
Safety and Efficacy Report

Breast-Enhancing Pills: Myth and Reality

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Breast-enhancing pills are presented as the “natural” and less expensive route to larger breasts for women. There are upward of 20 to 30 different herbal products in pill form advertised widely on television, in magazines, and on the Internet alleging to enhance the size of a woman’s breasts. Interestingly, many of the herbal ingredients found in these pills are also purported to help in the perimenopausal and postmenopausal period, presumably due to their estrogenic effects. The herbs most commonly found in these pills are saw palmetto (*Serenoa repens*), damiana (*Turnera diffusa*), dong quai (*Angelica sinensis*), chaste-tree berry (*Vitex agnus-castus*), blessed thistle (*Cnicus benedictus*), dandelion (*Taraxacum officinale*), wild yam (*Dioscorea villosa*), kava (*Piper methysticum*), fennel (*Foeniculum vulgare*), black cohosh (*Cimicifuga racemosa*), and fenugreek (*Trigonella foenum-graecum*).^{1,2}

Breast enlargement has been shown to occur as a side effect of other drugs, such as estrogen, oral contraceptives, antidepressants (including tricyclics and monoamine oxidase and serotonin inhibitors), penicillamine, neuroleptics, and protease inhibitors.³⁻¹⁶ However, the components of these prescription drugs are not the ingredients in the breast-enhancing pills found over the counter.

Needless to say, physicians are faced with patients who take a plethora of herbal products. These products are heavily advertised, readily available, and often self-prescribed. Breast-enhancing herbal products have become a lucrative industry in recent years due to their “guaranteed” safety and low cost compared with surgery. However, these guarantees

are not based on any long-term, randomized clinical trials.

Black cohosh is perhaps the most well studied of the herbs included in breast enhancement pills. Cohosh is also marketed as a treatment for menopausal symptoms. It has gained tremendous popularity as such with the public, prompting investigation into its estrogenicity. Though Duker in 1991 suggested that extracts of the herb bound to the 17 β -estradiol receptors and reduced luteinizing hormone levels in ovariectomized rats and in menopausal women for 8 weeks,^{16,17} subsequent studies have not confirmed these results. Recent clinical investigations have demonstrated no estrogenic effects and no luteinizing hormone, follicle-stimulating hormone, prolactin, or estradiol changes after cohosh administration.¹⁷ Additional in vitro studies have confirmed these results.^{15,18} These studies suggest that cohosh is not hormonally active, and some suggest that their symptomologic relief is separate from estrogenicity.¹⁵⁻²⁴

As with any herbal supplements, side effects and drug interactions remain to be established. Black cohosh may have an additive proliferative effect with tamoxifen and may increase the toxicity of doxorubicin and docetaxel. It is also contraindicated in patients with aspirin sensitivity because it contains salicylates.²⁴

Dong quai (*A. sinensis*) has been used by the Chinese for more than 2000 years to treat and relieve menstrual symptoms and as a female “tonic” or “enhancing” agent. Many claims have been made regarding the presence of phytoestrogens in dong quai, and one report

has cited use of the herb as the cause for gynecomastia.⁹ Several studies have refuted the estrogenicity of the herb, however, and hence dismissed the likelihood of it contributing to breast enlargement.^{1,17,19,25} Dong quai does contain coumarin derivatives and may interfere with anticoagulation.^{18,26} The primary active ingredients are psoralens and safrole, both of which have documented carcinogenicity.¹⁷ Some of the adverse effects reported include photosensitivity,¹⁹ photodermatitis, gynecomastia, bleeding, diarrhea, and fever.^{9,17,25,26}

Fenugreek (*T. foenum-graecum*) contains diosgenin, which is a precursor to progesterone in vitro, although it has not been shown to be converted in vivo.^{1,17,19} The compound has been hypothesized to increase mammary size, although results have not been established. Fenugreek herbs seem to exhibit hypocholesterolemic, hypolipidemic, and hypoglycemic activity.²⁷ As a result, individuals taking the supplement should monitor blood glucose levels closely and may demonstrate increased cholesterol absorption and bile acid secretion.²⁷ Fenugreek may potentiate the effects of anticoagulants, since it also contains coumarin, and may interact with monoamine oxidase inhibitors, antidiabetic agents, and hormonal agents. The herb also possesses some uterine stimulant activity and should therefore be avoided by pregnant women. Dandelion root (*T. officinale*) has no estrogenic effect and plays no role in breast enhancement, though it has been noted to cause diarrhea, especially when combined with other "cleansing" herbs such as senna and milk thistle.²⁸ Wild yam (*D. villosa* used) contains steroidal saponins based on diosgenin that exhibit a progesterone-like effect,^{17,19} though the plant itself is devoid of estrogen or progesterone. It has been used as a component of oral contraceptives and as a topical "progesterone" cream.¹⁷ No evidence exists that it stimulates breast enlargement.¹

Chaste-tree berry (*V. agnus-castus*) has been used to treat female reproductive complaints since ancient Greece. This herb is believed to contain substances that competitively bind hormone receptors, producing an antiandrogenic effect. Chaste-tree berry has been shown to inhibit prolactin secretion by binding to dopamine receptors in the anterior pituitary, as well as decreasing thyroid-releasing hormone stimulation of prolactin. Further, the herb has been demonstrated to decrease follicle-stimulating hormone levels and increase luteinizing hormone¹ and

progesterone levels.¹⁷ No evidence exists on the definitive role of chaste-tree berry in relief of menopausal symptoms or in breast enhancement. Side effects are minor, but interaction of the herb with birth control pills is likely.²⁴ Women should take care to avoid taking the supplements if they are concurrently taking dopamine agonists/antagonists.^{2,22,24}

The traditional use of saw palmetto (*S. repens*) involved treating genitourinary problems, enhancing libido, increasing sperm count, and enlarging the breasts.^{11,19,29-32} Recent studies and published reports suggest that saw palmetto blocks the enzyme 5 α -reductase, which is responsible for conversion of testosterone to its active form, dihydrotestosterone.³¹ Its effect on estrogen receptor blockage has also been postulated, but no conclusive data are available to explain its effect on breast enhancement.^{14,31}

Derived from the dried rhizome of the kava plant, kava (*P. methysticum*) is mainly used as an anxiolytic agent. Kava does have dopamine antagonistic effects, however,^{13,33} and dopamine in the brain is responsible for down-regulating prolactin release. Thus, by acting as an antagonist on the dopamine receptors, kava enhances prolactin, which could consequently lead to gynecomastia and breast enlargement. In a study conducted by Amsterdam et al.,¹⁴ an increase in prolactin levels was observed in 59 women treated with either selective serotonin receptor inhibitors or venlafaxine for more than 2 months. Thirty-nine percent of the subjects reported increased breast size in response to the treatment.¹⁴ Nevertheless, no conclusive or long-term studies have thus far conclusively confirmed that kava causes significant breast enlargement.

Malini et al.¹⁰ administered the acetone extract from fennel seeds to both male and female rats, and at 10 days the female rats demonstrated vaginal cornification. An increase in mammary gland weight was observed at moderate doses, while an increase in weights of the cervix, endometrium, and oviduct were seen at higher doses. Human studies and the long-term effects of fennel, as well as the exact mechanism of fennel's estrogenic effect, have not been fully researched. Therefore, no scientific or conclusive data are available to support fennel's breast-enhancing properties.

Abundant throughout Central and South America and the West Indies, damiana (*T. diffusa*) has a rich history as an antidepressant

and anxiolytic and as a treatment for amenorrhea and sexual inadequacy.³⁴ Recent studies have investigated its effects on sexual dysfunction and its association with progesterone receptors,²⁹ though no conclusive study is available about the estrogenic and breast-enhancing effects of damiana.³⁰

SUMMARY

There have been no prospective, randomized evaluations of the effects of herbal agents on breast enlargement, either singly or in combination. Several herbs have historically been believed to contribute to female well being and relief of menopausal symptoms, and some may modify hormonal levels to some degree, but a clear effect on breast growth has not been demonstrated for any herbal product. The majority of the data about the effect of herbs on breast enhancement are derived from historical anecdotes or isolated, limited studies. Although the use of these agents for breast enhancement cannot be supported at this time, the limited data also preclude definitive statements regarding their ineffectiveness. Additional evaluations would be required in order to rule out any possible efficacy for these agents. Individuals who choose to use these agents need to be aware that herbal medications are not without possible adverse side effects, especially if they are taken in conjunction with other medications.

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