

Lose Weight Fastin™!

By: Mark Wright, M.D.



Over the past nine years, I have worked with the top researchers, pharmacologists, and physicians from Hi-Tech Pharmaceuticals to develop the perfect diet pill. Hi-Tech has introduced several blockbuster weight loss aids such as Lipodrene®®, Stimerex-ES®, and Lipodrene® Xtreme®, to name a few. One thing most people do not know about Hi-Tech, is its direct response business. Over the past ten years, Hi-Tech has had three weight loss sister companies that formulate, market, and sell diet aids directly to the public. “So what?” you may ask. Well, Hi-Tech offers a 100% money-back guarantee to anyone not satisfied. Hi-Tech marketed over 20 diet aids with different ratios of ingredients until Hi-Tech hit pay dirt. Hi-Tech sold direct to over 500,000 consumers and was able to track refund rates and compare them versus re-order rates. Lipodrene®® and Stimerex-ES® were launched by Hi-Tech to retailers as they were the two best products Hi-Tech developed out of the 20 test marketed. No other company has the data, feedback, or technology to create such products. With the evolution of Hi-Tech’s pharmacological research into weight loss compounds, I believe we have created our finest **master-piece!** As a bariatric (weight loss) physician, I prescribed Fastin™ for decades as a prescription drug to my

patients with overwhelming success. When SmithKline Beecham (now known as GlaxoSmithKline) withdrew Fastin from the market, it sent **shockwaves** through the weight loss industry. Since its exit from the market, Hi-Tech has been doing some exhaustive research and development on a new formula with pharmaceutical fat mobilization and apoptosis agents to create the new and improved Fastin™. Fastin’s effectiveness produced a cult-like following, Fastin was unmatched in its efficacy until it was taken off the market by GlaxoSmithKline. Unwilling to attach the name “Fastin” to just any ole fat burning formula, Hi-Tech has spent a countless amount of time and resources to find a formula equal to, or superior to, the original Fastin, in terms of feeling and effect. Finally, after several years of research on this project, Hi-Tech developed a formula that is every bit as good (if not better) than the original Fastin formula. Hi-Tech is so confident in Fastin™, that they are staking their name on it in many ways as the leaders in the weight loss industry...as the shoes Hi-Tech had to fill were very large.

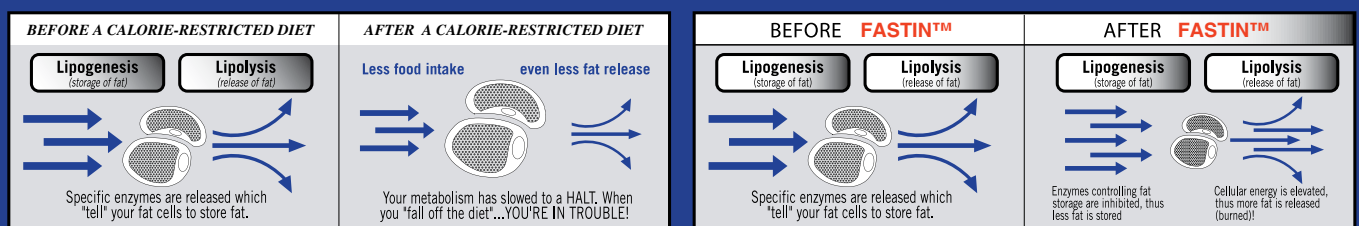
Although the feeling and effect of Hi-Tech’s Fastin™ is at least as good as the original, the formula has changed in significant ways. The old Fastin formula was formulated around Phentermine HCL, while the new Fastin™ is formulated around phenylethylamine HCL and derivatives of this molecule. Phenylethylamine is an amazing compound that is naturally present in human fluids and tissue. This compound is probably the cleanest stimulant ever researched, which has the remarkable ability to stimulate the central nervous system, without causing nervousness or the jittery feeling. Phenylethylamine is found in chocolate and is responsible for its effects on mood, appetite, and sense of well-being.

Incenerate Fat – Say Goodbye to your Love handles!

Fat mobilization is a new breakthrough in the field of weight loss. As a bariatric physician, I try to stay at the forefront of the diet industry. The newest thermogenic breakthrough introduced into the market is called Lipid Mobilization, which helps you burn body fat without exercise. In vitro research shows that lipid mobilization is one of the processes that releases fat into the bloodstream to be burned as energy. On the fat cell's surface are receptors that signal the cell to hold stored fat. Natural Alpha-2 antagonists have been shown to switch off these receptors. Freed fatty acids can then move out of the cell and into the bloodstream. These released fats are shuttled away from fat and prevented from simply being re-deposited. This is especially effective in the stubborn abdominal and hip areas of both men and women. Best of all, when taken before exercise, fat mobilizers are shown to boost lipolysis (the process of mobilizing fats from cells) and increase blood serum free fatty acid levels both during and after exercise.

The extent of which exercise burns body fat is totally dependent upon the rate of lipolysis. Lipolysis is the rate at which fat is mobilized from fat cells and enters the bloodstream as free fatty acids (FFAs). Exercise triggers lipolysis, and highly trained individuals possess a greater lipolytic rate, an ability to “burn” more fat during exercise, than untrained people. If you want the greatest possible fat burning effect from exercise, then increasing your rate of lipolysis is the way to do it. A high rate of lipolysis ensures greater fat mobilization by the liver and mitochondria in muscle cells during exercise. In turn, this process ensures that a greater concentration of body fat is burned during exercise. The impact of fat mobilizers on post-exercise fat metabolism is particularly evident 30 minutes after cardio exercise. One study showed that FFA levels in the bloodstream doubled in those that took a fat mobilizer prior to exercise compared to a placebo.

Many physiological factors stimulate and inhibit the breakdown of adipose tissue into free fatty acids and glycerol and their mobilization into the bloodstream to be used as fuel by other cells and tissues. Fasting, feeding, exercise, and stress have pronounced and rapid effects on lipolysis via hormones and other endogenous substances. As well, clinical conditions such as diabetes and obesity are associated with alterations in lipolysis. Age and gender are also of importance. Insulin and catecholamines are the main regulatory hormones of lipid mobilization. Insulin is the major antilipolytic hormone because of its effects on enzymes within the adipocyte. Insulin also enables the entry of glucose into the cells by inducing glucose transporter activity. Glucose serves as the backbone for the glycerol molecule to which fatty acids attach and form triacylglycerols. The catecholamines serve a dual function. You must first become acquainted with fat cell biology to comprehend the regulation of fat loss. Lipogenesis and lipolysis can be considered the Yin and Yang of adipose tissue metabolism. Lipogenesis is the process of fat accumulation and lipolysis is that of fat breakdown and release into the bloodstream.



Fat Mobilizers and Their Unique Fat Burning Abilities

There are physiological differences in fat cells, depending upon where they are located in the body. Fat cells located in the gut (visceral adipocytes) differ from fat cells located in the lower regions of the body (hips, thighs, lovehandles). Fat cells within the stomach contain a lot of beta-receptors. These cells respond to release fat when stimulated by the classic “fat burners,” such as caffeine, ephedrine, and synephrine. These compounds stimulate lipolysis specifically by increasing norepinephrine delivery to the visceral fat cells and catecholamine secretion that activates the beta-receptors and increases cAMP within cells. However, fat cells located around the hips, and lovehandles characteristically contain very few beta-receptors and respond poorly to catecholamine release that is induced by exercise and beta-stimulants. However, these lower body fat cells contain a lot of alpha adrenoreceptors. Alpha-receptors are tricky and obstinate if you want them to release their fat stores. When stimulated, these receptors activate other proteins that inhibit adenylcyclase, thus antagonizing the ability of beta-adrenoreceptors to boost cAMP generation, and therefore, shut down the usual fat mobilization process. Basically, when taking caffeine, ephedrine, and synephrine supplements in an effort to stimulate fat loss, the alpha-receptors on lower body fat cells say, “No! No fat mobilization for you!” Fat cells within the lower half of the body contain a higher concentration of alpha-receptors and lower concentration of beta-receptors. Therefore, they are quite resistant to lipolysis. Women characteristically carry more fat on their hips and thighs than men do, and this difference in fat cell structure is one reason why most women have a tougher battle with fat loss...Until Now!

Apoptosis – A Novel Approach to Weight Loss

Hi-Tech has recognized for years that the active components in Hi-Tech’s fat loss products exerted their influence on fat loss through mechanisms of action attributable to increased lipolysis, decreased lipogenesis, and more metabolically desirable fat mobilization. However, over the past five years of Research and Development, Hi-Tech began testing a theory that some of the beneficial effects of Lipodrene® and Stimerex-ES® were also actually due to their effect on elimination of entire fat cells, or apoptosis. Apoptosis is a form of cell suicide that plays a vital role in the maintenance of cellular homeostasis, but for weight loss it causes cell death (specifically, fat cell death). It was once believed that the total number of adipocytes (fat cells) remained fairly constant over one’s lifetime; however studies over the last ten years have shown that adipocytes can be both lost and gained, and it is becoming increasingly recognized that fat cells have a finite life cycle and can be eliminated by apoptosis.

Apoptosis is a novel approach to help people lose fat. Since research began several years ago on this activity of the compounds in Lipodrene®, Hi-Tech has been investigating many plant extracts and other natural substances for their ability to reduce adipose tissue mass by reducing the number of adipocytes through the mechanism of apoptosis. We have identified a number of agents that may induce apoptosis of adipose tissue, and found that some catecholamines and beta-adrenergic receptor agonists are prone to induce adipose tissue apoptosis when administered orally. These compounds include: clenbuterol, ractopamine, phenylethylamine, and alkaloids from acacia rigidula extract, including b-phenylethylamine, N-Methyl-b-phenylethylamine, and R-beta-methylphenylethylamine. These compounds appear to have the ability to increase the rate of apoptosis in adipose tissue cells, specifically white adipose tissue cells. It is suggested that Fastin™’s active components demonstrate a wide array of action on adipocytes, including increased lipolysis, decreased lipogenesis, decreased cell proliferation, and increased adipogenesis (blocking immature fat cells from maturing and storing lipids). In addition, Fastin™ assists in more effective lipid mobilization.

Fastin™ brings forth a trifecta of advancements in the fat loss arena: 1) a sophisticated manufacturing process that utilizes a dual delivery system technology for specific control of rapid and sustained release of its active compounds, 2) a proprietary active compound formulation that trumps the existing field of fat loss compounds and puts even ephedra in the back seat, 3) a novel approach to fat loss through triggering fat cell death (apoptosis).

Hi-Tech Pharmaceuticals recently launched Fastin™ into the weight loss arena. In recent months, Hi-Tech acquired rights to Fastin from King Pharmaceuticals. King Pharmaceuticals manufactured the brand name product Fastin (phentermine HCL) for Smith Kline Beecham. In December 1998, SK-Beecham withdrew Fastin from the market. Hi-Tech Pharmaceuticals has reformulated Fastin™ and expects it to be their top weight loss aid. Fastin™ is a pharmaceutical-grade dietary supplement indicated for weight loss in extremely overweight individuals. Fastin™ has both immediate and delayed release profiles for appetite suppression, energy, and weight loss. Fastin™ is comprised of nine pharmaceutical-grade fat loss catalysts at precise ratios in order to achieve its extraordinary results. Fastin™'s proprietary formula includes the following:



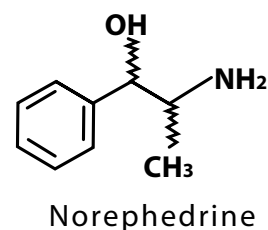
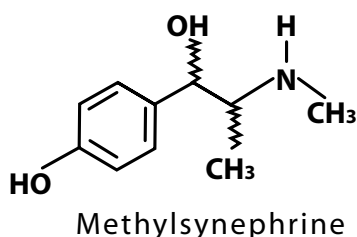
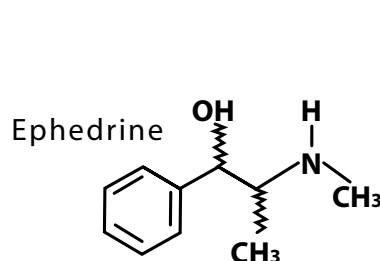
- R-Beta-methylphenylethylamine HCL – this amazing compound is the active isomer of MPEA much like 1R, 25 Norephedrine was of PPA years ago. This compound stimulates norepinephrine unlike any other and leads to appetite suppression, energy, and ultimate fat loss.

- Methylphenylethylamine tartrate – this is the racemic version of MPEA bound to tartaric acid, which keeps the molecule stable. This compound is found in Hi-Tech's line and is a rising star of the fat loss industry.

- N-methyl-phenylethylamine – is another isolated amine from acacia rigidula that is both for stimulating fat burning and energizing effects. This is the N-methyl derivative of the compound B-Phenylethylamine. This is a very potent compound for all who lack a chemistry degree.

- Methylsyneprhine – is phenolic B-Phenylethylamine found in Acacia Rigidula and some cacti, which produces considerable nervous system stimulation (CNS). With Hi-Tech's research over the past five years on Acacia Rigidula (as Thermo-Rx®), we have identified and isolated several key phenylethylamine alkaloids. The newest of which is methylsyneprhine. The alkaloids from the Acacia Rigidula are biologically and physiologically similar to those found in ephedra, and possess properties that are shared with ephedra alkaloids. Scientifically, this is in part due to the similarities in pharmacokinetics and pharmacodynamics. The most obvious similarity is that acacia alkaloids, like the ephedra alkaloids, readily pass into the brain. The main factor governing the transfer of small molecules into the central nervous system is lipophilicity. The distribution of drugs and/or compounds into the CNS from the blood is unique, because functional barriers are present that restrict entry of drugs into this critical site. One reason for this is that the brain capillary endothelial cells have continuous tight junctions; therefore, drug penetration into the brain depends on transcellular rather than paracellular transport between cells. The unique characteristics of pericytallary gillial cells also contribute to the blood-brain barrier. At the choroids plexus, a similar blood-cerebrospinal fluid (CSF) barrier is present, except that it is epithelial cells that are joined by tight junctions rather than endothelial cells. As a result, the lipid solubility of the non-ionized and unbound species of the drug is an important determinant of its uptake by the brain; the more lipophilic it is, the more likely it is to cross the blood-brain barrier. This situation is used in drugs design to alter the brain distribution, which is the case with drugs like amphetamine,

phentermine, and benzphetamine. As you can see from the comparison of the structures of ephedrine, norephedrine, and methysynephrine they all possess the β -methyl substituent of the aliphatic sidechain, which is characteristic of ephedrine and its congeners, as well as methysynephrine, thus further increasing lipophilicity.



What is a suitable substitute for ephedra? How about another beta agonist? Methysynephrine is just the answer that the industry has been waiting on for years! The sympathetic nervous system is involved in the regulation of energy. Therefore, pharmacological manipulation of the system offers a mechanism of targeting a reduction in excess body fat stores. Many beta-adrenergic agonists are known to increase muscle mass while concurrently decreasing fat mass. Prolonged treatment with sympathomimetic compounds reduces energy intake and increases energy expenditure. The beta 2&3 receptors appear to be responsible for the lipolytic and thermogenic effects of adrenergic agents, while interaction with beta-1 and to a much lesser extent, beta-2 control cardiac effects. Accordingly, the ideal fat loss compound would be one identical to *Acacia Rigidula*, but especially methysynephrine. Until now, there has never been a beta-adrenergic compound like methysynephrine that can stimulate lipolysis and increase resting metabolic rate like ephedra.

- **Theobromine** – is the primary methylxanthine found in products of the cocoa tree, *Theobroma cacao*. As a member of the methylxanthine family, it is thought to elevate levels of serotonin, the same action as the popular anti-depressants. Theobromine has a lot of research that shows its extraordinary effects on fat loss, appetite suppression, and mobilization of fatty deposits. Theobromine acts as a mild diuretic and stimulant, which creates a synergistic effect with caffeine.
- **Phenylethylamine HCL** – this amazing compound is probably the cleanest stimulant ever researched, and it is naturally present in human fluids and tissues. Although categorized as a stimulant, it has the remarkable ability to stimulate the central nervous system without causing nervousness or the jittery feeling. Phenylethylamine is found in chocolate and is responsible for its effects on mood, appetite, and sense of well-being. Until recent discoveries, PEA, or phenylethylamine, was rapidly destroyed within the body. If included with novel delivery systems, phenylethylamine HCL is provided “safe transport” and this metabolic fate is avoided and pharmacological activity becomes extremely apparent. This catecholamine precursor is responsible for elevating the metabolic rate and promoting a sense of satiety. Phenylethylamine acts on alpha-receptors in the brain, as do norepinephrine and certain prescription anti-obesity drugs. It is also believed to cause the release of dopamine in the pleasure sensing areas of the brain. Phenylethylamine HCL has a close chemical relationship to pharmaceutical stimulants, because it is the “backbone” of many pharmaceutical compounds.
- **Yohimbine HCL** – has been shown in many clinical trials to effectively block alpha 2 adrenoreceptors. These studies have found that yohimbine increases the amount of non-esterified fatty acids (NEFA's) a product of lipolysis (the breakdown of fat), in the bloodstream for both lean and

overweight subjects. There are a number of feedback mechanisms that prevent the release of norepinephrine (NE), one of the body's primary lipolytic hormones. When NE is released, such as when taking methylsynephrine and acacia rigidula, it stimulates both the alpha and beta adreno-receptors. Stimulation of the beta adrenoreceptors has the opposite effect, preventing the release of NE and lipolysis. Yohimbine prevents this negative feedback mechanism, and works in a synergistic fashion with the other components to increase NE and lipolysis. There are a number of reasons why alpha-2 inhibition is specifically useful. First, while the beta-adrenergic system primarily controls lipolysis during periods of intense activity, during rest, which makes up most of our day, the alpha-adrenergic system is in control. Also, "stubborn fat" areas – usually the abdominal area in men and the gluteofemoral area in women – contain a higher ratio of alpha-2 receptors, making yohimbine particularly effective in these areas (whereas other drugs that increase NE may be somewhat counterproductive). Finally, alpha-2 blockade increases blood flow in adipose tissue, which prevents fat from being retained in the area.

- Synephrine HCL – is a drug used primarily in fat loss, although the effectiveness is minimal in Fastin. It is very popular and has been used as an alternative to ephedrine (a substance with a history of controversy). Synephrine is derived primarily from the fruit of a small citrus tree.
- Caffeine Anhydrous USP – acts as a stimulant and thermogenic in humans, and is commonly taken to boost energy or mental concentration. It will stimulate the central nervous system and the metabolism. Once metabolized, caffeine can increase lipolysis in the body. Caffeine may also increase the effectiveness of other substances such as ephedrine or yohimbe, and was incredibly popular in the commonly used ECA stack (ephedrine, caffeine, and aspirin).

What's In A Name?



In Shakespeare's, *Romeo and Juliet*, the character, Juliet says, "What is in a name? That which we call a rose by any other name would smell as sweet." Hi-Tech has attached the name, Fastin™, to the most effective diet aid of the 21st century. Hi-Tech expects to revive the cult following that Fastin™ previously enjoyed. Hi-Tech also enjoys the challenge of living up to a legend. In baseball, Ken Griffey, Jr. came into the league with big shoes to fill because of Senior in the Cincinnati Red's eyes. Today, 593 home runs later, "the natural," as many call him, feels he achieved quite a bit more than his father ever did in baseball, and did more than just fill his father's shoes. In NASCAR racing, Dale Earnhardt, Jr. has fans worldwide expecting him to continue winning and live up to his father's reputation – which is that he was the best driver to ever get behind the wheel of a car. Fastin™ by Hi-Tech Pharmaceuticals, Inc. not only welcomes the challenge of living up to a legend, but chose the name in order to have a tall set of shoes to fill. Fastin™ is a world class fat burner that will help anyone needing to lose weight. Whether you need to lose a little or a lot of weight – Fastin™ is just what the doctor ordered!