Parafollicular thyroid cells secrete calcitonin, a hormone employed in calcium and phosphate homeostasis. Calcitonin inhibits bone breakdown and accelerates bone calcium and phosphate uptake. Blood calcium levels control the secretion and uptake of calcitonin by a pathway independent of the pituitary gland. Thyroid hormones stimulate metabolism and energy balance, as well as growth, development and activity of the nervous system. Thyroid hormones regulate calcium release in a central lumen and release into the bloodstream. In general, thyroid hormones refer to T3 (triiodothyronine) and T4 (thyroxine). Though T4 is the main product, T3 is 3 to 4 times more active. T4 (with 4 atoms of iodine) is converted to T3 (with 3 atoms of iodine) via peripheral tissues, especially the liver and lung.

Several factors, including low metabolic rate, falling blood pressure, and conditions that increase the need for energy such as a cold environment, hypoglycemia, pregnancy or high altitude, stimulate thyroid function. Aging generally decreases thyroid function. Abnormal Levels of Thyroid Hormones Varying degrees of hypothyroid function are routinely detected by laboratory tests and other measures. Hypothyroidism is characterized by obesity, cold, dry skin and fatigue, while hyperthyroidism has opposite effects. Goiter and thyroid hyperplasia are consequences of abnormally low dietary iodine.

Nutritional Support

Iodine. The common form of iodine in foods is iodide. This is the reduced form of iodine. In thyroid tissue, follicles normally concentrate iodide 40-fold greater than blood concentrations. At maximal activity, the thyroid can contain up to 300 fold greater concentration of iodide than blood levels. Cells oxidize iodide to organically bound iodine, which is then chemically combined with tyrosine. Kelp is a natural source of iodide.

Tyrosine. This amino acid is a protein building block. In particular, many of the tyrosine residues of thyroglobulin are iodinated. Each molecule of thyroid hormone contains the equivalent of two tyrosine molecules. The uptake of tyrosine decreases with age.

Biotics Research Bovine Neonatal Pituitary/Hypothalamic Glandular

Cytozyme-PT/HPT™ represents neonatal glandular tissue Cytozyme-PT/HPT™, as in all of Biotics Research Corporation’s Cytozyme glandulars, represents a tissue concentrate, including peptides, proteins, nucleic acids and other nutrient factors. Biotics Research Corporation selected neonatal tissues for several reasons. Neonatal glands and tissues possess very high anabolic activity. Factors associated with rapid growth are more likely to be present in neonatal glands than in adult glands. Histologic examination of adult (2-5 years) bovine glands and neonatal newborn bovine glands dramatically illustrates the differences between the two due to aging and environmental exposure.

These factors contribute to a loss of organ function, accumulation of lipofuscin and increased fat accumulation in many organs with aging. In addition, neonatal tissues have not been subjected to long exposure to pollutants and environmental stressors. For example, independent evaluation of common pesticides in neonatal glandulars has indicated that levels are below the limits of detection. In addition, all glandular supplements produced by Biotics Research Corporation are obtained from domestic, USDA approved animals.

Minerals

Selenium. This trace mineral in the form of selenocysteine is required by a family of antioxidant enzymes, the glutathione peroxidases. These enzymes reduce peroxidized fatty acids in membranes to safe byproducts. On the other hand, selenium is also required for iodothyronine deiodinase, the enzyme located in peripheral tissues that is required to convert T4 to T3. Selenium deficiency decreases the iodothyronine de-iodinase activity. High iodine intake, when selenium intake is low, can lead to thyroid damage because thyroid glutathione peroxidase activity is reduced.

Magnesium. Thyroid hormone is intimately associated with regulation of energy production and mitochondrial function. Indeed, mitochondria possess thyroid hormone receptors. Enzyme utilization of ATP generated by mitochondria requires complex formation with magnesium, generally in a 1:1 ratio. Magnesium is essential for protein
These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.