**JUNE 2014**

**SUPPLEMENT**

**HMB BOOSTS MUSCLE GROWTH, STRENGTH AND POWER**

HMB is a breakdown product of the amino acid leucine that prevents protein break-down and promotes muscle hypertrophy in people training with weights, it also increases fat-free weight (mainly muscle) and decreases fat. Other studies found that ideal HMB dosage is 38 milligrams per kilogram of bodyweight per day. It works best when taken close to a workout and consumed daily for two weeks prior to competition. It is effective in young and old people and is a safe and effective supplement for athletes and active adults. (European Journal Applied Physiology, published online March 6, 2014)

**GARCINIA CAMBOGIA PROMOTES FAT LOSS BUT HAS SIDE EFFECTS**

A study by researchers from South Korea showed that obese mice consuming a high-fat diet supplemented with *Garcinia cambogia*showed reduced abdominal fat levels and smaller fat cells compared to animals given a placebo (fake Garcinia). Animals receiving the supplement showed increased activity in genes involved in fat metabolism. However, the supplement impaired blood sugar regulation and had significant side effects in the liver that included increased connective tissue formation, cell membrane destruction and oxidative stress. If these results apply to humans, *Garcinia cambogia* might pose unacceptable health risks. Bodybuilders should avoid this supplement until we know more about it. (World Journal Gastroenterology, 19: 4689-4701, 2013)

**WHEY PROTEIN PLUS LEUCINE PROMOTES PROTEIN SYNTHESIS IN OLDER ADULTS**

Muscle loss, a condition called sarcopenia, is a significant health issue in older adults. Sarcopenia interferes with mobility and quality of life, and decreases metabolic health by reducing one of the most active tissues in the body. Overwhelming evidence shows that older adults can help maintain muscle mass by consuming a supplement containing 20 to 30 grams of whey protein and three grams of leucine at least once a day. (Nutrition Journal, 13:9, 2014)

**WHEY PROTEIN SUPPRESSES LIVER FIBROSIS**

The disease typically progresses from liver fibrosis (excessive accumulation of scar tissue in the liver that occurs in most types of chronic liver diseases) to liver failure. A study on rats by scientists from Kyoto University in Japan induced liver fibrosis with toxic chemicals. Feeding the animals a diet high in whey protein prevented liver fibrosis compared to a normal diet. Whey protein prevents inflammation in the liver that can lead to fibrosis and liver failure. It protects liver cells directly and also acts as an antioxidant. Whey protein is a healthy food that also promotes protein synthesis and weight management. (Nutrition, published online February 28, 2014)

**HEALTH**

**SATURATED FATS DO NOT INCREASE HEART DISEASE RISK**

“We used to think these were unhealthy,” said the doctor. “Now we know they are the best things for you”. Could it be that all of us are coming out of cold storage? A large meta-analysis of published studies led by Rajiv Chowdhury from the University of Cambridge in the UK concluded that high consumption of saturated fats or polyunsaturated fats did not affect the risk of cardiovascular disease. High intake of trans fats increased the risk of heart disease by 16 percent. They compared heart diseases risk between people consuming the highest and lowest amounts of various kinds of fat. The results were based on an analysis of 76 studies involving nearly 700,000 people. The study refutes dietary recommendations that people reduce saturated fat intake and replace them with foods high in unsaturated fats such as nuts, fish and vegetable oils. You should not pig out on burgers, fries and butter. Factors such as total calories and intake of refined carbohydrates and salt also affect cardiovascular health. Consider the overall dietary composition instead of concentrating on single foods. (Annals Internal Medicine, 160: 398-406, 2014)

**INTENSE TRAINING LINKED TO RHABDOMYOLYSIS**

Overzealous cross trainers may develop rhabdomyolysis (rhabdo), which involves destruction of muscle tissue that results from the release of the muscle cell contents into the bloodstream. Toxic chemicals include myoglobin, creatine kinase, potassium, lactate dehydrogenase, uric acid, calcium asparate transaminase, alanine transaminase and phosphorus. The incidence of rhabdo has increased alarmingly with the popularity of high-intensity training programs. Approximately 3 percent of people involved in physical training programs for the military, police and firefighters experience rhabdo. Physicians across the country have reported an increased incidence in ordinary people performing extreme physical training programs in health clubs. The exact percentage is unknown, but experts believe that the incidence is underreported. (Current Sports Medicine Reports, 13: 113-119, 2014)

**PROSTATE CANCER SURGERY REDUCES MORATLITY RATES**

While prostate cancer is a serious disease, most men die from other causes before succumbing to it. A Swedish study from Uppsala University found that surgical removal of cancerous prostates resulted in a substantial reduction in death rates. Men younger than 65 benefited most from the surgery. Prostate cancer deaths were 11 percent lower in men who had surgery compared to men treated with “watchful waiting”. However, prostate surgery is often accompanied by erectile dysfunction and incontinence. (New England Journal Of Medicine, 370: 932-942, 2014)

**ABDOMINAL WALL HERNIAS**

About seventy-five percent of hernias are inguinal, which protrude from a weak spot in the inguinal canal in the lower pelvic area. While less common, athletes sometimes experience umbilical (belly button) hernias due to a weakness where the umbilical cord passes through the abdominal wall; incisional hernias caused by incomplete healing after surgery; hiatal hernias where the esophagus (stomach tube) passes through the diaphragm (breathing muscle), and traumatic hernias caused by muscle injury. Returning to play after hernias depends on the treatment and severity of the defect. (Current Sports Medicine Reports, 13:86-93, 2014)

ALCOHOL INTAKE: MODERATE INTAKE GOOD, HIGH INTAKE BAD

The 18th Amendment of the U.S. Constitution banned alcohol in 1920, while the 21st amendment allowed it again in 1933. Several religious groups ban alcohol consumption for their members, while many social functions among college students and adults are centered on drinking. Many recent studies found that moderate alcohol intake (one drink per day for women and up to two drinks per day for men) reduced the risk of premature death, coronary artery disease, diabetes, heart failure and stroke. However, heavy drinking is linked to high blood pressure, heart enlargement, abnormal heart rhythms and stroke. The risk of heavy drinking is particularly severe in young people, where it is linked to auto accidents, violence and inappropriate behaviour. Drinking a glass or two of red wine with dinner is good for you. Drinking more than that is not. (Mayo Clinic Proceedings, 89: 382-393, 2014)

STETHOSCOPES ARE BUG-RIDDEN

A study from Switzerland found that the stethoscopes are often laden with deadly bacteria. They examined the fingertips, palms and stethoscopes of three physicians who performed physical examinations on 83 patients. The fingertips of the dominant hand contain the greatest concentration of bacteria. Alarmingly, the stethoscopes were also contaminated- some with deadly antibiotic resistant MRSA bacteria. Health professionals should clean their stethoscopes with alcohol after each use. The research suggested that patients in intensive care units should have individual stethoscopes. Bacterial contamination is common in everyday devices such as cell phones and computer keyboards. These bugs can make you sick or even kill you. (Mayo Clinic Proceedings, 89:291-299, 2014)

HIGH IRON INTAKE LINKED TO CORONARY SYSTEM

Many bodybuilders, active people and older adults take iron supplements to boost energy levels and oxygen transport capacity. This could be a mistake. A meta-analysis of nearly 300,000 men and women by Jacob Hunnicutt and colleagues from Indiana University concluded that elevated heme iron intake increased the risk of heart disease by 57 percent, while high total iron intake decreased the risk of heart disease but not the risk of death from heart disease. Elevated heme iron is linked to inflammation, which is an important risk factor of heart disease. (Journal of Nutrition 144:359-366, 2014)

NUTRITION

VITAMIN D DEFICIENCY LINKED TO LOWER FITNESS AND OBESITY

Several recent studies have linked low vitamin D levels to poor bone health, muscle weakness and deficiencies in reproductive hormones. However, the only health claims allowed by government agencies in the United States, Europe and Canada for vitamin D include reducing the risk of osteoporosis, preventing inflammation and promoting normal muscle function. Laura Forney from Louisiana State University and colleagues found that lower blood levels of vitamin D were linked to lower aerobic capacity and higher body mass index in college students. Half of the students were vitamin D deficient, with blood levels below 250 HD. The results could be due to reduced physical activity levels in vitamin D-deficient students- they didn’t exercise in the sun much. On the other hand, low vitamin D levels might impair athletic performance. (Journal Strength Conditioning Research, 28: 814-824, 2014)