

# Product Rationale: **MASTERZYME**



Consider the following review of clinical research results on several important ingredients known for their ability to influence normal hormonal imbalances and strengthen the immune system.

The endocrine system consists of several glands: the hypothalamus, pituitary, thyroid, parathyroids, adrenals, pineal body, the ovaries, and the testes. The primary responsibility of glands is to make hormones. These chemical messengers, when released into the bloodstream travel to other parts of the body. They help control mood, growth, development, the way our organs work, metabolism, and reproduction. Each endocrine gland has one of more specific functions, but all are dependent upon one another for the maintenance of a normal hormonal balance and the health of the body.

Disruption to the endocrine system can occur as a result of genetics, poor diet, fasting, excess calories, obesity, or exposure to chemicals in our food, beverages, pesticides, and cosmetics. The results of endocrine disruption is hormonal imbalance which is linked to adverse health outcomes including alterations in sperm quality and fertility, abnormalities in sex organs, early or delayed puberty, alterations to the nervous system, immune dysfunction, respiratory problems, metabolic issues, delayed growth, neurological disorders, learning disabilities, and many other disorders.

Our clinical experience and that of research suggests that supplementing a healthy diet with nutrients known to fortify the health of the endocrine system has become a necessity for overall health and wellness.

## FORMULA RATIONALE

Transformation's MasterZyme includes mycelial enzymes, herbs, and glandulars that are specifically chosen to support the endocrine glands. This formulation contains ingredients source from animal. All glandular are sourced from bovine and are tested for purity, safety and are BSE free.

### Herbs

MasterZyme contains a unique combination of botanicals for neuro-endocrine support. Shatavari

supports both male and female reproductive vitality and rejuvenation, black cohosh and bladderwrack are known for their ability to support thyroid function, and rose hips are a natural source of antioxidants and vitamin C.

- **Rose Hips** fruit contains vitamins A, B1, B2, B3, B6, C, and E along with the minerals boron, calcium, chlorine, chromium, cobalt, copper, flourine, iron, lithium, magnesium, manganese, molybdenum, PABA, potassium, selenium, silicon, sodium, and zinc.
- **Shatavari** (*Asparagus racemosus*) root has been known and used in Ayurvedic medicine for centuries for its role in reproductive health for both men and women, helping to enhance and increase both male and female fertility and libido. In fact, in Ayurveda, it is known by many names, with the prominent one being the "Queen of Herbs." Shatavari is considered the main natural female tonic for vitality and rejuvenation. For both pre and postmenopausal women has been shown to control inflammations of the reproductive organs, control leucorrhea and menorrhagia, promote folliculogenesis and ovulation, support the reproductive organs, stimulate lactation, balance hormones, help fight dryness and hot flashes during menopause, improve musculoskeletal strength in menopausal women, and control mood swings. More generally shatavari helps fight stress as an adaptogen, control bacterial and parasitic infections, support the digestive system, support the liver, modulate the immune system, and control other metabolic disorders and chronic inflammations.
- **Black Cohosh** (*Cimicifuga racemosa*) was discovered more than two centuries ago by Native Americans who used the root of the black cohosh plant to help relieve menstrual cramps and menopausal symptoms such as mood swings,

hot flashes, night sweats, vaginal dryness, heart palpitations, tinnitus, vertigo, sleep disturbances, nervousness, and irritability.

- **Bladderwrack** (*Fucus vesiculosus* L.) leaf is an excellent source of support for the thyroid. Bladderwrack is a genus of brown algae found in intertidal, rocky seashores of the temperate zone especially the Pacific Ocean. Bladderwrack has been used as food and medicine for centuries, particularly in Asian cultures. Fucus was termed “bladderwrack” because little air-filled bladders (or flotation devices) keep it in the upper regions of the sea (i.e., close to the ocean surface). Fucus is often known as kelp, the name given to the alkaline ashes that were used as an alkali agent to make soap. Fucus vesiculosus contains the flavonoid fucoxanthin and is reported to have the highest antioxidant activity of the edible seaweeds. These L-fucose compounds have been shown to be anti-obesity, anti-inflammatory, antioxidant, and anti-carcinogenic. There are also some implications of them being anti-viral and anti-diabetic. Seaweed, being high in numerous minerals and halides including iodine, may enhance thyroid function when consumed in appropriate amounts. In seaweeds tested, iodine content was highest in young, freshly-cut blades and lowest in sun-dried form. Fucus also has the ability to decrease trans-sialidase activity in the blood, an enzyme associated with cholesterol accumulation. This may benefit patients with low thyroid function, as decreased metabolism is associated with hyperlipidemia.
- **Parsley** (*Petroselinum crispum*) leaf is beneficial to glandular health. According to research it has a remarkable capacity to shrink swollen and enlarged glands. Adrenal glands in particular can be soothed by the plant. The parsley root includes calcium, iron, and B-complex vitamins, all of which support the parathyroid glands. Parsley is thought to aid with hormone balance, which may help reduce premenstrual syndrome symptoms and promote healthy menstruation while alleviating cramps.

## Glandulars

For a tissue or a cell to repair or replace itself, it must have the necessary raw materials. Glandular therapy provides the raw materials to the failing organs, glands, and tissues so that they can start the process

of regeneration. For example, the key organ for metabolism is the thyroid gland. It regulates metabolism by releasing hormones that control energy production in all the body’s cells. Administration of thyroid extract has an adaptogenic effect that helps cells eliminate cellular waste and speeds up their restorative functions.

It is believed that glands and organs in animals and humans contain similar biochemical substances, as their functions are very similar. The effect of using biochemical compounds extracted from animals is often one of “substituting” an exogenous (externally generated) source to make up for the endogenous (internally generated) deficiency. Glandular and organ extracts are indicated when a patient’s endocrine system is underproducing or undersecreting a specific hormone, or when an organ is weakened or diseased. to help restore a patient’s overall metabolism.

Glandular therapy is the use of tissue from the glands or organs of an animal to nourish and thereby increase the tone, function, and/or activity of the corresponding human organs, glands, and/or tissues. These cellular factors are organ-specific but not species-specific. This means that the raw cellular material of a bovine liver, when ingested, will be picked up by the bloodstream and delivered to the human liver. Research supports this theory and shows how glandular and organ extracts that are taken from animals, known clinically as “protomorphogens,” produce active factors that are undisturbed by digestion to bolster the function of one’s own organs and/or glands.

Glandular tissues are rich in nutrients, including vitamins, minerals, amino acids, fatty acids, polypeptides, enzymes, and many other substances. Glandular therapy can therefore supply essential nutritional needs in a highly efficient manner. This principle has been used for centuries and is a mainstay of treatment in Traditional Chinese Medicine as well as Ayurvedic Medicine. The comprehensive glandulars in this product (bovine from Argentina and New Zealand) are purified extracts highly tested for purity and safety to naturally feed and fortify the thyroid, adrenal, suprarenal cortex, anterior pituitary, ovaries, testes, and prostate glands.

- **Thyroid** concentrate: This is a pure New Zealand tissue extract and is an animal source of thyroid used in hormonal replacement therapy. Thyroid extract or desiccated thyroid contains both thyroxine

and triiodothyronine. Levothyroxine (LT4), a synthetic thyroid hormone, is the recommended treatment for patients with hypothyroidism. LT4 effectively restores the levels of thyroid hormone and improves thyroid-related symptomatology. However, despite the strong evidence regarding the effectiveness of LT4 for the treatment of hypothyroidism, some patients prefer other thyroid hormone replacement formulations. One of the most commonly used non-LT4 formulations for the treatment of hypothyroidism is desiccated thyroid extract (DTE), preparations made from desiccated pig thyroid glands. It is estimated that about 10-29% of patients with hypothyroidism use DTE as their primary thyroid hormone replacement medication in the US. A previous survey conducted among patients with hypothyroidism identified an overall high dissatisfaction rate with conventional therapy for hypothyroidism. However, when stratified by treatment modality, patients taking DTE showed less treatment dissatisfaction compared to the individuals treated with LT4. The most frequently described benefits with DTE use were an improvement in clinical symptoms, change in overall wellbeing, possibility to reach previous health status, and a low cost compared with conventional treatment. Among patient improvement in clinical symptoms with DTE use, the symptoms associated with improvement were fatigue, weight gain, neurocognitive symptoms, dermatological symptoms, and depression. The average time to notice benefits with DTE treatment was  $29.7 \pm 32.5$  days, ranging from two days to four months. Eighty-one percent of the patients considered that DTE had moderate-to-major overall effectiveness.

- **Adrenal substance and Suprarenal Cortex substance:** This pure glandular support from Argentina for the adrenal cortex helps the adrenal gland produce the hormones essential to homeostasis, including mineralocorticoids, androgens, and glucocorticoids.
- **Anterior Pituitary:** This pure Argentina tissue extract produces TSH. The pituitary is a small endocrine gland which produces and secretes hormones vital to the regulation of various bodily functions. Hormones secreted by the pituitary stimulate and control the functioning of almost all other endocrine glands as well as the

growth and water balance of the body. In vitro studies demonstrate that bovine pituitary extract (BPE) promotes epithelial cell and melanocyte proliferation. BPE has been widely used as an additional supplement in the culture of various epithelial cells and melanocytes. BPE is a filtered, water-based extract of fresh pituitary glands from cattle. As a source of growth factors and hormones, BPE is used in tissue culture research to support various cell lines such as skin, breast, lung, and prostate. BPE has been used to address any number of issues including thyroid, growth, reproductive, or adrenal problems.

- **Gonad Blend** includes ovarian, orchic, and prostate glandulars from bovine sources for additional nourishment of the ovaries, testicles, and prostate to provide more comprehensive support of the endocrine and reproductive systems for both men and women.

**Glandular Enzyme Blend** includes mycelial enzymes to maximize digestion of nutrients, production of energy, and aid in immune support. This proprietary blend includes protease which aids in the lysis of the animal-based suprarenal substance and also aids in extracting key components from plant-based herbal products. These proteolytic enzymes hydrolyze free-floating proteins, which limits their destructive tendencies and allows for maximum absorption of all nutrients. This formula also includes a proprietary blend of polysaccharolytic enzymes which facilitates the digestion of all carbohydrates and ensures the absorption of minerals by preventing the chelating effects of phytates, pectinates, and oxalates.

## OTHER INGREDIENTS

This product is encapsulated in a gelatin capsule from a BSE-free porcine source. MasterZyme is dairy, gluten, and soy free.

## COMPONENT BENEFITS

Transformation's MasterZyme includes herbs and adrenal, thyroid, pituitary, and gonadal tissues specific to the endocrine and reproductive systems. This formula also includes enzymes for improved absorption and delivery of the various ingredients.

Each one-capsule serving of MasterZyme is formulated to include the following.

Herbs

Rose Hips powder (fruit)	52 mg
Organic Shatavari powder (root)	52 mg
Black Cohosh powder (root)	50 mg
Bladderwrack powder (leaf)	40 mg
Parsley powder (leaf)	25 mg

Glandulars

Thyroid bovine powder	30 mg
Suprarenal cortex substance powder (bovine)	15 mg
Anterior Pituitary substance powder (bovine)	15 mg
Gonad substances blend (bovine)	15 mg
Ovarian substance powder	
Orchic substance powder	
Prostate substance powder	
Adrenal substance powder (bovine)	10 mg

Glandular Enzyme Blend

50 mg

Glucosylase	2 AGU
Protease 3.0	5.1 SAPU
Alpha-Galactosidase	17 Gal U
Cellulase	37 CU
Peptidase	1,000 HUT
Protease 4.5	15,500 HUT
Phytase	3.7 FTU
Pectinase	7 endo-PGU
Hemicellulase	37 HCU
Lipase	43 FIP
Protease 6.0	15,500 HUT

Other Ingredients:

- Gelatin
- Water
- Rice flour
- Bamboo leaf extract (silica)

SUMMARY

Total health is the sum of the health of our individual organs and glands. When we are ill, it is because our organs and glands cannot function at ideal levels either individually or collectively. Although good nutrition can aid glandular function, when nutritional intake is not adequate, organs and glands cannot receive the specific nutrients that they require. Transformation's MasterZyme provides nutritional support for the adrenal, pituitary, and thyroid glands as well as the reproductive system.

CLINICAL APPLICATIONS

- PMS
- Irregular menses
- Menopausal symptoms
- Hormonal imbalances
- Trace mineral deficiency
- Adrenal or thyroid insufficiency
- Endocrine system weakness
- Immune system weakness
- Low energy, lethargy, fatigue
- Hypoglycemia
- Hypothyroidism
- Obesity
- Infertility
- Goiter (after removal)

RECOMMENDED USAGE

- Take one capsule daily preferably with a meal or as directed by health care practitioner
- For therapeutic use take one capsule in the morning and one capsule mid-afternoon
- May be taken after meals or as needed for sugar cravings
- May be taken with Thyroid Complex or Adrenal Complex for additional endocrine support

INDICATIONS

**Infertility**

For infertility, both male and female partners need to be on an enzyme and glandular support protocol.

CONTRA-INDICATIONS

May also be taken with prescription thyroid medications, however please monitor hormone levels closely.

Do not take at bedtime, as it may hinder sleep.

In general, herbs are not recommended during pregnancy / lactation or for children 12 years or younger. However, each case should be assessed on an individual basis and the practitioner, along with the patient, may use their professional judgment and decide to use the formula.

Any long-term use of glandular products should be monitored by testing applicable hormone levels on a regular basis by a health care professional.

## ALLERGEN INFORMATION

Bladderwrack is a wildcrafted aquatic plant which may contain traces of fish and/or shellfish.

## PROP 65 TEST

This product has been identified as containing naturally-occurring lead that exceeds California Proposition 65 lead levels when dosing more than one capsule per day. For more information about Proposition 65 visit the Office of Environmental Health Hazard Assessment, and for a list of elements listed under Prop 65 visit [www.oehha.ca.gov/prop65/prop65\\_list/Newlist.html](http://www.oehha.ca.gov/prop65/prop65_list/Newlist.html)

## SAFETY / QUALITY ASSURANCE

All Transformation™ formulas are carefully prepared to assure maximum quality and nutritional effectiveness. The glandulars are freeze-dried from clean, safe, disease-free, FDA and USDA certified manufacturing facilities, and the manufacturer ensures that the ingredients are BSE free and free from harmful chemicals or pesticides.

## MICROBIOLOGICAL EVALUATION

This product was tested and found to be NSF/ANSI compliant and absent of any traces of *E.coli*, *salmonella*, and *S.aureus*.

## PRODUCT SPECIFICATIONS

MasterZyme is available in bottles of 100 capsules. Does not contain any dairy, gluten, soy, artificial colors, flavors, or preservatives. Store in a cool, dry place. Keep out of reach of children.

## REFERENCES

Britton SW, Silvette H. Further experiments on cortico-adrenal extract: Its efficacy by mouth. *Science*. 1931 Oct 30;74(1922):440-1.

Hall JE. Adrenal function. *Guyton Textbook of Medical Physiology*, 8th edition. Harcourt Brace: Philadelphia, PA. 1991;842-843.

Hall JE, Guyton AC. The pituitary hormones and their control by the hypothalamus. *Guyton and Hall Textbook of Medical Physiology*, 9th ed. Philadelphia, PA: Saunders Elsevier. 2011;75:935.

Hall JE, Guyton AC. The thyroid metabolic hormones. *Guyton and Hall Textbook of Medical Physiology*, 9th ed. Philadelphia, PA: Saunders Elsevier. 2011;76:945-54.

Kent KD, Bomser JA. Bovine pituitary extract provides remarkable protection against oxidative stress in human prostate epithelial cells. *In Vitro Cell Dev Biol Anim*. Sep-Oct 2003;39(8-9):388-94.

Murray M, Pizzorno J. Abnormal response of the adrenal gland. *Encyclopedia of Natural Medicine*, Revised 2nd edition. Prima Health Publishing: Rocklin, CA. 1998;185-187.

Murray M, Pizzorno J. Chronic Fatigue Syndrome and the adrenal

gland. *Encyclopedia of Natural Medicine*, Revised 2nd edition. Prima Health Publishing: Rocklin, CA. 1998;366-367.

Murray M, Pizzorno J. Description of the adrenal gland. *Encyclopedia of Natural Medicine*, Revised 2nd edition. Prima Health Publishing: Rocklin, CA. 1998;175-176.

Nussey S, Whitehead S. The thyroid gland. *Endocrinology: An Integrated Approach*. Oxford: BIOS Scientific Publishers. 2001;3.

Sodano WL. *Integrative Medicine Approach to Thyroid Disorders: Clinician's Desk Reference*. Kansas City, MO: Paladino Publishing. 2018.

Tolozza FJK, Espinoza Suarez NR, El Kawkgi O, Golembiewski EH, Ponce OJ, Yao L, Maraka S, Singh Ospina NM, Brito JP. Patient experiences and perceptions associated with the use of desiccated thyroid extract. *Medicina (Kaunas)*. 2020 Apr 3;56(4):161.

### SHATAVARI

Alok S, Jain SK, Verma A, Kumar M, Mahor A, Sabharwal M. Plant profile, phytochemistry and pharmacology of *Asparagus racemosus* (Shatavari): A review. *Asian Pac J Trop Dis*. 2013 Jun; 3(3):242-251.

Kamat JP, Bloor KK, Devasagayam TP, Venkatachalam SR. Antioxidant properties of *Asparagus racemosus* against damage induced by gamma-radiation in rat liver mitochondria. *J Ethnopharmacol*. 2000 Aug;71(3):425-35.

O'Leary MF, Jackman SR, Sabou VR, Campbell MI, Tang JCY, Dutton J, Bowtell JL. Shatavari Supplementation in Postmenopausal Women Improves Handgrip Strength and Increases Vastus lateralis Myosin Regulatory Light Chain Phosphorylation but Does Not Alter Markers of Bone Turnover. *Nutrients*. 2021 Dec;13(12):4282.

Pandey AK, Gupta A, Tiwari M, Prasad S, Pandey AN, Yadav PK, Sharma A, Sahu K, Asrafuzzaman S, Vengayil DT, Shrivastav TG, Chauhe SK. Impact of stress on female reproductive health disorders: Possible beneficial effects of shatavari (*Asparagus racemosus*). *Biomedicine & Pharmacotherapy*. 2018 Jul;103:46-49.

Sharma S, Ramji S, Kumari S, Bapna JS. Randomized controlled trial of *Asparagus racemosus* (Shatavari) as a lactagogue in lactational inadequacy. *Indian Pediatr*. 1996;33:675-677.

### BLACK COHOSH

Amsterdam JD, Yao Y, Mao JJ, Soeller I, Rockwell K, Shults J. Randomized, double-blind, placebo-controlled trial of *Cimicifuga racemosa* (black cohosh) in women with anxiety disorder due to menopause. *J Clin Psychopharmacol*. 2009;29(5):474-83.

Borrelli F, Ernst E. Black cohosh (*Cimicifuga racemosa*) for menopausal symptoms: a systematic review of its efficacy. *Pharmacology Res*. 2008;58(1):8-14.

Ernst E, Chrubasik S. Phyto-anti-inflammatories: a systematic review of randomized, placebo-controlled, double-blind trials. *Rheum Dis Clin North Am*. 2000 Feb;26(1):13-27, vii.

Foster S. Exploring the peripatetic maze of black cohosh adulteration. *HerbalGram* 2013; May-July:32-51.

Jacobson JS, Troxel AB, Evans J, Klaus L, Vahdat L, Kinne D, Lo KM, Moore A, Rosenman PJ, Kaufman EL, Neugut AI, Grann VR. Randomized trial of black cohosh for the treatment of hot flashes among women with a history of breast cancer. *J Clin Oncol*. 2001 May 15;19(10):2739-45.

Leach MJ, Moore V. Black cohosh (*Cimicifuga* spp.) for menopausal symptoms. *Cochrane Database Syst Rev* 2012 Sep 12;2012(9):CD007244.

Palacio C, Masri G, Mooradian AD. Black cohosh for the management of menopausal symptoms: a systematic review of clinical trials. *Drugs Aging*. 2009;26(1):23-36.

Shams T, Setia MS, Hemmings R, McCusker J, Sewitch M, Ciam

A. Efficacy of black cohosh-containing preparations on menopausal symptoms: a meta-analysis. *Altern Ther Health Med*. 2010 Jan-Feb;16(1):36-44.

#### BLADDERWRACK

Bae M, Kim MB, Park YK, Lee JY. Health benefits of fucoxanthin in the prevention of chronic diseases. *Biochim Biophys Acta Mol Cell Biol Lipids*. 2020 Nov;1865(11):158618.

Stansbury J, Saunders P, Winston D. Promoting healthy thyroid function with iodine, bladderwrack, guggul and iris. *Jour Restorative Med* 2012;1(1):83-90(8).

Zhang H, Tang Y, Zhang Y, Zhang S, Qu J, Wang X, Kong R, Han C, Liu Z. Fucoxanthin: A Promising Medicinal and Nutritional Ingredient. *Evid Based Complement Alternat Med* 2015:2015:723515.

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