

Super Bazongas

Botanical Breast Enlargement (Draft release)

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The reader should regularly consult a physician in matters relating to her/his health and particularly with respect to any symptoms that may require diagnosis or medical attention. It is inadvisable to diagnose yourself for treatment, for example about imbalances; see a medical professional in that case.

Information or suggestions in this book are not intended for conceiving, pregnant, or lactating women, and for those with poor physical or mental health.

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I Biology

Breast Development

The hormones of estrogens, progestogens, and prolactin influence breast tissue through Estrogen Receptor Alpha ($ER\alpha$), Progesterone Receptor B (PRB), and Prolactin Receptor (PrlR). As each receptor is positively stimulated by its respective hormone, it also becomes desensitized. There are more receptor types in the breast that cannot be ignored due to health reasons, but those mentioned above regulate breast tissue.

Positive estrogenic stimulation, or agonism, of $ER\alpha$ causes lengthening of milk ducts. Branching of milk ducts, which increases the amount of end buds, is caused by progestogenic agonism on PRB. The initial formation of milk lobules converted from the end of milk ducts and their continued growth is caused by prolactin's effects on PrlR. Progesterone also has a role in differentiation, or conversion of end points into milk lobules, by influencing prolactin, during the luteal phase.

Of $ER\alpha$, PRB, and PrlR, their non-respective hormone enhances each hormone's response to its respective hormone, known as receptor upregulation. Without this synergistic action, the response to a receptor's own specific hormone dulls with quantity or potency, known as receptor downregulation. Too much of a potent hormone may possibly damage its own and other interacting receptors. An imbalance of too much of one type of hormone is a cancer risk. The breast contains more types of cell receptors, but the mentioned above are the focus here.

Endocrinology

Outside of the secretory (part of luteal) phase or pregnancy, progesterone amounts in the body are existent (due to the adrenal glands), but negligible. Progesterone is produced by the corpus luteum, which is a temporary organ whose function is to signal to the pituitary gland to momentarily prevent menstruation, for purposes of maintaining fertilization or pregnancy. The pituitary gland releases prolactin, which signals the corpus luteum (and if during pregnancy, the placenta) to release more progesterone, creating a feedback loop. If the egg is not fertilized, the corpus luteum dies within the ovaries, then this signals for the pituitary to release Follicle Stimulating Hormone (FSH) instead of prolactin, allowing the menstrual cycle to proceed. Luteinizing Hormone (LH) is released later to continue the egg's preparation. The ovaries also produce estrogens and progesterones during the luteal phase and pregnancy. Progesterone increases prolactin, and prolactin lowers FSH and LH.

Estrogens are formed from androgens through a process called aromatase, and this happens within ovary, egg, bone, brain and adipose tissue.

II Hormone Imbalances

Here is about hormone balance and some of their manifestations. Serum prolactin, progesterone and estrogen levels work synergistically for breast maintenance, and their proportion is important throughout the cycle. There are more hormones that play a role in the health of the human body.

LH, FSH and Androgens

Prolonged or heavy periods can be explained by low prolactin and abnormally high Follicle Stimulating Hormone (FSH). FSH and Luteinizing Hormone (LH) allow menstruation and ovulation to continue. Light or a delay in menstruation can be explained by high prolactin levels.

High amounts of androgens, high amounts of LH, a presence of hirsutism, and poor insulin sensitivity are associated with polycystic ovary syndrome (PCOS). It is uncertain if a lack of aromatase (the conversion of androgens into estrogens), or if too much aromatase which is coupled with high amounts of androgens contribute to PCOS. Exercise is commonly used as a treatment for PCOS to lower abnormal amounts of androgens caused by negative feedback due to insulin insensitivity.

Androgen insufficiency in women is rare, except in late reproductive years and afterwards. A few symptoms of adrenal insufficiency are fatigue, loss of libido, loss of appetite and nauseousness. Adrenal androgens play a role in women's health, for instance, for causing growth spurts during puberty.

Fertility

A prolonged excessive imbalance of hormones can cause reduced fertility, and that is a risk for sterility.

Low levels of LH and FSH, usually as a result of high levels of prolactin, cause diminished fertility. Both progesterone and prolactin are capable of pausing the menstrual cycle for pregnancy or nursing, as are also their roles in the luteal phase. High progesterone and prolactin, with the absence of LH, FSH, and possibly androgens cause symptoms consistent with shrinkage of the ovaries. Estrogenic compounds in the presence of high prolactin and progesterone, in the absence of LH and FSH, further reduce fertility. In cases of ovarian shrinkage, reduced fertility can often be reversed, until if sterility occurs. An imbalance of low estrogen levels is consistent with primary ovarian insufficiency (POI), and it is uncertain if this is related to what is described above.

Infertility due to hormones are not limited to progesterone and prolactin excesses. PCOS and endometriosis (uterine tissue growing outside the uterus) are also associated with infertility.

Severe PCOS can cause damage to the ovaries. PCOS is consistent with abnormally high LH and androgen levels, which are consistent with low levels of prolactin. It is uncertain whether estrogen conversion contributes to or alleviates PCOS.

Progesterone deficiency or insensitivity of the reproductive tract, and abnormally high levels of bodily estrogen contribute to endometriosis. Severe endometriosis may block passage ways needed for fertilization.

There may be other hormonal imbalances that cause reproductive changes which contribute to lack of fertility. Not all infertility cases can be determined by symptoms of menstrual irregularity.

Theories on Cancer Treatments

When a well intended cancer treatment works against a specific cancer, the cancer's receptors usually become desensitized. This situation is also seen in the analogies of steroid and drug use, where more and more is needed to get a desired effect to a diminished body response and diminishing ability for bodily regulation. With receptor targeted therapy, the receptor must be re-sensitized for a cancer therapy to remain effective. This often seems to be the case in receptor negative types of cancer. Otherwise, a stronger medicine is given, and it becomes less and less effective. Not all substances with a specific hormone attribute have anti-cancer properties to be used for re-sensitization of receptor responses. This idea was extended from a few studies about upregulating specific receptors for more effective cancer treatment.

It is thought that insoluble dietary plant fiber, which otherwise cannot be absorbed into the bloodstream, is digested by intestinal flora to produce anti-cancer chemicals which enter the body.

Premenstrual Syndrome

Premenstrual syndrome (PMS) can occur during the late luteal phase. It is commonly recommended to lower salt intake and to avoid alcohol during this time.

Low levels of progestogens allopregnanolone, pregnenolone, pregnanolone and 5 α -dihydroprogesterone are associated with negative mood during the late luteal phase. Pregnenolone is the precursor to progesterone, which suggests that not enough progestogens were being converted for hormonal balance. Progestogens allopregnanolone and 5 α -dihydroprogesterone are neurosteroids formed by 5 α -reductase from other progestogens that help the brain cope with stress during the luteal phase. Alcohol may cause problems, because it decreases allopregnanolone levels during this time.

My hypothesis is that premenstrual syndrome is associated with the monthly disintegration of the corpus luteum during the second week of luteal phase. The corpus luteum produces the majority of progestogens in the human body, and lack of certain progesterones are associated with negative symptoms. It is during the second week of luteal phase, when progesterone levels drop due to an absence of the corpus luteum, and this perhaps help create hormone imbalances that are not fully understood.

Lowering salt intake is commonly recommended to reduce PMS bloating. Many symptoms can be attributed to high levels of the mineralocorticoid aldosterone, which is a breakdown product of

progestogens formed by the adrenal gland. Aldosterone influences the body to retain liquids and sodium, but it also causes loss of potassium. High amounts of potassium salt were also surprisingly associated with PMS symptoms. These imbalances may be responsible for bodily swelling as well.

Physical

A history of hormonal inconsistencies can be related to breast conditions. Prolactin influences mammary gland size which possibly then influences nipple or areola development. Estrogen causes the extension of ducts, which allows room for branching by other hormones. In theory, a lack of bodily prolactin, and possibly an excess of estrogen can be a cause for inverted nipple. Ductal elongation is caused by estrogen, so a consistent higher proportion of estrogen to prolactin or progesterone can explain the shape of tuberous breasts. History of menstrual irregularities may be common with tuberous breasts or inverted nipples.

III Precautions

This chapter is about the importance of health, and precautions or care to be taken when using herbs.

Prolonged excessive hormone imbalance is a health, including a cancer, risk. Hormone excess can also cause fibrotic breasts, and cell receptor desensitization. Menstrual irregularities may signify hormone imbalances.

Prolactin or progesterone imbalances may aggravate mood disorders. For one, prolactin and dopamine influence each other. The brain also reacts to hormones on its own.

For post-menopausal women, progesterone levels are typically low. During this time, there is a lack of menstrual cycling to hint at hormone levels which has to be taken into consideration.

It is important to eat whole foods including grains, fruits and vegetables to reduce the risk of cancer.

Herbs and Fertility

An excessive hormone imbalance is a fertility risk.

An excess of herbs that directly increase prolactin levels have the capability to shrink the gonads which can eventually lead to the occurrence of sterility. Clover, hops and possibly the mycotoxin ZEN are capable of shrinking the gonads. Hops and clover raise prolactin levels. Lowered birth-weight of animals is anecdotal evidence of prolactin properties of ZEN, which is considered a mycoestrogen. For animals grazing on clover, this outcome of reduced fertility has been known as “clover disease.” Farm animals that were fed clover and were administered estrogen had less offspring than animals that just ate clover by itself. Based on clover's stronger effects on ER-beta in the reproductive tract than hops, clover's infertility effects appear to be more potent than hops. An excess of prolactin or progestogenic herbs coupled with low levels of LH and FSH, as described in the previous chapter, are a risk for infertility. Be aware of symptoms of low androgens or low fertility. Herbs that raise LH, FSH and subsequently, androgens are supposed to remedy this problem.

An imbalance of low estrogen levels is consistent with adverse symptoms of primary ovarian insufficiency (POI). It is uncertain the effects that other hormone imbalances have on issues related to POI.

Also, be cautious with herbs that alter other hormones. High amounts of androgens, LH, and possibly FSH can increase the incidence of PCOS, and this is a risk for infertility. There is uncertainty whether lack of estrogen conversion or high amounts of estrogen contribute to PCOS. FSH and LH are responsible for egg release and preparation. An excess of serum FSH, which can be triggered by LH, can cause multiple egg release, potentially allowing multiple pregnancies if conceiving. Also, contractions are caused by significant serum levels of FSH and LH, which is a risk to an existing pregnancy.

Be aware of the symptom of itchy skin, which happens from taking excessive prolactin herbs. Itchy skin signifies reduced fertility, and it is often also a symptom of pregnancy. When this happens, and no pregnancy is involved, it is important to take a month break.

Other abnormal levels of hormones may have an effect on fertility too.

Standard Warnings

Avoid herbs and extracts which easily become toxic, as they are also useless or unnecessary. An example of a dangerous herb is Kava which can easily cause organ failure.

There is the consideration that oil extracts are many times potent than whole herb or other extracts of herbs, leading to safety concerns. The botanical recommendations from this ebook will be limited to unconcentrated herb or herbal tea. Mint and other extracts or concentrates in minuscule amounts can also cause organ failure. Lavender oil and tea tree oil can only be used topically after being diluted.

The reader is responsible for researching ingredient safety, and for using prudence. Please read product instructions, if applicable, and check safety for herbal extracts. Also, check herb interactions with medications or other herbs. Only ingest food grade botanicals in small amounts, and do not ingest herbs that have dubious properties. Any supplement should be taken with plenty of water.

See the previous chapters and the disclaimer for more.

IV Botanical

Progesterone, estrogen, and prolactin work synergistically to influence breast tissue through receptors ER α , PRB, and PrlR. Evidence suggests, small amounts of hormones upregulate their respective hormone receptors, allowing their respective receptors to continue to have an effect. While a hormone activates its respective receptor, it also reduces its sensitivity. An overload, especially of potent hormones, may decrease sensitivity of all involved receptors. It is important to cycle botanicals according to their phytohormone property in small amounts, to use them in proportionate combinations, and to take breaks.

The rest of this chapter will look at practical effects of herbs on hormones, menstrual cycles and direct influence on breasts. An herb may have various properties, causing specific body tissues to react differently. Herbs will be described by their effects on regulating steroidal hormones which influence the breast. We will also look at herbs' ultimate effect on breast receptors ER α , PRB, and PrlR. Labels of phytoestrogens, phytoprogestogens and botanical prolactin will often be replaced with more specific effects relating to breast enhancement.

ER β (Estrogen Receptor Beta), PRA (Progesterone Receptor A) and other receptors in the breast and body cannot be ignored due to health and hormone balance.

Application

We see how receptors ER α , PRB, and PrlR react to progesterones, estrogens, and prolactin. The idea is for these representative phytohormones to be present in balanced amounts to ultimately activate receptors while keeping them from being desensitized too much. There are three types of hormonal effects from herbs: the human hormone it influences (raises/lowers), the hormone receptor it modulates (sensitizes/desensitizes), and the hormone receptor it acts (usually weakly) directly on. A herb can have more than one of each type of property for multiple receptors, hormones or actions. Usually, a herb will sensitize many hormone receptors. For instance, hops is mildly estrogenic, increases prolactin, and it increases sensitivity of ER α , and PRB. Including herbs with phytohormones that act directly on select receptors during the right times is used to further gains, and to help maintain gains that would otherwise mostly be temporary. If certain receptors are not mildly desensitized by an agonist after there is noticeable breast growth, the next phase of the cycle will cause these gains to be temporary due to opposing effects on these receptors. Once a response stops working, it is time to stop taking that herb, because further receptor desensitization is counterproductive and a health risk.

Be aware of symptoms of low or excess androgens, or any other hormone imbalance. Some herbs more directly increase aromatase, while other herbs increase aromatase as a secondary function of raising androgens. LH and FSH raising herbs should be balanced with prolactin raising herbs. The hormones LH, FSH, and prolactin are gonadotrophins (hormones released by the pituitary), so these must be

balanced so that these pituitary responses remain healthy. Theoretically, prolactin, progesterone and aromatase herbs would have to be used together to counter androgen symptoms.

Large doses of herb will be avoided, because the idea is for lower amounts to be in the right balance to keep responses sensitive. Essential extract oils and concentrates will be avoided for ingestion. The only dietary herbs suggested here are whole (fresh, dried or ground) herbs and herbs in tea form. It is easier to compare volumes when herbs are in the same form as dried, ground or fresh, otherwise weight should be used to compare amounts. Limit amounts of herbs, and try to take them in balance according to their hormonal property.

Herbs whose ultimate effect mimics prolactin on the breasts cause a secondary effect as progesterone herbs only during the luteal phase. Phytoprogestins act with a secondary function as prolactin herbs at any time.

A healthy diet is necessary. The fiber contained in whole herbs is important for body health. Choose herbs that contain a variety of phytochemicals with anti-carcinogenic properties. It is also important to eat a variety of whole foods: fruits, grains and vegetables. [Vitamins](#) are important for health and breast enhancement. For instance, supplements of 500mg of vitamin C, 400IU of vitamin E, and 100mcg of selenium per day help keep hormone responses healthy; the rest of your intake of these vitamins can come from food.

If you have hormonal imbalances, see a health professional for diagnosis and treatment. Herbal breast enhancement should not be done while trying to conceive.

Botanicals According to their Effects on the Breast

* Many recommended herbs have anti-tumor properties against their target receptor, except Pueraria.

* See <http://breast.is/herbs/> for more information and for herb updates.

Botanical Aromatase

Lavender (*Lavendula*)

Progestogenic

Chaste berry (*Vitex*) – Increases progesterone, but directly lowers prolactin.

Fenugreek (*Trigonella*) – Increases estrogen and testosterone. Progestogenic action based on its actions that cause branching, instead of duct elongation. Contains a replica of progesterone. [reference claims it is estrogenic]

Suma (*Hebanthe eriantha*) – Has adaptogenic properties. Also, raises estrogen, progestogen and testosterone. [Brazilian ginseng]

Wild yam (*Dioscorea*) – Has similar properties to Fenugreek.

Raises Prolactin

Clover (*Trifolium*) - Increases prolactin. Overuse can reduce fertility.

Hops (*Humulus*) – Increases prolactin. Has more potent effect on ER α in the breast, than ER β . Also increases sensitivity of PRB and ER α .

Milk thistle (*Silybum*) - Increases prolactin. Similar attributes to hops.

Emmenagogue (induces menstruation)

Mint (*Mentha*) – Taking too much mint, especially in concentrate form, is dangerous.

Rosemary (*Rosmarinus*)

Adaptogens

Ashwaganda (*Withania*) – [Indian ginseng]

Basil (*Ocimum*)

Chuchuhuasi (*Maytenus*) – For menstrual symptoms. [Chuchuasos, Chuchuhuasha, Gnikélé]

Eleuthero (*Eleutherococcus*) – [Siberian ginseng]

Ginseng (*Panax*) – [American ginseng, *Panax quinquefolius*, Korean ginseng]

Gotu kola (*Centella*)

Maca (*Lepidium*)

Schizandra (*Schisandra*)

Other

Asparagus (*Asparagus*) – Tuber is used. Asparagus raises prolactin, but it is probably primarily progestogenic. [Common asparagus, Shatamuli, Shatavari, *Asparagus racemosus*]

Kudzu (*Pueraria*) – Specific hormonal properties are uncertain, but anecdotally it seems to have a combination of FSH, LH or estrogenic properties in conflict with prolactin or progestogenic properties. Kudzu may not be a carcinogenic, but it seems to not discriminate between nurturing healthy and tumorous cells. [*Pueraria candollei mirifica*, *Pueraria mirifica*]

Suma (*Hebanthe*) – Raises androgens, estrogens and progesterones. It is also an adaptogen.
[*Brazilian Ginseng*]

Tea tree (*Melaleuca*) – Aromatase. Topical use only.

Herb Schedule

The recommendation of combined ground herbs is less than 1,500mg per day. Only use non-extracted herbs or herbal tea, because concentrates are many times more potent and can easily be dangerous. Herbs come in different strengths, and the body's response may also vary the effectiveness of each herb. The suggested proportions below are in estimated herb strength, not in weight or volume.

The schedule is not applicable for those on birth control or other hormone pills. Menstrual cycle phases will be divided into: Menstruation, Proliferation, Ovulation, Secretory, and Premenstrual. Follicular phase was split into menstruation and proliferation phases. Luteal phase was divided into secretory and premenstrual phases. Progesterone is produced by the corpus luteum during the secretory phase.

For purposes of this text, LH and FSH are treated as near opposite equals to prolactin, in terms of their effects.

Here are suggestions about herbs mentioned. Mint and lavender are more effective as tea, and the remaining herb can be eaten. Hops and thistle may be interchangeable, but it would be better to combine both. Mint primarily raises androgens, and has a secondary effect (possibly through upregulation) of converting androgens into estrogens. Lavender primarily helps the body convert androgens into estrogens.

When there is breast tingling, you may have found the right balance for breast enhancement herbs. When breast growth or swelling stops during normal menstrual phase, or when menstruation becomes irregular, stop or readjust the proportions for each day.

Here is the herb ratio to take during menstruation. Take ½ parts each: mint, clover, lavender, fenugreek and wild yam. Hops must be adjusted from ¼ parts to ½ parts, depending on menstruation intensity. ⅛ part of either saw palmetto, fennel, oatmeal or pumpkin seed can be used here. Increase hops if menstruation is too heavy. Alternatively, increase fenugreek if menstruation is too light or has stopped. For a combination of herbs, do not take more than 1,200mg combined herbs per day at this time. Menstruation is a good time to balance out androgen excess compared to lowered fertility. An adaptogen is also recommended during menstruation.

Here are reasons for this combinations herbs during menstruation. Mint and clover together balance each others' effects on pituitary and ovarian function. Hops increases prolactin, countering menstruation actions of mint and fenugreek, and it sensitizes other breast receptors responsible for

growth. Wild Yam is necessary during menstruation, because it acts directly as progesterone, which the body cannot produce during menstruation. Without wild yam to both stimulate and mildly desensitize PRB, breast sizes usually shrink from the abundance of hormone effects by other herbs. Fennel, pumpkin seed, almonds and saw palmetto lower DHT.

For proliferative phase, take ½ part each of fenugreek and lavender per day. Hops, clover or thistle at this time will cause breast shrinkage.

For the approximate time of ovulation, take 1 part lavender and ½ part fenugreek.

The following are herbs to take daily during secretory phase according to herb strengths, and guidelines. Take 4 part each of hops and fenugreek. Lavender, suma, thistle and wild yam should be 1 part each. Take ½ part each daily of: vitex, mint and clover. Asparagus can substitute suma. Gradually increase amounts of fenugreek, if there are signs of androgen insufficiency. If nipple size increases, add ¼ part more vitex. If there are signs of acne, increase lavender and hops by 1 part each.

For premenstrual phase, take daily ½ to 1 part of adaptogenic herbs, or those known for relieving symptoms. Take ½ part of wild yam to maximize the effect of progesterone on breasts, and to slightly desensitize progesterone receptors to lessen shrinkage during the next menstrual cycle. Also, take ½ part of hops. The corpus luteum becomes incapable of producing progesterone around this time, so hormonal imbalances for this duration are common. When breasts stop responding to wild yam, stop taking it, because taking more is not productive.

Out of every six months, take a one month break from herbs. If there is a lack of menstruation or other symptom of menstrual cycle irregularity, take a one month break as well. Also, if you feel any discomfort in your body, stop.

Inverted Nipple Correction

For inverted nipple correction, the following herb proportion should be taken during menstruation: 3 parts hops, ½ part mint, ½ part fenugreek, ½ part clover, ½ part lavender, ½ part milk thistle, and ½ part wild yam. Increase fenugreek if menstruation is too light, and increase hops if menstruation is too heavy.

The reason for hops is, it increases prolactin, which indirectly activates the nipple area. Milk thistle is known as a galactagogue. Mint and lavender are needed for balance against prolactin increasing effects of hops and clover.

Notes

Take a break periodically. If symptoms become unfavorable, take a break and see a medical professional. Read the disclaimer, the chapters "Precautions", and "Imbalances" beforehand. See a medical professional for diagnosis and treatment of hormonal imbalances.

Postmenopausal women need to consider that they generally have low amounts of serum progesterone, which is less than 1 nanogram per milliliter. It is recommended for everyone, including postmenopausal women, to get periodic health check ups.

The recommendations are non-concentrate form, or made into tea. The differences in weight and absorption of ground herbs, unground herbs, and preparation needs to be taken into account.

Be sure you are certain of the plant species and the properties of all of its parts. Herbs with the main properties of raising LH or FSH (emmenagogues) that are aromatases are listed separately than herbs with the main property of aromatase. Mushrooms will intentionally be left off, because they are difficult to properly identify to not confuse them with poisonous varieties, which can take days for toxic effects to become noticeable. Please see Medline Plus: Herbs and Supplements at http://www.nlm.nih.gov/medlineplus/druginfo/herb_All.html.

V Appendix

Nutrition Resources

For DRIs and UL see 'Dietary Supplement Fact Sheets' <https://ods.od.nih.gov/factsheets/list-all/>.

For iron and zinc see 'Women's iron intake may help to protect against PMS'

http://www.eurekalert.org/pub_releases/2013-02/uoma-wii022013.php.

DRI tool, <http://fnic.nal.usda.gov/fnic/interactiveDRI/>.

Nutrient Recommendations: Dietary Reference Intakes (DRI)

https://ods.od.nih.gov/Health_Information/Dietary_Reference_Intakes.aspx.

More

breast.is/appendix/

breast.is/blog/

Glossary

- α = Alpha
- 5α -reductase = Enzyme that converts Testosterone or Progesterone into more potent forms
- Agonism = Positive activation
- Alveologenesis = Creation of milk lobules
- Antagonism = Negative activation
- Differentiation = Conversion of a type of cell into another
- Emmenagogue = Induces menstruation
- Endometriosis = Uterine tissue that grows outside the uterus
- $ER\alpha$ = Estrogen Receptor Alpha
- FSH = Follicle Stimulating Hormone
- Gonadotrophin = Hormone released by the pituitary gland; These include LH, FSH and prolactin
- Lactagogue = Galactagogue = Breastfeeding herb
- LH = Luteinizing Hormone
- Mycoestrogen = A fungal estrogen
- Mycotoxin = A toxin made by fungi
- PCOS = Polycystic Ovarian Syndrome
- POI = Primary Ovarian Insufficiency
- PRB = Progesterone Receptor B
- Phytoprogestogen = Phytoprogestin = Plant based progestogen; For plants, the terms phytoprogestogen and phytoprogestin are interchangeable
- PrlR = Prolactin Receptor
- Prl = Prolactin = Luteotrophic Hormone = LTH

VI References

Estrogen. *Encyclopædia Britannica*, 2012.

Menstruation. *Encyclopædia Britannica*, 2012.

Polycystic Ovary Syndrome. *ADAM Encyclopedia*. 2015.

<https://www.nlm.nih.gov/medlineplus/ency/article/000369.htm>.

Prolactin. *Encyclopædia Britannica*, 2012.

Brisken C, O'Malley B. Hormone action in the mammary gland. *Cold Spring Harb Perspect Biol*. Dec 2012; 2(12). <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2982168/>.

Li Y, Yuan YY, Meeran SM, Tollefsbol TO. Synergistic epigenetic reactivation of estrogen receptor- α (ER α) by combined green tea polyphenol and histone deacetylase inhibitor in ER α -negative breast cancer cells. *Mol Cancer*. 2010; 9: 274.

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2967543/>.

Li Y, Meeran SM, Patel SN, Chen H, Hardy TM, Tollefsbol TO. Epigenetic reactivation of estrogen receptor- α (ER α) by genistein enhances hormonal therapy sensitivity in ER α -negative breast cancer. *Mol Cancer*. 2013; 12: 9. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3577460/>.

I Biology

Nussey S, Whitehead S. *Endocrinology: An Integrated Approach*. Oxford: BIOS Scientific. 2001.

<http://www.ncbi.nlm.nih.gov/books/NBK22/>.

Breast Development

Horseman ND, Gregerson KA. Prolactin Actions. *J Mol Endocrinology*. 2013 Dec; 52(1).

<http://www.ncbi.nlm.nih.gov/pubmed/24130130>.

Jemstrom H, Olsson H. Breast Size in Relation to Endogenous Hormone Levels, Body Constitution, and Oral Contraceptive Use in Healthy Nulligravid Women Aged 19-25 Years. *Am J Epidemiol*. 1997 Apr 1 ;145(7).

<http://www.ncbi.nlm.nih.gov/pubmed/9098173>.

Hormone. *Encyclopædia Britannica*. 2012.

Mammary Gland. *Encyclopædia Britannica*. 2012.

Steroid Hormone. *Encyclopædia Britannica*. 2012.

Premenstrual Breast Changes. *ADAM Encyclopedia*. July 2015.

<http://www.nlm.nih.gov/medlineplus/ency/article/003153.htm>.

Endocrinology

Stocco C. *Tissue Physiology and Pathology of Aromatase*. *Steroids* 77.1 -2 (2012): 27-35. Web. www.ncbi.nlm.nih.gov/pmc/articles/PMC3286233/.

Progesterone. *Encyclopædia Britannica*, 2012.

II Imbalances

LH, FSH and Androgens

Ovary. *Encyclopædia Britannica*. 2012.

Androgen: Hormone. *Encyclopædia Britannica*. September 24, 2016. <https://www.britannica.com/science/androgen>.

Growth and Development: Human Growth and Development. *Encyclopædia Britannica*.

Adrenal Insufficiency and Addison's Disease. NIDDK. 2016. <https://www.niddk.nih.gov/health-information/health-topics/endocrine/adrenal-insufficiency-addisons-disease/Pages/fact-sheet.aspx>.

Androgen insufficiency in women: diagnostic and therapeutic implications. *Hum. Reprod. Update* (September/October 2004) 10 (5): 421-432. <http://humupd.oxfordjournals.org/content/10/5/421.long>.

Involvement of androgens in ovarian health and disease. *Mol. Hum. Reprod.* (2013) 19 (12): 828-837. <http://molehr.oxfordjournals.org/content/19/12/828.long>.

Androgen actions in the ovary: balance is key. *J Endocrinol* September 1, 2014 222 R141-R151. <http://joe.endocrinology-journals.org/content/222/3/R141.long>.

Li X, Feng Y, Lin JF, Billing H, Shao R. Endometrial progesterone resistance and PCOS. *J Biomed Sci.* (2014) Jan 9; 21 (2). <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3917599/>.

Fertility

Infertility fact sheet. Office of Women's health. <https://www.womenshealth.gov/publications/our-publications/fact-sheet/infertility.html#f>.

R. Lobo, KA Martin. *Infertility and Women*. Hormone Health Network. January, 2012. 4th ed http://www.hormone.org/~media/Hormone/Files/Questions%20and%20Answers/Women/FS_MWH_Infertility_Women_EN%20612.pdf.

Diseases and Conditions that Influence Fertility. NICHD.

<https://www.nichd.nih.gov/health/topics/infertility/conditioninfo/Pages/health-factors.aspx>.

Endometriosis. Mayo Clinic. <http://www.mayoclinic.org/diseases-conditions/endometriosis/home/ovc-20236421>.

Progesterone Alleviates Endometriosis via Inhibition of Uterine Cell Proliferation, Inflammation and Angiogenesis in an Immunocompetent Mouse Model. <https://www.ncbi.nlm.nih.gov/pubmed/27776183>.

Estrogen and progesterone receptor subtype expression in granulosa cells from women with polycystic ovary syndrome. <https://www.ncbi.nlm.nih.gov/pubmed/25603724>.

Novel three dimensional human endocervix cultures respond to 28-day hormone treatment. <https://www.ncbi.nlm.nih.gov/pubmed/25635622>.

Shao R, Cao S, Wang X, Feng Y, Billig H. The elusive and controversial roles of estrogen and progesterone receptors in human endometriosis. *Am J Transl Res.* 2014; 6(2): 104-113. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3902220/>.

Theories on Cancer Treatments

Lattimer JA, Haub MD. Effects of Dietary Fiber and its Components on Metabolic Health. *Nutrients.* 2010 Dec;2(12) www.ncbi.nlm.nih.gov/pmc/articles/PMC3257631.

EurekAlert! Fiber Intake Associated with Reduced Risk of Death. Washington (DC): The JAMA Network Journals. 2011. www.eurekalert.org/pub_releases/2011-02/jaaj-fia021111.php.

Premenstrual Syndrome

Aldosterone. *Encyclopædia Britannica.* 2012.

Premenstrual Syndrome. *Encyclopædia Britannica.* 2012.

Premenstrual Syndrome. *ADAM Encyclopedia.* July 2015.

EurekAlert: Women's Iron Intake May Help to Protect Against PMS. University of Massachusetts. 2013. http://www.eurekalert.org/pub_releases/2013-02/uoma-wii022013.php.

Rosenfeld R, Livne D, Nevo O, Dayan L, Milloul V, Lavi S, Jacob G. Hormonal and volume dysregulation with premenstrual syndrome. *Hypertension.* 2008; 51(4). <http://www.ncbi.nlm.nih.gov/pubmed/18259015>.

Nyberg, S, Andersson A, Zingmark E, Wahlstrom G, Backstrom T, Sundstrom-Poromaa I. The effect of low dose of alcohol on allopregnanolone serum concentrations across the menstrual cycle in women with severe premenstrual syndrome and controls. *Psychoneuroendocrinology.* October 2005; 30(9). <http://dx.doi.org/10.1016/j.psyneuen.2005.04.016>.

Wang M, Seippel L, Purdy RH, Backstrom T. Relationship between symptom severity and steroid variation in women with premenstrual syndrome: study on serum pregnenolone, pregnenolone sulfate, 5-alpha-pregnane-3,20-dione and 3 alpha-hydroxy-5 alpha-pregnan-20-one. *J Clin Endocrinol Metab.* Mar 1996; 81(3). <http://www.ncbi.nlm.nih.gov/pubmed/8772579>.

Melcangi RC, Panzica GC. Allopregnanolone: state of the art. *Prog Neurobiol.* Feb 2014; 113. <http://www.ncbi.nlm.nih.gov/pubmed/24121112>.

Sripada RK, Marx CE, King, AP, Rampton IC, Ho SS, Liberon I. Allopregnanolone Elevations Following Pregnenolone Administration Are Associated with Enhanced Activation of Emotion Regulation Neurocircuits. *Biol Psychiatry.* 2013 Jun; 73(11). <http://www.ncbi.nlm.nih.gov/pubmed/23348009>.

Hellgren C, Akerud H, Skalkidou A, Backstrom T, Sundstrom-Poromaa I. Low serum allopregnanolone is associated with symptoms of depression in late pregnancy. *Neuropsychobiology.* 2014; 69. <http://www.karger.com/Article/FullText/358838>.

Rey M, Coirini H. Synthetic neurosteroids on brain protection. *Neural Regen Res.* Jan 2015; 10(1). <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4357103/>.

Physical

III Precautions

Poluzzi E, Piccinni C, Raschi E, Rampa A, Recanatini M, Poni FD. Phytoestrogens in Postmenopause: The State of the Art from a Chemical, Pharmacological and Regulatory Perspective. *Curr Med Chem.* 201 4;21(4):417-36. <http://www.ncbi.nlm.nih.gov/pubmed/24164197>.

Eunice Kennedy Shriver NICHD. NIH. 2013 <https://www.nichd.nih.gov/health/topics/poi/Pages/default.aspx>.

Herbs and Supplements: MedlinePlus. U.S. National Library of Medicine. http://www.nlm.nih.gov/medlineplus/druginfo/herb_All.html.

Lattimer JA, Haub MD. Effects of Dietary Fiber and its Components on Metabolic Health. *Nutrients.* 2010 Dec;2(12) www.ncbi.nlm.nih.gov/pmc/articles/PMC3257631.

EurekAlert! Fiber Intake Associated with Reduced Risk of Death. Washington (DC): The JAMA Network Journals. 2011. www.eurekalert.org/pub_releases/2011-02/jaaj-fia021111.php.

Herbs and Fertility

Ovarian overproduction of androgens. ADAM Encyclopedia. 2014.

<https://www.nlm.nih.gov/medlineplus/ency/article/001165.htm>.

Solak KA, Santos RR, van den Berg M, Blaauboer BJ, Roelen BA, van Duursen MB. Naringenin (NAR) and 8-prenylnaringenin (8-PN) reduce the developmental competence of porcine oocytes in vitro. *Reprod Toxicol*. 2014 Nov;49:1-11. <http://www.ncbi.nlm.nih.gov/pubmed/24905140>.

Overk CR, Yao P, Chadwick LR, Nikolic D, Sun Y, Cuendet MA, Deny Y, Hedayat AS, Pauli GF, Farnsworth NR, van Breeman RB, Bolton JL. Comparison of the in vitro estrogenic activities of compounds from hops (*Humulus lupulus*) and red clover (*Trifolium pratense*). *J Agric Food Chem*. 2005 Aug 10;53(16):6246-53. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1815392/>.

Berry W, Denison MS, Klasing KC, Millam JR, Rochester JR, Stevenson L. Dietary Red Clover (*Trifolium Pratense*) Induces Oviduct Growth and Decreases Ovary and Testes Growth in Japanese Quail Chicks. *Reprod Toxicol*. 2008[2009];27(1). <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2858001/>.

EurekAlert! Women advised to avoid ZEN bust-enhancing supplements because of possible cancer risk. Washington (DC): Wiley; 2011 http://www.eurekalert.org/pub_releases/2011-12/w-wat120811.php.

Standard Warnings

Wellness Mama. <http://wellnessmama.com/26519/risks-essential-oils/>.

IV Botanical

Jenstrom H, Olsson H. Breast size in relation to endogenous hormone levels, body constitution, and oral contraceptive use in healthy nulligravid women aged 19-25 years. *Am J Epidemiol*. April 1 1997; 145(7). <http://www.ncbi.nlm.nih.gov/pubmed/9098173>.

Premenstrual breast changes. ADAM Encyclopedia. [accessed July 2015].

<http://www.nlm.nih.gov/medlineplus/premenstrualsyndrome.html>.

Menstrual Cycle: Proliferative Phase, Secretory Phase, Menstruation. JRank.

<http://science.jrank.org/pages/4235/Menstrual-Cycle.html>.

Botanicals According to their Effects on the Breast

Grant P, Ramasamy S. An update on plant derived anti-androgens. *Int J Endocrinol Metab*. 2012; 10(2). <http://www.ncbi.nlm.nih.gov/pubmed/23843810>.

- Aradhana, Rao AR, Kale RK. Diosgenin - a growth stimulator of mammary gland of ovariectomized mouse. *Indian J Exp Biol*. May 1992; 30(5). <http://www.ncbi.nlm.nih.gov/pubmed/1459613>.
- Mitra SK, Prakash NS, Sundaram R. Shatavarins (containing Shatavarin IV) with anticancer activity from the roots of *Asparagus racemosus*. *Indian J Pharmacol*. 2012; 44(6). <http://www.ncbi.nlm.nih.gov/pubmed/23248403>.
- Henley DV, Lipson N, Korash KS, Bloch CA. Prepubertal gynecomastia linked to lavender and tea tree oils. *N Engl J Med*. Feb 2007; 356(5). <http://www.ncbi.nlm.nih.gov/pubmed/17568038>.
- Nowak DA, Snyder DC, Brown AI, Denmark-Wahnefried W. The effect of flaxseed supplementation on hormonal levels associated with Polycystic Ovarian Syndrome: A case study. *Curr Top Nutraceutical Res*. 2007; 5(4). <http://www.ncbi.nlm.nih.gov/pubmed/19789727>.
- Overk et al. In vivo estrogenic comparisons of *Trifolium pratense* (red clover) *Humulus lupulus* (hops), and the pure compounds isoxanthohumol and 8-prenylnaringenin. *Chem Biol Interact*. Oct 2008; 176(1). <http://www.ncbi.nlm.nih.gov/pubmed/18619951>.
- Overk CR, Yao P, Chadwick LR, Nikolic D, Sun Y, Cuendet MA, Deny Y, Hedayat AS, Pauli GF, Farnsworth NR, van Breeman RB, Bolton JL. Comparison of the in vitro estrogenic activities of compounds from hops (*Humulus lupulus*) and red clover (*Trifolium pratense*). *J Agric Food Chem*. 2005 Aug 10;53(16):6246-53. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1815392/>.
- Madhubhani et al. Hops (*Humulus lupulus*) inhibits oxidative estrogen metabolism and estrogen-induced malignant transformation in human mammary epithelial cells (MCF-1 0A). *Cancer Prev Res*. Jan 2012; 5(1). <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3252489/>.
- Fugh-Berman A. "Bust enhancing" herbal products. *Obstetrics & Gynecology*. June 2004. 101(6). <http://www.sciencedirect.com/science/article/pii/S0029784403003624>.
- Hajirahimkhan A, Dietz BM, Bolton JL. Botanical modulation of menopausal symptoms: mechanisms of action? *Planta Med*. 2013 May; 79(7): 538-553. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3800090/>.
- Trisomboon H, Malaivijitnond S, Wantanabe G, Taya K. Estrogenic effects of *Pueraria mirifica* on the menstrual cycle and hormone-related ovarian functions in cyclic female cynomolgus monkeys. *J Pharmacol Sci*. 2004 Jan;94(1):51-9. <https://www.ncbi.nlm.nih.gov/pubmed/14745118>.
- Rao A, Steels E, Beccaria G, Inder WJ, Vitetta L. Influence of a Specialized *Trigonella foenum-graecum* Seed Extract (Libifem), on Testosterone, Estradiol and Sexual Function in Healthy Menstruating Women, a Randomised Placebo Controlled Study. *Phytother Res*. 2015 Aug;29(8):1123-30. doi: 10.1002/ptr.5355. Epub 2015 Apr 24. <https://www.ncbi.nlm.nih.gov/pubmed/25914334>.

Notes

Serum Progesterone. ADAM Encyclopedia. June 2016.

<https://www.nlm.nih.gov/medlineplus/ency/article/003714.htm>.

V Appendix

Glossary

MeSH. U.S. National Library of Medicine. <http://www.ncbi.nlm.nih.gov/mesh/>.

Major Pathways in the Biosynthesis of Steroid Hormones. Encyclopædia Britannica. 2012.