

The University of Michigan Rugby Football Club

Manuscript on Nutritional Supplementation

The aim of this handbook is to provide The University of Michigan Rugby Football Club players with a brief but insightful guide into appropriate nutritional supplementation.

The first thing to remember is that supplements are just that, supplements. They are not designed to replace your meals or normal daily energy intake but instead are designed to provide you with additional, easy to consume minerals or nutrients. Before we even consider a supplement we must first ensure our body is appropriately conditioned to accept it. Trying to build a healthy, optimally functioning body out of poor ingredients is like trying to put icing on an unmade cake. Considering this, adding performance supplements to an unmade, un-iced cake is worthless. Take time to choose, prepare and cook good, healthy food. Prepare your body. You are what you eat.

The sports supplement industry accounts for an annual sale of more than \$4bn in the US alone. To enhance their marketing potential and compete for sales, many of these companies make unsubstantiated claims concerning the efficacy of their products. Further to this, companies will often suggest excessive dosage amounts (particularly in weight gainers and protein powders) so that you return to the store in a matter of weeks having excreted all the excess they've encouraged you to consume. They are a business after all. The following paragraphs will suggest the recommended amounts in contrast to the suggestions of the majority of companies.

Finally, realize that the gains you will see as a result of this program are completely individualized. Genetics, age and training experience alongside program compliance/progression will dictate a good portion of your supplement response.

Whey Protein Isolate

There is convincing evidence that whey protein and EAAs (essential amino acids) either before or after exercise improves muscle protein synthesis and maintains the training athlete in a positive net protein balance during recovery. On a daily basis it is recommended that the weight training athlete consumes 0.7g to 1.0g of protein per lb of body mass. Amounts over 1.0g of protein per lb of body mass per day are unnecessary for any athlete; the excess will simply be excreted by the body. Remember that daily meals will account for at least 40-60g of protein per day if not more, thus not all protein needs to be provided by your supplement.

Timing of protein ingestion is particularly important, whilst there is no significant difference as to before or after, it is recommended that you consume your protein supplement within 30 minutes either side of training. Some users prefer to wait until after the workout as it gives the athlete something to look forward to.

Suggested product and usage

Syntrax Nectar

1 serving of Syntrax Nectar will provide you with 23g protein. I would recommend taking 2 shakes (1 scoop in a shake) 1 immediately after workout and one in the evening if working out in the morning. Take one shake in the middle of the day during rest days.

Mass Gainer

Gaining mass is the aim of many athletes, be they power lifters or rugby players. Put simply, in order to increase body mass you must consume more calories than you expend. That means the total amount of calories you consume must account for your basal metabolic rate as well as any expenditure due to physical activity...and then some. In some cases this may mean that a daily intake of 3,000kcal to 4,500kcal is necessary, particularly in larger, leaner individuals and in periods of heavy training. As expected, consuming the quantity of food required to fulfill 3,500kcal is challenging. Commercial mass gainers provide you with a convenient, easy to stomach supplement with a larger caloric dose per serving than simple 'Whey' mixtures. Much of this caloric intake is provided by a hefty serving of simple sugars such as maltodextrin. Ideally, mass gainer should boast a 2:1/3:1 carb to protein ratio. Some companies will pack their products with carbohydrate and minimize necessary protein (Optimum Nutrition, Serious Mass 5:1). Do not be fooled by these companies. In some cases it makes more sense to consume a protein isolate (without carbs) beverage and add additional carb to the shake, for example an accompanying banana or oats. There are however some companies out there that provide you with a more appropriate ratio and so these mass gainers can be very useful. One thing to look out for on weight gainers is the amount of cholesterol that it contains. A lower amount of cholesterol is ideal.

BSN True Mass is ideal since it contains multiple blended proteins, including those that can be absorbed quickly post workout and also slow release proteins such as Casein which are ideal for night time recovery. In addition to this, the BSN carbohydrates are not high glycemic. This prevents that bloated, sick feeling that is associated with many cheaper brands.

Suggested product and usage

BSN True Mass

There are 18 servings in this tub. The suggested serving on this mass gainer is 3 scoops per shake providing 630kCal per serving. If you took 2 True Mass shakes per day (as suggested) this would only last you 9 days. Not ideal for the wallet. From experience I can tell you that an adequate amount to take (with virtually all products) is $\frac{2}{3}$ to $\frac{3}{4}$ the recommended dosage. If you are serious about gaining mass I would recommend purchasing 1 tub of BSN True mass and taking 2 shakes consisting of 2 scoops per day on workout days, and only 1 shake consisting of 2 scoops per day on rest days. This will last you 2 weeks. You will then have to purchase another tub. I would recommend sticking with this despite the expense. Be under no illusion that without the proper and adequate nutrition to support your training you are going to feel like you've been hit by a bus, lethargic and under motivated

Creatine

Creatine Monohydrate is the most studied ergogenic aid in sports performance. Creatine occurs naturally in red meats and 'fast' fish such as Tuna and Herring and is an essential component of the ATP-PC system (the fastest energy system) used for short duration sprints and explosive movements. Since this creatine exists in a monohydrate condition, consumption and uptake into the muscle will also draw water into the muscle causing an increase in cell mass and thus overall body mass. It has been suggested that creatine use over an extensive number of years places a strenuous load on the kidneys though no longitudinal evidence has confirmed this suggestion.

Suggested product and usage

Allmax Nutrition Creatine

There are two ways to load for creatine 1. 4 x 5g per day with 16oz of water each time, do this for 7 days and then reduce your creatine intake to 3-5g per day for the period of training. 2. 5g per day with 16oz of water for 14 days will usually saturate your systemic levels of creatine, maintain at 3-5g per day thereafter.

BCAA (Branched chain amino acids)

The claims that BCAAs reduce protein breakdown are mainly based on early cellular studies. Several human studies performed thereafter failed to confirm the positive effect on protein balance that had been observed. No BCAA supplementation studies to date have demonstrated an improved nitrogen balance during or after exercise. Therefore, no valid scientific evidence supports the commercial claims that orally ingested BCAAs have an anticatabolic effect during or after exercise or that BCAA supplements may accelerate the repair of muscle damage after exercise.

No product recommended

Pre-workout supplements

NO Xplode

Jack'd 3D

These pre-workout supplements tend to have a large amount of caffeine, sugars and compounds that stimulate epinephrine or adrenaline release. If you feel chronically lethargic or under-motivated going into the gym then these products may work for you. However, be prepared to have a come down following the gym session. Personally I don't think they're necessary (worth the money) and have not yet been studied extensively to determine any effects on health.

No product recommended