

Confronting Menopause and Hormone Imbalance

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"Is this really my body?" - that is the question many women ask themselves in the midst of the many hormonal changes that occur during menopause. Often this probing question is followed up by the expression: "I don't think I really want to do this!"

Unfortunately, there doesn't seem to be much choice in the matter, as menopause is simply a fact of life. Forewarned is forearmed, as the saying goes, and the more a woman knows about the pathophysiology of what will take place, the better for her when she goes through "the change," and also the better for her patients if she is a healthcare provider.

The fact is, there are many things that women can do to ease the unpleasant symptoms and reinforce the positive benefits of becoming a post-menopausal woman.

Actual menopause is the final cessation of menstrual periods and fertility. It occurs as a necessary result of aging, and the final process takes place over two to three years. It usually begins in earnest between the ages of 48-49 and is complete by about age 51. Many menopausal symptoms can begin earlier than this, and the entire process occurs early if a woman has undergone removal of her ovaries as a treatment for genital tract cancer or breast cancer.

Changes in the balance of the female reproductive hormones are the driving force of the menopause and the premenopausal period that precedes it. Estrogen, progesterone and testosterone are all steroid hormones, and I'd like to start off with a brief review of the major steroid hormones in the body, as all are important to good health and all are closely related to each other biochemically.

Understanding Menopause

All of these hormones come from cholesterol, and the four carbon ring nucleus of the cholesterol molecule serves as the template for all the following hormones. Adequate intake of cholesterol is important, as is a normally functioning liver, where the metabolism of fats and triglycerides takes place and a proper balance of all the lipids is maintained. Most of the actual cholesterol that is utilized throughout the body is actually synthesized in the liver from building blocks of ingested lipids.

Here is a rundown:

- Pregnenolone: synthesized from cholesterol by the mitochondria of all cells in the body except red blood cells. This is the precursor to all steroid hormones.
- Progesterone: derived from pregnenolone, and made primarily in the ovaries after ovulation. It is secreted by the corpus luteum, the shell of the follicle which remains in the ovary after the mature egg has extruded from its surface during ovulation. Progesterone buffers the woman against the adverse effects of estrogen, as noted below.
- DHEA (dehydroepiandrosterone): a precursor to the androgens and the estrogens. It helps with

protein building and repair of body tissues that are damaged or wear out.

- Cortisol, corticosterone: moderate glucose levels in the bloodstream, enhance energy balance, and have powerful anti-inflammatory effects. These steroids are made in adrenal glands from cholesterol.
- Aldosterone: also made in the adrenal glands from cholesterol, this hormone regulates sodium, potassium, fluid balance, and blood pressure.
- Testosterone: made in the testes and also the ovaries. Testosterone is the hormone that imparts sexual desire to both men and women. It is the necessary precursor of all the estrogens (all come from testosterone).
- Estrone, estradiol, and estriol: the family of estrogens; made primarily in the ovaries, but also in fat cells, muscle cells, and skin (especially after the menopause).
- Estradiol: the major premenopausal estrogen
- Estriol: the estrogen of pregnancy
- Estrone: the estrogen of menopause, with much weaker estrogenic effects than estradiol or estriol.

The different stages of menopause are as follows:

Premenopause: The beginnings of the menopausal process can start 10 years before menopause, with anovulatory cycles causing estrogen dominance. No progesterone is secreted if no ovulation occurs, and there is no buffering of the estrogen secreted mostly by the ovaries, but also by fat cells and muscle cells.

One of the most important symptoms of the premenopause is often the onset of irregular vaginal bleeding, with variations in the length of time between periods and also with the amount of bleeding that takes place during the menses. Other symptoms of this time in a woman's life often include breast swelling and tenderness, sudden and often unpredictable mood swings, sleep disturbances, a tendency to experience water retention, and a newly increased likelihood of putting on weight more easily than before.

Perimenopause: Beginning a year or two before menopause, this period may lead to an intensification of the symptoms noted above.

Menopause: When the menopause begins in earnest, usually in a woman's late 40s, other symptoms become painfully apparent in many if not most women. The most common is hot flashes and night sweats. This occurs in 80-85 percent of women in industrialized countries (more on this later). It is due to hypothalamic stimulation. The hypothalamus is the major "defense command center" of the body that controls our appetite, our body temperature, and the finely-tuned balance of our parasympathetic and sympathetic nervous systems. This vital brain center also controls the endocrine system and it stimulates the master gland of the body, the pituitary gland, to secrete its hormones that then control all the other glands. It so happens that the thermoregulatory center is right next to the center in the hypothalamus that controls the secretion of female hormones.

When the estrogen level in the body falls during early menopause because of decreased secretion of the ovaries, the hypothalamus starts firing off more and more gonadotropin-releasing hormones to the pituitary and it also fires off its thermoregulatory center, causing the body to experience hot flashes because of intense vasodilation and increased blood flow in the skin all over the body. It suddenly feels like a furnace was turned on to 120 degrees.

Alcohol, nicotine, caffeine, spicy foods, exercise, and chocolate can all set off a hot flash. The actual climate can also be the stimulus if it is hot outside or in the room. Sleep deprivation or excessive stress can also be to blame. If you're experiencing hot flashes, you might consider keeping a diary to track some of these environmental conditions that may be triggering them.

Vaginal dryness generally occurs during the menopause, and sexual activity requires a greater attention to proper external lubrication. Without continued sexual activity the uterus and vagina both shrink and vaginal mucosa atrophies. Fewer such changes occur in sexually active women.

During the menopause the menses become more irregular and are often anovulatory. Menopause is considered complete when no menstrual flow has occurred for one year.

Osteoporosis and Weight issues

Osteoporosis is common in menopausal women. All should consider taking at least 800 mg of calcium daily. The best foods for calcium intake:

- non or low-fat milk products
- calcium-fortified orange juice
- green leafy vegetables
- corn tortillas
- canned sardines or salmon
- consider adding 1 gm of elemental calcium as a daily supplement
- sunlight plus daily exercise are important

Note: cigarette smokers are at greater risk for osteoporosis, as are those who exercise to extreme (marathon runners, jazzercise teachers, ballet dancers).

Because of the tendency to gain weight in mid-life, many women find themselves overweight when in their 50s or 60s. This is perfectly natural in terms of hormonal changes, possible reduction in activity levels, and perhaps the attractiveness of food as a comfort. However it opens the door to becoming insulin resistant. Studies suggest that over half of overweight Americans suffer from a condition known as Syndrome X, also referred to as metabolic syndrome. This syndrome is extremely common in America today, far more so than ever before, due to the epidemic of obesity that is ravaging our country's health at present.

The characteristics of the metabolic syndrome include: truncal obesity (excess weight in the abdomen and hips, rather than in the thighs and buttocks); fatty infiltration of the liver; hypertension, or pre-hypertension; high cholesterol, with increased LDL (bad cholesterol) and triglycerides; insulin resistance, with glucose levels above 100 mg/dL.

Insulin resistance is a common precursor to actual diabetes. It means that the body has become less responsive to insulin's effect of driving glucose into the cells, where it fuels metabolism. Thus following a meal the insulin rises to high levels as it attempts to force glucose into the cells, because it is has become less efficient than normal in doing so. The excess insulin causes fat deposition, especially in the trunk of the body and in the liver, and causes the build-up of high cholesterol and triglyceride levels. People with insulin resistance have a difficult time losing weight and tend to continue to gain it instead. Actual diabetes is likely to follow, with all its complications, including blindness, renal failure, and gangrene. We need to support all our diabetics, but, believe me, if you are not a diabetic you do not want to become one. Sadly, over 40 million Americans who are now

overweight or obese will likely become diabetics within the next 10 years. This problem is lowering our nation's life expectancy.

Anthropology and the Metabolic Syndrome

Studies with the Pima Tribe of Native Americans as well as other in-bred groups suggest that the individuals who survived best in hunter-gatherer societies were those whose genes tended to make them have insulin resistance. This worked well for those with this metabolism because they stored fat more efficiently when food was available which they could then utilize in times of famine. Now, with less exercise and over-abundant food supplies, almost 90 percent of the Pima people are overweight or frankly obese. The same process of natural selection may have operated in the past in our own cultures, but this genetic metabolic type now works against us!

The only way out of this dangerous situation that is rampant across America is to lose weight. Adequate exercise helps a lot. Most people will lose weight if they consume a balanced diet that limits the amount of sugar to 10-15 teaspoons per day. To figure out the amount of sugar in foods, look up the grams of carbohydrates in processed foods, usually given per serving. Subtract the grams of fiber in the serving and divide the remainder by five to get the teaspoons of sugar. For example if there are 28 carbs per serving, and this includes three grams of fiber, you get 25 grams of carbohydrates. Divided by five this gives 5 teaspoons of sugar.

Many people who do this figuring are amazed how much sugar they consume. You can get a small booklet at any drugstore that has this information for all foods. A cup of pasta without any sauce on it has eight teaspoons of sugar (and, how many times do we limit our plate of pasta to one cup?).

A balanced diet should be less than 30 percent fat, and a good rule is to take your ideal weight and divide by two to get the grams of protein you should consume a day (140 lbs/ 2 = 70 grams of protein a day).

If you wish to lose weight it's good to stay within 1,500 calories per day, assuming you are moderately active, or lower amounts if you can stick with it and eat a balanced diet. It's wise to take a multivitamin with minerals daily, with fish or Krill oil capsules and a calcium supplement of 1,000 mg per day.

Menopausal concerns in American women

The biggest concerns for menopausal women seem to center around hot flashes, night sweats, mood swings, depression, vaginal dryness, sagging breasts, wider hips, weight gain, decreased libido and sexual enjoyment. These problems are avoidable or can be minimized in most women by following these simple tips:

- Severely limit alcohol, caffeine, junk food
- No smoking
- Increase exercise (moderate; every day if possible, or at least most days)
- Manage stress well
- Consume foods rich in vitamins B and E
- Consume phytoestrogens, found in tofu, soy milk, tempeh, miso
- Get enough Vitamin D from the sun, or take Vitamin D3 supplements

The reason why industrialized countries tend to have so many menopausal problems is because they

have diets rich in animal fats and refined starches, plus lack of adequate exercise leads to estrogen levels at least twice as high in the U.S. and other industrialized countries as in women in agrarian third-world countries. The natural balance of estrogens and progesterone is lost. Anovulatory cycles are more common in premenopause and happen sooner in menopause. There is more exposure to xenoestrogens, many of which come from plastic bottles and packaging materials in processed foods. These increase a woman's estrogen dominance. Obesity leads to production of excess estradiol (much more potent than estrone in its toxic effects). This also causes estradiol dominance in women in the westernized countries here in North America, and in Europe, Australia, New Zealand, and Japan.

As you read through this list below, ask yourself if any of these apply to you. These can be reversed by proper diet management as noted above, adequate exercise, plus careful avoidance of xenoestrogens whenever possible:

- Accelerated aging
- More allergies
- Increased anxiety
- Autoimmune disorders
- Breast tenderness
- Breast cancer
- Decreased sex drive
- Depression
- Fat gain, esp. abdomen, hips, thighs
- Fatigue
- Fibrocystic breasts
- Gallbladder disease
- Hair loss
- Headaches
- Hypoglycemia
- Hypercoagulability of blood
- Infertility
- Insomnia
- Osteoporosis
- Thyroid dysfunction mimicking hypothyroidism
- Uterine cancer
- Fibroids
- Water retention

If you know are facing menopause or have patients who are make sure you know about hormone replacement therapy (HRT): HRT is an estrogen plus a progestin (usually medroxyprogesterone), taken every day or cyclically (estrogen daily and progestin the last 14 days). Pure progesterone cream may be better and safer than progestins. Menopausal women should not use combination progestin-estrogen therapy to prevent menopausal symptoms or osteoporosis for more than three to four years, due to the increased risk of thrombotic cardiovascular disease, gallstones, persistent or new fibroids, and increased risk of developing breast cancer.

In August 2005, the United Nations Cancer Agency published a report concluding that HRT is clearly linked to increased rates of cancer, and oral contraceptives definitely increase the risk of breast cancer. A proper perspective is necessary, here. Actual causation was not proven. Always remember risk does not equal causation but must be carefully taken into account. The risk of HRT causing cancer

is far less risk than with other agents, such as smoking or asbestos, for example. So, with oral contraceptives and HRT, balance the benefits versus the risks.

Studies show that most American women survive the menopause without becoming depressed. They should also be especially motivated to follow a disciplined, holistic lifestyle and a healthy diet if they wish to get through the menopause as smoothly and painlessly as possible in all respects.

Postmenopausal women I know tell me it's actually pretty great to not have to worry about those periods anymore as they enter the golden years of life, where they know who they are, and, hopefully, they have what they need to stay healthy and happy into later life.

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