



FAT METABOLISM FACTORS™

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THE IMPORTANCE OF FATS

A fat is a substance containing one or more fatty acids that is the principle form in which energy is stored in the body.¹ Contrary to what most people think, a certain amount of fat is necessary in the diet to provide an adequate supply of essential fatty acids to the body and for the efficient absorption of fat-soluble vitamins from the intestine.² Fats, medically and nutritionally called lipids, are essential for those reasons and for their high energy value. The most plentiful lipids in your body and in your food are triglycerides, which provide more than twice as much energy per gram than either carbohydrates or proteins.³ Furthermore, much of the carbohydrate in the diet is converted to fat before it is ever used for providing energy.⁴ Still, the same fate befalls a surplus of carbohydrates, proteins, or fats in the diet as they are all converted to triglycerides and stored in fat tissue.⁵

METABOLISM OF FATS

Metabolism is the term used to describe the chemical and physical changes that take place within the body that enable it to grow and function.⁶ Fat metabolism is related to basal metabolism, that is, the "base" rate of chemical reactions occurring within the body while it is at rest.⁷ A fluctuating state of energy balance occurs daily between caloric intake and expenditure based on food and calorie consumption. When the body converts intake such as carbohydrates, fat and protein to fuel, the process is slow and controlled.⁸ Yet, the proper metabolism of these compounds is an important aspect of good health.

The liver plays a central processing and distributing role in metabolism and furnishes all other organs and tissues with a proper mix of nutrients via the bloodstream.⁹

ESSENTIAL FATTY ACIDS

Most triglycerides contain more than one kind of fatty acid, polyunsaturated (PUFA), saturated and monosaturated, and most food fats are mixtures of different triglycerides.¹⁰ The body has a specific need for PUFA since they cannot be synthesized in the body from saturated or monosaturated acids or from carbohydrates and protein.¹¹ Linoleic acid is the PUFA needed for healthy cell membranes and serves as a precursor for the formation of other fatty acids necessary within the body.¹² Arachidonic acid is the PUFA that is a major precursor for prostaglandins, a group of chemically active, hormonelike compounds that influence innumerable body processes.¹³

HOMEOSTASIS

As with other processes in the body, homeostasis must be maintained in order to insure a healthy metabolism. Homeostasis is defined as balance and harmony within the body. It is the condition created when each cell in the body functions within certain physiological limits. Homeostasis is achieved when the body: 1) has the proper amounts of gases, nutrients, ions, and water; 2) maintains the optimal internal temperature and; 3) has an optimal fluid volume for the health of the cells. When homeostasis is disturbed, health may be affected.¹⁴

NUTRITIONAL SUPPORT

The following information is provided to help you better understand the role that certain nutrients play in the metabolism of fats and the overall health of the body.

CHOLINE (CHOLINE BITARTRATE) is involved in the transport of fats and cholesterol in the body.¹⁵ This B complex factor is involved in the formation of lecithin, used in fat metabolism by the liver.

INOSITOL, like choline, is a compound used in the metabolism of fats and cholesterol and in the formation of lecithin.

VITAMIN B-6 (PYRIDOXINE) is an essential coenzyme for normal amino acid metabolism. It is also necessary for the metabolism of fats, carbohydrates and proteins.

POTASSIUM (AMINO ACID COMPLEX) is stored almost entirely within the lean tissues, where it serves as the dominant intracellular cation. It is of great physiological importance contributing to transmission of nerve impulses, to the control of skeletal muscle contractility, and to the maintenance of normal blood pressure.¹⁶

IODINE (KELP), an essential part of the thyroid-produced hormones thyroxine and triiodothyronine, is an essential micronutrient for all animal species, including humans.¹⁷ These hormones are required for normal growth and development and for maintenance of a normal metabolic state.

CHROMIUM is a mineral that is generally accepted as an essential nutrient that potentiates insulin action and thus influences carbohydrate, lipid, and protein metabolism.¹⁸ It has been found to decrease serum cholesterol levels and normalize exaggerated insulin responses to glucose loads.¹⁹

HOW TO OBTAIN NUTRITIONAL SUPPORT

The food industry adds substances like salt, sugar and fat to processed foods for added taste, preservation and texture.²⁰ The end products combination of low nutrient density, high caloric density (from added fat) and high sodium content can all

adversely effect health.²¹ **MICHAEL'S® FAT METABOLISM FACTORS™** is the ideal nutritional support to provide the nutrients that are important in the metabolism of fats and essential fatty acids to balance a diet full of highly processed foods that are stripped of nutrients.

About MICHAEL'S® Products

Seasoned health food shoppers already know that a combination of nutrients is always more effective than taking single nutrients one at a time. Add in the cost savings of taking combinations, with herbs included, and the math proves to be more efficient, too. Combinations increase assimilation and reduce the amount of binders and fillers. That's why **MICHAEL'S®** created the **FACTORS OF LIFE®** programs. Your life is busy enough as it is. Why worry when synergistically complete nutrition is conveniently at hand?

MICHAEL'S® products include an expiration date to ensure freshness. He personally guarantees purity and specified content. Each product is hypo-allergenic with no artificial colors or flavors. The formulas contain cold-pressed or organically grown (when available) herbs to ensure the highest quality. Additionally there is no sugar, wheat, corn, gluten, sodium, or anything artificial in any of our supplements. These high-potency, all-natural products are even manufactured with food-grade fillers, binders and enteric coatings. Most are suitable for vegetarians and tell you so right on the front label. Every product is double safety sealed with an outer shrink wrap and inner bottle freshness seal. As is normal in all-natural products, some color and texture variations may occur, but do not affect product purity, potency or assimilation.

Above all else, all **MICHAEL'S® NATUROPATHIC PROGRAMS** are designed to produce physical results you can feel, due to the innovative nutritional supplementation with specific, targeted **FACTORS OF LIFE®** programs. As always, the newest developments, the finest ingredients and the most effective formulations for your total healthcare from **MICHAEL'S® NATUROPATHIC PROGRAMS**.

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- ¹⁸ Nielsen, Forrest H. Modern Nutrition in Health and Disease (8th Ed.). Philadelphia: Lea & Febiger, 1994. p.265.
- ¹⁹ Nielsen. p.264.
- ²⁰ Tortora and Grabowski. p.160-161.
- ²¹ Tortora and Grabowski. p.160.



Fat Metabolism Factors™

Supplement Facts

Serving Size: One (1) Tablet

Amount Per Serving	% Daily Value
Vitamin B-6 (as Pyridoxine)	33 mg 1,667%
Iodine (from Kelp)	75 mcg 50%
Chromium (CHROMATE)***	67 mcg 56%
Potassium (as Potassium Amino Acid Complex)	70 mg 2%
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Lecithin (from Soy)	333 mg *
Choline (as Choline Bitartrate)	100 mg *
Inositol	100 mg *
Chickweed Leaf (Stellaria media)	100 mg *
Sea Wrack Leaf (Fucus vesiculosus)	50 mg *
Guggulipid** (from Commiphora mukul)	33 mg *
2.5% Guggulsterones, 0.8 mg *
Methionine (as L-Methionine Hydrochloride)	33 mg *
Phenylalanine (as L-Phenylalanine)	33 mg *
White Ash Bark (Fraxinus americana)	25 mg *
Bitter Orange Fruit (Citrus aurantium)	17 mg *

* Daily Value not established

** A Trademark of Sabinsa Corp.
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OTHER INGREDIENTS: Dicalcium Phosphate, Maltodextrin, Magnesium Stearate and Stearic Acid.

CAUTION: Contains phenylalanine and should be avoided by phenylketonurics and women who are pregnant or lactating.



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