

*The only aspect of bodybuilding more important than training effort is attention to adequate recovery.*

**Recovering** from your workout begins the moment you end your last set, and it's recovery, **not the workout itself**, that is vital for making progress. If you blast several muscle groups in a workout, recovery actually begins **during your workout**, when you transition from one muscle group to another! As a matter of fact, recovering **between sets** dictates the nature of training stimulus, so recovery actually starts **after your very first set**.

The vital nature of recovery for making gains is why we've created **Recovery Factor X™** (RFX): A precise combination of electrolytes, carbohydrates, essential amino acids (EAAs), and pump enhancing ingredients to ensure **hydration**, preserve precious muscle **glycogen**, and get an **anabolic / anti-catabolic** jump start on recovering from your workouts.

## **Activate... Recovery Factor X™ !**

To prepare for battle, a warrior arms himself **before** stepping on the battlefield. Therefore, we suggest you start consuming Recovery Factor X™ 10-15 minutes **before** and **throughout** your workout to enhance recovery from start to finish. And because these sessions can be brutal (and long), we've added the major electrolytes lost in sweat to help keep you well hydrated. Additionally, electrolytes help with taste, and we've balanced our flavoring system with a variety of mineral salts to make sure Recovery Factor X™ tastes ridiculously good.

You'd be mistaken if you think we've just concocted a fruity drink you might order on the beach with a cocktail umbrella. The meat n' potatoes components of **Recovery Factor X™** triage **recovery** and **anabolism** with carefully chosen carbohydrate, EAAs and pump-enhancing ingredients:

- Performance **Carbohydrate** And Neurogenic Fuel Blend
- **Essential Amino Acid** Myotropic Matrix
- Vasoactive **Pump** Matrix

## Recovery Factor X™ Triage



### **Recovery Factor X™ : Supplement Synergy Strategy**

When it comes down to it, making muscular gains is about going beyond simply recovery: Building muscle size, day by day, inch by inch, requires a **net positive** effect on muscle protein balance. Reducing **muscle breakdown** [probably by increasing **insulin** levels] is one way that including **carbs** in your peri-workout recovery drink gets this done. Intra-workout carbs also reduce post-exercise **cortisol**, a important predictor of muscle growth over the long haul. Admittedly though, the science is a actually bit fuzzy as to the acute and long haul benefits of peri-workout carbs for packing on size per se, but including carbs in a recovery drink primes your muscles for restoring **glycogen** (see [Cyclic Dextrin®](#) below) and there's certainly **no disadvantage** to intra-workout carbohydrate.

Before we get into the details of **Recovery Factor X™**, be sure you don't lose sight of the **big picture** when crafting your intra- and post-workout **strategy**. Intra-workout nutrition is just one piece of the puzzle: Substantial gains may very well mean consuming **more carbohydrate** and/or **protein** (and **calories!**) than subjects following most research protocols. For example, supersizing your post-workout carbohydrate (e.g., with 90-100g) may or may not inhibit protein breakdown. However, a glycogen-filled muscle cell is generally a more anabolic one and a brutal weight training workout dramatically elevates metabolic rate, and can even temporarily prohibit glycogen replenishment despite eating a high carbohydrate diet. This may be why one study found that hard training plus massive (>350g)

carbohydrate supplementation (even without additional protein!) produces substantial gains in muscle mass without increased body fat.

Obviously protein has its role, too. While consuming more than ~40g of post-workout **protein** may not further increase protein **synthesis**, doubling this amount!] creates the **positive protein balance** we want by blunting protein **breakdown**. While adding more and more protein to the diet beyond a certain point isn't a magic bullet for building more muscle, there is also little risk of adverse health effects or gaining body fat from simply from eating large amounts of protein.

Essentially, **Recovery Factor X™** is a great way to jumpstart a recovery strategy based on a sound diet replete with carbs, protein, and calories.

### **Performance Carbohydrate And Neurogenic Fuel Blend**

- Recovery Factor X™ contains **highly branched cyclic dextrin** (as [Cyclic Dextrin®](#)) to enhance gastric emptying and minimize gastrointestinal discomfort during exercise [including burping and gas, which your training partner benefit will appreciate]. By more rapidly ushering glucose from the stomach to the small intestine and blood stream, [Cyclic Dextrin®](#) can improve performance, and maintain higher glycogen levels, giving you a head start on recovering for your next workout.
- To ensure sustained blood glucose during your workout, we've also included 6 grams of **Isomaltulose** (as [Palatinose®](#)), a disaccharide that produces a steady blood glucose, much lower than even table sugar.
- **N-Acetyl L-Tyrosine** is Recovery Factor X™'s soluble source of L-tyrosine, a precursor for catecholamine synthesis (e.g., noradrenaline and dopamine), thus supporting brain neurotransmitter levels and cognitive performance. When under duress (e.g., during a killer workout), tyrosine supplementation may actually promote the aggressive mentality needed to drive through previous performance barriers.

### **Essential Amino Acid Myotropic Matrix**

- We included the **Essential Amino Acid (EAA) Myotropic Matrix** because it's the **essential** [not the non-essential] **amino acids** that trigger muscle protein synthesis. Leucine (3g) sits atop this EAA stack because of its primacy in triggering protein anabolism. We were sure focus on the other branched chain aminos (BCAAs; Isoleucine and Valine at 1.5g each) as well, because the BCAAs are known to reduce muscle breakdown and post-exercise soreness and damage.

- The other EAAs blended in the Myotropic Matrix are based on the anabolic EAA mixture used extensively in research, adjusted slightly to take advantage of the anabolic signaling and insulin-releasing effects of lysine and phenylalanine.

### **Vasoactive Pump Matrix**

- **Recovery Factor X™** contains 3g of **L-Citrulline**, which if consumed alongside **ArcReactor™** (our preworkout formula containing 6g of L-Citrulline) or some other 3-6g source L-Citrulline, provides an adequate dose to bolster nitric oxide synthesis [elevating both arginine and nitrite!], open up blood vessels, drive more blood into muscle, improve exercise performance, and perhaps even reduce muscle soreness. L-Citrulline gives you a pump, performance enhancement and recovery potential, all in one!
- **Taurine** is a  $\beta$ -amino acid vital for a plethora of cellular processes including **maintaining cell volume**. Adequate taurine stores are necessary for optimal muscle force production and useful to prevent muscle cramps. Although endurance exercising rodents seem to get an ergogenic boost from taurine, differences in taurine metabolism probably explain why this hasn't generally panned out in humans, at least during endurance events;Rutherford, 2010 #10715}. On the other hand, a 1-2 gram dose of taurine was **ergogenic** in an all-out 11 min effort and increased fat burning during a 90 min bout. Still, taurine's a perfect fit in **Recovery Factor X™**: Daily supplementation with taurine and BCAA (in our Myotropic Maxtrix) can speed recovery by reducing post-exercise muscle damage and oxidative stress, **without** sacrificing the normal adaptive free-radical quenching adaptations sent in motion by training.
- The **casein-derived tripeptides** in **VasoDrive-AP™** have been demonstrated to normalize blood pressure by inhibiting angiotensin converting enzyme (ACE). Inhibiting ACE and/or blocking the angiotensin II receptor also improves insulin sensitivity - vital for muscle blood flow and a good pump - and protects your muscle cells (and their mitochondria) against age and free-radical related dysfunction. However, it's the potential **ergogenic effects** of lowering ACE activity that have prompted the suggestion ACE inhibitors be scrutinized as doping agents!
- [Capros®](#) is a concentrated extract from **Indian gooseberry** (a.k.a. amla) with powerful antioxidant properties. [Capros®](#) improves markers of cardiovascular risk(e.g. C-protein levels) and blood vessel function, vital for a skin-splitting pump. [We've intentionally limited the dose of [Capros®](#) to ensure that it's anti-

oxidant quenching power ([ORAC](#) value) is roughly that of a few oranges, i.e., far less than what could endanger your gains.]

**Disclaimer:** L-Tyrosine may interact with certain drugs (such as MAOIs, Levodopa and thyroid medications).