Citizens of Western Nations are tired of being told that they are fat and idle, but physicians and their patients are equally fed up with the promises of a "quick-weight-loss strategy." Combat against the widespread epidemic of weight gain and overweight status has proven to be a monumental task for modern medicine, especially in view of the recognition that obesity is rapidly becoming the number one preventable cause of premature death and disability. The last thing that modern healthcare needs is another "fast diet" or "magic pill" for weight loss.

The global epidemic of obesity threatens longevity. Considerable evidence supports the notion that a physically active person of normal body weight lives longer than the overweight, inactive individual. Obesity causes premature morbidity and mortality as a consequence of obesity related diseases are often associated metabolic problems, such as the Metabolic Syndrome X. Among the commonest causes of premature death and disability are heart disease, cancer, stroke, lung disease, diabetes mellitus, organic brain disease, accidents, infections and side effects of drugs. These diseases or disorders are often associated with obesity or the Metabolic Syndrome X. The many obesity related diseases and diseases associated with Syndrome X mirror common causes of premature morbidity and mortality.

Obesity is caused by an interaction of complex factors, including: genetic predispositions, poor lifestyle, normal reductions in lean body mass with age and diet. Pivotal observations of the effect of diet on aging are provided by many animal studies, which show a relationship between retention of body functions or survival and partial food restriction.

Weight Management Principles
Simple or single interventions for weight control are universally unsuccessful. There is not a documented, "stand-alone" use of a diet, drug or dietary supplement that has resulted consistently in sustained weight loss or weight control. A combat against obesity must involve a multifactorial approach including: positive lifestyle change, behavior modification, exercise and controlled calorie diets. Obesity has a series of "ugly disease companions" and it has emerged as the

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nation’s number one cause of premature death, at least indirectly. This means that weight control initiatives must address the primary objective of overall health and well-being. Excess dietary intake of simple sugars, compounded by other factors, drives the disordered regulation of the functions of insulin (metabolic dysglycemia). Insulin resistance leads to excess insulin secretion which has many negative effects on the body. In addition to the inefficient “handling” of blood glucose, insulin excess in the presence of insulin resistance can promote cholesterol synthesis in liver, raise blood pressure, cause other hormonal aberrations and result in cell proliferation.

The legacy of Metabolic Syndrome X has not been fully experienced. Some credible opinions imply that we may have a current generation of adults who may variably outlive their children. Syndrome X may be precipitating a “human dinosaur” phenomenon, as the metabolic evolution of humankind cannot keep pace with “advancing lifestyles.” Such lifestyles are characterized often by excess calorie intake combined with inactivity.

**Metabolic Syndrome X, Insulin Resistance Syndrome**

The phrase Syndrome X had been used to describe the combination of obesity, hypertension and hypercholesterolemia, linked by underlying insulin resistance. Approximately 70 million Americans have Syndrome X, which is causally linked with the development of cardiovascular disease, female endocrine disorders, polycystic ovaries (PCOS), non-alcoholic fatty liver disease, gestational diabetes, changes in eicosanoid status and cancer. The pathophysiology of Metabolic Syndrome X creates a platform for the development of many diseases.

Effective prevention and treatment of Syndrome X involves a multifaceted approach to impact all cardinal components of the disorder. Current allopathic treatments may have been too focused on individual components of Syndrome X and they tend to form a “back up plan” for management. In contrast, natural approaches with lifestyle modification and nutritional and/or nutraceutical interventions may provide versatile and powerful, first-line management options.

The use of dietary supplements in the adjunctive management of the Metabolic Syndrome in the overweight individual has led to the suggestion that there is an array of nutraceuticals that can be defined as Syndrome X nutritional factors. These nutritional factors include a variety of nutrients or botanicals or herbs that may be used variably in a synergistic manner to correct underlying metabolic problems in Syndrome X.

These natural substances may help reverse pathophysiology encountered in the overweight person by addressing: abnormal glucose metabolism, insulin resistance, body status of inflammation, diminished immune function, blood lipid abnormalities, hypertension and other issues that precipitate or contribute to obesity related disease.

**Obesity: A Concept that Further Unifies Modern Disease Theories?**

Obesity and excess body fat can be classified as inflammatory conditions and inflammation is a key factor in the pathophysiology of Metabolic Syndrome X. Not only does obesity raise the level of pro-inflammatory messenger molecules in the body, it precipitates or contributes to several disorders of inflammation, including cardiovascular disease, cancer, arthritis, liver disease and asthma. This inflammatory disease “link” compounds the undesirable effects of insulin resistance. Many factors that link inflammation and tissue damage have come from recent studies of non-alcoholic, fatty liver disease which is a common component of Metabolic Syndrome X.

The final common pathway of tissue damage often involves oxidized damage due to the generation of free radicals, perhaps exacerbated by a reduction in antioxidant defenses in the body. Of course, the progression of the complications of obesity and diabetes mellitus is related to oxidized tissue stress with the development of advanced glycation and products (AGES). Therefore, the treatment of obesity related disease seems quite incomplete without supporting antioxidant activity in the obese clinical management of the obese or overweight person.

**Circadian Biorhythms, Sleep, Obesity and Metabolic Syndrome X**

Sleep deprivation, overweight status and Metabolic Syndrome X appear to be inextricably linked in many people. The mechanisms of this association are not fully understood. Reduction in sleep duration in healthy young men is associated with major changes in hormonal levels of substances (ghrelin and leptin) that increase hunger and appetite, thereby promoting weight gain. An established association between short sleep duration and obesity has led to the proposition that more sleep is necessary to prevent obesity.

Chronic lack of sleep may increase susceptibility to the Metabolic Syndrome X and it is known that forced sleep deprivation in healthy young adults appears to be “diabetogenic”, as evidenced by detectable alterations of glucose metabolism. The diabetogenic effects of sleep deprivation may be hormonally mediated. Sleeplessness has been associated with decreases in the normal nocturnal surge of thyrotropin or growth hormone and increases in corticosteroid secretion. These hormonal changes are often
present in the elderly, reinforcing the notion of a potential causal relationship between sleeplessness and/or obesity and premature aging.

The restoration of sleep patterns of optimum quality and duration can be expected to improve the management of obesity, but stress management appears to be a very important additional factor in obesity management, because of its beneficial effect on sleep patterns or body metabolism that favors weight control.

Clearly, natural ways to healthy sleep are preferred over pharmaceutical interventions and comprehensive lifestyle plans suggest that first-line options for adjuncts to sleep involve increasingly the use of dietary supplements. Sleeping naturally has been described in programs that involve lifestyle change and the use of nutritional support for sleep with dietary supplements.

**Implications for Effective Management of Obesity**

Integrative medicine can offer the optimal pathway to the management of an overweight status, if the modern science of allopathic medicine is complemented by holistic care. Many people can shed a few pounds of body weight in the short term, but sustained weight control involves many management principles, other than diet alone.

The last thing that is required in the new millennium is another diet promise for weight loss. That said, carbohydrate restriction in the short term can result in apparently safe and effective, accelerated weight loss. However, long-term restriction of carbohydrate intake is probably neither safe nor effective. Low carbohydrate diets result in rebound weight gain, largely because of lack of compliance and failure of carbohydrate restriction to overcome insulin resistance. Without positive lifestyle change there cannot be a health benefit from any weight control program.

Drugs for weight control are often undesirable because of side effects. Nutritional approaches are often safe and are assumed cost effective when used in an appropriate manner. Unfortunately, many dietary supplements used for weight control are purveyed often with weak evidence of efficacy.

Recent studies with non-stimulant appetite suppressants such as Hoodia Gordonii and Caralluma Fimbriata wall or extract are very promising because controlled intake of calories is the key initiative in weight control.

Diet to combat Syndrome X should also have more liberal “healthy fat” recommendations (omega-3 and -6 fatty acids in the correct balance) with strict control of refined carbohydrate intake, restricted salt intake, enhanced fiber intake and a move toward vegetable sources of protein.

Currently, alternative and complementary medicine may have more to offer the prevention and treatment of Syndrome X than many existing pharmaceuticals, which are being scrutinized increasingly in terms of their cost effectiveness and safety.  

For references send a SASE to totalhealth magazine.

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