

Take *Total Control* Over Fat Loss

by Dr. Walter Kazachuk MD

As a physician specializing in weight loss I am excited to tell you about a new weight loss product from Herbalife that took over five years now to develop. Over the years Herbalife has developed some of the most advanced weight loss products to ever hit the market such as cell-U-loss, Snack Defense, and Thermo-bond to name a few. Each one has created a loyal following of customers that found their success in these products. This medical report is meant to describe the issue that Herbalife took on and how they developed a unique science to produce a product unlike any seen in the weight loss market before.

Five years ago Herbalife started with the idea of creating a product that would fill the void left from a prescription product taken off the market several years ago called *Total Control*. When the original product was removed from the market by the companies manufacturing *Total Control*, it left many physicians and their patients scrambling for an equal alternative, but there was none. That is when Herbalife really took on the challenge of developing the next wave of weight loss products, and after exhaustive research with their *Cellular and Molecular Nutrition Lab* UCLA lab, I am convinced Herbalife has developed a *MORE* effective product that will exceed the expectations of physicians such as myself and finally fill the void left when the original *Total Control* left the market.

Complex System Needs A Complex Targeted Approach - *Utilizing the Science of "Cellular Nutrition" and "Chemical Profiling"*

There are very few companies in any industry that have the integrity and responsiveness of Herbalife. As a physician I have recommended their products to patients and friends because Herbalife provides the highest quality nutrition products utilizing the Cellular Nutrition model they pioneered at the *Cellular and Molecular Nutrition Lab at UCLA*. Simply put, we are fundamentally "cellular beings" and need to provide the nutrients necessary for optimal health and the fastest weight loss possible. This approach has worked wonders for many products and has made Herbalife the "Gold Standard" for all companies in the health and wellness sector.

However when it came to weight loss the "Cellular Nutrition" approach needed a tune up, a new science that would synergistically tackle the complex pharmacokinetics involved in fat loss. "*Chemical Profiling*" took Herbalife's weight loss products to a new level of success never before experienced and set a new standard for excellence in the field. "*Chemical Profiling*" is a unique method for identifying multiple compounds that act

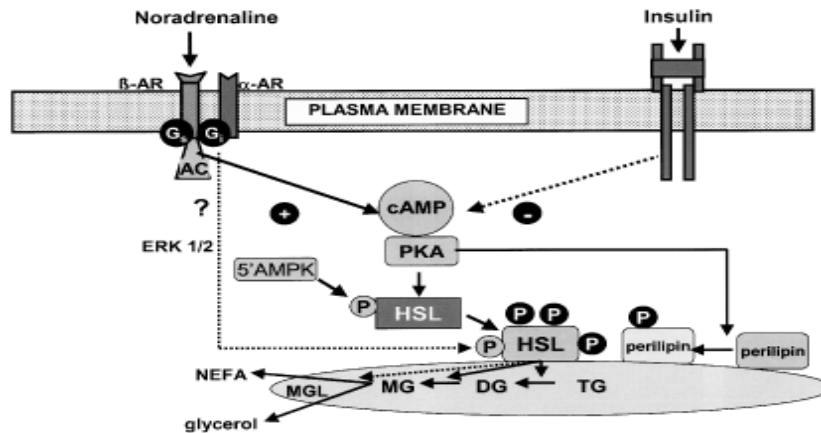
synergistically and systemically throughout our physiologically active body to coordinate the science of "Cellular Nutrition" and create a bio energetically advantageous response that is sustainable for extended periods of time resulting in "**Total Control**" over the weight loss puzzle. As a medical professional this is the holy grail of products because for weight loss it tackles where fat is stored (adipocytes and mobilization), where they are burned for energy (muscle tissue and beta-oxidation), and increases metabolic rate to speed up the rate of loss.

Complexity of Fat Burning

The complexity of fat burning or fatty acid oxidation is a difficult issue that has made using drugs so effective (when you get it right), yet extremely difficult to do with weight loss all starts because fat is stored in specialized fat cells called adipocytes. The fat then needs to be mobilized from adipocytes to the largest metabolic organ in the body, our muscle tissue in order to be activated and go through beta-oxidation within the mitochondria of active tissue compartments. The pharmacology involved in developing such a coordinated tissue specific yet whole body energetic response took years to develop the perfect formula and it started with the discovery of how to mobilize the fatty acids in fat cells.

Mobilization of Adipocyte Specific Fatty Acids

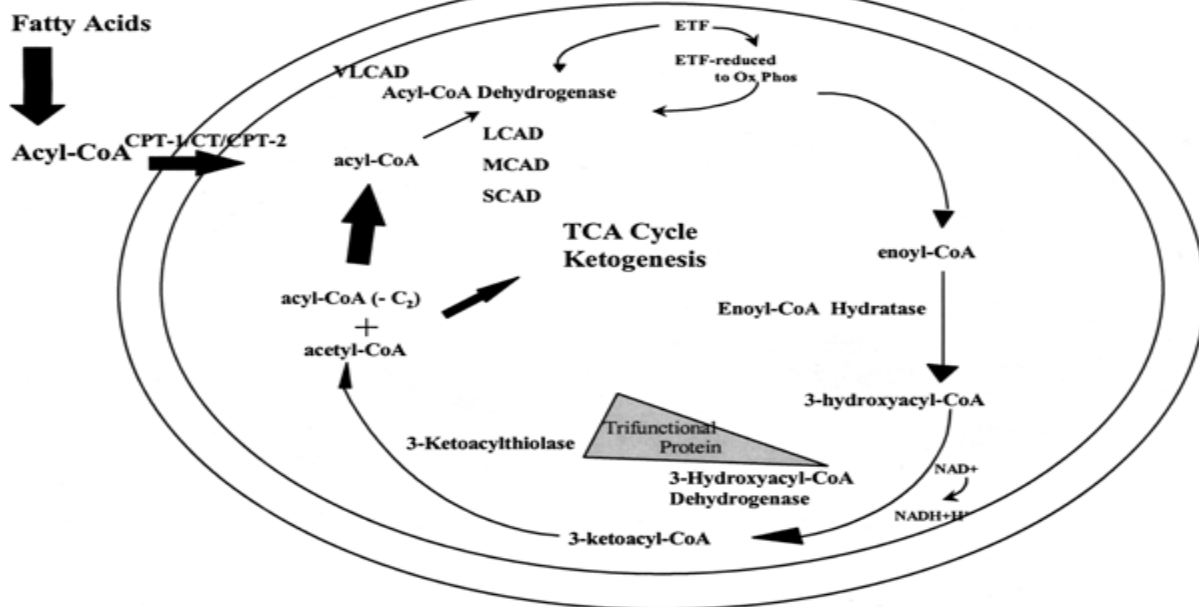
Fat mobilization was a breakthrough in weight loss science several years ago that provided the first prescription **Total Control** product, because at the time it was thought that of as the rate limiting step in fatty acid oxidation. It had been known for years that when people were on severely low calorie diets they had extremely high levels of fatty acids in their blood that were mobilized in a yet unknown way. The key enzyme, hormone sensitive lipase, that gets activated was discovered several years later. Hormone sensitive lipase breaks down stored body fat specifically in the adipose and allows it to be released into the bloodstream and was hailed as the holy grail of discovery for fat burning. Two key ingredients in **Total Control**, Epigallocatechin Gallate and Calcium are extremely potent activators of lipolysis and fat mobilization that are usually reserved for pharmaceutical grade products and act through the Noradrenaline receptors on the plasma membrane. However the researchers at Herbalife realized that it is not a linear relationship because increasing fat mobilization did increase fat burning but something was missing in the puzzle that if unlocked would completely revolutionize once again the fat burning industry.



Oxidizing Specific Uptake

As it turns out increasing fat mobilization only shifts our fat burning a small amount above baseline. That is because there is another control point that needs to be shifted in favor of fat burning, called "fatty acid uptake." This is where **"Total Control"** really takes fat burning to an entirely new level, and has helped keep Herbalife as America's #1 nutrition company. Two key enzymes are activated, called Fatty Acid Transporter (FAT), and Carnitine palmitoyltransferase I (CPT-1) also known as the "Gate-Keeper Enzyme" for fatty burning in muscle, liver, heart, etc... These two enzymes regulate at the tissue level fat burning via beta-oxidation for use in the Krebs Cycle. The specialized xanthine cocktail found in **Total Control** allow the activation of these two key enzymes. Xanthines are extremely potent and are similar to many pharmaceutical stimulants, because they form the "backbone" of many pharmaceutical compounds. The xanthines work by activating a cyclic-AMP cascade that won a Nobel Prize for its discovery several years ago, and stimulate various master regulators including AMPK and its phosphorylation dependent kinase within the cell. In muscle cells, where most fat burning in the body occurs if the cells Fatty Acid Transporters and CPT-1 enzyme is activated fatty acids are readily oxidized at astonishingly high rates.

Mitochondrial Fatty Acid Oxidation



Super Charging Fat Burning - Accelerating Results

Most companies would stop there and start marketing away that they have a revolutionary new product that will assist in fat burning like never before. But the scientists at Herbalife felt they still had more to do in order to deliver a product that would not just increase fat burning, but turn up a person's metabolic rate as well. That is because the scientists at Herbalife were onto a new class of compounds now called **catechin polyphenols** that raise thermogenesis (the rate at which calories are burned), and hence increases energy expenditure. Total Control contains a pharmaceutical grade mixture of these rare polyphenols. It is thought that these exotic compounds work through several Uncoupling Proteins specifically UCP-1 and UCP-2 that can be up-regulated in rare circumstances in human development and allow for additional heat production. Most notably when we are born until about the age of 5 years when our mass to size ratio favors heat loss and evolutionarily these UCP's help maintain our core temperature. For weight loss efforts they are akin to an extra exercise session each day.

Finalizing the Ratio's of Ingredients

At the UCLA research lab the final ingredient amounts were worked out to maximize the synergistic effect of Total Control *in vivo*. The results are phenomenal, producing safe, effective, and **accelerated** fat burning to complement the Science Based Diet that has satisfied over 10 million people

worldwide!

Synergistic Cellular Nutrition Ingredients

Through the science of "**Chemical Profiling**" Herbalife has developed specific ratio's of the following pharmaceutical-grade fat loss catalysts to tackle the complex issue of increasing fat oxidation and fat loss in the **Total Control** product:

Green Tea Extract - "Epigallocatechin Gallate" or EGCG Clinical trials conducted by the University of Geneva indicate that green tea raises metabolic rates, speeds up fat oxidation and improves insulin sensitivity and glucose tolerance. In addition EGCG contains **catechin polyphenols** that raise thermogenesis (the rate at which calories are burned), and hence increases energy expenditure.

Ginger Extract - Synergistically calms the body from the sometimes stimulating effect of EGCG and some of the other compounds in "Total Control." Additionally ginger extract helps reduce inflammation and is used by experts to help arthritis patients.

Yerba Mate - Is a potent, yet gentle infusion that is commonly found throughout South America and is known by the locals as an appetite-suppressant and invigorating drink. The xanthine cocktail found in pure Yerba Mate is different from other plants containing caffeine most significantly in its effects on muscle tissue. Mate has been shown to have a relaxing effect on smooth muscle tissue, such as the intestines, while and a stimulating effect on skeletal tissue (such as the legs, arms, etc...) where fatty can be burned most effectively.

Calcium - It has recently been shown that higher-calcium diets favor burning rather than storing fat. Calcium changes the efficiency of weight loss by assisting in activating hormone sensitive lipase the key enzyme in fatty acid mobilization!

Additional compounds for optimal health - As with all Herbalife products your goals are first, however your overall health and well being is of the utmost importance. That is why **Total Control** contains a blend of additional herbs and roots that boost immune systems, reduce blood pressure, lower cholesterol, and help discard waste products and toxins by nourishing every cell in your body ensuring your cellular nutrition is taken care of.

Herbalife, with **Total Control**, has developed the most advanced fat burning and weight loss aid ever to be brought to market. It will undoubtedly revive

the cult like following its predecessor had and set new expectations customers will have in a weight loss product. I stand behind recommending **Total Control** to my patients because of the undeniable results it helps them achieve in a timely manner and encourage others to do the same.