

# NUTRITIONAL CONSIDERATIONS OF CHRONIC CONDITIONS

Chronic diseases are the most common cause of death in the world and present a great burden for society, particularly diseases such as cancer, obesity, osteoporosis, diabetes and cardiovascular disease. Additionally, the prescriptions used to treat the symptoms of these conditions can further deplete the nutrients most needed for your body.

## HEART DISEASE AND METABOLIC SYNDROME

Scientists now emphasize that heart disease is actually an inflammatory condition within the blood vessels. Inflammation and oxidative stress work together damaging arteries and impairing cardiac function. Several antioxidant nutrients minimize this inflammatory process.

Glutathione is the most potent intracellular antioxidant and actually helps to regenerate other antioxidants in the body. Cysteine, glutathione, B2, selenium, vitamin E and vitamin C work together to reduce oxidative stress throughout the entire cardiovascular system. It is essential that balance in the antioxidant system is critical and that use of a single antioxidant may be detrimental.

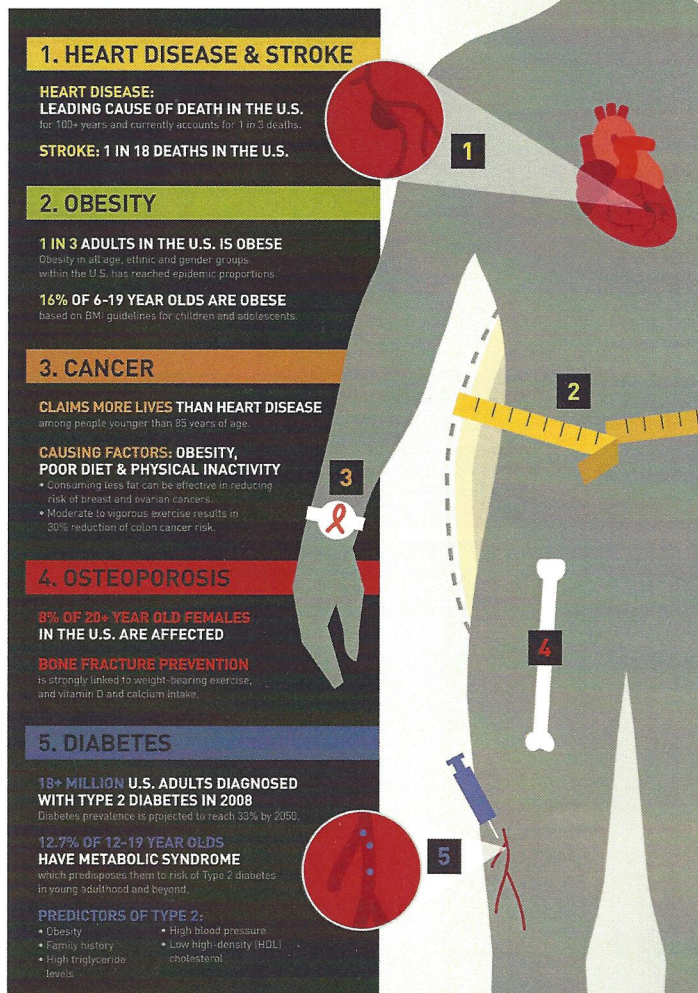
Metabolic syndrome is a group of health risks that significantly increase your chance of developing cardiovascular disease, stroke and diabetes. According to a national health survey, more than 1 in 5 American adults (47 million) and roughly one million adolescents have a metabolic syndrome and the number is rising. The risk of metabolic syndrome increases with age, affecting more than 40% of people in their 60s and 70s.

## OBESITY AND BARIATRIC SURGERY

Obesity is a complex, multi-faceted, chronic disease involving social, environmental, genetic, physiological, metabolic, behavioral and psychological components. It is the second leading cause of preventable death in America, second only to cigarette smoking. Obesity increases risk of heart disease, diabetes, hypertension and a host of other illnesses including cancer. Weight loss drugs and bariatric surgery may also increase risk of chronic disease. In fact, an astounding 98% of bariatric surgery patients exhibit micronutrient deficiencies within two years of surgery. Neurological complications such as confusion, impaired muscle coordination, even seizures may manifest after bariatric procedures, due to a lack of B vitamins, especially thiamine.

Risk factors for many chronic diseases can begin early in life. But evidence shows that making dietary and lifestyle changes may prevent disease progression and premature death.

## CHRONIC CONDITIONS RELATED TO DIET



Academy of Nutrition and Dietetics

## DIABETIC HEALTH

According to the American Diabetes Association, type 2 diabetes is the most common form of diabetes. With this type of diabetes, cells do not receive enough insulin. As a result, cells starve for energy, and over time, a glucose buildup in the blood stream causes negative effects on a person's eyes, kidneys nerves and/or heart.

Micronutrients such as niacin, magnesium, calcium, zinc, carnitine, inositol alpha-lipoic acid, as well as vitamins E, B6 and D all play an important role in the prevention and treatment of diabetes.

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## CANCER

Evidence of nutrition in the prevention or recurrence of cancer is mounting. This evidence based on numerous and remarkably consistent observations suggest that individuals who consume high intakes of fruits and vegetables have reduced risks of most cancers, supporting the concept that micronutrients do in fact play an important role in the prevention of this particular disease.

Antioxidant micronutrients are one of the body's primary defenses against free radicals and reactive oxygen molecules. Low antioxidant status is linked to higher rates of breast and other cancers. In fact, antioxidants such as coenzyme Q10, cysteine and vitamin A have been shown to mitigate DNA damage in cancerous tissue and inhibit hormonal toxicities that can initiate cancerous cells.

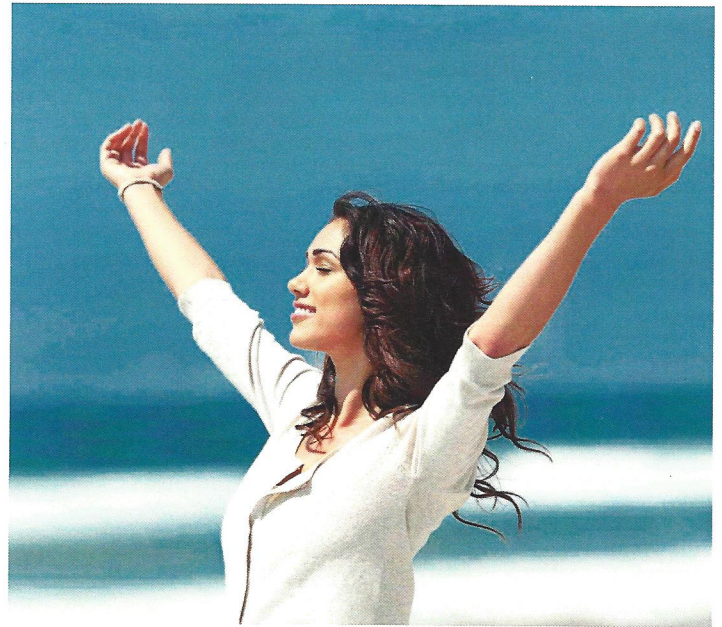
## ADHD AND AUTISM

There has been an unprecedented rise in autism and attention deficit hyperactivity disorder (ADHD) over the years with overwhelming evidence suggesting that nutritional deficiencies may be a contributing factor. Low levels of vitamin D have been linked to autism and in some cases of severe deficiency, high-dose vitamin D therapy actually reversed some autistic behaviors. Some research even suggests that the nutritional status of the mother during gestation can affect behavior in children. One study confirmed that low folate status in pregnancy was associated with hyperactivity in children. Other studies show that persons with a mutation of a common gene, MTHFR, which predisposes them to folate and vitamin B12 deficiency, were more likely to suffer from ADHD.

Supplementation with thiamine (vitamin B1) has shown clinical benefit among some autistic children. Specifically, a deficiency in vitamin B1 has been associated with delayed language development in childhood. When deficient, biotin (vitamin B7) can potentially cause neurological problems associated with autism since the brain is quite vulnerable to biotin deficiency.

## CELIAC DISEASE

Comprehensive nutritional testing is extremely important, especially in the case of celiac disease. Whether diagnosed or undiagnosed, celiac patients are notoriously at higher risk for nutrient deficiencies, largely due to malabsorption issues. When it comes to supplements, the "more is better" philosophy does not apply. The key is balance.



## WOMEN'S HEALTH

Overwhelming evidence suggests that infertility issues stem from low antioxidant status. Deficiencies in vitamins C and E, zinc, copper, magnesium, folate as well as the powerful antioxidant cysteine have been linked to infertility. In many cases, targeted repletion is very beneficial with fertility and related issues like endometriosis and polycystic ovary syndrome. Additionally, the demands for specific nutrients during pregnancy and lactation are particularly taxing on a mother, often draining her nutritional reserves. Since nutritional deficiencies can be passed from a mother to her baby, accurate and targeted diagnostic testing is important before, during and post-partum.

