

# Lyzme5®

*Lypolytic Compound*

By Jeff Golini

Patents Pending

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## **A ‘Fat’ Conundrum:**

The human body is composed of carbon, water, oxygen and nitrogen that is assembled and organized into infinite structural complexities. Of all our body’s complexities, seemingly simple fat is indispensable to life itself. It alone is responsible for compartmentalizing cells and organs, as well as insulating our neural network and preventing a biological ‘short circuit’. In other words, humans are essentially kept alive by fats.

Lipids (fats) are essential for life support. Lipids provide biological energy to burn, protect internal organs, aide in nutrient absorption, and are the starting material for hormones and some vitamins. Lipids can be simple or complex. They come in a variety of forms, and are generally categorized into several families as fats, oils, phospholipids, sterols, triglycerides or waxes. All lipids share the same trait of insolubility in water and soluble in numerous organic solvents.

While a physical description of the lipid diversities is beyond the scope of this report, several members of two very important lipid families – the simple lipid cholesterol (high density lipoproteins [HDL], low density lipoproteins [LDL], and related fatty acids), and triglycerides – a complex lipid, have been linked to an ever increasing list of health concerns.

## **Good lipids gone ‘bad’**

While the liver is capable of synthesizing essential lipid complexes from plant matter, humans usually overload this natural process by indulging in excesses of commercially available fats.

There are predominantly four types of fats in foods. Saturated and trans fats (both of which are undesirable because of the way they are conjugated during absorption and metabolism) have been shown to raise low density lipoprotein (LDL) cholesterol (‘bad cholesterol’) levels in the blood; monounsaturated and polyunsaturated fats are not identified by our metabolic processes in the same manner, and do not appear to negatively impact LDL when consumed in moderation.

Excess calories (from fats, carbohydrates, and protein [to a lesser degree]) are all stored as fat (adipose tissue). The cycle of Hyperlipidemia (elevated serum cholesterol) begins with the synthesis of bile acid in the liver, from existing cholesterol, in response to choleric intake. As intake increases, more bile acid is produced. This material functions like an organic ‘soap’, forming a protective envelope around otherwise insoluble food fats (saturated and excess unsaturated fats), permitting digestion and metabolism. At the end of the cycle (in the ileum of the small intestine) they are ‘uncoupled’ (deconjugated) reabsorbed and recycled. This action increases the total amount of free cholesterol in the blood plasma.

Storing of energy reserves is a body’s survival mechanism. Excess carbohydrates (simple/complex sugars) and protein not burned are primarily converted to triglycerides

and stored in fats cells. Excess of triglycerides in the plasma is called hypertriglyceridemia and is also linked to the occurrence of coronary artery disease.

### **Metabolic Syndrome, Hyperlipidemia and Heart Disease**

Metabolic syndrome has a significant negative impact on morbidity and mortality. 25% of the adult population in the U.S., including as many as 60% of obese individuals, are reported to have Metabolic Syndrome.

Elevated blood cholesterol (LDL and triglycerides) levels initiate arteriosclerosis and (potentially) hypertension. While it is not a universal association, hyperlipidemia is most often observed in conjunction with being obese.

Data from the National Health and Nutrition Examination Survey (NHANES) completed in 2001- 2004 showed that about two thirds of all adults in the United States were overweight and almost one-third were obese. According to a most recent cumulative study conducted by the CDC and NHANES, it was discovered that the number of cases of adult obesity has reach 68% (1). The CDC has estimated that obesity is fast approaching tobacco as the top underlying preventable cause of death in the USA.

In 2000, poor diet including obesity and physical inactivity caused around 400,000 U.S. deaths, which is more than 16% of all deaths and the number two killer. That compares with 435,000 for tobacco or 18%, which is the top (self inflicted) underlying preventable killer.

In 2004, obesity mixed with inactivity increases the risks for the top two killers: all forms of cardiovascular disease (heart/disease and/or attack, cerebrovascular events – including stroke), and all forms of malignancies (2). As of 2004, the Journal of the American Medical Association listed '*mistakes caused by the actions of health professionals*' the third leading cause of (preventable) death in the USA, beating out tobacco (3).

In addition, hyperlipidemia and obesity are strong risk factors for hypertension (today more than 50 million Americans have hypertension), diabetes, kidney disease, gastric related disease, gallbladder disease, osteoarthritis, sexual dysfunction (ED), sleep apnea and other breathing problems.

### **The Statin Paradox**

Presently, the number one group of drugs for antilipidemic action are the statin drugs. There is considerable research that calls into question the metabolic friendliness of statin drugs. This group of drugs, created approximately 20 years ago, acts by inhibiting 3-hydroxy-3-methylglutaryl-Co enzyme (HMG-CoA reductase). This enzyme is related to production of cholesterol. As production declines, a deficit in the total cholesterol pool forms causing the body to draw on its lipid reserves. The statin drugs also have a secondary effect acting as an anti-inflammatory agent. Despite manufactures claims that HMG-CoA reductase inhibition is the primary reason for the cardiovascular benefit, there is now a growing body of evidence to suggest that it is not the case (4).

By blocking cholesterol synthesis, it directly causes the depletion of other key biological components down stream such as, ubiquinol (coenzyme Q10), creatin and phosphorylation of various lipids, and muscle enzymes. Persistent muscle pain and weakness are the signs and symptoms of statin actions on these pathways. Label warnings

for the most common statin drugs warns users of the most common side effects such as: unexplained muscle pain and weakness, headache, muscle aches, abdominal pain, muscle weakness, nausea, diarrhea, muscle inflammation leading to kidney failure, blurred vision, bleeding, dizziness, (etc..).

Some researchers are now questioning the potential cognitive impact statins are having (Alzheimer's, dementia, and confusion), long and short term, due to direct inhibition of the brain's glial cell synthesis of cholesterol (5-6).

### **The Need:**

If you do not want to take a drug, your current choices are slim. The dietary supplement industry is loaded with slick ads and unbelievable claims backed up by nothing but marketing. These products have been under the eye of the FDA for years and we have seen many false claim suites, products adulterated with drugs to increase the outcome and high dose recommendations resulting in health issues. All American<sup>(R)</sup> Pharmaceutical has been in the supplement business since 1985 and is the current leader in product development and innovation. AAP's track record speaks for it self with cutting edge developments such as Kre-Alkalyn<sup>(R)</sup>, Kre-Celazine<sup>(R)</sup>, KarboLyn<sup>(R)</sup>, ProtaLyn<sup>(R)</sup>, Taxadrol<sup>(R)</sup> & now Lyzme5<sup>(R)</sup>. All American<sup>(R)</sup> Pharmaceutical has just been granted an orphan drug status for its product called Prophexel<sup>(R)</sup> for the "treatment of Juvenile Rheumatoid Arthritis joint and related tissue inflammation", make this a prescription drug.

### **What is Lyzme5<sup>(R)</sup>?**

#### Design:

The compound, referred to as Lyzme5<sup>(R)</sup>, has demonstrated the propensity ( in previous studies) to be directly involved in the breakdown, lysis and elimination of food-derived fats as well as assisting in the reduction of liver-derived lipids. This is an exciting discovery, which will aid the body in lowering overall cholesterol and triglyceride levels.

#### Structural importance:

Lyzme5<sup>(R)</sup> can be classified as a unique trimethylated material. This compound's unique trimethylated structure makes it highly important in methyl group metabolism. Many important chemical events in the body are made possible by the transfer of methyl groups. For example, genes can be switch on or off (methylation or de-methylation) in this way, and cells-to-cell communication (i.e. membrane receptor site activation/competition) can be carried out via methylation.

#### Functional mechanism:

Dietary lipids are transported to the liver by lipoproteins called chylomicrons. In the liver, fat and cholesterol are packaged into lipoproteins called very low density lipoproteins (VLDL) for transport through the blood to the target tissues.

There are several mechanisms for Lyzme5<sup>(R)</sup>'s actions in the reduction of overall cholesterol. The first is the ability to reduce hepatic related lipids. Lyzme5<sup>(R)</sup> acts by interfering with hepatic storage and or lysis of lipids, assisting in 'chaperoning' lipid

molecules from the liver, back into the blood stream. With an exercise program your body can now burn these lipids for energy, resulting in a reduction of body fat.

The second mechanism of cholesterol reduction is through inhibition of cholesterol synthesis in the liver. Lowering cholesterol in hyperlipidemic individual is the first step in slowing the development of coronary artery disease.

### **Is Lyzme5® Safe?**

Two pre-clinical toxicity studies have been completed. There was no definitive histopathologic substance-related tissue toxicity confirmed for any of the samples.

Therefore Lyzme5<sup>(R)</sup> is completely safe for human consumption at recommended doses.

### **Literature Cited**

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