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MASS GAINER POWDER; Helps to increase muscle mass, reduce body fat increases strength & Keeping muscles healthy and optimising their repair to maximise performance

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ABSTRACT

Keeping muscles healthy and optimising their repair after training is extremely important in sport to maximise performance. For many sports, it is also desirable to increase muscle mass, reduce body fat overall and increase strength where necessary. This review summarises the current available scientific literature regarding the effect of **MASS GAINER POWDER; Helps to increase muscle mass, reduce body fat increases strength & Keeping muscles healthy and optimising their repair to maximise performance.**

Keywords: MASS GAINER POWDER, Muscle mass, Strength

INTRODUCTION

How to gain muscle mass?

Gaining lean body mass involves a combination of strength training, which acts as a stimulus for muscle growth, and a balanced diet, which provides the energy and nutrients to grow at the optimal rate. for an athlete it is best to modify his body composition outside of competition season.

Training programme

Overload

You need to load your muscles with weights/resistance greater than they are used to. When this additional stress on the muscle is combined with recovery time and optimal nutrition, the muscle will repair, strengthen and ultimately grow in size.

Progression

You must continue to increase the weight or number of repetitions to increase your resistance and continue gains from overloading your muscles.

Goal

Your muscles need to bentrained specifically for the outcome you desire. If endurance gains are your target, then lower weights with higher repetitions are important; for higher maximal

strength training, aim for fewer repetitions but a greater weight load.

HOW TO KEEP MUSCLES HEALTHY

Positive energy balance to build muscle

This means having more kilojoules (kJ) each day than you would normally require; an extra 2000-4000kJ is ideal.It is however important to remember that these kJs need to come from GOOD quality food and drinks, and it's not an opportunity to eat junk food or overindulge in high fat, salt or sugary options.

Carbohydrate intake

Ideally base all meals and snacks on carbohydrate rich foods. Also include plenty of fruit and vegetables each day. Having fruit juice or low fat milk with meals can help increase your daily kJ intake. Consuming adequate carbohydrate is extremely important to ensure that protein is not used to fuel a workout.

Adequate protein intake

Aim for between 1.2-1.8g protein per kg of body weight, depending on your training/stage of life. Include protein rich foods in all your meals and snacks e.g. lean meat, skinless chicken, eggs, fish and milk products. For optimal muscle recovery after a strength training workout it is ideal to have between 20-25g protein straight after, along with some carbohydrate. Despite the focus on protein, having more than you need will NOT increase strength or size gains and is unnecessary.

Eat and drink frequently

Aim to eat every 2-3 hours. This will allow you to increase your food and kJ intake without feeling overly full. Easy snacks between meals include smoothies, milkshakes, cereal/muesli bars, low fat yoghurt, tuna on crackers, breakfast cereal and low fat milk or sports bars.

Refuel as soon as possible after training.

A carbohydrate and protein rich snack needs to be eaten ASAP after training to maximise muscle repair and recovery. Alcohol should be completely avoided at this time as it will compromise muscle recovery.

Be patient

Increases in body mass of 2-4 kg per month are considered achievable but will depend on how you respond individually to strength training. Muscle gains will not happen overnight though, so be patient. There will be a limit to the increase in muscle mass over time.

How mass gainer powder helps to increase muscle mass

Everyday food is inadequate to provide you with the nutrition you need to maximise muscle growth. MASS GAINER POWDER is quick and convenient way to include protein before or after strength training workout. It is best to seek individual advice from a sports nutritionist or dietitian when it comes to protein supplements or any other supplements for that matter.

Composition of mass gainer powder

Dietary fiber	2g	Oat & wheat
Sugars	20g	added sugar
Steviol glycosides	0.15gm	
Protein	9gm	Whey protein concentrate
Calcium	600mg	Tri calcium phosphate
Phosphorous	500mg	Tri calcium phosphate
Iron	5mg	Ferrous Bisglycinate
Sodium	300mg	Sodium sulphate
Potassium	300mg	Potassium phosphate
Manganese	2mg	Manganese sulphate
Copper	1mg	Copper Sulphate
Selenium	20mcg	Sodium Selenite

Magnesium	300mg	Magnesium sulphate
Vitamin A	0.6mg	Retinal palmitate
Vitamin C	30mg	Ascorbic acid
vitamin D	0.35mg	Ergocalciferol
Vitamin E	14.9mg	DL Tocopherol Acetate
Vitamin B1	1mg	Thiamine Mononitrate
Vitamin B2	1mg	Riboflavin
Vitamin B3	10mg	Niacinamide
Vitamin B5	6mg	Pantothenic acid
Vitamin B6	2mg	Pyridoxine HCl
Vitamin B9	130mcg	Folic acid
Zinc	100mg	Zinc Sulphate
Panex ginseng	0.01g	
L-Carnitine-L-tartrate	10mg	L- Carnitine L-Tartate

Role of whey protein concentrate in mass gainer powder

Whey and whey components offer several benefits for individuals with physically active lifestyles [1]. Whey protein is a rich source of branched chain amino acids (BCAAs), containing the highest known levels of any natural food source. BCAAs are important for athletes since unlike the other essential amino acids, they are metabolized directly into muscle tissue and these are the first ones used during periods of exercise and resistance training. Whey protein provides the body with BCAAs to replenish decreased levels and start repairing and rebuilding lean muscle tissue. Essential amino acids and whey protein are equally effective in stimulating muscle protein synthesis in elderly individuals [2]. These amino acids provide an energy source during endurance exercise which allows athletes to train more intensively for longer periods of time [3]. Moreover, whey protein is an excellent source of the essential amino acid, leucine. Leucine is important for athletes as it plays a key role in promoting muscle protein synthesis and muscle growth. Research has shown that individuals who exercise benefit from diets high in leucine and have more lean muscle tissue and less body fat compared to individuals whose diet contains lower levels of leucine. Whey protein is easy to digest protein and is efficiently absorbed into the body. It is often referred to as a “fast” protein for its ability to quickly provide nourishment to muscles . Indeed, its consumption has been shown to result in faster muscle protein synthesis as compared to other proteins. This makes whey protein more effective than other proteins for repairing exercise-related muscle damage and building bigger, stronger muscles. Its consumption results in a higher peak amino acid concentration in the blood than other proteins [4]. Whey proteins are rich in the amino acids, arginine and lysine, which may increase the release of growth hormone, a stimulator of muscle growth. Whey protein cans creatine showing an increase in lean muscle fiber adaptations [5]. Milk protein is better than soy protein for greater gains in lean mass and greater muscle hypertrophy. 20 g of whey protein casein switches net amino acid balance to positive after ingestion. It influences muscular power and strength and increase intracellular glutathione. It increases net protein gain. The rate of protein digestion affects protein gain differently during aging in humans. Whey protein is digested faster than casein. Faster digestion gives rise to a quicker amino acid flood into muscle cells. Whey protein is the preferred protein for net protein gain [6]. Dietary protein and resistance training affect muscle body composition in older persons. Adequate intake of protein combats sarcopenia. Resistance training helps older people gain muscle, hypertrophy muscle, and increase whole body fat-free mass. Adequate intake of protein and resistant exercise synergistically can reduce sarcopenia [7].

Weight management

Studies show that achieving and maintaining a healthy weight can add years to life and help prevent weight related complications, including diabetes, cancer and heart disease. Diet plays a key

role in any weight management program and adding whey protein often helps make a positive difference. Whey protein is a good choice for diabetics who need to carefully manage food intake. It has potential as an added component in dietary plans and in functional foods aimed at control of appetite and body weight and in the management of the metabolic consequences of excess body fat. It has potential as physiologically functional food component for persons with obesity and its co-morbidities (hypertension, type II diabetes, hyper-and dislipidemia) [8]. It is the best protein for fat loss during energy restricted diets, when combined with exercise [9]. It improves body composition and reduces waist circumference. The researchers found that individuals who consumed whey protein weighed less, had less body fat [10]. Whey protein is the best protein for fat loss during energy restricted diets. It influences on appetite and hunger controlling hormones [11]. A high-protein diet reduces energy intake and adiposity and that whey protein is more effective than red meat in reducing body weight gain and increasing insulin sensitivity [12]. In addition, whey protein helps control blood glucose levels and has been shown to be beneficial for weight management, both of which are often a concern for type-II diabetics. The meal with α-lactalbumin preserves lipid oxidation and rapidly delivers amino acids for use during exercise improved the efficiency of exercise training to decrease adiposity [13].

Bone health

Milk contains several components effective for bone health. Milk basic protein promotes bone formation and suppresses bone resorption in healthy adult men. Milk basic protein is in the whey protein fraction. 300 mg of milk basic protein increases serum osteocalcin concentrations. Milk basic protein promotes bone formation and suppresses bone resorption [14]. The milk basic protein of whey is the active protein that activates osteoblast. The active component in the whey protein plays an important role in bone formation by activating osteoblasts [15].

LF is a potent regulator of bone cell activity and increases bone formation *in vivo*. It increases osteoblast differentiation and forms new bone formation. It also decreases bone breakdown [16]. It has powerful anabolic, differentiating and anti-apoptotic effects on osteoblasts, and inhibits osteoclastogenesis. It is a potential therapeutic target in bone disorders such as osteoporosis and possibly an important physiological regulator of bone growth [17]. Glycomacropeptide has shown inhibitory activity to enamel demineralization and promotes tooth enamel remineralization. Some whey components (e.g., proteose-peptones) may protect against tooth tissue demineralization, and other whey components, because of their immunostimulatory effects, may have favorable effects on dental plaque [18].

Role of vitamins in mass gainer powder

For the elite athlete's performance, vitamins are essential. In fact, an athlete's performance will drop considerably if certain vitamins are deficient in his or her diet. Vitamins are unique in that they are absorbed directly into the blood. Because of this factor, they are able to move freely throughout the body, and once they reach the cell, they can circulate inside its water-filled compartments.

Since vitamins are extremely mobile, they are also easily excreted from the body. The kidney, whose function is to monitor the blood that flows through it, detects excess amounts of water-soluble vitamins and properly disposes of them. In cases of extreme excess, which is usually due to improper supplementation, there will be certain side effects that may become severe.

The B vitamins are the most crucial water-soluble vitamins that aid in the overall performance of the athlete. While vitamins in general do not yield energy like the macronutrients, the B vitamins actually assist in the utilization of that energy. The B vitamins thiamine, riboflavin, niacin, pantothenic acid, and biotin are all units of compounds called coenzymes. Coenzymes are small organic molecules that are closely associated with certain enzymes, and that aid in their function. Coenzymes are so important that the enzymes cannot function at all without their presence. The other B vitamins assists enzymes that metabolize amino acids, while folate helps in the multiplication of cells.

Role of minerals in mass gainer powder

Minerals are the other group of micronutrients the body requires. They are in a completely different class from the other micronutrients for several key reasons, including each mineral's chemical makeup, their availability through absorption from food, the interactions that take place between two or more minerals, and their roles

in the body. Since minerals are a dynamic factor in a person's performance.

Vitamins are carbon based and are therefore are organic compounds. Anything that is carbon based can be easily destroyed by heat, radiation, and most significantly, time. Minerals, on the other hand, never change in chemical makeup. They never undergo a change to another chemical compound such as we see in the conversion of retinol to retinoic acid. However, they can combine with another compound for a specific function, such as the iron in hemoglobin and myoglobin serves to transport and store oxygen.

The absorption and transportation processes of minerals by the body are a lot like vitamins in the sense that some minerals, like potassium, are easily absorbed, transported, and excreted by the kidneys, and others are not. Calcium is much like a fat-soluble vitamin in the sense that it needs assistance in the form of carriers and transporters for proper utilization. Since minerals can behave like vitamins in terms of absorption, storage, and excretion, there is the possibility that an excess of certain minerals can lead to toxicity.

The bioavailability of the particular minerals present in food can vary. Bioavailability refers to the amount of the particular nutrient that is available for absorption by the body. Some foods contain compounds called binders that actually hold on to the mineral and prevent it from being absorbed. For example, the compound known as phytic acid (phytates) in legumes, grains, split peas, and parsnips can act in this manner. In foods like spinach, rhubarb, plums, blueberries, nuts, and seeds, oxalates reduce the amount of minerals available for absorption. Although all of these foods provide great health benefits, the bioavailability of the minerals they contain will be low. To lessen this disadvantage, an athlete desiring adequate amounts of minerals would follow the diet-planning.

Role of *Panax ginseng* in mass gainer powder

Boosts Physical Performance

Several studies have reported that ginseng can help boost physical performance. Although most of these studies were concerned with muscle endurance, one study reported that male and female subjects taking 1 gram of *Panax ginseng* every day for six weeks increased muscle strength in the upper and lower body. Ginseng may increase strength because it enhances the body's own creatine production. A 2010 study by Chinese researchers found that mice that were fed ginseng for 15 days experienced less fatigue during forced swimming. The researchers discovered that one of the main ways that ginseng blunted fatigue in the mice was by increasing levels of enzymes involved in creatine production. This allowed them to have more quick energy and burn fewer carbohydrates. Greater levels of the kind of quick energy creatine promotes can lead to more strength in the gym, as well as muscle growth.

In athletic circles, ginseng is best known for its ability to boost muscle endurance. One study from Germany reported that trained athletes taking *Panax ginseng* experienced significant improvements in their aerobic capacity. A study from California State Polytechnic University reported that subjects taking *Panax notoginseng* for 30 days increased their exercise time to exhaustion by more than seven minutes. Canadian researchers reported that rats receiving ginseng for just four days increased their exercise time to exhaustion because ginseng causes the body to spare glucose and burn more fat for fuel. This not only explains why ginseng increases muscle endurance but also why it can aid fat loss.

Ginseng also may delay fatigue by directly affecting the brain. Korean researchers found that rats given ginseng before exercise showed increased time to exhaustion for treadmill running because of lower serotonin production from tryptophan in the brain. Serotonin signals fatigue, which reduces muscle strength and endurance. By inhibiting serotonin production, you can train stronger for longer.

Spanish researchers, on the other hand, discovered that rats given ginseng for 12 weeks experienced higher mitochondria numbers and greater blood-vessel density in their muscles. This means that ginseng may enhance endurance by getting more nutrients and oxygen from the blood into the muscles. With more mitochondria, muscles are better equipped to convert those nutrients and oxygen into fuel. Italian scientists reported that trained subjects taking ginseng for six weeks increased their aerobic performance through increased oxygen consumption. This may have been a result of greater blood-vessel density, as reported in the Spanish study. Or it may be because of a boost in nitric-oxide levels, which ginseng has

been shown to provoke by increasing activity of the enzyme that converts arginine into NO in the body. Having higher NO levels during workouts means that ginseng not only will increase your endurance but also will boost your muscle size and strength gains, as research confirms.

Aids muscle recovery

In addition to aiding workout performance, ginseng can aid muscle recovery after the workout is over, which also encourages greater gains in muscle mass. Spanish scientists found that rats that were fed *Panax ginseng* after completing a bout of downhill running — exercise that for rats is the equivalent to doing negative reps and is known to cause muscle damage — had significantly less damage to their thigh muscles and reduced inflammation. Korean researchers also reported that male college students taking ginseng for one week experienced less thigh-muscle damage and inflammation after an intense uphill running test as compared to those receiving a placebo. This allowed the subjects taking ginseng to maintain higher insulin sensitivity after the workout, which could further enhance recovery and muscle growth because insulin is an anabolic hormone. Chinese researchers reported similar findings in male college students following four weeks of ginseng supplementation.

Another group of Korean researchers found that eight weeks of *Panax ginseng* supplementation in men decreased exercise-induced oxidative damage by increasing free-radical scavenging. This not only helped prolong their exercise time to exhaustion but also aided their ability to recover from the workout. Similar results also were reported in animal studies.

Ginseng not only protects muscles from oxidative damage following aerobic exercise but also appears to protect the muscles from mechanical damage, like the kind that weightlifting can produce. Brazilian researchers have reported in several studies that ginseng supplementation protects the muscle fibers from damage during eccentric exercise (negative-rep training). They discovered that ginseng better protects membrane integrity and decreases the accompanying oxidative damage. This can result in better muscle recovery and growth.

Role of L-carnitine in mass gainer powder

Athletic performance and L-Carnitine

Carbohydrates are the primary source of energy. There's a reason why athletes are recommended to do carb loading few days before competition. Marathon runners typically eat pastas and grain a week before the actual event to have sufficient fuel for miles and miles. Eating complex carbohydrates gives you the necessary fuel that you can use during intense activities.

What carnitine does is to provide an additional source of energy into the equation. It converts fats into energy in cellular level. By taking carnitine from food and supplements, athletes can also rely not only on their carbohydrates but also on their body fat as fuel. This gives you an additional boost of energy in order to perform on your sport.

Anti-catabolic effect

One of the reasons carnitine is popular among athletes is the fact that it has an anti-catabolic effect. According to research, the amount of carnitine in a person's system is related to the amount of glycogen found in the muscles. What muscle carnitine does is to prevent the use of glycogen in the muscles. With this glycogen sparing effect, it becomes an anti-catabolic agent that athletes could benefit from.

Recovery

Aside from the fact that it gives the athlete additional source of energy especially during stressful situations, it has also been reported that L-carnitine comes in handy in helping the body recover.

After an intensive exercise, expect a drop in serum pH levels. It also follows that there's an increase in lactic acid concentration in the body. What L-carnitine does is to prevent damage in the cellular level especially when you are dealing with hypoxic conditions during strenuous physical activity. What carnitine does is to lessen the amount of lactic acid in the body post exercise.

It decreases the amount of the anaerobic enzyme called PFK which then reduce the rate of glycolysis. With reduced rate of glycolysis, there's fewer pyruvate molecule present which can create lactate.

SUMMARY & CONCLUSION

Keeping muscles healthy and optimising their repair after training is extremely important in sport to maximise performance. For many sports, it is also desirable to increase muscle mass, reduce body fat overall and increase strength where necessary. MASS GAINER POWDER helps to increase muscle mass, reduce body fat increases strength & Keeping muscles healthy and optimising their repair to maximise performance.

SUPPLEMENT FACTS

Presentation: POWDER

Usage

MASS GAINER POWDER helps to increase muscle mass, reduce body fat increases strength & Keeping muscles healthy and optimising their repair to maximise performance.

Contra-indications

Product is contra-indicated in persons with Known hypersensitivity to any component of the product hypersensitivity to any component of the product.

Recommended usage

Once or twice a day along with portion controlled nutritious meals and exercise. One Serving (30g- 1 Scoop) per day. “Do not exceed the recommended daily dose”.

Directions for Use

Take one level scoop (30g) with skimmed milkor water to make a cup of 200ml. Gently shake well in shaker or stir well until the powder is evenly dispersed and drink immediately.

Administration

Taken by oral route at any time with food.

Precautions

Food Supplements must not be used as a substitute for a varied and balanced diet and a healthy lifestyle. This Product is not intended to diagnose, treat, cure or prevent any diseases. Do not exceed the recommended daily dose.

Warnings

If you are taking any prescribed medication or has any medical conditions always consults doctor or health care practitioner before taking this supplement.

Side Effects

Mild side effects like nausea, headache and vomiting in some individuals have been reported.

Storage: Store in a cool, dry and dark place.

FAQs

*Is the **whey protein concentrate in mass gainer** free of hormones?*

Yes. The dairy for our whey protein concentrate comes from cows not treated with hormones.

If I'm sensitive to lactose or dairy, is whey protein concentrate in mass gainer is the best protein source for me?

Even though whey protein is traditionally low in lactose, people who are lactose intolerant and/or have dairy sensitivity should consider using our Vegan Protein or Aminos to avoid any digestive distress (gas and/or bloating).

How does mass gainer taste?

Mass gainer tastes great, but everyone is different when it comes to taste.

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