal anti-inflammatory drugs) to reduce muscle soreness from training. They can have a host of side effects and inhibit your adaptation to training [study 1, study 2, study 3].

I realize not all of these will fit into everyone’s lifestyle, and it may not be financially feasible, or practical to use ALL of these ALL the time, but the more of these you are able to do, the better off you’ll be with your recovery.

**Final Thoughts:**
If you want to go higher in your performance, you MUST go deeper in your recovery.

The ancient Chinese principle of Yin and Yang are very valuable to understand and apply when it comes to training and recovery.

If you tend to be very yang/stressed/amped all the time, or if you feel like you’ve hit a wall in your performance, it’s time to deepen your recovery.

The most elite performers have the highest highs and the lowest lows.
Anecdote: Marcelo Garcia (said to be the best grappler who has ever lived) once was napping right before his match in the Submission Wrestling World Championships. He had a deep low/yin right before his highest high where he proceeded to kick his opponent’s ass.

Food for thought: How can you get lower lows (deeper sleep, less stress, more meditation, more relaxation)? You’ll find these will likely lead to higher highs.

**If you want better PERFORMANCE (yang), you must have better RECOVERY (yin).**

(References and About the Author below)
References:

1. **The Importance of Warmup and Cool down**

   The role of warmup in muscular injury prevention.

   Effects of functional exercises in the warm-up on sprint performances.

   Cardiac vagal tone: a physiological index of stress.

   Influence of cool-down exercise on autonomic control of heart rate during recovery from dynamic exercise.

2. **Whey Protein**:

   Supplementation with a whey protein hydrolysate enhances recovery of muscle force-generating capacity following eccentric exercise

   Ingestion of casein and whey proteins result in muscle anabolism after resistance exercise.

   Effect of a proprietary protein supplement on recovery indices following resistance exercise in strength/power athletes

   Protein supplementation augments the adaptive response of skeletal muscle to resistance-type exercise training: a meta-analysis.

3. **BCAAs**

   Exercise Promotes BCAA Catabolism: Effects of BCAA Supplementation on Skeletal Muscle during Exercise

   BCAA intake affects protein metabolism in muscle after but not during exercise in humans

4. **Glutamine**

   Glutamine, Exercise and Immune Function

   The Emerging Role of Glutamine as an Indicator of Exercise Stress and Overtraining

5. **Fish oil**:

   Fish Oil Reduces Heart Rate and Oxygen Consumption During Exercise

   Influence of omega-3 (n3) index on performance and wellbeing in young adults after heavy eccentric exercise.
6. Music:
Coping with stress: the effectiveness of different types of music.
Evaluation on the effects of relaxing music on the recovery from aerobic exercise-induced fatigue.
Music improves sleep quality in students.

7. Meditation/Breath Control
Diaphragmatic Breathing Reduces Exercise-Induced Oxidative Stress
Roles of meditation on alleviation of oxidative stress and improvement of antioxidant system.

8. Tart Cherries:
Efficacy of tart cherry juice in reducing muscle pain during running: a randomized controlled trial.
Antioxidants in Exercise Nutrition
Efficacy of a tart cherry juice blend in preventing the symptoms of muscle damage.

9. Blueberries
Effect of New Zealand blueberry consumption on recovery from eccentric exercise-induced muscle damage.
Research Review: Can blueberries beat muscle soreness?

10. Ginger
Ginger (Zingiber officinale) reduces muscle pain caused by eccentric exercise.
Influence of Ginger and Cinnamon Intake on Inflammation and Muscle Soreness Endued by Exercise in Iranian Female Athletes

11. Turmeric
Potential Therapeutic Effects of Curcumin, the Anti-inflammatory Agent, Against Neurodegenerative, Cardiovascular, Pulmonary, Metabolic, Autoimmune and Neoplastic Diseases
Systemic administration of the NF-kappaB inhibitor curcumin stimulates muscle regeneration after traumatic injury.
Curcumin effects on inflammation and performance recovery following eccentric exercise-induced muscle damage

12. Black Pepper

Black pepper and its pungent principle-piperine: a review of diverse physiological effects.

Piper nigrum and piperine: an update.

Influence of piperine on the pharmacokinetics of curcumin in animals and human volunteers.

13. Ashwagandha

Effects of Withania somnifera (Ashwagandha) and Terminalia arjuna (Arjuna) on physical performance and cardiorespiratory endurance in healthy young adults

Effect Of Ashwagandha (Withania Somnifera) Root Powder Supplementation On The Vo2 Max. And Hemoglobin In Hockey Players

Scientific Basis For The Therapeutic Use Of Withania Somnifera (Ashwagandha): A Review.

14. Magnesium:

Magnesium in disease prevention and overall health.

Effects of magnesium supplementation on testosterone levels of athletes and sedentary subjects at rest and after exhaustion.

Update on the relationship between magnesium and exercise.

15. NSAIDs

[Sports injuries and NSAID].

Practical management: nonsteroidal antiinflammatory drug (NSAID) use in athletic injuries.

16. Antioxidants

Oxidants, antioxidant nutrients and the athlete

Exercise and oxidative stress: significance of antioxidants with reference to inflammatory, muscular, and systemic stress.
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Justin Goodhart is a teacher, coach, athlete, and writer living in Denver, Colorado. He believes in the power of play and practice, and regularly trains martial arts, parkour, and gymnastics (among other things!). His blog, Wellrounded Athlete, is dedicated to providing knowledge and inspiration for those hungry to improve the quality of their lifestyle, nutrition, and movement. He firmly believes, “the longer and stronger you are able to pursue your higher purpose, the better every single person on the planet will become.”

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