Thermogenics vs. Lipothermics

Which One Will Help the Body Burn More Fat?

Discover the Exciting New Secret!

Burning Fat: Why Dieting and Working Out May Not Be Enough

Regular exercise and a healthy diet have long been the doctor's orders when trying to achieve a fit body. It sounds simple enough, but there are other factors at play that make fat loss a challenging and complicated goal. For instance, there is the dreaded "weight loss plateau." As explained by Dulloo (1993) in his paper on obesity management, your body reacts to reduced food intake and weight loss by slowing down its metabolism. **This energy-sparing mechanism (adaptive thermogenesis) explains why you suddenly stop losing weight after a few weeks of following a diet and workout regimen.**

This table published in the *British Journal of Nutrition* (van Baak 2004) illustrates how adaptive thermogenesis works.

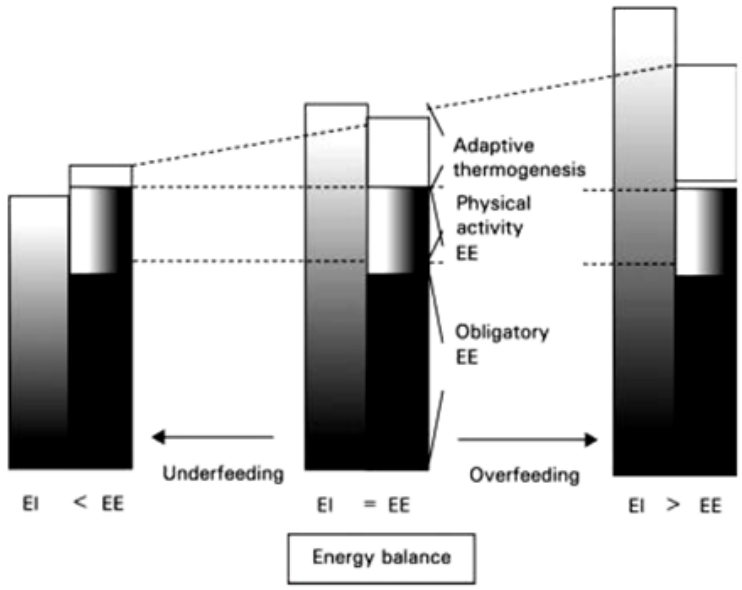

Fig. 1. Changes in energy balance resulting from changes in energy intake (EI). Adaptive thermogenesis, the regulated component of energy expenditure (EE), which responds to changes in temperature and diet, will increase during overfeeding and decrease during underfeeding, thus reducing the energy imbalance created by overfeeding or underfeeding. Over time, body-mass changes that result from the energy imbalance will result in changes in obligatory EE, required for the maintenance of cellular and organ functions, and EE for physical activity and a new energy balance at a lower or higher body weight will be attained.

Adaptive thermogenesis serves to help our bodies store energy. When we reduce food intake and lose lean body mass, the body defends itself by decreasing energy expenditure (Dulloo 1993). This is why we start to burn fewer calories after a few weeks of working out—even though we exercise at the same intensity level. This decreased thermogenesis can make it difficult to get rid of stubborn fat and it may even lead to regaining lost weight.

Enhancing Fat Loss with Supplements: Thermogenics vs. Lipothermics

Thermogenics: The Old School Supplement

For many years now, thermogenic supplements have been used by millions of athletes, bodybuilders and health-conscious individuals around the world. Thermogenics claims to increase the body's core temperature, thereby speeding up the metabolic rate which results in the body burning more fat (Clapham 2007).

Thermogenic supplements usually contain fat-burning ingredients such as chili pepper, synephrine, and green tea extracts. One of the most popular thermogenic ingredients is ephedra (from the plant Ephedra sinica). Ephedra is a stimulant that could expand bronchial tubes (to make breathing easier) and increase body heat, thereby increasing metabolism (Gurley, Wang and Gardner 1998).

Ephedra became a popular ingredient since it was proven to be effective in aiding weight loss, especially when combined with caffeine. In a recent study (Boozer et al 2002), it was found that subjects who were given a herbal treatment of ephedra and caffeine during a period of 6 months significantly lost more weight than subjects who were only given placebos.

However, in 2004, the U.S. Food and Drug Administration (FDA) banned the sale of ephedra-containing supplements. The FDA came to this decision after a comprehensive study of cases reporting adverse side effects and even deaths caused by the stimulant. The number of these complaints had been rising steadily since the late 1990s.

Ephedra-Free Thermogenics

After FDA imposed the ban, manufacturers scrambled to produce "ephedra-free" fat burners. Ingredients in these ephedra-free supplements included the usual stimulants such as caffeine, green tea, and yohimbine. Many of these manufacturers claimed that this new class of ephedra-free fat burners was even *more powerful* than the ephedra-based ones, but research would indicate that this was all indeed a lie.

Caffeine, for instance, is a popular ingredient in these ephedra-free thermogenic supplements. In a 1992 study by Spriet and colleagues, it was found that indeed, caffeine increases fat oxidation and decreases the breakdown of glycogen, but not all of the fat oxidized is burned (Astorin et al 2011). In other words, caffeine is not a very effective thermogenic, but it does decrease glycogenolysis, helping the body use more energy from fat instead of carbohydrates during exercise.

Yohimbine, another popular ingredient in thermogenic supplements, is also known for its fat-oxidizing properties. Unfortunately, its lipid-mobilizing effects are negated when administered during or after a meal (Galitzky et al 1988).

In other words, most of these ephedra-free thermogenics are mild stimulants at best, but they are not powerful enough to help your body burn more fat.

Lipothermics: Compounds That Help You Burn More Calories from Fat during Exercise

In their mission to provide cutting-edge supplements, PharmaGenx is constantly involved in the research and formulation of new products. Working with doctors and athletes, PharmaGenx discovered the science of lipothermics.

Lipothermics is a new class of fat-burning compounds that trigger a shift in energy usage, causing the body to burn more calories from fat instead of carbohydrates during exercise. This decreases muscle breakdown and it helps your body save glucose to give you more endurance and stamina.

As explained by Brooks (2000) in his book *Exercise Physiology: Human Bioenergetics and Its Applications,* the body expends energy by breaking down adenosine triphosphate (ATP), a chemical stored in our muscle cells.

The human body uses three types of energy systems to rebuild ATP: the phosphogen system, the anaerobic system and the aerobic system. This table shows the characteristics of each energy system.

System	Rate of ATP Production	Total Ability to Produce ATP	Fuels Used	
Phosphogen	Very High	Very Low	Creatine phosphate stored in skeletal muscles	The primary system used for short, intense movements lasting 1 to 10 seconds
Anaerobic	High	Low	Blood glucose, muscle and liver glycogen	Predominant energy system used for intense movements lasting from 30 seconds to 2 minutes
Aerobic	Low	Very High	Blood glucose, muscle and liver glycogen, adipose and intramuscular fat	The predominant energy system for long duration workouts

Lipothermics works by repartitioning your body's energy usage during exercise, taking it quickly to the aerobic level where there is more lipid oxidation and your body uses more fuel from fat instead of muscle.

This table summarizes the difference between old-school thermogenics and the new class of energy-repartitioning Lipothermics.

Lipothermics®	Thermogenics
Burns up to 107% more energy from fat during exercise.	Increases Basal Metabolic Rate (BMR) by only 2-3%.
Only one dose a day before training is needed.	Needs to be taken multiple (2-3) times a day.
Significantly increases excess post-exercise consumption (EPOC), which results in more calories burned throughout the day.	BMR increase only lasts for 2-3 hours. Thermogenic effects diminish after 2 weeks.
Burns more calories from fat (not muscle and carbohydrates) during exercise, giving you more energy.	Burns total extra calories of only 168 kcal a day.

VentileanRx: The Lipothermic Fat Burner

PharmaGenx has a registered trademark on Lipothermic and uses this new class of compounds to create VentileanRx—a highly concentrated liquid solution that carries the VYCE stack.

The VYCE stack is a well-balanced combination of four potent ingredients—vinpocetine, yohimbine, caffeine and EGCG. Although most of these ingredients can be found in other thermogenic supplements, what makes these ingredients especially powerful in VentileanRX is PharmaGenx's proprietary technology that solubilizes the nutrients of the ingredients into a super concentrated solution that can be quickly delivered in a micro dose (2.5 ml).

The powerful Lipothermic compounds in the VYCE stack will enable the body to experience the following benefits:

- Burn up to 107% more energy during workouts
- Increased and prolonged after burn
  (continue to burn calories for the rest of the day after exercising)
- Energy repartition: While exercising, your body can quickly reach the aerobic level where you burn more calories from fat, not muscle.

VentileanRx Lipothermic Stimulant: The Main Ingredients

VINPOCETINE is a chemical compound with neuroprotective properties. Derived from vincamine (an alkaloid extracted from the periwinkle plant), vinpocetine enhances blood circulation within the brain and decreases cerebral vascular resistance (Karpati and Szporny 1976).

In a study on the effects of vinpocetine in chronic ischemic stroke patients (Szilyagi et al 2005) using Positron Emission Tomography (PET), it was found that vinpocetine improved cerebral blood flow up to 37% in the contralateral side of the brain and up to 33% in the affected side.

Number of Patients: 13
Dosage: 6.68 +/- 7.2 mg/day
Time Period: 14 days
Age: 59.7 +/- 13.2 years

RESULTS: % Improvement in Cerebral Blood Flow

	CONTRALATERAL SIDE	AFFECTED SIDE
Whole Hemisphere	26.11%	19.92%
Thalamus	36.39%	21.75%
Mesencephalon	33.08%	24.32%
Cerebellum	28.26%	25.94%
Stroke Region	—	33.89%
Caudate Nucleus	37.29%	—
Putamen	25.95%	—
ACA Region	16.97%	—
Pons	18.59%	8.63%

Journal of Neurological Sciences 2005;229-230:275-284

Vinpocetine is an important ingredient in VentileanRX because it counteracts caffeine's negative side effects. Caffeine reduces cerebral blood flow, which could lead to an energy crash. Vinpocetine tempers caffeine's limiting effects and ensures that all four ingredients in the VYCE stack work harmoniously together.

YOHIMBINE is a substance extracted from the bark of Yohimbe trees. It acts as a blocking agent to alpha-2 adrenoceptors (Verwaerde et al 1997). By blocking alpha-2 receptors, Yohimbine increases lipolysis (fat mobilization), thereby reducing fat absorption.

In this table taken from a research paper on Yohimbine as an alpha-2 antagonist (Lafontan et al 1992), it clearly shows that Yohimbine promoted an increase in NEFAs (nonesterified fatty acids) and noradrenaline levels in ten fasting obese women(compared to those who only took placebos).

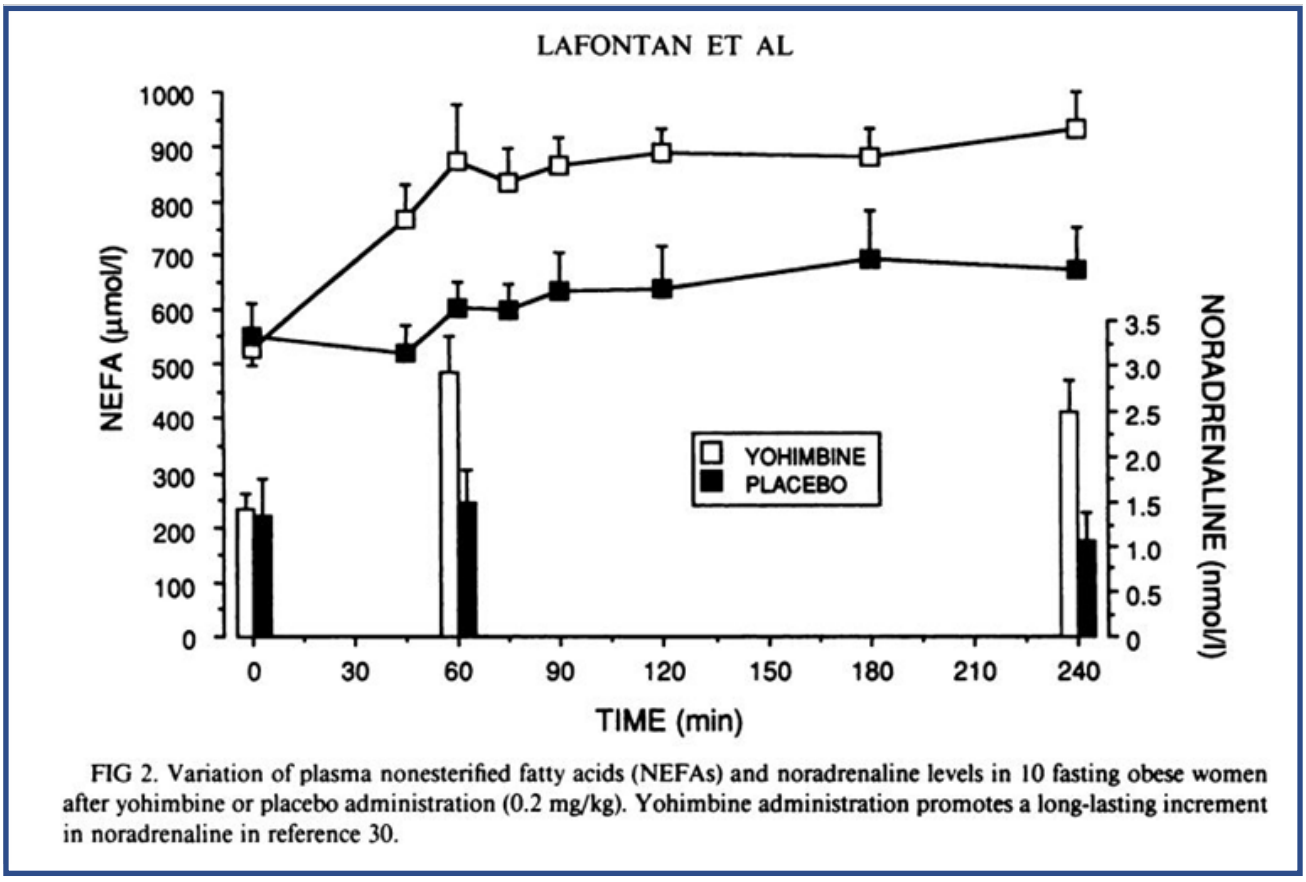

FIG 2. Variation of plasma nonesterified fatty acids (NEFAs) and noradrenaline levels in 10 fasting obese women after yohimbine or placebo administration (0.2 mg/kg). Yohimbine administration promotes a long-lasting increment in noradrenaline in reference 30.

Based on the findings of this study, yohimbine improves fat mobilization, helping the body access its fat reserves for fuel, instead of using energy from carbohydrates.

CAFFEINE increases the body's metabolic rate. Previous research by Astrup (1990) revealed that caffeine promotes thermogenesis (fat burning) and lipolysis (fat mobilization). This table from a research paper on the metabolic effects of caffeine (Acheson et al 2004) illustrates the increased lipid turnover and oxidation in research subjects who took caffeine instead of a placebo.

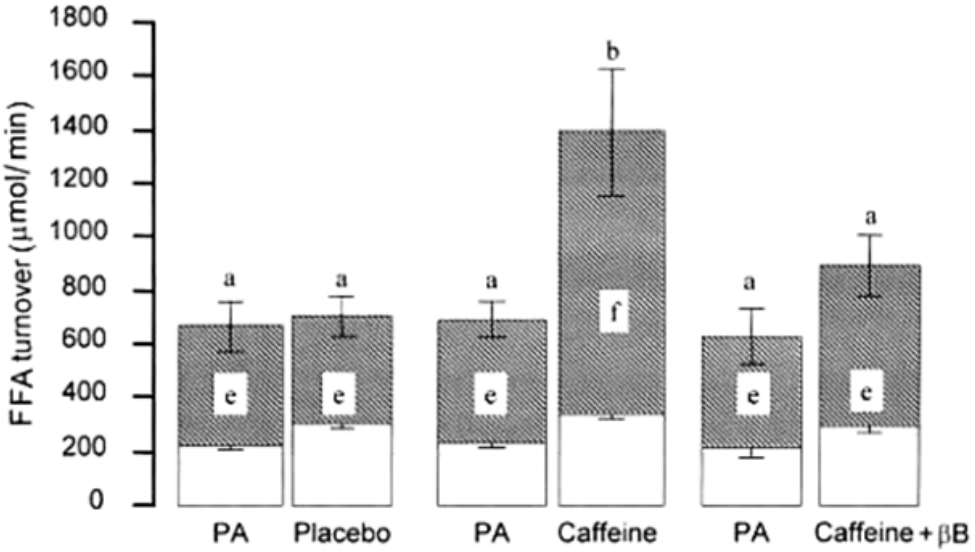

FIGURE 5. Mean (±SEM) total free fatty acid (FFA) turnover and mean (±SEM) values of its components, oxidative fatty acid disposal and nonoxidative fatty acid disposal or recycling, during postabsorptive fasting conditions (PA) and the last hour of experiments in which either a lactose placebo, caffeine (5 mg slow-release caffeine/kg + 5 mg caffeine/kg), or caffeine during β-adrenoceptor blockade with propranolol (βB) was administered ($n = 8$). For total FFA turnover, repeated-measures ANOVA showed significant treatment ($P < 0.01$) and condition ($P < 0.001$) effects and significant treatment-by-condition interactions ($P < 0.02$). The letters *a* and *b* above the bars refer to total FFA turnover. Bars with different letters are significantly different by at least $P < 0.05$ (Bonferroni multiple comparison test). For oxidative FFA disposal, repeated-measures ANOVA showed a significant condition effect ($P < 0.001$). For nonoxidative FFA disposal, repeated-measures ANOVA showed significant treatment ($P < 0.01$) and condition ($P < 0.01$) effects and significant treatment-by-condition interactions ($P < 0.02$). The letters *e* and *f* inside the shaded bars refer to nonoxidative FFA disposal. Bars with different letters are significantly different by at least $P < 0.01$ (Bonferroni multiple comparison test).

By increasing free-flowing fatty acids in your system, caffeine helps your body use more fat instead of lean muscle for energy. This delays muscle fatigue and improves your endurance during training.

Another study on caffeine (Spriet et al 1992) also shows that caffeine decreases glycogenolysis (the breakdown of glycogen) during exercise, thereby increasing its endurance during workouts. This table from Spriet and his colleagues' research shows caffeine's glycogen-sparing effects.

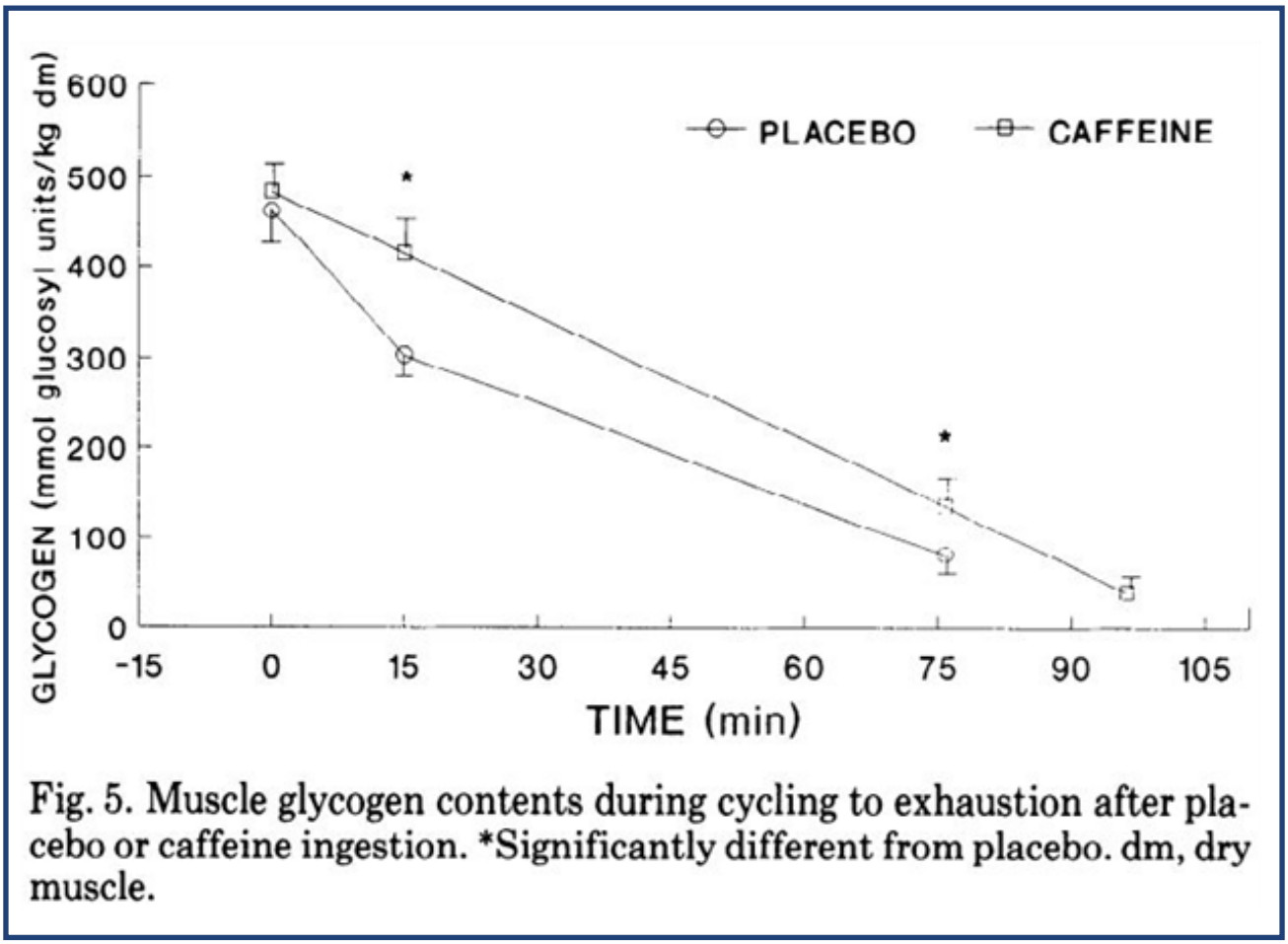

Fig. 5. Muscle glycogen contents during cycling to exhaustion after placebo or caffeine ingestion. *Significantly different from placebo. dm, dry muscle.

In this experiment, eight subjects were asked to cycle until they were exhausted. It was discovered that muscle glycogen content was higher among subjects during exercise after they had ingested caffeine (compared to the effects of a placebo). Seven out of eight subjects also increased their cycling time before reaching exhaustion after ingesting caffeine.

EPIGALLOCATECHIN GALLATE (EGCG) According to a study by Dulloo, Duret and Rohrer (1999), green tea (which has high EGCG levels) has thermogenic properties and promotes fat oxidation. In this study, Dulloo and his colleagues measured the effects of EGCG on the 24-hour energy expenditure (EE) and fat oxidation levels in 10 healthy men. The table below clearly indicates that fat oxidation was significantly higher in subjects who were treated with green tea extract compared to those who took caffeine or a placebo.

Substrate oxidation during 24 h in the respiratory chamber[1]

	Placebo	Caffeine	Green tea	P^2
Protein				
(g)	65.6 ± 3.1	66.9 ± 4.7	68.3 ± 3.5	NS
(% of 24-h EE)	13.2 ± 1	13.4 ± 0.98	13.3 ± 0.98	NS
Carbohydrate				
(g)	336 ± 16	324 ± 16	285 ± 17[3]	<0.001
(% of 24-h EE)	55.1 ± 2.4	52.7 ± 2.1	45.2 ± 2.7[4]	<0.001
Fat				
(g)	76.2 ± 10.6	81.9 ± 8.7	103 ± 13[4]	<0.001
(% of 24-h EE)	31.6 ± 3.1	33.8 ± 2.4	41.5 ± 3.1[4]	<0.001

[1] $\bar{x}$ ± SEM; $n = 10$.

[2] For differences across treatments (ANOVA).

[3] Significantly different from placebo, $P < 0.05$ (post hoc pairwise comparison with Tukey's test).

[4] Significantly different from placebo and caffeine, $P < 0.05$ (post hoc pairwise comparison with Tukey's test).

As explained in previous paragraphs, **Caffeine**, **Yohimbine** and **EGCG** are three powerful fat oxidizers. They also act as stimulants that give you the burst of energy you need to endure intensive workouts. **Vinpocetine** tempers caffeine's limiting effects (reduced myocardial and cerebral blood flow) and ensures that all four ingredients work harmoniously together.

The VYCE stack combined with the energy-repartitioning properties of **LIPOTHERMICS** gives you **107%** more calorie-burning power compared to thermogenic supplements.

The VentileanRx Lipothermic Stimulant comes in a highly concentrated liquid form. Its main ingredients (the VYCE stack) are already solubilized, making them easily absorbed by the body. The *Physicians' Desk Reference* shows a table which illustrates how the delivery system of a drug or supplement affects its ability to be easily absorbed by the human body.

DELIVERY SYSTEM	RATE OF ABSORPTION
Pill or Tablet	10%
Capsule	20%
Gel Cap	30%
Transdermal Patch	45%
Sublingual Liquid	90%
Intramuscular Injection	90%
Intraoral or Sublingual Spray	95%
Intravenous Injection	100%

The Physicians' Desk Reference reports that 85 percent to 90 percent of nutrients in liquid supplements are absorbed by the body in 27 to 30 seconds. Since VentileanRx is a super concentrated liquid, the onset of effects will certainly be much quicker compared to taking capsules or tablets (which takes the body 20-30 minutes to break down before assimilation occurs).

More than just the VYCE stack, VentileanRx also contains other health-enhancing nutrients (as shown on the product label):

	Amount Per Serving (2.5 ml)	Percent Daily Value
Vitamin B1 (Thiamin HCL)	0.375 mg	25%
Vitamin B2 (Riboflavin-5-Phosphate)	0.35 mg	20%
Vitamin B3 (Niacinamide)	165 mg	825%
Vitamin B6 (Pyridoxyl-5-Phosphate)	0.42 mg	25%
Vitamin B12 (Cyanocobalamin)	6 mg	100%
Vitamin C (as Ascorbic Acid)	12.5 mg	27%
Folic Acid	200 mcg	50%
Pantothenic Acid (D-Calcium Pantothenate)	2.5 mg	25%

Because VentileanRx is highly concentrated, only small doses of 2 to 5 ml are needed to create a rapid onset of action in the body.

HIIT (High Intensity Interval Training) vs. Traditional Cardio Training: *How to Use VentileanRx to Get the Best Results*

In recent years, there has been growing interest in HIIT (High Intensity Interval Training) and with good reason. HIIT reportedly gives great results with a mere 15 minutes of training three times a week. It definitely sounds like the perfect exercise program for people with busy schedules—but first, let's take a look at how HIIT compares to traditional cardio training.

	HIGH INTENSITY INTERVAL TRAINING	**TRADITIONAL CARDIO TRAINING**
Intensity Level	Alternates between short, high-intensity bursts of exercise (60 - 70 percent of your maximum heart rate) and longer periods of low-intensity work	Steady pace of exercise at a moderate intensity level
Duration	15 - 20 minutes	20 - 60 minutes
Sample Workout Plan	• Warm up • Intense, all-out exercise for one minute (swim, run, cycle, push-ups etc.) • Recovery period for four minutes (e.g. slowly jogging in place) • Repeat three times • Cool down	• Warm up • Continuous exercise (walking on the treadmill, running, swimming, etc.) at the same intensity level for 20 - 60 minutes or longer • Cool down

While HIIT takes less time, it certainly requires more energy. ACE-certified fitness expert Dean Anderson[24] explains that those short bursts of intense exercise briefly pushes you beyond the upper end of your aerobic exercise zone. This gives you several advantages that traditional cardio training can't offer:

- HIIT conditions both your anaerobic and aerobic energy systems
- You burn more calories during and after your workout because HIIT increases the length of time it takes your body to recover from each exercise session
- HIIT helps your body use more fat than carbohydrates for fuel

Anderson's explanations are supported by the results of a study (Trapp et al 2008) published in the *International Journal of Obesity.* In this experiment, 45 young women were randomly assigned to one of three groups: HIEE (High Intensity Intermittent Exercise), Steady-State Exercise (SSE) and a control group who maintained their usual physical activity levels and dietary habits throughout the experimental period.

The table below clearly shows that the women who underwent 15 weeks of HIEE experienced greater reduction in total body mass compared to the SSE and control groups.

Group	Leg fat (kg)	Leg lean (kg)	Leg, % fat	Trunk fat (kg)	Trunk lean (kg)	Trunk, % fat
HIIE pretraining	8.0±1.2	13.1±0.5	36.6±3.0	11.4±2.0	18.3±0.8	36.5±3.4
HIIE post training	6.8±0.8	13.2±0.5	$33.2_{\pm}2.2^{a}$	$10.0_{\pm}1.6^{b}$	$18.8_{\pm}0.8^{b}$	$33.2_{\pm}2.9^{a,b}$
SSE pretraining	7.3±0.7	13.2±0.6	35.4±2.4	8.6±1.3	18.6±0.8	30.9±3.7
SSE post training	7.0±0.5	13.1±0.6	34.8±2.0	8.8±1.2	18.3±0.8	31.8±3.6
CONT pretraining	8.9±1.2	13.3±0.5	38.1±2.4	11.0±1.5	18.3±0.6	35.3±2.9
CONT post training	8.7±1.1	13.2±0.5	38.1±2.1	11.0±1.3	18.0±0.5	36.1±2.6

Because HIIT is physically demanding, it's not recommended as a daily workout. Three times a week is ideal. A smart training schedule should give your body adequate time to recover.

HIIT and the VentileanRx Lipothermic Stimulant: A Powerful Combination

As explained in previous paragraphs, HIIT pushes your body's aerobic system to maximum levels. This helps you burn more calories from fat.

However, while your body is warming up at the beginning of your workout (and also during recovery periods), you are using energy from your anaerobic system. At the anaerobic level, you are burning calories from a larger percentage of carbohydrates (glucose) instead of fat. As much as possible, you need to spare your glucose levels to help you perform optimally.

Taking VentileanRx before your workout helps you spare glucose. VentileanRx's groundbreaking lipothermic system repartitions your energy usage during exercise. The lipothermic compounds trigger a metabolic shift, helping your body reach the aerobic level earlier during your workout (and even during recovery periods). At the aerobic level, your body burns more calories from fat, not muscle. Your glucose levels are spared, giving you long-lasting energy during your training sessions.

The calorie-burning power of HIIT combined with the metabolism-boosting effects of the lipothermic compounds in VentileanRx results in effective fat loss while maintaining healthy muscle mass.

As an added bonus, VentileanRx's lipothermic system also increases the body's EPOC, resulting in more calories burned after your workout session.

Lipothermics Are The Future Of Fat Loss

VentileanRx uses PharmaGenx's proprietary lipothermic system to deliver powerful ingredients that aid in effective fat-burning. If you would like to know more about the power of lipothermics, get in touch with the PharmaGenx team today.

Click here to get special pricing on Ventilean RX right now

References:

1. Dulloo AG. Strategies to counteract readjustments toward lower metabolic rates during obesity management. Nutrition 1993; 9: 366–372.
2. vanBaak M. Adaptive thermogenesis during over- and underfeeding in man. *British Journal of Nutrition* (2004), 91, 329–330
3. Clapham, J. C.; Arch, J.R.S (2007). "Thermogenic and metabolic antiobesity drugs: rationale and opportunities". Diabetes, Obesity & Metabolism 9: 259–275. doi:10.1111 /j.1463-1326.2006.00608.
4. Gurley B, Wang P, Gardner S (1998). "Ephedrine-type alkaloid content of nutritional supplements containing Ephedra sinica (Ma-huang) as determined by high performance liquid chromatography". J Pharm Sci 87 (12): 1547–53.
5. Boozer C, Daly P, Homel P, Solomon J, Blanchard D, Nasser J, Strauss R, Meredith T (2002). "Herbal ephedra/caffeine for weight loss: a 6-month randomized safety and efficacy trial". Int J ObesRelatMetabDisord 26 (5): 593–604.
6. Shekelle P, Hardy M, Morton S, Maglione M, Mojica W, Suttorp M, Rhodes S, Jungvig L, Gagné J (2003). "Efficacy and safety of ephedra and ephedrine for weight loss and athletic performance: a meta-analysis". JAMA 289 (12): 1537–45.
7. Astrup A, Toubro S, Cannon S, et al. Caffeine: a double-blind, placebo-controlled study of its thermogenic, metabolic, and cardiovascular effects in healthy volunteers. *Am J ClinNutr.* 1990;51(5):759-767.
8. Costill DL, Dalsky GP, Fink WJ. Effects of caffeine ingestion on metabolism and exercise performance. *Med Sci Sports.* 1978;10:155-158.
9. How does caffeine affect the body? http://www.scientificamerican.com/article.cfm?id=how-does-caffeine-affect. Updated Feburary 15, 1999. Accessed January 7, 2011.
10. Maki KC, Reeves MS, Farmer M, et al. Green Tea Catechin Consumption Enhances Exercise-Induced Abdominal Fat Loss in Overweight and Obese Adults. J Nutr. 2009; 139(2):264-270.
11. Venables MC, Hulston CJ, Cox HR, Jeukendrup AE.Green tea extract ingestion, fat oxidation, and glucose tolerance in healthy humans. *Am J ClinNutr.* 2008;87(3):778-784.
12. Dulloo AG, Duret C, Rohrer D, et al. Efficacy of a green tea extract rich in catechin polyphenols and caffeine in increasing 24-h energy expenditure and fat oxidation in humans. *Am J ClinNutr.* 1999;70(6):1040–1045.
13. Karpati E, Szporny L. General and cerebral haemodynamic activity of ethyl apovincaminate. Arzeimittelforschung. 1976;26(10a):1908-1912.
14. Physicians' Desk Reference, NPPDR. 1997; No. 18:676.
15. Verwaerde, P; Tran, MA; Montastruc, JL; Senard, JM; Portolan, G (1997). "Effects of yohimbine, an alpha 2-adrenoceptor antagonist, on experimental neurogenic orthostatic hypotension.". Fundamental & clinical pharmacology 11 (6): 567–75. PMID 9444525.
16. Adeniyi AA, Brindley GS, Pryor JP, Ralph DJ (May 2007). "Yohimbine in the treatment of orgasmic dysfunction". Asian Journal of Andrology 9 (3): 403–7. doi:10.1111/J.1745-7262.2007.00276.x. PMID 17486282.
17. December 1, 1998 (1998-12-01). "Fat Loss, alpha2-Adrenoceptors and Yohimbine, Part 2". Thinksteroids.com.

18. Brooks, G.A., et al. 2000. *Exercise Physiology: Human Bioenergetics and Its Applications.* Mountain View, CA: Mayfield.
19. Astorino TA, Martin BJ, Wong K, Schachtsiek L. Effect of acute caffeineingestion on EPOC after intense resistance training. J Sports Med Phys Fitness.2011 Mar;51(1):11-7. PubMed PMID: 21297558.
20. Acheson KJ, Gremaud G, Meirim I, Montigon F, Krebs Y, Fay LB, Gay LJ,Schneiter P, Schindler C, Tappy L. Metabolic effects of caffeine in humans: lipid oxidation or futile cycling? Am J ClinNutr. 2004 Jan;79(1):40-6. PubMed PMID:14684395.
21. Szilágyi G, Nagy Z, Balkay L, Boros I, Emri M, Lehel S, Márián T, Molnár T,Szakáll S, Trón L, Bereczki D, Csiba L, Fekete I, Kerényi L, Galuska L, Varga J,Bönöczk P, Vas A, Gulyás B. Effects of vinpocetine on the redistribution ofcerebral blood flow and glucose metabolism in chronic ischemic stroke patients: aPET study. J Neurol Sci. 2005 Mar 15;229-230:275-84. Epub 2005 Jan 8. PubMedPMID: 15760651.
22. Galitzky J, Taouis M, Berlan M, Riviere D, et al. a 2-Antagonist compounds and lipid mobilization: evidence for a lipid mobilizing effect oral yohimbine in healthy male volunteers. Eur J Clin Invest 1988; 18:587-594.
23. Lafontan M, *et al.* Alpha-2 adrenoceptors in lipolysis: alpha 2 antagonists and lipid-mobilizing strategies. *Am J Clin Nutr.* (1992)
24. Anderson, Dean: High Intensity Interval Training. *Take Your Fitness and Fat Loss to the Next Level.* Retrieved from http://sparkpeople.com/resource/fitness_articles.asp?id=621
25. Trapp EG, Chisholm DJ, Freund J, Boutcher SH (April 2008). “The effects of high-intensity intermittent exercise training on fat loss and fasting insulin levels of young women”. International Journal of Obesity 32 (4): 684–91. doi:10.1038/sj.ijo.0803781. PMID 18197184