

GRI

Glycemic Research Institute
WASHINGTON, D.C.

PRESS RELEASE

Glycemic Research Institute Awards Burger King “Kid-Friendly Product of the Year”



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BURGER KING JOINS THE WAR AGAINST CHILDHOOD OBESITY

Despite awareness of the ever-rising obesity and diabetes epidemic in children, the numbers continue to skyrocket. Parents are struggling to control and prevent their children from becoming yet another statistic in the obesity/diabetes epidemic.

Researchers are now predicting that *one of every two children* will develop Type 2 diabetes because of excess weight, which raises the probability that they will die as much as 20 years younger than their parents (2008. *The Washington Post Series on Childhood Obesity*).

FEDERAL TRADE COMMISSION JOINS THE WAR AGAINST CHILDHOOD OBESITY

With the obesity epidemic raging in children, the United States government *Federal Trade Commission* (FTC) has called for nutrition-based standards for foods marketed to children.

William Kovacic, Chairman of the *Federal Trade Commission* (FTC), stated, "We call on both the food and media industries to deploy their talents to promote healthier choices for children and adolescents."

The FTC prepared a document for Congress entitled, "*Marketing Food to Children and Adolescents: A Review of Industry Expenditures, Activities and Self-Regulation*." This report was designed to get the attention of Congress and to educate Congressional members on the seriousness of the childhood obesity epidemic.



According to the *World Health Organization*, it is estimated that 22 million children under the age of five are overweight (globally). In the United States, since 1980, the number of overweight children has doubled and the number of overweight adolescents has tripled.

In the adult population, more than 300 million people are obese worldwide, which is three-fold that of adults in the 1980's.

Both the FTC and the *Council of Better Business Bureau's Children's Food and Beverage Advertising Initiative of 2006* strongly encourage that *large food manufacturers take their self-regulatory obligations seriously.*

They also advise that *companies improve the nutritional profiles of products marketed to children and adolescents in a bid to combat obesity.*

BURGER KING STEPS UP TO THE PLATE

In the ongoing war against childhood obesity, *Burger King* has made a positive stance with the introduction of their new product, *Apple Fries*. The *Apple Fries* have just received the "*Kid Friendly Product of the Year*" award from the *Glycemic Research Institute* (GRI) in Washington, D.C.



The *Glycemic Research Institute* (Glycemic.com) is a Non-Profit organization providing Federal government Certifications in the areas of the Glycemic Index, obesity, diabetes, and Kid-Friendly foods.

The GRI Certification Marks are backed by independent Board Approved Human In Vivo Clinical Trials (GlycemicIndexTesting.com), which are required for FDA and FTC claims, such as Low Glycemic and Diabetic-Friendly.

The Glycemic Research Institute (GRI) has been providing CFR 21 claim substantiation for the past 25 years, to food and beverage manufacturers, and is also Certified by the UK and Canadian governments.



GRI's decision to award *Burger King* the "*Kid Friendly Product of the Year*" was based on the innovative aspect of the *Apple Fries*, as well as the metabolic response of the *Apple Fries*. The *Kid-Friendly Certification Seal* (GRIKidFriendly.com) is only awarded to products that meet the GRI strict criteria for foods and beverages.

Each potential *Kid Friendly* product tested by the *Glycemic Research Institute* is assigned a clinical index that reflects the Glycemic, Cephalic, diabetic, and fat-storage perimeters of a food or beverage. These trials represent the *Critical Health Number* and *Critical Health Index* assigned to foods tested.

In order for the *Glycemic Research Institute* to independently determine the metabolic response of the BK *Apple Fries*, plasma glucose and serum insulin responses were analyzed following the ingestion of *Burger Kings Apple Fries* (2.4-ounce serving with 35 total calories). Glycemic perimeters were tracked and analyzed, as well as Cephalic Response, and Adipose Tissue Fat-Storage.

Per these protocols, the *Critical Health Index* of the *Burger Kings Apple Fries* passed as a *Kid Friendly* approved food.

Three other *Burger King* foods were tested and approved as *Kid Friendly*:

- *Burger King* Flame-Broiled Chicken Tenders (145 calories and 6 grams of fat per four-piece children's serving)
- *Burger King* organic unsweetened applesauce (1 serving)
- *Burger King* low-fat milk (1 serving)

SUMMARY

The *Glycemic Research Institute* applauds the efforts of *Burger King* in the war against childhood obesity.

If all food manufacturers take responsibility for the fat-storing and diabetic properties of foods marketed to children, we can begin to control the obesity and diabetic epidemic in this country and globally.



ADVANCED CLINICAL STUDIES in HUMAN ADIPOSE TISSUE FAT

PROTOCOLS FOR ADIPOSE TISSUE FAT-STORAGE CLINICAL TRIALS

Adipose tissue in obesity becomes refractory to suppression of fat mobilization by glycemic and insulin responses, and also to the normal acute stimulatory effect of insulin on activation of lipoprotein lipase (involved in fat storage).

The metabolic relationship between adipose tissue fat-storage and ingested food (hereinafter "*Test Foods*") can be tracked and documented In Vivo. *Test Foods* that increase total Lipoprotein Lipase (LPL) activity, both secreted and cell-associated, promote adipose fat storage in humans.

Lipoprotein lipase (LPL) is a key enzyme regulating the disposal of fuels in the body. LPL is expressed in a number of peripheral tissues including adipose tissue, skeletal and cardiac muscle and mammary gland. In white adipose tissue, LPL is activated in the fed state and suppressed during fasting. The reverse is true in muscle. LPL is the definitive metabolic gatekeeper for fat storage in the fat cell.

Oral consumption of foods, drinks, Nutraceuticals, and Pharmaceuticals (*Test Foods*) elicit distinct responses in humans. These metabolic responses range from glycemic and insulinogenic (via oral ingestion and Cephalic), to adipose tissue fat storage, and encompass imbalances in human fat-storing mechanisms, such as Lipoprotein Lipase (LPL), Brain Glycemic Indexing (CPIR), Neuropeptide Y, and Leptin.

Test Foods that activate deposition in human adipose tissue fat cells can be identified and classified as to their Fat-Storage capacity. *Test Foods* that trigger Lipoprotein Lipase (LPL) cause a net effect as adipocytes *fill up* and reach maximum storage capacity. As this occurs, new adipose tissue fat cells are created to fulfill storage needs.



This situation also leads to fat deposition in other tissues. Accumulation of triacylglycerol in skeletal muscles and in liver is associated with insulin resistance.

Obese humans present 70-80% greater body fat than the lean humans, exhibited elevated levels of leptin and insulin and increased activity of Lipoprotein Lipase in adipose tissue (aLPL), with no change in muscle LPL.

Common characteristics of obese humans include hyperphagia, elevated circulating levels of triglycerides (TG), nonesterified fatty acids (NEFA) and glucose, and a significant increase in beta-hydroxyacyl-CoA dehydrogenase (HADH) activity in muscle, reflecting its greater capacity to metabolize fat. This is typically accompanied by a significant increase in expression of the peptide, galanin (GAL), in the paraventricular nucleus (PVN), as measured by in situ hybridization and real-time quantitative PCR, and also in GAL peptide immunoreactivity.

Specific characteristics of obesity, including expression of hypothalamic peptides, are dependent upon diet composition, thus the precise composition of a *Test Food* determines its fat-storage proclivity.

Whereas High-Glycemic-Related Obesity (HGRO) and Cephalic-Related Obesity (CPIR) are associated with hyperphagia and elevated lipids, fat metabolism in muscle, and fat-stimulated peptides such as GAL, non-HGRO/CPIR, with a similar increase in body fat, shows none of these characteristics and instead exhibits a metabolic pattern in muscle that favors carbohydrate over fat oxidation. The existence of multiple forms of obesity, with different underlying mechanisms, are *diet dependent*.

Glycemic Research Laboratories Adipose Tissue Fat Studies focus on identification of the proclivity and ability of a *Test Food* to stimulate fat-storage in fat cells via stimulation of human fat-storing enzymes and mechanisms. *Test Foods* are clinically analyzed In Vivo to determine their metabolic fat-storing properties with optional specific focus on insulin-resistance disorders and adipose tissue fat-storage via LPL and other metabolic biomarkers.

Test Foods that pass the *Glycemic Research Institute Adipose Tissue Fat-Storage* protocols will have met specific criteria in clinical studies that determine the *Test Foods* acceptability for use by non-diabetic and/or diabetic persons, overweight and obese persons, normal persons, hypoglycemics, and persons with Insulin Resistance and other known Metabolic Syndromes.



Controlling the fat-stimulating properties of *Test Foods* allows for better control over food-driven fat-storage, insulin stimulation, reactive hypoglycemia, as well as exacerbation and development of obesity, Metabolic Syndrome, Insulin-Resistance, and type 2 diabetes.

GRI PERIMETERS **IN ADIPOSE TISSUE FAT STIMULATION (ATFS)** **RATING PROTOCOLS**

Test Foods undergoing clinical trials for ATFS protocols are rated as follows:

<u>LEVEL</u>	<u>PERCENT</u>	<u>FAT-STORING CAPACITY</u>
1	1 % - 25 %	Very Low Adipose Tissue Fat-Storing Capacity
2	25 % - 49 %	Low Adipose Tissue Fat-Storing Capacity
3	50 % - 60 %	Moderate Adipose Tissue Fat-Storing Capacity
4	61 % - 75 %	High Adipose Tissue Fat-Storing Capacity
5	76 % - 100 %	Very High Adipose Tissue Fat-Storing Capacity

PROTOCOLS

Test Foods that qualify: Level 1 to level 2
Tests foods that do not qualify: over Level 2

The Adipose Tissue Fat-Storage value/index of Test Foods is not obvious by the ingredients, nor by the percent of carbohydrate/protein/fat. Rice cakes rate “Very High”, though they do not possess significant fat or caloric content. Rice cakes stimulate adipose tissue fat-storage via mechanisms in humans that defy logic, while following *anthropologic* (the logic of Anthropology in human development).



SERVICES

Foods including bread, candy, chocolate, and ice cream, typically high-fat-storage foods, can be naturally-re-engineered to avoid adipose tissue fat storage in fat cells. Food manufacturers can utilize new methodologies in reformulating foods that circumvent activation of human fat-storing mechanisms, particularly in foods marketed to children.

The *Glycemic Research Institute* offers pre-testing of foods in development to manufacturers who desire to develop healthier products.

Glycemic Research Institute

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