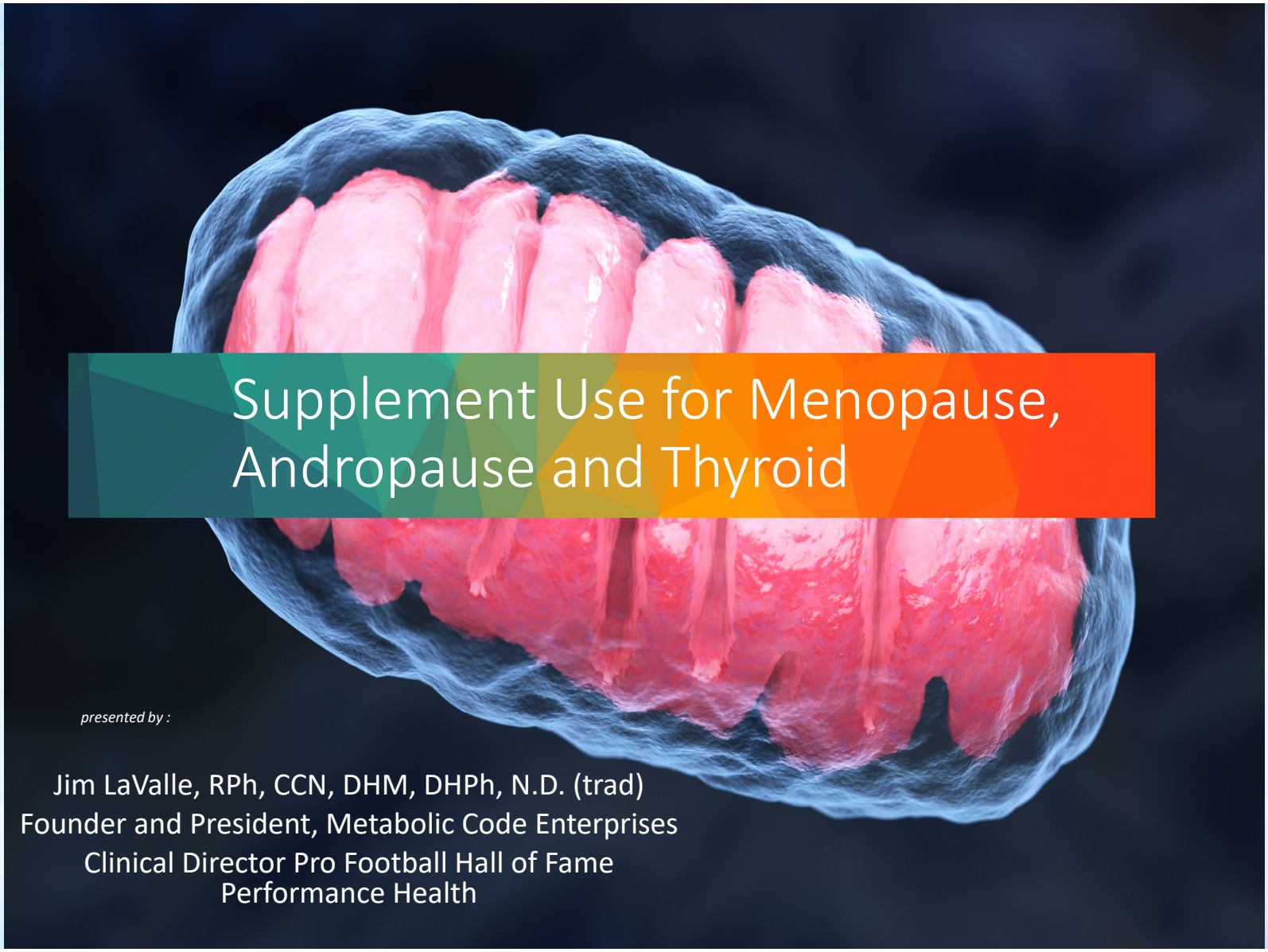


Supplement Use for Menopause, Andropause and Thyroid

presented by :

Jim LaValle, RPh, CCN, DHM, DHPh, N.D. (trad)
Founder and President, Metabolic Code Enterprises
Clinical Director Pro Football Hall of Fame
Performance Health

Disclosure

- Nothing to disclose

This material is provided for educational and informational purposes only to licensed health care professionals. This information is obtained from sources believed to be reliable, but its accuracy cannot be guaranteed. Herbs and other natural substances are very powerful and can occasionally cause dangerous allergic reactions in a small percentage of the population. Licensed health care professionals should rely on sound professional judgment when recommending herbs and natural medicines to specific individuals. Individual use of herbs and natural medicines should be supervised by an appropriate health care professional. The use of any specific product should always be in accordance with the manufacturer's directions.

Supplement Support for Andropause/Menopause

- Choose botanicals and nutrients that support sex hormone axis production and balance in conjunction with HPA axis support
  - Testosterone support
  - Estrogen supportive – support healthy estrogen metabolism
  - Maintain healthy estrone levels - fiber
  - Progesterone/Estrogen balance

Eurycoma (*Eurycoma longifolia*) root

- Tongkat ali or “Malaysian ginseng” - used in SE Asian cultures for improved testosterone levels, libido

- Adaptogenic botanical for male sexual health and performance
  - Erogenic
  - Improves libido
  - Reported to improve testosterone levels (free and total) in men and women
  - Also improves testosterone/cortisol ratio

Thu HE, et al. Eurycoma longifolia as a potential adaptogen of male sexual health: a systemic review on clinical studies. Chinese J Nat Med. 2017;15(1):0071-80.

Ismail SB, et al. Randomized Clinical Trial on the Use of Physta Freeze-dried Water Extract of Eurycoma longifolia for the Improvemetn of Quality of Life and Sexual Well-Being in Men. Evid Based Complement Alternat Med. 2012;2012:429268.

Eurycoma (*Eurycoma longifolia*) root

- Quassinoids - major phytochemical compounds
- Laboratory studies:
  - Aromatase inhibition
  - At high concentration may also have phosphodiesterase inhibiting properties
- Helps stimulate osteoblast proliferation and osteoclast apoptosis

Thu HE, et al. Eurycoma longifolia as a potential adaptogen of male sexual health: a systemic review on clinical studies. Chinese J Nat Med. 2017;15(1):0071-80.

Table 1 Summary of the selected studies showing promising potential in improving male sexual disorders

Year of Publication	Country	Major effect	Sample size and Age	Subject state	Study duration	Study design	*EL* form	*EL* dosing regimen	Outcomes	Ref.
2014	Malaysia	Improvement in penile erection	109 (40–65 years)	Healthy males	+6 months	Double blind/ Multiple cohort study	Water extract	300 mg daily	A significant ($P < 0.05$) increment in penile erection and sexual libido (8.4%–8.7%). A remarkable improvement in principle sexual parameters, including penile hardness, penile erection scores, and sexual libido.	[35]
2012	Malaysia	Increase in sex hormone and penile erection	320 (30–64 years)	Hypogonadic males	1–6 months	Multiple cohort study	Water soluble extract	200 mg daily	A significant ($P < 0.000\ 1$) increase in testosterone level. Noteworthy improvement in sexual performance, including erectile function, sexual intercourse performance, and penile hardness.	[36]
2010	Malaysia	Male fertility	350 (45–64 years)	Sub-fertile couples with idiopathic infertility	9 months	Placebo-controlled trial	Water soluble extract	200 mg daily	A significant ($P < 0.05$) increase in principle parameters of fertility such as semen volumes, sperm concentrations, percentage of sperm morphology, and sperm motility. 11 (approx. 15%) spontaneous pregnancies.	[38]
2012	Malaysia	Male fertility	109 (30–55 years)	Healthy male	6 months	Double blind / multiple cohort study	Water extract	300 mg daily	A significant ($P < 0.05$) improvement in principle seminal parameters, including semen volume, sperm motility, sperm concentration, and sperm morphology.	[41]

Eurycoma (*Eurycoma longifolia*) root

- 2014 study (n=25; 13 men, 12 women; ages 52-72)
- 400mg standardized water extract of Eurycoma QD x 5 weeks
- Significant increases in total and free testosterone
- Significant declines in SHBG
- Improved muscular force

Henkel RR, Wang R, Bassett SH, et al. Tongkat ali as a potential herbal supplement for physically active male and female seniors-A pilot study. Phytother Res. 2014;28(4):544-50.

Eurycoma (*Eurycoma longifolia*) root

- 2013 clinical trial
- N=63 men and women
- 200 mg QD standardized water extract for 4 weeks
- 37 % decrease in cortisol levels
- 16% increase in testosterone levels
- Reduced symptoms:
  - -11% stress
  - -15% confusion
  - -12% anger

Talbott SM, Talbott JA, George A, et al. Effect of Tongkat Ali on stress hormones and psychological mood state in moderately stressed subjects. J Int Soc Sports Nutr. 2013;10(1):28.

Eurycoma (*Eurycoma longifolia*) root

- 2012 randomized, double-blind, placebo controlled parallel group study (n=109 men; ages 30-55)
- 300 mg QD *Eurycoma* root standardized water extract for 12 weeks
- Reported improvements in erection, sexual libido, sperm motility and semen volume
- A significant improvement in fat mass was also reported in subjects with a BMI $\geq$ 25.

Ismail SB, Wan Mohammad WM, George A, et al. Randomized Clinical Trial on the Use of Physta Freeze-dried Water Extract of Eurycoma longifolia for the Improvemetn of Quality of Life and Sexual Well-Being in Men. Evid Based Complement Alternat Med. 2012;2012:429268.

Thai Ginseng (*Kaempferia parviflora*) root

- aka Black Ginger - in the ginger family, not ginseng
- Contains high level of antioxidant polymethoxyflavones specifically 5,7 dimethoxyflavone
- PDE5 inhibitor - improves nitric oxide utilization
  - Not recommended to take concurrently with a PDE5 inhibitor
- Traditionally used in erectile dysfunction

Eungpinichpong W, et al. Effects of Kaempferia parviflora on physical and psychological stresses in adults. Int J GEOMATE. 2018;15(5):26031.

Thai Ginseng root

- Improves mitochondrial biogenesis/function
- Increased energy production
- Neuroprotective - protects against glutamate excitotoxicity
- Metabolic Support and weight management
  - SIRT1 and PPAR gamma regulating
  - Upregulates UPC1 (uncoupling protein1)
  - Increases whole-body energy expenditure (EE)
  - Improves brown adipose tissue (BAT) production
- Cardiovascular support – improved NO production
- Reported to improve athletic performance based on stress response and cardiorespiratory performance
- Supports post-exercise recovery
- Upregulates antioxidant enzymes

- Yoshino S, Kim M, Awa R, Kuwahara H, Kano Y, Kawada T. 2014. Kaempferia parviflora extract increases energy consumption through activation of BAT in mice. Food Sci Nutr 2: 634–637.

- Promthep K, et al. Effect of Kaempferia parviflora extract on physical fitness of soccer players: A randomized double blind placebo controlled trial. Med Sci Monit Basic Res. 2015;21:100-108.

Thai Ginseng

- A summary of Human randomized, placebo-controlled clinical studies using Thai ginseng include:
  - Improved physical or exercise performance
  - Improved erectile response
  - Improved energy expenditure; improved thermogenesis
  - 50mg BID std. to 4% 5,7-dimethoxyflavone

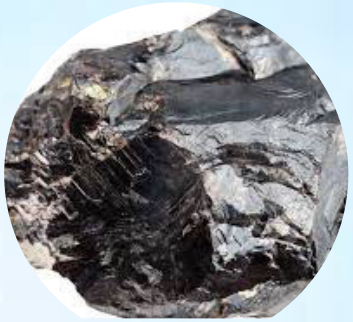
Saokaew S, et al. Clinical effects of Krachaidum (Kaempferia parviflora): a systematic review. J Evid Based Complementary Altern Med. 2017;22(3):413-28.

Tribulus (*Tribulus terrestris*) fruit

- Used in Ayurvedic medicine for thousands of years as aphrodisiac
- Helps support male sexual vitality
- Steroidal saponins identified to improve free testosterone levels in lab animal studies
- 600mg daily Std to 90% steroidal saponins

El-Tantawy WH, Temraz A, El-Gindi OD. Free serum testosterone level in male rats treated with Tribulus alatus extracts. Int Braz J Urol. 2007;33(4):554-8.

Zinc



- Necessary for the functioning of over 300 different enzymes
- Plays a vital role in a balanced metabolism
- Antioxidant/Immune balance
- Prostate epithelial cells contain high amounts of zinc
- Helps maintain testosterone balance
- Laboratory studies report zinc has 5 alpha-reductase and aromatase activity

Prasad AS, et al. Zinc status and serum testosterone levels of healthy adults. Nutrition. 1996;12(5):344-8.

Zinc

- Zinc Deficiency directly effects T levels
- Zinc acts as an aromatase inhibitor low zinc=high estrogen
- Low iron and zinc go hand in hand so check Fe zinc status and serum testosterone levels of healthy adults, ferritin pool and iron if you have trained hard
- 30-50mg daily - zinc bislycinate chelate more bioavailable

Om AS, et al. Dietary zinc deficiency alters 5 alpha-reductase and aromatization of testosterone and androgen and estrogen receptors in rat liver. J Nutr. 1996;126(4):842-8.

Fenugreek seed extract

- A proprietary extract of Fenugreek (T*rigonella foenum-graecum)* seed
- Clinically reported to improve testosterone levels
- Improves sexual desire in men/women
- 2014 double blind placebo-controlled study n=60 men
  - Proprietary fenugreek seed ext. 600mg daily 12 weeks
  - Improving % leans mass – decreasing body fat
  - Improving functional threshold power – improving leg strength
  - Improving testosterone levels (total and free) and SHBG vs. placebo

Wankhede S, et al. Beneficial effects of fenugreek glycoside supplementation in male subjects during resistance training: a randomized controlled pilot study, J Sport Health Sci. 2015;, doi: 10.1016/j.jshs.2014.09.005.

Fenugreek seed extract

- 2016 clnical study n=120 healthy men
- Testofen 600mg daily for 12 weeks
- Results:
  - Significant decrease in androgen deficiency scores
  - Improved sexual function (including morning erections and sexual activity)
  - Improved total and free testosterone levels compared to placebo

Wankhede S, et al. Beneficial effects of fenugreek glycoside supplementation in male subjects during resistance training: a randomized controlled pilot study, J Sport Health Sci. 2015;, doi: 10.1016/j.jshs.2014.09.005.

Fenugreek seed extract

- A double-blind, randomized, placebo-controlled trial n= 50 women aged 40 to 65 years completed study

- 600mg per day for 12 weeks or placebo

RESULTS:

- Significant reduction in menopausal symptoms in the active group compared with placebo as assessed by total MENQOL score,
- Average estradiol levels similar in both the active group and placebo group after treatment

Steels E, et al. Efficacy of a Proprietary Trigonella foenum-graecum L. De-Husked Seed Extract in Reducing Menopausal Symptoms in Otherwise Healthy Women: A Double-Blind, Randomized, Placebo-Controlled Study. Phytother Res. 2017;31(9):1316-22.

Shilajit

- Himalayan shilajit – mineral pitch resin
- 40 trace minerals; 50% fulvic acids
- Not less than 0.3% w/w of dibenzo α-pyrones (DBPs) and not less than 10% w/w of dibenzo-α-pyrone chromoproteins (DCPs)
- Clinical study reports supports testosterone levels
  - 250mg BID x 90 days
  - Total , free T and DHEA increased significantly

Pandit et al. Clinical evaluation of purified Shilajit on testosterone levels in healthy subjects. Andrologia. 2016;48(5):570-5.

Female Hormonal Issues

- Approximately four out of five women suffer from menopausal symptoms (MPS) such as hot flushes and sweating, as well as from sleep disorders associated with these symptoms

- Important to have estrogen metabolizing to 2-OH estrogens in women and men

- Balance of estrogen/progesterone in women

Von-Zepelin.. 60 years of Cimicifuga racemose medicinal products. Wein Med Wochenschr. 2017;167(7):147-59.

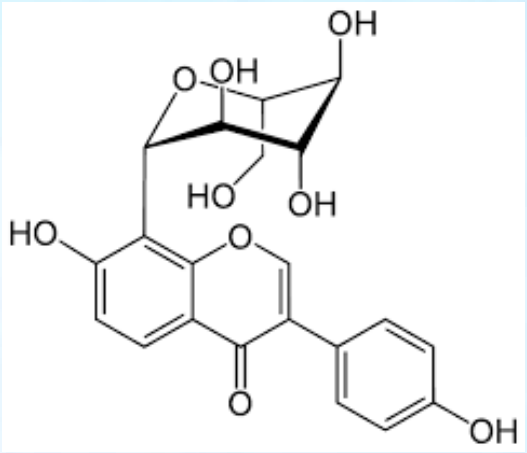
Kudzu (*Pueraria lobata*) root

- Contains isoflavone compounds
  - Puerarin – major constituent
  - Formononetin
  - Genistin
  - Genistein
  - Daidzin
  - Daidzein
- Constituents similar to those found in red clover, soy and black cohosh
- Estrogen receptor modulation
- ↓ testosterone aromatization in laboratory studies

Cho HJ, et al. Acute effect of high-dose isoflavones from Pueraria lobata (Willd.) Ohwi on lipid and bone metabolism in ovariectomized mice. Phytother Res. 2012;26(12):1864-71.

Isoflavones in General

- Studies support improvement in cycles
- Reduced cardiovascular risk
- Reduced estradiol
  - Decrease aromatization of estradiol
- Increased SHBG in low SHBG women
- Decreased cancer risk; breast CA, uterine, prostate
- Improved bone density
- Improves skin thickness, wrinkling, dermal elasticity, collagen fibers



Puerarin – Kudzu Isoflavone

Accorsi-Neto A, et al. Effects of isoflavones on the skin of postmenopausal women: a pilot study. Clinics (Sao Paulo. 2009;64(6):505-10.

Kudzu root

- Reported to interact with PPAR-γ and PPAR-α

  Jungbauer A, Medjakovic S. Phytoestrogens and the metabolic syndrome. J Steroid Biochem Mol Biol. 2013;[Epub ahead of print].

- Animal and in vitro studies support traditional uses in cardiovascular, cerebrovascular and endocrine systems

Wong KH, et al. Kudzu root: traditional uses and potential medicinal benefits in diabetes and cardiovascular diseases. J Ethnopharmacol. 2011;134(3):584-607.

- May help improve symptoms of metabolic syndrome

- Antioxidant/antiinflammatory (COX-2)

  Bebrevska L, Foubert K, Hermans N, et al. In vivo antioxidative activity of a quantified Pueraria lobata root extract. J Ethnopharmacol. 2010;127(1):112-7.

Kudzu root

- Dosage = 500mg daily in divided dosage std. to at least 40% isoflavones
- Use with caution if patient has or is pre-disposed to hormonally sensitive cancers

DIM (diindolylmethane)

- Found in cruciferous veggies
- Helps convert active estrogens into 2-hydroxyestrogen metabolite vs. 4-OH and 16-OH
- May act as weak estrogen
- Binds to receptor and stimulates apoptosis via AMPK signaling

Wang TT, et al. Estrogen receptor alpha as a target for indole-3-carbinol. J Nutr Biochem. 2006;17(10):659-64.

DIM (diindolylmethane)

- Improves free testosterone levels

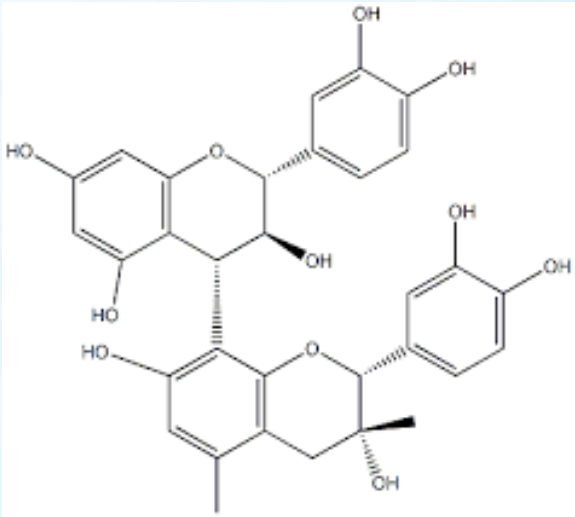
Garikapaty VP, Ashok BT, Tadi K, et al. 3,3'-diindolylmethane downregulates pro-survival pathway hormone independent prostate cancer. Biochem Biophys Res Commun. 2006;340(2):718-25.

- Decreased risk of hormonally related cancers, including breast, prostate and thyroid

- Dose = 150mg BID

Grape (*Vitis vinifera*) seed extract

- Concentrated form of polyphenols - proanthocyanidins
- Superior Antioxidants
- Supports vascular health - antiatherogenic
- Lab study reports inhibition of aromatase



Zheng FM, et al. Phytochemical constituents health benefits, and industrial applications of grape seeds: a mini-review. Antioxidants (Basel). 2017;6(3):71.

Grape (*Vitis vinifera*) seed extract

- Dosage = 150-200mg daily of 95% or > OPCs oligoprocyanidins

- Lab study reports inhibition of aromatase
  - Kiima I, Phung S, Hur G, et al. Grape seed extract is an aromatase inhibitor and a suppressor of aromatase expression. Cancer Res. 2006;66(11):5960-7.

- 2011 Meta analysis reported grape seed extract significantly lowers systolic BP and heart rate
  - Feringa HH, et al. The effect of grape seed extract on cardiovascular risk markers: a meta-analysis of randomized controlled trials

Vitex or Chasteberry (*Vitex agnus-castus*) berry

- Found in Mediterranean regions
- Used as a female tonic
- Helps support estrogen/progesterone balance
- Progesterone-like activity
- Useful clinically in PMS/Menopause symptoms
- Significant effect on the pituitary, binding to dopamine-2 receptors, leading to inhibition of prolactin

He Z, et al. Treatment for premenstrual syndrome with Vitex agnus castus: A prospective, randomized, multi-center placebo controlled study in China. Maturitas. 2009 May 20;63(1):99-103.

Vitex or Chasteberry (*Vitex agnus-castus*) berry

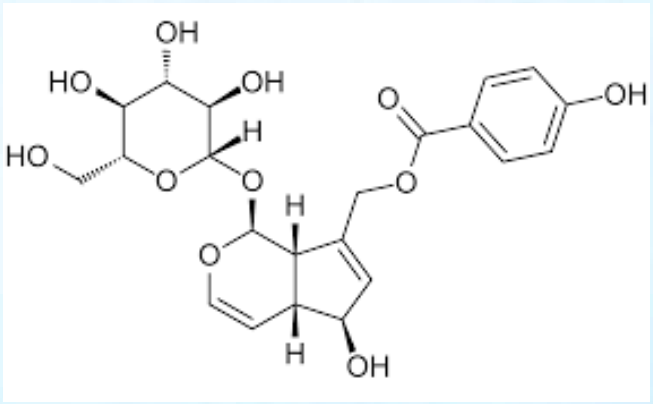
- Apigenin flavonoid also binds to estrogen receptors in vitro
- Early lab studies reported that chasteberry stimulates LH and inhibits follicle stimulating hormone FSH
- 2000 multicentric non-interventional trial n=1634 patients suffering PMS (vitex extract Ze 440, 20mg daily)
- Treatment w/ Vitex 93% reported a decrease in the number of symptoms or even cessation of PMS complaints

- Nasri S, Oryan S, Rohani AH, et al. The effects of vitex agnus castus extract and its interaction with dopaminergic system on LH and testosterone in male mice. Pak J Biol Sci. 2007;10(14):2300-7.
- Berger D, Schaffner W, Schrader E, et al. Efficacy of Vitex agnus castus L. extract Ze 440 in patients with pre- menstrual syndrome (PMS). Arch Gynecol Obstet 2000;264(3):150-153.

Vitex or Chasteberry (*Vitex agnus-castus*) berry

- Dosage = 200mg BID std. 0.5-1.5% agnusides (1-3mg)
  - Or 400mg BID daily fruit extract 1:4w/v

- Use caution in those taking/using contraceptives



Black cohosh (*Actaea racemose)*

- Archaic *Cimicifuga racemosa*
- Black cohosh Native American botanical
- Used worldwide for menopausal symptoms since 1956 (Germany, Remifemin) - over 30 clinical studies, > 11,000 patients
- Mechanism(s) of action (proposed) in menopausal and PMS symptom relief
  - Selective estrogen receptor modulator
  - Serotonergic pathways,
  - An antioxidant
  - Regulates Inflammatory pathways

Ruhlen RL, et al. Black cohosh: Insights into its mechanism(s) of action. Integr Med Insights. 2008;3:21-32.

Black cohosh (*Actaea racemose)*

- Clinical studies support use for menopausal symptoms
- Reported in laboratory studies to inhibit proliferation of estrogen receptor-positive and negative human breast carcinoma cell lines by induction of apoptosis
- 2015 systematic review of 147 studies
  - Non-hormonal treatments for vasomotor symptoms in climacteric women and in cancer patients
  - Improved symptoms of menopause
  - Reported that Black Cohosh had a positive risk-benefit ratio in these patients

Drewe J, Bucher KA, Zahner C. A systematic review of non-hormonal treatments of vasomotor symptoms in climacteric and breast cancer patients. Springerplus. 2015;10(4):65.

Black cohosh

- Supports breast and bone tissue
- 20mg AM, 20mg PM std. 2.5% terpene glycosides
- Reported protective in breast cancer – however still use with caution if predisposed to or has hormonally sensitive cancers

Adnan MM, et al. Black cohosh and liver toxicity: is there a relationship? Case Rep Gastrointest Med. 2014;201`4:860614.

Black cohosh

- Use with caution in hepatic conditions
  - Used for decades safely
  - Several case reports of increased hepatic labs and enzyme levels, hepatic nodules, hepatotoxicity and even hepatic failure in patients using black cohosh for menopausal symptoms have been reported
  - Use with caution in patients predisposed to hepatic injury – **heavy drinkers, polypharmacy, elevated hepatic enzymes, pre-existing hepatic pathology**

Adnan MM, et al. Black cohosh and liver toxicity: is there a relationship? Case Rep Gastrointest Med. 2014;201`4:860614.

Stress and Thyroid Function

- Increased cortisol levels inhibit conversion of T4 to T3 and favors conversion to rT3 secondary to diversion of tyrosine to cortisol production vs. thyroid hormone production
- Increased oxidative stress
- rT3 decreases cellular energy production
- Increases in T3 reverse this decline

Okamoto R et al. Adverse effects of reverse triiodothyronine on cellular metabolism as assessed by 1H and 31P NMR spectroscopy. Res Exp Med (Berl) 1997;197(4):211-7)

Symptoms of Hypothyroidism
% of cases

- Weakness 99
- Dry skin 97
- Coarse skin 97
- Lethargy 91
- Slow speech 91
- Edema of eyelids 90
- Cold hands and feet 89
- Decreased sweating 89
- Cold Skin 83
- Memory Impairment 66
- Constipation 61
- Weight gain 59
- Loss of hair 57
- Pallor of lips 57
- Dyspnea 55
- Peripheral edema 55
- Hoarseness or aphonia 55
- Anorexia 45

Weetman AP. Hypothyroidism: screening and sublinical disease. BMJ. 2997;3214(7088):1175-8.

Sub-clinical Hypothyroidism

- Serum T3 and T4 are in range, TSH slightly elevated
- Largely undiagnosed-becoming more recognized
- Stem from the inability of target cells to convert T4 to T3, or increased RT3 production.
- Barnes Test – body temp. indicator

Metabolic Effects of Suboptimal Thyroid Function

- Glucose tolerance
  - Thyroid hormone influences rate of glucose absorbed from the GI tract and taken up by cells
- Insulin resistance
  - Hypothyroidism reduces target cell insulin binding/number of insulin receptor expressed
- Cardiovascular health
  - Decreases metabolism of fats and increases serum lipids
  - Decreases the availability of cardioprotective essential fatty acids
  - Inadequate T3 lowers oxygen consumption, contributes to lipids peroxidation and free radical damage
  - Subclinical hypothyroidism – an independent risk factor in atherosclerosis and myocardial infarction

Ann Intern Med 132 (4) Feb 15, 2000)

Chromium

- Supports thyroid function by improving T4-T3 conversion
- Helps support balanced blood glucose and insulin levels
- Insulin receptor activation
- Increases insulin dependent GLUT-4 levels

Onakpoya I, et al. Chromium supplementation in overweight and obesity: a systematic review and meta-analysis of randomized clinical trials. Obes Res. 2013;14(6):496-507.

Chromium

- Diets high in simple sugars (comprising more than 35% of calories) can increase chromium excretion in the urine.
- Overweight/Obese reported low in chromium (20-40% lower than healthy)
- 600-1,500 mcg daily chromium GTF
- A study reported chromium picolinate interfered with the absorption of oral levothyroxine - separate the dosing if on synthetic thyroid

- John-Kalarickal J, et al. New medications which decrease levothyroxine absorption. Thyroid. 2007;17(8):763-5.
- Via M. The malnutrition of obesity: micronutrient deficiencies that promote diabetes. ISRN Endocrine. 2012;2012:103472.

Selenium

- Antioxidant
- Support immunity
- Cofactor in conversion of T4 to T3
- Thyroid gland has highest concentration of selenium per gram of organ tissue – converted into selenoproteins

Ventura M, et al. Selenium and thyroid disease: from pathophysiology to treatment. Int J Endocrinol. 2017;2017:1297658.

Selenium

- Reported effective support in autoimmune thyroiditis
    - Van Zuuren EJ, Albusta AY, Fedorowicz Z, et al. Selenium supplementation for Hashimoto's thyroiditis. Cochrane Database Syst Rev. 2013;CD010223.
- Dose = 200-400mcg daily
- Selenomethionine more bioavailable

Bladderwrack (*Fucus vesiculosus*)

- Genus of brown algae found mainly in Pacific
- High in nutrients:
  - **Iodine**
  - Magnesium
  - Calcium
  - Potassium
  - Sodium
  - Zinc
- Iodine up to 600 mcg/gm plant
- Dose 100 mg std. to 0.12% iodine daily
- Reported to help improve thyroid hormone levels

Stansbury J, et al. Promoting healthy thyoid function with iodine, bladderwrack, guggul. Ass Adv Restor Med. 2012;1(1):83-90.

Coleus *(Coleus forskohlii*)

- Herb commonly used in Ayurveda and Chinese Medicine
- *In vitro* forskolin stimulates secretion of T3 and T4
- Increases c-AMP levels in cells
- Stimulates iodine organification
- Activates adenyl cyclase
- Increases thermogenesis ; lipolysis

Laurberg P. Forskolin stimulation of thyroid secretion of T4 and T3. FEBS Lett. 1984;170(2):273-6.

Coleus *(Coleus forskohlii)* - Thermogenesis

- Human trial (n=15) 500mg bid of 10%
- Weight loss up to 2.3kg over 2 months
- Makes fat cells more sensitized to compounds like epi, norepi
- Promotes fat oxidation

Kamohara S, Noparatanawong S. A *Coleus forskohlii* extract improves body composition in healthy volunteers: An open-label trial. Personalized Medicine Universe. 2013;2:25-27.

Coleus *(Coleus forskohlii)* - Testosterone

- Randomized, double-blind placebo-controlled study n= 30 overweight/obese men BMI $\geq$ 26kg/m^2
- 12 weeks forskolin (250mg BID std. 10% forskolin) or placebo
- Serum free testosterone significantly ↑ vs placebo; up to 33.77% compared to a ↓ in placebo
- Leydig cells become more sensitive to LH
- Improved bone mass

Godard MP, Johnson BA, Richmond SR. Body composition and hormonal adaptations associated with forskolin consumption in overweight and obese men. Obes Res. 2005;13(8):1335-43.

Ashwagandha *(Withania somnifera)*

- "Indian ginseng"
- Herbal adaptogen
- Helps improve performance and decrease fatigue
- Lab studies report improves thyroid hormone levels, especially T4

- Sandhu JS, et al. Effects of Withania somnifera (Ashwagandha) and Terminalia arjuna (Arjuna) on physical performance and cardiorespiratory endurance in healthy young adults. Int J Ayurveda Res. 2010;1(3):144-9.
- Panda S, Kar A. Changes in thyroid hormone concentrations after administration of ashwagandha root extract to adult male mice. J Pharm Pharmacol. 1998 Sep;50(9):1065-8.

Ashwagandha Human Study

- 2018 prospective, randomized, double-blind, single-center placebo-controlled study n=46 (ages 18-50)
- All had elevated serum TSH levels (range 4.5-10 ulU/L)
- Ashwagandha root extract 600mg daily or placebo x 8 weeks
- Tested TSH, T3T, T4T
- RESULTS: Improved serum TSH, T3 and T4 levels significantly
- Ashwagandha treatment normalized thyroid levels after 8 weeks therapy
- Authors concluded: “treatment with ashwagandha may be beneficial for normalizing thyroid indices in subclinical hypothyroid patients”

Sharma AK, et al Efficacy and safety of ashwagandha root extract in sublinical hypothyroid patients: a double-blind randomized placebo-controlled trial. J Altern Complement Med. 2018;24(3):243-48.

Clinical Pearls

- Evaluate cortisol levels also in thyroid patients 8AM serum – salivary 4 point or urinary 5 point
- Thyroid Lab Evaluation: T3T/FT3, T4T/FT4, TSH, TPO, ThyAb, Ferritin, rT3
- ↑ Low to Moderate Exercise – Improves thyroid function
- High levels of exercise can ↓ thyroid hormones

Thyroid Questions

1. Do you feel tired from morning to night?
2. Do you have extreme difficulty losing weight?
3. Do you have a lot of trouble getting up in the morning?
4. Do you have cold hands and feet?
5. Are you constipated?
6. Do your muscles feel weak?
7. Do you struggle with depression or low mood?
8. Do you have thin hair or lose a lot of hair with brushing and shampooing?
9. Do you have dry skin, hair or brittle nails?
10. Is your body temperature below 98.6?