

LE Magazine April 2006

*On The*  
COVER**A Natural Approach to Menopause**

By Dale Kiefer



For the last few decades, doctors have had a simple solution for menopause: writing prescriptions for estrogen drugs. With millions of women taking estrogen, all seemed to be going well, until data revealed that estrogen drug use resulted in significant increases in lethal diseases ranging from breast cancer to stroke.<sup>1</sup> This development left both the medical profession and menopausal women paralyzed, with no direction and no answers as to how best to relieve the debilitating symptoms of menopause.

Clearly overlooked is the fact that menopause is a complex, multifactorial health condition. Addressing menopause requires a diverse approach that both restores normal hormone balance and protects against the multitude of diseases that can arise during this period in a woman's life. The onset of menopause triggers profound changes in cardiac health, mental states, bone strength, and

cell proliferation, all of which combine to greatly elevate a woman's risk for contracting heart disease, osteoporosis, and certain cancers.

These health issues are not easy to correct, especially when they occur simultaneously. The ideal approach to addressing menopause would be comprehensive and holistic, providing fast-acting, short-term symptomatic relief as well as longer-term benefits that support women's health as their body chemistry changes. While declining levels of estrogen are what gives rise to the difficulties of menopause, both nutritional and hormonal support are required to address and ameliorate the physiological symptoms and other changes that accompany menopause.

Fortunately, researchers have identified natural approaches that may safely relieve hot flashes, breast pain, insomnia, irritability, and other menopausal symptoms. Unlike estrogen-progestin drugs, the use of these natural agents is correlated with reduced risks of certain cancers, along with improved bone and cardiovascular health.

Scientists have known for years that women who consume certain plant-based nutrients are less likely to develop hot flashes, heart disease, osteoporosis, and breast cancer.<sup>2-5</sup> In response to the health debacle arising from the use of estrogen drugs, researchers have begun digging deeper into the botanical medicine chest, critically evaluating the efficacy of various traditional herbal products that safely stimulate estrogen receptors and create estrogen-like responses.

Mounting scientific evidence indicates that menopausal women may safely benefit from inexpensive, readily available botanical extracts that do not require a prescription.<sup>6-18</sup> This article reviews the latest research findings concerning menopause-related health conditions—ranging from depression and hot flashes to osteoporosis and heart disease—and how women may benefit from highly researched botanicals. Taken together, these findings suggest a new approach to safely and effectively managing menopause.

**WHY LIGNANS ARE SO IMPORTANT**

For women approaching menopause, plant lignans offer important protection against cancer, cognitive decline, and hypertension. These fibrous compounds are present in large quantities in foods such as flaxseed, whole grains, and vegetables. In the digestive tract, they are converted to beneficial estrogenic compounds by resident bacteria. Two of these metabolic byproducts, enterolactone and enterodiols, are believed to play an important role in cancer prevention in mammals.<sup>19-22</sup>

A recent study published in the *Journal of Hypertension* concluded that dietary lignans, even in small amounts, are likely to normalize blood pressure and reduce hypertension, thereby lowering the risk of cardiovascular disease.<sup>23</sup>

Research from Korea indicates that high enterolactone levels also are associated with greater bone mineral density in postmenopausal women. Furthermore, scientists have found that women with low levels of enterolactone are more likely to suffer

from osteoporosis.<sup>5</sup> Scientists in the Netherlands recently reported that “higher dietary intake of lignans is associated with better cognitive function in postmenopausal women.”<sup>24</sup>

Surprisingly, the evergreen tree is an excellent source of potent lignans. Scandinavian researchers recently discovered that the knotwood of these majestic trees contains highly concentrated amounts of a lignan known as hydroxymatairesinol, or HMR. Numerous studies have shown that HMR is a potent antioxidant that may promote health and help protect against diseases such as cancer. In laboratory models of uterine, breast, colon, and other carcinomas, HMR lignan has demonstrated efficacy in reducing the volume and growth of existing tumors and preventing the formation of new tumors.<sup>22,25-29</sup>

Bioavailability—that is, the ease with which HMR lignan is converted directly to enterolactone and absorbed into the bloodstream—is what sets HMR apart from other plant lignans. Its unique chemical composition allows natural gut bacteria to convert HMR directly to the beneficial enterolactone and enterodiol lignans. This contrasts with other plant lignans, which must undergo further metabolism.<sup>29</sup> Although flaxseed has long been recognized as one of the most concentrated sources of plant lignans, it takes far more flaxseed than HMR lignan to deliver an equivalent amount of beneficial enterolactone into the bloodstream. While one would have to eat about four tablespoons (20-30 grams) of unrefined flaxseed to get a beneficial dose of lignans, just 10-30 milligrams of HMR lignan (about 1,000 times less) provide an equivalent amount of enterolactone in the body.<sup>28</sup>

## PROTECTIVE EFFECTS OF POMEGRANATE

One of the more devastating long-term effects of menopause is an increase in both cancer and heart disease risk. Doctors initially thought that estrogen drugs would reduce cardiovascular risk, but these drugs instead dramatically increased a woman's risk of contracting these lethal diseases. Fortunately, scientists are now discovering that natural agents can help protect aging women from these diseases.

Long venerated for its health-promoting properties, the fruit of the pomegranate tree is drawing new attention as a source of beneficial compounds that provide powerful protection against heart disease and cancer. Among these compounds are unique antioxidants that may dramatically improve cardiovascular health. A recent study conducted in Israel, for example, examined the effects of consuming pomegranate juice on the cardiovascular status of patients with atherosclerosis. Although some patients were followed for three years, dramatic differences were noted after just one year. Patients receiving the juice experienced a 30% improvement in atherosclerosis as measured by blood flow capacity through the carotid artery. In control patients who did not receive the juice, the same parameter of cardiovascular health actually worsened by 9%. Systolic blood pressure was reduced by 21% and total serum antioxidant status increased by 130% in the pomegranate-supplemented patients.<sup>30</sup>



These dramatic improvements were achieved within one year of treatment. Subsequent years yielded no further improvements, except in low-density lipoprotein (LDL) oxidation, which continued to decrease with continued consumption of pomegranate juice.<sup>30</sup> More recent research confirms that pomegranate juice fights cardiovascular disease by preventing LDL peroxidation and by significantly suppressing the synthesis of new cholesterol by macrophages.<sup>31</sup> In fact, punicalagin, the major antioxidant polyphenol ingredient in pomegranate juice, is found nowhere else in nature. But pomegranate also contains ellagic acid, the compound that makes berries the health-promoting powerhouses of the produce aisle. A recent analysis of the abilities of various components of pomegranate juice to fight cancer and quench free radicals found that pomegranate's many compounds work synergistically and in a variety of ways to stop cancer.<sup>8</sup>

New research indicates that pomegranate may be particularly indicated in the prevention of breast cancer, one of the most common cancers threatening women after menopause. The most powerful estrogen in the body, 17-beta-estradiol, plays an important role in the genesis and development of breast cancers, most of which are hormone dependent in their early stages.<sup>32</sup> Pomegranate-derived polyphenol compounds inhibit 17-beta-hydroxysteroid dehydrogenase type I, the enzyme that converts the weak estrogen estrone into its most potent metabolite, 17-beta-estradiol.<sup>33</sup> High expression of 17-beta-hydroxysteroid dehydrogenase type I can be an indicator of adverse prognosis in women with estrogen-receptor-positive breast tumors.<sup>32</sup> Based on these findings, scientists hope to conduct clinical trials assessing the preventive and therapeutic applications of pomegranate in human breast cancer.

## HORMONAL EFFECTS OF SOY



Phytoestrogens are plant-derived compounds that closely mimic the natural estrogens women produce in abundance before menopause. In the body, phytoestrogens have been shown to modulate the effects that estrogen exerts on cells in a way that could reduce the risk of contracting various diseases. It was long ago established that natural estrogens play a role in the healthy function of bones, heart muscle, and blood vessel linings. Estrogens also contribute to learning and memory.<sup>34</sup>

Aging women need to counter the depletion of beneficial natural hormones that occurs upon menopause. Soy contains genistein and daidzein, which are among the most extensively studied phytoestrogens. Epidemiological evidence shows that cancer and heart disease are less prevalent in populations that consume large amounts of soy.<sup>35</sup> Moreover, scientists have demonstrated in laboratory studies that genistein inhibits the proliferation of breast cancer cells.<sup>36-39</sup>

Rates of cardiovascular disease and hormone-dependent cancers are lower among Asian women who consume soy.<sup>4</sup> Epidemiological evidence shows that North American women who consume the greatest amounts of phytoestrogens enjoy significantly better cardiovascular risk profiles than women who consume the least phytoestrogens.<sup>40</sup> Such epidemiological evidence suggests that dietary rather than genetic differences account for Asians' better health.

Numerous studies have shown that increased consumption of phytoestrogens, including genistein and daidzein, is associated with a reduced risk of breast and other hormone-dependent cancers, such as endometrial cancer.<sup>19,41-44</sup> Scientists have also determined that phyto-estrogens confer protection against lung cancer.<sup>45</sup> Recent studies have documented significant improvements in long- and short-term memory, mental flexibility, and attention with increased phytoestrogen consumption.<sup>46-49</sup>

Phytoestrogens from soy have also been shown to reduce the loss of bone density in postmenopausal women.<sup>50</sup> The findings from a recent prospective study suggested that postmenopausal women who consume more soy products experience a decreased risk of bone fracture compared to those who consume little soy. This association was most pronounced in the years immediately following menopause.<sup>51</sup>

Asian women experience hot flashes less frequently than do Western women. Less than one fifth of menopausal Chinese women, for example, complained of hot flashes in one such study.<sup>3</sup> By contrast, more than three fourths of menopausal North American and European women suffer from hot flashes. Numerous studies have demonstrated that isoflavone-rich soy extracts decrease both the frequency and severity of hot flashes in postmenopausal women.<sup>52</sup> In one study, 80% of women using a soy extract experienced a significant decrease, averaging 48%, in the number of daily hot flashes. These women also reported statistically significant improvements in other menopausal symptoms, including sleep disorder, anxiety, depression, vaginal dryness, loss of libido, and bone pain.<sup>53</sup>

In response to these findings, scientists conducted clinical trials using soy extracts in an attempt to relieve menopausal miseries. Because these studies produced inconclusive results, many mainstream medical doctors lost confidence in soy's ability to relieve menopausal symptoms. This is regrettable considering the many diseases associated with normal aging and menopause that soy-derived phytoestrogens have been shown to prevent. While soy phyto-estrogens by themselves may not be equal to potent estrogen drugs in alleviating menopausal symptoms, their estrogen-modulating effects merit including soy in a comprehensive approach to both reducing disease risk and relieving the symptoms of menopause.

## A Natural Approach to Menopause

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Black Cohosh (*Cimicifuga racemosa*)

### BENEFITS OF BLACK COHOSH

Black cohosh (*Cimicifuga racemosa*) is a North American perennial herb that has been used to treat gynecological complaints for centuries. Native American healers and American physicians alike have prescribed black cohosh for relief from hot flashes and other menopausal symptoms.<sup>54</sup> Listed as an official drug in the U.S. Pharmacopoeia from 1820 to 1926, black cohosh has been rediscovered by research scientists and menopausal women.<sup>18,55</sup> Several recent clinical trials of exacting randomized, double-blind, placebo-controlled design have shown that black cohosh is indeed effective in reducing the severity, duration, and incidence of hot flashes and night sweats.<sup>6,16,17,56</sup>

A recent study at the Mayo Clinic in Scottsdale, AZ, examined the safety and effectiveness of black cohosh in reducing hot flashes. Weekly hot flash scores were reduced by 56% among women receiving black cohosh. Researchers noted that previous studies reported relatively high placebo effects in tests of treatments for hot flashes, but in this trial, placebo effects ranged from only 20% to 30%. "The efficacy found in this trial seems to be more than would be expected by a placebo effect," according to the researchers. Women taking black cohosh in this study also reported less trouble sleeping, less fatigue, and less sweating.<sup>57</sup>

Another recently published study compared the efficacy and safety of black cohosh extract to a standard hormone replacement regimen (low-dose estradiol administered by skin patch). The researchers concluded that the two treatments were equally effective in reducing hot flashes. Both treatments significantly lowered LDL, but only black cohosh raised beneficial HDL. In addition, both patient groups experienced significant improvements in menopause-associated symptoms of anxiety and depression. Effects were noted within the first month of treatment and continued unabated for the three-month duration of the study. Neither treatment affected liver function or altered levels of follicle stimulating hormone, luteinizing hormone, or cortisol. The estradiol treatment, but not black cohosh, slightly increased levels of the hormone prolactin.<sup>58</sup>

Because of the potential estrogenic activity of black cohosh, scientists have carefully evaluated whether it is capable of influencing the growth of hormone-dependent cancers. Researchers at Northwestern Medical School who performed a series of sophisticated laboratory analyses of the extract concluded, "Black cohosh extracts did not demonstrate estrogenic activity in any of these assay systems."<sup>59</sup> However, German researchers found that black cohosh appears to exert estrogenic effects elsewhere in the body. They concluded that the botanical product demonstrated "no action in the uterus, but beneficial effects in . . . bone."<sup>60</sup>

In practical terms, this means that black cohosh, like estradiol, prevented bone loss in laboratory animals after their ovaries had been removed. Unlike estradiol, black cohosh did not appear to exert any influence on the uterus, which may account for its superior safety profile compared to hormone replacement therapy. Thus, black cohosh not only reduces hot flashes, anxiety, and depression in menopausal women, but also appears to prevent some of the bone loss associated with the natural decline in estrogens, without the risk of stimulating uterine or breast cancer.<sup>60</sup>

In 2004, the North American Menopause Society added its stamp of approval to the use of black cohosh. In fact, it recommended black cohosh as a first-line approach. Its position statement reads, in part: "In women who need relief for mild [hot flashes and night sweats], NAMS recommends first considering lifestyle changes, either alone or combined with a nonprescription remedy, such as dietary isoflavones, black cohosh, or vitamin E."<sup>61,62</sup>

### SOOTHING PROPERTIES OF CHASTEBERRY

Chasteberry (*Vitex agnus castus*), also known as monk's pepper, has served humankind for thousands of years. To be more precise, the berries of this deciduous shrub have benefited womankind for many years. In the ancient world, chasteberry was used to treat various gynecological complaints. For the past half century, chasteberry has been used to treat premenstrual syndrome (PMS), breast tenderness, and other gynecological conditions. In Europe, it is approved for the treatment of menstrual cycle irregularities, PMS, and breast discomfort by the German Commission E, which serves as a governmental regulatory agency for herbal medicines.<sup>15,63</sup>

Studies have shown that chasteberry acts in the brain to affect the neurotransmitter dopamine, which in turn indirectly affects the release of prolactin. Oscillating prolactin levels are thought to contribute to the breast tenderness and discomfort associated with PMS. Chasteberry has been shown to beneficially regulate several hormones including progesterone.<sup>15</sup>

Clinical trials of chasteberry for the treatment of PMS have demonstrated that it reduces a number of symptoms, especially breast pain or tenderness, headache, water retention, constipation, irritability, depressed mood, and even anger.<sup>13,15,64-70</sup> Many small limited studies have confirmed these effects.<sup>15</sup> Recently, a more rigorously designed study added further credence to these findings. This randomized, double-blind, placebo-controlled study of 170 women with PMS found significant improvement in self- and physician-assessed symptoms of irritability, mood change, anger, headache, breast fullness, and bloating. Symptoms decreased by 50% or more for more than half of the women taking chasteberry compared to placebo. Side effects were few and mild.<sup>13</sup> Another double-blind, placebo-controlled trial examined chasteberry's effects on at least three menstrual cycles in 104 women. Women in the treatment group showed significant improvement in cyclical breast discomfort.<sup>71</sup>

An intriguing study conducted in 2003 found that chasteberry was at least as effective as the popular antidepressant fluoxetine (Prozac®) in relieving premenstrual dysphoric disorder, a severe form of PMS characterized by extreme emotional and physical distress. Fluoxetine was somewhat better at improving psychological symptoms, but chasteberry did a better job of diminishing physical complaints.<sup>72</sup> Last year, Italian researchers published a comprehensive review of all the relevant clinical data and concluded, "the data available seem to indicate that [chasteberry] is a safe herbal medicine."<sup>63</sup> Although no drug interactions have been reported, chasteberry might interfere with dopaminergic antagonist drugs. It should also be avoided during pregnancy or lactation, according to the Italian researchers.

### PROTECTIVE ACTION OF LICORICE ROOT

Licorice (*Glycyrrhiza glabra*) is native to the Mediterranean, where it has been used medicinally for thousands of years. Today, women may benefit from this sweet and fragrant root in a number of ways. Recent data indicate, for instance, that extracts of a *Glycyrrhiza* species exhibit estrogenic activity and put the brakes on breast cancer cells in the laboratory.<sup>73</sup> Specifically, the licorice extract induced apoptosis, or programmed suicide, in a line of human breast cancer cells.

Remarkably, this flavorful herb also exhibits activities that may ameliorate other common menopausal maladies, including depression, osteoporosis, and cardiovascular disease. In 2003, Israeli scientists reported that certain flavonoids extracted from licorice root inhibit the re-uptake of serotonin, much as estradiol does. Serotonin is a neurotransmitter that is thought to play an important role in regulating mood. Modern antidepressant drugs such as sertraline (Zoloft®) and fluoxetine (Prozac®) act in precisely this manner to alleviate depression. "This study showed that several isoflavans are unique phytoestrogens," wrote the researchers, "and, thus, potentially may be beneficial for mild to moderate depression in pre- and post-menopausal women."<sup>74</sup>



Licorice (*Glycyrrhiza glabra*)

Noting that postmenopausal women are at greater risk of cardiovascular disease, possibly due to declining estrogen levels, another team of Israeli researchers investigated licorice root's effects on blood vessels. Because it has estrogen-like properties, licorice extract stimulated DNA synthesis in human endothelial cells and affected the production of human vascular smooth muscle cells. "We suggest the use of glabrene [extracted from licorice root] with or without estradiol as a new agent for modulation of vascular injury and atherogenesis for the prevention of cardiovascular disease in postmenopausal women," the scientists concluded.<sup>75</sup>

Finally, Korean researchers recently determined that glabridin, a biochemical extracted from licorice root, exerted powerful influences on bone precursor cells known as osteoblasts in the laboratory. The extract acted in several ways to promote the growth and health of these crucial bone cells. According to the researchers, "Our data indicate that the enhancement of osteoblast function by glabridin may result in the prevention of osteoporosis and inflammatory bone disease."<sup>76</sup> Scientists at Israel's Tel-Aviv University have also demonstrated an osteoporosis-fighting effect of licorice components.<sup>77</sup>

### A CHINESE REMEDY FOR MENOPAUSE

Dong quai (*Angelica sinensis*) is a traditional Chinese medicinal herb that has long been used to manage gynecological conditions. Few clinical trials of sufficient size and rigor have been conducted, so Western scientists tend toward skepticism regarding the use of this time-honored botanical for the relief of menopause symptoms. However, tantalizing research indicates that dong quai root contains a number of bioactive compounds that may help reduce menopause-related hot flashes, prevent cancer, boost immune function, and improve bone health.<sup>78-82</sup>

Not surprisingly, Chinese re-searchers have taken it upon themselves to validate claims for dong quai's potential healing properties. Although one randomized, controlled clinical trial failed to find a significant difference between dong quai and placebo in relieving hot flashes,<sup>83</sup> it should be noted that Chinese healers never prescribe dong quai alone. It is always administered in

combination with one or more other herbs. In fact, a Chinese study of one such traditional herbal combination that included dong quai, among other botanicals, concluded that hot flashes and other menopausal complaints were reduced by 70%.<sup>80,84</sup>

Another recent study examined the effects of a combination of dong quai and chamomile in treating menopausal symptoms. This randomized, placebo-controlled study of 55 women found a significant difference in relief of hot flashes, insomnia, and fatigue between the treatment and placebo groups. Effects materialized in the treatment group within the first month of taking the herbs. "Treatment . . . seems to be effective for menopausal symptoms without apparent major adverse effects," according to the researchers.<sup>85</sup>

A recent study of dong quai's purported anxiety-relieving effects found that the essential oil of this Asian herb was about as effective as the prescription anti-anxiety drug diazepam (Valium®) in stress tests performed on laboratory mice.<sup>86</sup> Another recent experiment showed that dong quai extract significantly halted replication of cancer cells in the laboratory, and induced apoptosis (programmed suicide) in the cells.<sup>81</sup>

In Chinese medicine, dong quai is often used in combination with other herbs to treat bone injuries. Seeking to understand how it affects bone health, scientists in Pennsylvania cultured human bone precursor cells with varying amounts of dong quai extract. They found that the extract stimulated proliferation of bone cells, while enhancing protein, collagen synthesis, and the activity of an enzyme associated with bone building.<sup>82</sup>

## COMPREHENSIVE HORMONE MODULATION

While plant-derived compounds such as phytoestrogens and lignans successfully counter menopausal symptoms in many women, others may need additional therapeutics to achieve optimal relief.

Bioidentical hormone replacement is an option for managing the uncomfortable effects of menopause. This method involves first assessing hormone levels with blood testing and then correcting deficiencies using hormones that are identical to those found naturally in the body. By restoring estrogens (using only natural forms), progesterone, DHEA, pregnenolone, and testosterone to the levels found in healthy women in their twenties, bioidentical hormone replacement therapy helps to relieve menopausal symptoms and enhance well-being. Supplementation with phytoestrogens, lignans, and cruciferous vegetable extracts may help protect against the increased cancer risk that even some natural estrogen drugs may induce.

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### CANCER-PREVENTIVE CRUCIFEROUS VEGETABLES

Epidemiological evidence strongly suggests that abundant consumption of cruciferous vegetables such as broccoli, from the Brassica genus, correlates with lower breast cancer incidence. A recent study in China concluded: **“Greater Brassica vegetable consumption . . . was associated with significantly reduced breast cancer risk among Chinese women.”**<sup>87</sup>

The bioactive chemicals in cruciferous vegetables that are responsible for cancer protection derive from a family of chemicals called gluco-sinolates. When consumed, gluco-sinolates are converted to highly beneficial compounds, including sulforaphane and indole-3-carbinol (I3C). These compounds are believed to inhibit numerous types of cancers, including breast and cervical cancers, by a variety of mechanisms.<sup>88,89</sup> In a recent article published in the Journal of Nutritional Biochemistry, scientists noted: **“Mounting preclinical and clinical evidence indicates that indole-3-carbinol (I3C), a key bioactive food component in cruciferous vegetables, has multiple anticarcinogenic and anti-tumorigenic properties.”**<sup>90</sup>

I3C appears especially effective in protecting against hormone-dependent cancers such as breast, cervical, and prostate cancers, due to its favorable influence on the body’s balance of estrogens.<sup>91-95</sup> I3C further affects health by undergoing a natural conversion in the body to yet another potent anti-cancer compound, diindolylmethane (DIM). In addition to stopping hormone-dependent cancer cells in their tracks, DIM inhibits breast cancer cells that are not hormone dependent, through a number of mechanisms.



For example, scientists at the University of California, Berkeley, recently discovered that DIM causes breast cancer cells to boost production of interferon gamma, an immune system component that plays an important role in preventing the development of primary and transplanted tumors.<sup>96</sup> This finding is only the latest in a long line of discoveries regarding the healing properties of cruciferous vegetables. It is likely that researchers will continue to unravel the many ways in which cruciferous vegetable compounds work to prevent and destroy different types of cancer.

### HORMONES USED IN MENOPAUSE MANAGEMENT

**Estrogens.** Estriol is the main component of bioidentical estrogen replacement therapy, often used with smaller proportions of estradiol and estrone. Estriol offers many of the benefits of more conventional estrogen-replacement therapies, without the harsh side effects or long-term dangers associated with conventional hormone replacement therapy.<sup>97</sup>

Some popular prescription estrogen formulas are BiEst and TriEst. BiEst consists of estradiol and estriol, while TriEst contains all three estrogens.<sup>98</sup>

**Progesterone** is important to hormone replacement, serving as a counterpoint to estrogen. One of progesterone’s most valuable benefits may be its ability to fight cancer. Studies have shown that progesterone has anti-proliferative effects on at least two different types of breast cancer cells.<sup>99</sup> Natural progesterone has also demonstrated neuroprotective properties.<sup>100</sup> Progesterone deficiency has been linked to migraine.<sup>101</sup>

Most natural progesterone products are derived from soybeans and yams, and can be purchased over the counter. A common form of natural progesterone is dispensed in a cream that is applied topically to the skin.<sup>102,103</sup> Many physicians recommend using progesterone therapy only during the last half of the month to simulate a young, healthy progesterone cycle.

**DHEA** is a hormone secreted by the adrenal gland, the gonads, and the brain.<sup>104</sup> Although women usually have less DHEA than men, both sexes lose DHEA at about the same rate, suggesting that its decline is related to aging.<sup>105,106</sup> Decreased levels of DHEA are associated with cancer, diabetes, lupus, and psychiatric illness.<sup>107,108</sup>

DHEA has been shown to improve mood, neurological functions, immune function, energy, and feelings of well-being, and to maintain muscle and bone mass.<sup>109-111</sup> One study demonstrated DHEA and pregnenolone help enhance memory.<sup>112</sup> DHEA

may also improve insulin sensitivity and lower triglyceride levels.<sup>113</sup>

Testosterone levels gradually decrease with age.<sup>114</sup> Loss of testosterone adversely affects libido, bone and muscle mass, vasomotor symptoms, cardiovascular health, mood, and well-being.<sup>115,116</sup> Testosterone therapy, combined with estrogen therapy, has been shown to improve quality of life, vigor, mood, ability to concentrate, bone mineralization, libido, and sexual satisfaction.<sup>117-120</sup> This combination therapy also produces improvements in hot flashes, sleep disturbances, night sweats, and vaginal dryness. In women, DHEA often converts to testosterone, thereby making it possible to raise testosterone levels using DHEA supplements.<sup>114,119</sup>

Pregnenolone levels likewise decline with age, decreasing significantly in women after the age of 30.<sup>121</sup> Reduced pregnenolone levels result in decreased amounts of all other hormones, and pregnenolone deficiencies have been associated with diminished brain function and dementia.<sup>122,123</sup>

## CONCLUSION

Menopause marks an important life transition for women, one potentially fraught with challenges to health and quality of life.

While many women wish to avoid the risks associated with estrogen drugs, they are keenly interested in finding relief from hot flashes, depression, irritability, insomnia, breast pain, and possible declines in cognition and bone and cardiovascular health.

Fortunately, the wisdom of ancient folk medicine combined with the objective application of modern science may now help women obtain effective, reliable relief from these menopausal conditions, without significant side effects.

## HORMONE REPLACEMENT THERAPY, THEN AND NOW

For decades, hormone replacement therapy was essentially the standard treatment for menopausal complaints. This changed abruptly in 2002, when the National Institutes of Health announced that it had halted a comprehensive study of the effects of hormone replacement therapy on various aspects of women's long-term health.

Alarmed by emerging findings, researchers cancelled the massive trial, known as the Women's Health Initiative, before it was completed. Although the combination of estrogen and progestin improved healthy menopausal women's bone health compared to placebo, it was also clearly associated with significant increases in heart disease, stroke, blood clots, and breast cancer. Hormone replacement therapy increased the incidence of breast cancer alone by as much as 26%, while increasing heart attack incidence by nearly 30%.<sup>1</sup>

Accordingly, menopausal women were encouraged to discontinue hormone replacement therapy, and millions of women complied.<sup>124</sup> Although hormone replacement therapy offers slight improvements in osteoporosis risk and incidence of colon cancer, NIH officials noted, "The balance of harm versus benefit does not justify any woman beginning or continuing to take estrogen plus progestin." While the use of hormone replacement therapy has dropped precipitously, the health problems associated with menopause remain. What to do about the erosion of quality of life, sleeplessness, irritability, hot flashes, and brittle bones that accompany menopause? Data indicate that women have been reluctant to turn to traditional herbal remedies such as black cohosh and soy.<sup>124</sup>

However, mounting evidence suggests that women should embrace these time-honored remedies, as science makes progress in proving what traditional healers have long known: botanicals work. Indeed, nature seems to know best, offering all the benefits of hormone replacement therapy with few, if any, of the side effects. Herbal remedies in use for centuries are gradually regaining acceptance in the wake of hormone replacement therapy's fall from grace.

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