

CLINICAL APPLICATIONS OF SPECTRACELL'S MICRONUTRIENT TESTS IN OBESITY

Obesity is a complex, multi-factorial, chronic disease involving environmental (social and cultural), genetic, physiological, metabolic, behavioral and psychological components. It is the second leading cause of preventable death in the U.S. Each year, obesity causes at least 300,000 excess deaths in the U.S., and healthcare costs of American adults with obesity amount to approximately \$100 billion.

Being overweight and obesity are part of the U.S. Department of Health and Human Services' health agenda that have steadily moved away from their established targets for improvement. Today, public health leaders recognize obesity as a "neglected public health problem." Approximately 127 million adults in the U.S. are overweight, 60 million obese and 9 million severely obese. That's 65% of our population that is overweight or obese.

Obesity increases the risk of illness from about 30 serious medical conditions, including diabetes, high blood pressure, high cholesterol, coronary heart disease and is associated with increases in deaths from all-causes. Earlier onset of obesity-related diseases, such as Type 2 Diabetes, are being reported in children and adolescents with obesity. The increase in overweight, obesity and severe obesity prevalence is evident in adults (aged 20 to 74) of both genders over the last decade. Prescription medications used to treat many of these conditions can induce deficiency status.

Weight loss drugs and bariatric surgery also increase the risk of serious deficiencies as well. Multiple medications, post-surgical "dumping" and severely limited food intake without proper supplementation can lead to malnutrition and serious deficiencies. This increases the risk for illness and chronic disease conditions despite efforts to lose weight and gain health.

DRUGS AND THEIR EFFECT ON NUTRITIONAL STATUS

DRUG	NUTRIENT	POTENTIAL HEALTH PROBLEM(S)
Anti-Diabetic Drugs Sulfonylureas (Dymelor, Micronase/Glynase/Diabetab, Tolinase) Biguanides (Glucophage)	Coenzyme Q10 Vitamin B12 Folic Acid	Various cardiovascular problems, weak immune system, low energy Anemia, tiredness, weakness, increased cardiovascular disease risk Birth defects, cervical dysplasia, anemia, cardiovascular disease
Weight loss drugs Orlistat No other prescription or OTC weight loss drugs have been studied for nutrient depletions	Vitamin D Vitamin E	Osteoporosis, muscle weakness, hearing loss Heart disease risk, weak immune system, increased free radical damage
Hydralazine-containing Vasodilators	Vitamin B6 Coenzyme Q10	Anemia, tiredness, weakness, increased cardiovascular disease risk Various cardiovascular problems, weak immune system, low energy
Diuretics Furosemide (Lasix), Bumetanide (Bumex), Ethacrynic acid (Edecrin) Hydrochlorothiazide (HCTZ), Methylclothiazide (Enduron), Chlorothiazide (Diuril), Indapamide (Lozol), Metolazone (Zaroxolyn), Chlorthalidone (Hygroton), Dyazide, Maxzide, Triamterene (Dyrenium), etc.	Calcium Coenzyme Q10 Folic Acid Magnesium Potassium Vitamin B1 Vitamin B6 Vitamin C Sodium Zinc	Osteoporosis, heart & blood pressure irregularities, tooth decay Various cardiovascular problems, weak immune system, low energy Birth defects, cervical dysplasia, anemia, cardiovascular disease Cardiovascular problems, asthma, osteoporosis, cramps, PMS Irregular heartbeat, muscle weakness, fatigue, edema Depression, irritability, memory loss, muscle weakness, edema Depression, sleep disturbance, increased cardiovascular disease risk Lowered immune system, easy bruising, poor wound healing Muscle weakness, dehydration, memory problems, loss of appetite Weak immunity, wound healing, sense of smell/taste, sexual dysfunction