



MELTDOWN HER

Scientific Research

Obesity is a complex disease caused by an array of interactive factors including genetics, diet, certain medication, lifestyle and our environment. Obesity is defined as a body mass index (BMI) of more than 30 or a fat percentage of 30% for women and 25% for men. Excess weight drastically increases one's risk of developing chronic degenerative diseases. Obesity is associated with various illnesses like high blood pressure, stroke, heart disease, high cholesterol, gout, diabetes, cancer, gallbladder disease, osteoarthritis and psychological problems (1). Development, progression and maintenance of obesity is governed by various feedback mechanisms like insulin resistance, central adiposity, altered adipokine hormone secretion (hormonal appetite control), altered digestive hormones, compromised diet-induced thermogenesis and low brain serotonin levels. Although the tendency to be overweight can also be genetically determined, the highest prevalence of obesity is associated with an unhealthy diet and lifestyle.

PSNLifestyle Meltdown Her is engineered with an array of very powerful metabolism boosting botanical extracts and L-Tyrosine. The synergy of these constituents not only demonstrate effective weight loss but also encourage powerful sustainable energy levels. By increasing energy expenditure and decreasing spontaneous energy consumption, these extracts may also prevent weight regain in the long term.

Raspberry ketones are bio-active raspberry constituents with a similar molecular structure as capsaicin and synephrine, which are extensively used to improve fat metabolism and weight loss. Raspberry ketones significantly increase norepinephrine induced fat breakdown in white fat cells and has been scientifically reported to prevent and decrease body and liver weight, as well as elevations in visceral fat tissue during a high fat diet (12).

Garcinia Cambogia, with its high amounts of bioactive hydroxycitric acid (HCA), is effectively used as a weight loss supplement and appetite suppressant. Garcinia protects against obesity related complications like insulin resistance (2), inflammation (2,4,5) and oxidative stress (2) and has additional antifungal (3), antimicrobial (6-8) and anti-ulcer (9,10) properties. HCA's proposed mechanisms in weight loss support, include its ability to regulate appetite by regulating serotonin levels, decrease fatty acid supply and fat synthesis in fat cells, increase fat oxidation and thus energy supply for endurance performance, and its ability to downregulate transcription of obesity-associated genes (11).

Guarana seed extract possesses anti-oxidant (13), antimicrobial (13), antiplatelet aggregation (14), anti-mutagenic and anticancer (15) properties. It also has the ability to enhance memory (16). It may be helpful in depression (17) and promotes healthy energy levels (18). Guarana contains caffeine and theobromine, both central nervous system stimulants, that stimulate adrenaline and noradrenaline release. Noradrenaline and adrenaline promote the metabolism and release of fats and glucose into the blood for provision of muscle fuel, instead of being stored as fat.

Caffeine and green tea are two key bio-actives, synergistically used in weight management. Their efficacy is attributable to their augmenting effect on thermogenesis, via activation of the sympathetic nervous system. Thermogenesis can be defined as increased energy expenditure above sleeping and basal metabolic rate. Sympathetic nervous system activation may decrease appetite and stimulate energy expenditure by increasing fat oxidation (23).

Coffee is one of the most consumed beverages globally and is supported by ample research

indicating its effectivity in enhancing energy expenditure (19) and its ability to increase provision of macronutrients for healthy energy metabolism during exercise. Caffeine has a powerful stimulating effect on the central nervous system and increases energy supply during anaerobic and aerobic exercise, which may increase speed and power output and improve endurance capacity. Caffeine promotes adrenaline release (20) which enhances fat breakdown for use as muscle fuel, by activating an enzyme called lipase which is responsible for fat breakdown. Through this mechanism, if caffeine is consumed prior to training, muscle glycogen is spared and endurance capacity enhanced (21). Research demonstrates that only 13 days of consumption of green coffee bean extract containing chlorogenic acid and caffeine may reduce abdominal fat and body weight as well as liver triglyceride (fat) level (22).

Green tea EGCG is a multifunctional anti-obesity phytonutrient, high in catechins, which can reduce appetite, increase energy expenditure (25) and via enzyme (catechol O-methyltransferase) inhibition, stimulate sympathetic nervous system activity, thermogenesis and fat oxidation. Catechins also reduce fat absorption by exerting a strong inhibitory activity against pancreatic lipase, a key pancreatic enzyme released during digestion for the breakdown and absorption of fats (24). In liver cells, thermogenesis and fat breakdown is dependent on cyclic adenosine monophosphate. This reaction is however short-lived since adenosine monophosphate is rapidly degraded by an enzyme called phosphodiesterase. With caffeine however, this enzyme can be inhibited resulting in an extended activation signal for thermogenesis (24). Caffeine can also reverse adenosine mediated inhibition of noradrenaline and adrenaline release.

The combination of caffeine and green tea extract may therefore significantly increase and extent the effect of noradrenaline on the sympathetic nervous system. This enhances resting metabolism and subsequently increase fat burning activity for fuel supply.

Tyrosine is an amino acid precursor for neurotransmitters dopamine, serotonin, noradrenaline, adrenaline and thyroid hormones. Inadequate levels of L-Tyrosine may lead to symptoms of depression, impaired memory and concentration, fatigue and hypothyroidism (slow metabolism). Therefore, L-Tyrosine plays a vital role in healthy metabolism and emotional wellbeing.

Cayenne (known as chili pepper) may promote weight loss by increasing basal metabolic rate, reducing appetite and hence, caloric intake. It also attenuates obesity induced inflammation, metabolic disorders and liver disease (28). Cayenne, with its high anti-oxidant levels, exerts cardio-protective benefits by reducing the risk of atherosclerosis via reducing platelet aggregation, cholesterol and triglycerides (26, 27).

Dandelion root is a nutritional herb with a wide array of medicinal benefits. Dandelion supports healthy digestion with its bitter principles, which stimulate secretion of digestive juices and bile. It is also a liver tonic and by promoting bile secretion, is helpful as supportive treatment in conditions like liver congestion, bile duct inflammation, hepatitis, gallstones and jaundice (29,30). During weight loss and mobilization of fat stores, stored toxins are released into the blood stream and may overburden the organs. Dandelion supports the liver's and kidneys' ability to clear these toxins via stimulation of bile flow and diuretic properties and therefore is an important component to any weight loss supplement.

Piperine 95% is a bioactive constituent found in black pepper. It is known for its influence on the metabolism of various drugs and herbs by promoting digestive absorption and by downregulating enzymes involved in the biotransformation of herbs, which prevents their inactivation and elimination. The results are improved absorption and bio-availability of nutrients and herbs (31).

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