Glandular Support for Weight Management

The thyroid is a gland located in the front part of the neck, below the Adam's apple. The thyroid produces hormones that regulate metabolism and are important in regulating energy, body temperature, basal metabolic rate, the use of other hormones, as well as helping to regulate growth and development. The thyroid gland and the other endocrine organs may play a role in how the body responds to changes in diet and exercise.

With increasing age, metabolism naturally slows down. This occurs primarily because of normal muscle mass atrophy and a natural decrease in levels of hormones such as T3 and testosterone. An increase in the production of a hormone called cortisol, in response to stress, may also impact weight-management efforts.

T3, or triiodothyronine, is an iodine-containing hormone produced by the thyroid gland. It is synthesized under the influence of thyroid stimulating hormone (TSH) by attaching iodine atoms to the amino acid tyrosine. A lack of proper nutrition can have a negative effect on the thyroid and on metabolic rate. Nutritional ingredients that support optimal thyroid function include Irish moss, kelp, black walnut, I-tyrosine, zinc and 7-keto.

Healthy thyroid status is dependent on the presence of multiple elements necessary for the synthesis and metabolism of thyroid hormones. Irish moss, kelp and black walnut are good sources of iodine. Iodine plays a central role in thyroid function, being both a major constituent of thyroid hormones and a regulator of thyroid gland function. Zinc intake is also important as suboptimal dietary intakes of zinc can adversely affect thyroid hormone function.1 7-keto, a metabolite of DHEA, may increase the production of T3, supporting metabolism and weight loss.2

Cortisol, a hormone produced by the adrenal glands, plays multiple roles throughout the body. In addition to its best-known role as the "stress hormone," it is involved in glucose metabolism, regulation of blood pressure and in immune function. Cortisol levels naturally fluctuate and are highest in the morning and lowest at night. Bursts of cortisol are also released in response to physical or psychological stress. While small amounts of cortisol have positive effects, research has shown that prolonged elevated cortisol levels are connected with increased amounts of abdominal fat and also cause increased consumption of calories.3 Nutritional ingredients commonly suggested to counteract the physiological effects of stress associated with elevated cortisol levels include magnolia bark extract, phellodendron extract, holy basil, l-theanine and DHEA.

The combination of magnolia bark extract and phellodendron extract has been shown to help curb stress-related eating and mild anxiety.4,5 This was associated with reduced weight gain and some weight loss among study volunteers. Compounds naturally occurring in holy basil, an Indian herb, have positive effects on stress parameters and may help to decrease the effects of stress by normalizing the levels of stress-related hormones.6 L-theanine, a non-essential amino acid found in green tea, promotes the generation of alpha brain waves indicative of relaxation without causing a drowsy state or impairment of motor skills.7 DHEA is a hormone precursor produced by the adrenal glands. After about age 25, the body's production of DHEA declines, leading many experts to believe that DHEA plays a role

in the aging process. Research shows that administration of DHEA decreases plasma cortisol concentration and may decrease weight, abdominal fat and insulin levels.8,9

Additional nutritional ingredients with a history of successful use in supporting the glandular system include licorice, parsley, schizandra, vitamin B5, vitamin C and manganese.

References:

1. Barceloux DG. Zinc. J Toxicol Clin Toxicol 1999;37:279-92.

2. Colker CM, Torina GC, Swain MA, Kalman DS. Double-Blind Study Evaluating the Effects of Exercise Plus 3-Acetyl-7-oxo-dehydroepiandrosterone on Body Composition and the Endocrine System in Overweight Adults. Abstract presented at 2nd ASEP Annual Meeting, October 14-16, 1999, and published in Journal of Exercise Physiology online, Volume 2 Number 4 October 1999.

3. Bjorntorp P. Do stress reactions cause abdominal obesity and comorbidities? Obes Rev. 2001 May;2(2):73-86.

4. Effect of a proprietary Magnolia and Phellodendron extract on stress levels in healthy women: a pilot, double-blind, placebo-controlled clinical trial. Kalman DS, Feldman S, Feldman R, Schwartz HI, Krieger DR, Garrison R. Nutr J. 2008 Apr 21;7:11.

5. Effect of a proprietary Magnolia and Phellodendron extract on weight management: a pilot, doubleblind, placebo-controlled clinical trial. Garrison R, Chambliss WG. Altern Ther Health Med. 2006 Jan-Feb;12(1):50-4.

6. Constituents of Ocimum sanctum with antistress activity. Gupta P, Yadav DK, Siripurapu KB, Palit G, Maurya R. J Nat Prod. 2007 Sep;70(9):1410-6.

7. L-Theanine reduces psychological and physiological stress responses. Kimura K, Ozeki M, Juneja LR, Ohira H. Biol Psychol. 2007 Jan;74(1):39-45.

8. Kroboth PD, Amico JA, Stone RA, Folan M, Frye RF, Kroboth FJ, Bigos KL, Fabian TJ, Linares AM, Pollock BG, Hakala C. Influence of DHEA administration on 24-hour cortisol concentrations. J Clin Psychopharmacol 2003 Feb;23(1):96-9.

9. Villareal DT, Holloszy JO. Effect of DHEA on abdominal fat and insulin action in elderly women and men. JAMA 2004;292:2243-8.