

# **Super Bazongas**

Botanical Breast Enlargement (Draft release)

<https://breast.is>

Dynseli

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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 aromatase enzymes are located within tissue where  $ER\alpha$  and  $ER\beta$  are also present. This includes ovarian, 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. Estrogen conversion possibly 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.

Sensitization of aromatase enzymes and ER $\beta$  in granulosa cells are important for reproductive health. Granulosa cells are within ovarian tissue.

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 $\alpha$ -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 $\alpha$ -dihydroprogesterone are neurosteroids formed by 5 $\alpha$ -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 progesterone 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.

Estrogen and its production are important for fertility health. This hormone must be in balance with androgens and progestogens. An imbalance of low estrogen levels is consistent with adverse symptoms of primary ovarian insufficiency (POI). Miniscule amounts of certain phytohormones upregulate aromatase enzymes, while large amounts desensitize them. Although there are aromatase enzymes throughout the body, aromatase ability in the ovaries and the rest of the reproductive tract is necessary for reproductive health. Herbs that modulate aromatase enzymes in this way include mint, clover, kudzu and flax, so it is important they are used in miniscule amounts at a time. Androgens, including DHT, have the ability to upregulate aromatase enzymes, at least when available in small amounts.

Be cautious of herbs that alter androgens, LH or FSH. High amounts of androgens, LH, and possibly FSH can increase the incidence of PCOS, and this is a risk for infertility. Lack of estrogen conversion

from androgens is a risk for reproductive health. Lack of estrogen conversion possibly contributes to PCOS and hot-flashes. 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 symptoms of itchy skin, and hot flashes. Itchy skin can be caused by taking excessive prolactin or progestogenic herbs. Itchy skin signifies reduced fertility, but it is also a symptom of pregnancy. Hot flashes, indicative of rising body temperature, are typical during pregnancy, perimenopause and menopause, but it can also happen from herb use during secretory (luteal) phase. Rising body temperature or hot-flashes typically occur when estrogen synthesis decreases. It seems that this is a result of an extreme ratio of low estrogen production to progesterone or other steroidal hormone synthesis. Some literature disagrees on whether progesterone or estrogen treatment should be used to treat hot flushes. Try to avoid itchy skin and hot flashes related to herbal breast enhancement, but if it happens, it is important to stop taking herbs immediately.

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, the disclaimer, and <https://breast.is/appendix/precautions> for more.

## IV Botanical

Progesterone, estrogen, and prolactin work synergistically to influence breast tissue through receptors ER $\alpha$ , 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 $\alpha$ , PRB, and PrlR. Labels of phytoestrogens, phytoprogestogens and botanical prolactin will often be replaced with more specific effects relating to breast enhancement.

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

### Application

We see how receptors ER $\alpha$ , 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 $\alpha$ , 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.

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, 500IU of vitamin D, 400IU of vitamin E and 50mcg of selenium per day help keep tissue and hormone responses healthy. Get as many vitamins and minerals necessary for daily requirements from food sources.

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 licorice and kudzu.

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

### Progestogenic

Chasteberry (*Vitex*) – Temporarily increases progesterone. Large amounts directly lower prolactin, but small amounts slightly increase prolactin.

Fenugreek (*Trigonella*) – Increases estrogen, progesterone and testosterone. Progestogenic action based on its actions that cause branching, instead of duct elongation. Contains diosgenin, 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*) – Mildly simulates progesterone. Diosgenin increases estrogen, but not enough information available whether it upregulates or downregulates estrogen receptors.

### Raises Prolactin

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

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

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

### Emmenagogue (induces menstruation)

Mint (*Mentha*) – Taking too much mint, especially in concentrate form, is dangerous. Increases FSH and LH. Large amounts inhibit aromatase production.

Rosemary (*Rosmarinus*)

### Adaptogens

Basil (*Ocimum*)

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

Ginseng (*Panax*) – Adaptogen. It is uncertain if other species within Ginseng have same hormonal properties as Korean ginseng. [*American ginseng*, *Panax quinquefolius*, *Panax notoginseng*, *Chinese ginseng*]

Gotu kola (*Centella*)

Korean ginseng (*Panax*) – *Panax ginseng* upregulates ER $\alpha$  and ER $\beta$ . Increases weight of ovaries, and increases bodily estrogens. [*Asian ginseng*, *Korean ginseng*, *Panax ginseng*, *Radix ginseng*]

Maca (*Lepidium*)

Schizandra (*Schizandra*) – Upregulates ER $\alpha$  and ER $\beta$ . Increases bodily estrogens. [*Schizandra chinensis*]

### Other

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*]

Lavender (*Lavandula*) – Mildly estrogenic. Decreases DHT.

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

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

## Herb Doses

Large doses of herb will be avoided, because the idea is for lower amounts to be in the right balance to keep responses sensitive. The suggested proportions in the herb schedule are in weight of solid form. Solid form can be ground, capsule, dried, fresh, or whole. Volume cannot accurately be used to measure different forms of solid herb (without knowing the herbs' density). The recommendation of combined solid herbs is less than 2,000mg per day. In the herb schedule, each part in an herbal proportion will be approximately 250mg. The dosage for the minimal amount will be less than 100mg of each herb, regardless of the proportion of other herbs. In cases of hormonal imbalances, use down to 25mg for the minimal amount of solid herb. For reference, a nickel weighs about 5,000mg, and a metal paper clip of approximately 1" typically weighs about 500mg.

Teas are measured by the solid amount of herb put into it, and the remaining herb from it can be eaten. Essential extract oils and concentrates will be avoided for ingestion, because concentrates are many times more potent and can easily be dangerous.

Here are suggestions about herbs mentioned. Limit amounts of mint, clover and kudzu (*Pueraria*) to less than 100mg of solid form per day. Mint and lavender are better taken as tea. Thistle can partially replace hops. Fenugreek can possibly be replaced by suma. Schizandra can possibly replace Panax ginseng. Maca in minimal amounts is optional for menstruation and premenstrual phase.

When there is breast tingling, you may have found the right balance for breast enhancement herbs. Herbs come in different strengths, and the body's response may also vary the effectiveness of each herb. Limit amounts of herbs, and try to take them in balance according to their hormonal property.

When breast growth stops, or when menstruation becomes irregular, that herb proportion will no longer work. Any herb combination that doesn't show positive results within an hour, won't work. If body temperature becomes irregular, or if there are any other symptoms, stop immediately.

## Herb Schedule

The schedule is not applicable for those on birth control or other hormone pills. [Menstrual cycle phases](#) will be divided into: Menstruation, Proliferative, 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.

Here is the daily herb ratio to take during **menstruation**. Take 2 parts fenugreek, 1 part wild yam and 1 part hops. Then, take the minimal amount each of Panax ginseng and lavender. 1 part maca per day is optional. If menstruation intensity is heavy, take hops by a minimal amount at a time. Alternatively, take a combined minimal amount of mint and lavender at a time as tea, if menstruation is too light or has stopped.

Here are reasons for this combination of herbs during menstruation. Mint and hops counterbalance 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 significantly during menstruation. Without wild yam to both stimulate and mildly desensitize PRB, breast sizes usually shrink back from the abundance of hormone effects by other herbs.

Here is the herb schedule for **proliferative** phase. At the beginning, take 1 part Panax ginseng and a minimal amount of wild yam.

For **ovulation** phase, take a break.

The herb schedule for **secretory** (luteal) phase is a little complex.

At the beginning of secretory phase, only take once: 3 parts fenugreek, 2 parts hops, a minimal amount of vitex, a minimal amount of wild yam and a minimal amount of Panax ginseng. Starting the next day, take daily: 2 parts fenugreek and 1 part hops. Also, take up to daily a minimal amount of: Panax ginseng, wild yam and lavender. Asparagus by 1 part, can optionally be added on occasion.

The following is for responsive use during secretory phase. Take an additional 1 part fenugreek per day. When there is the slightest amount of acne, take about every hour, a minimal part each hops, Panax ginseng and wild yam, as long as there is breast swelling and until there are no signs of acne. If nipple size increases, take a minimal amount of vitex. Within a day of taking vitex, if breast width decreases, take 1 part each fenugreek, wild yam and hops/thistle periodically and cautiously, until breast width stops widening. As long as there is breast swelling or growth in width, do not take vitex.

Measure your body temperature: it should be between 37°C (98.6°F) and 36.5°C (97.7°F) for secretory phase. If temperature gets too low before secretory phase is supposed to be over, add a minimal amount of hops. When body temperature gets closer to 37°C (98.6°F), take a minimal amount of Panax ginseng. However, if you get itchy skin, hot-flashes or if body temperature rises above 37°C (98.6°F), take a minimal amount of Panax ginseng and stop immediately.

Here are the herbs for **premenstrual** phase. Take 2 parts fenugreek and 1 part each wild yam and hops. Then, take the minimum amount of lavender. Wild yam has an effect of progesterone on breasts, and it slightly desensitizes progesterone receptors to lessen shrinkage during the next menstrual cycle. 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.

## **Delayed Menstruation or Ovulation**

If ovulation is delayed by a few days more than expected, or if the start of menstruation is delayed by a few weeks more than expected, take a minimal amount of mint, Panax ginseng and lavender as tea.

## **Inverted Nipple Treatment**

For inverted (or inward) nipple correction here is the herb schedule. During menstruation, the following herb proportion should be taken: 3 parts fenugreek, 1 part combined hops or milk thistle, 1 part wild yam and a minimal amount of lavender. A minimal amount of clover with equal parts Panax ginseng is optional. As long as there is acne from fenugreek, take an additional 1 part hops at a time. Increase hops by a minimal amount at a time if menstruation is too heavy, and increase fenugreek and lavender by a minimal amount at a time if menstruation is too light. Replace occasional days of the herb schedule with this.

Hops and milk thistle increase prolactin, which indirectly activates the nipple area. Fenugreek and lavender are needed for balance from prolactin increasing effects of hops and thistle.

## **Extroverted Nipple Treatment**

For extroverted (outward) or puffy nipples, prolactin's effects need to be reduced. Vitex continually lowers prolactin, while temporarily raising progesterone. Use 1 part each of vitex, wild yam and fenugreek up to daily for extroverted nipples. A minimal amount of mint, Panax ginseng, lavender and hops can also be taken with this. Hops is used in minimal amounts to keep receptors sensitive, and because its prolactin effects will be offset by Vitex. When breasts swell from progesterone-like effects, taking more vitex will no longer be effective and will shrink the breasts. Replace occasional days of the herb schedule with this. When this stops working, take a break.

## **Signs of Hirsutism**

If there are signs of hirsutism during any phase, make a tea with a minimal amount of Panax ginseng. Take a sip at a time, and don't take another sip, until there are positive signs.

Any herb that has a reputation for causing hot flashes should not be used to lower androgen symptoms.

Keep in mind that hirsutism can be a symptom of insulin insensitivity.

## **For Increasing Insulin Response**

On occasion, no more than once per cycle, take a minimal amount of any combination of: ginger, black tea and tumeric as tea. Take with a teaspoon of unrefined olive oil. The purpose of using these herbs is to increase insulin sensitivity, and to help decrease the odds of insulin related cancer. These herbs cause breast shrinkage, so they should be used in the smallest amounts, but they should help increase responses from herbs during other times of the menstrual cycle.

There are plenty of Internet resources on eating healthy fats and on exercising for improving the issue of insulin insensitivity.

## **Herbal Breast Reduction**

For herbal breast reduction, take a minimal amount combined each daily of green tea, ginger and tumeric as tea. A minimal variant of the above herb schedule should be added, but this is untested, and may cause problems in the case of uncontrollable growth.

## **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.

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 [https://www.nlm.nih.gov/medlineplus/druginfo/herb\\_All.html](https://www.nlm.nih.gov/medlineplus/druginfo/herb_All.html).

For updates, see <https://breast.is/blogs/>.

## 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'  
[https://www.eurekalert.org/pub\\_releases/2013-02/uoma-wii022013.php](https://www.eurekalert.org/pub_releases/2013-02/uoma-wii022013.php).

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

Nutrient Recommendations: Dietary Reference Intakes (DRI)  
[https://ods.od.nih.gov/Health\\_Information/Dietary\\_Reference\\_Intakes.aspx](https://ods.od.nih.gov/Health_Information/Dietary_Reference_Intakes.aspx).

### More

- <https://breast.is/appendix/aromatase>
- <https://breast.is/appendix/diagrams>
- <https://breast.is/appendix/glossary>
- <https://breast.is/appendix/menstrual-phases>
- <https://breast.is/appendix/nutrition>
- <https://breast.is/appendix/precautions>
- <https://breast.is/appendix/questions-answers>
- <https://breast.is/blogs/>
- <https://breast.is/herbs/>

## Glossary

- $\alpha$  = Alpha
- $5\alpha$ -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.

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

Li Y, Yuan YY, Meeran SM, Tollefsbol TO. Synergistic epigenetic reactivation of estrogen receptor- $\alpha$  (ER $\alpha$ ) by combined green tea polyphenol and histone deacetylase inhibitor in ER $\alpha$ -negative breast cancer cells. *Mol Cancer*. 2010; 9: 274. <https://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- $\alpha$  (ER $\alpha$ ) by genistein enhances hormonal therapy sensitivity in ER $\alpha$ -negative breast cancer. *Mol Cancer*. 2013; 12: 9. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3577460/>.

Lephart ED. Modulation of Aromatase by Phytoestrogens. *Enzyme Res*. 2015; 2015: 594656. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4699002/>.

## I Biology

Nussey S, Whitehead S. *Endocrinology: An Integrated Approach*. Oxford: BIOS Scientific. 2001. <https://www.ncbi.nlm.nih.gov/books/NBK22/>.

## Breast Development

Horseman ND, Gregerson KA. Prolactin Actions. *J Mol Endocrinology*. 2013 Dec; 52(1). <https://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). <https://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.  
<https://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.  
<https://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.  
<https://humupd.oxfordjournals.org/content/10/5/421.long>.

*Involvement of androgens in ovarian health and disease*. *Mol. Hum. Reprod.* (2013) 19 (12): 828-837. <https://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. 4<sup>th</sup> ed [https://www.hormone.org/~media/Hormone/Files/Questions%20and%20Answers/Women/FS\\_MWH\\_Infertility\\_Women\\_EN%20612.pdf](https://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. <https://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) <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3257631>.

EurekAlert! *Fiber Intake Associated with Reduced Risk of Death*. Washington (DC): The JAMA

Network Journals. 2011. [https://www.eurekalert.org/pub\\_releases/2011-02/jaaj-fia021111.php](https://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 Massachusettes.

2013. [https://www.eurekalert.org/pub\\_releases/2013-02/uoma-wii022013.php](https://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).

<https://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://www.psyneuen-journal.com/article/S0306-4530\(05\)00117-4/fulltext](http://www.psyneuen-journal.com/article/S0306-4530(05)00117-4/fulltext).
- 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). <https://www.ncbi.nlm.nih.gov/pubmed/8772579>.
- Melcangi RC, Panzica GC. Allopregnanolone: state of the art. *Prog Neurobiol*. Feb 2014; 113. <https://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). <https://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). <https://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. <https://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. [https://www.nlm.nih.gov/medlineplus/druginfo/herb\\_All.html](https://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) <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3257631>.

EurekAlert! Fiber Intake Associated with Reduced Risk of Death. Washington (DC): The JAMA Network Journals. 2011. [https://www.eurekalert.org/pub\\_releases/2011-02/jaaj-fia021111.php](https://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. <https://www.ncbi.nlm.nih.gov/pubmed/24905140>.

Overk CR, Yao P, Chadwick LR, Nikolic D, Sun Y, Cuendet MA, Deny Y, Hedayat AS, Pauali 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).

<https://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 [https://www.eurekalert.org/pub\\_releases/2011-12/w-wat120811.php](https://www.eurekalert.org/pub_releases/2011-12/w-wat120811.php).

Mayo Clinic Staff.Hot Flashes. Mayo Clinic. May 18, 2012. <https://www.mayoclinic.org/diseases-conditions/hot-flashes/symptoms-causes/syc-20352790>.

Who Gets Hot Flashes and When? *Breastcancer.org*. March 29, 2016.

<http://www.breastcancer.org/tips/menopausal/treat/hot-flashes/causes>.

Perimenopause: Rocky road to menopause. Harvard Health Publishing. September 20, 2017.

<https://www.health.harvard.edu/womens-health/perimenopause-rocky-road-to-menopause>.

The BabyCenter Editorial Team. Is it normal to have hot flashes during pregnancy? *BabyCenter*.

July 2017. [https://www.babycenter.com/404\\_is-it-normal-to-have-hot-flashes-during-pregnancy\\_3659303.bc](https://www.babycenter.com/404_is-it-normal-to-have-hot-flashes-during-pregnancy_3659303.bc).

Itching during pregnancy. *BabyCenter*. July 2017. [https://www.babycenter.com/0\\_itching-during-pregnancy\\_9450.bc](https://www.babycenter.com/0_itching-during-pregnancy_9450.bc).

Mouriec K, Gueguen MM, Manuel C, Percevault F, Thieulant ML, Pakdel F, Kah O. Androgens upregulate cyp19a1b (aromatase B) gene expression in the brain of zebrafish (*Danio rerio*)

through estrogen receptors. *Biol Reprod.* 2009 May;80(5):889-96. doi: 10.1095/biolreprod.108.073643. <https://www.ncbi.nlm.nih.gov/pubmed/19129512>.

## Standard Warnings

Wellness Mama. <https://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). <https://www.ncbi.nlm.nih.gov/pubmed/9098173>.

Premenstrual breast changes. *ADAM Encyclopedia.* [accessed July 2015]. <https://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). <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3693613/>.

Aradhana, Rao AR, Kale RK. Diosgenin - a growth stimulator of mammary gland of ovariectomized mouse. *Indian J Exp Biol.* May 1992; 30(5). <https://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). <https://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). <https://www.ncbi.nlm.nih.gov/pubmed/17568039>.

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). <https://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). <https://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). <https://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>.
- MD Die, HG Burger, HJ Teede, KM Bone. *Vitex agnus-castus* Extracts for Female Reproductive Disorders: A Systematic Review of Clinical Trials. *Planta Med* 2013; 79(07): 562-575. doi: 10.1055/s-0032-1327831. 2013. <https://www.thieme-connect.com/products/ejournals/abstract/10.1055/s-0032-1327831>.
- Ying X, Jie D, Xiao-Ping M, Ying-Hui M, Zhi-Qiang L, Na L. Treatment with *Panax Ginseng* Antagonizes the Estrogen Decline in Ovariectomized Mice. *Int J Mol Sci*. 2014 May; 15(5): 7827–7840. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4057706/>.
- Park J, Song H, Kim S, Lee MS, Rhee D, Lee Y. Effects of ginseng on two main sex steroid hormone receptors: estrogen and androgen receptors. *J Ginseng Res*. 2017 Apr; 41(2): 215–221. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5386121/>.
- Ding J, Xu Y, Ma X, An J, Yang X, Liu Z, Lin N. Estrogenic effect of the extract of *Renshen* (*Radix Ginseng*) on reproductive tissues in immature mice. *J Tradit Chin Med*. 2015 Aug;35(4):460-7. <https://www.ncbi.nlm.nih.gov/pubmed/26427118>.
- Kim MH, Lee HS, Hong SB, Yang WM. *Schizandra chinensis* exhibits phytoestrogenic effects by regulating the activation of estrogen receptor- $\alpha$  and - $\beta$ . *Chin J Integr Med*. 2017 Jul 31. doi: 10.1007/s11655-017-2966-y. <https://www.ncbi.nlm.nih.gov/pubmed/28762131>.

Kim MH1, Choi YY, Han JM, Lee HS, Hong SB, Lee SG, Yang WM. Ameliorative effects of *Schizandra chinensis* on osteoporosis via activation of estrogen receptor (ER)- $\alpha$ / $\beta$ . *Food Funct.* 2014 Jul 25;5(7):1594-601. doi: 10.1039/c4fo00133h.

<https://www.ncbi.nlm.nih.gov/pubmed/24881676>.

Kim JK, Park SU. An update on the biological and pharmacological activities of diosgenin. *EXCLI J.* 2018; 17: 24–28. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5780621/>.

## 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. <https://www.ncbi.nlm.nih.gov/mesh/>.

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