

oestrogen overload.

Oestrogen has a powerful effect on health, creating fertility and protecting our bodies in many ways. But it also has a dark side, naturopath **Louise O'Connor** reports.

Oestrogen is the most powerful female hormone, and it is essential for reproductive function, playing a key role in determining a woman's health. Oestrogen is produced primarily by the ovaries.

To be precise, oestrogen is not a single hormone; it is a collective term for oestradiol (E2), oestrone (E1) and oestriol (E3). Oestradiol is the most potent and protects against osteoporosis and heart disease. Oestrone is the primary oestrogenic hormone in post-menopausal women. Oestriol is protective and anti-carcinogenic. The family of oestrogens is balanced by progesterone, the secondary female steroid hormone.

It may surprise you to learn that there are oestrogen receptors in virtually all body tissues, including the brain, bones and skin. The uterus, urinary tract, breasts, blood vessels also depend on oestrogen to stay toned and flexible.

Premenstrual syndrome

Mood swings, tender breasts, a swollen abdomen, food cravings, fatigue, irritability and depression: if you experience some or all of these problems in the days before your monthly period, you may have premenstrual syndrome (PMS). The fall of progesterone and the consequent dominance of oestrogen is the most common hormonal imbalance associated with PMS. Other contributing factors are low

thyroid function, adrenal fatigue, hypoglycaemia, and an imbalance of serotonin and endorphin levels.

New concerns are being raised that these symptoms are being classified as premenstrual dysphoric disorder (PMDD). PMDD has not been listed in the World Health Organisation's International Classification of Diseases, nor is PMDD listed on the Australian Pharmaceutical Benefits Scheme (PBS). Some critics object to labelling PMS as a psychiatric disorder, believing this legitimises the use of antidepressants and the newer combined oral contraceptive for PMS symptoms.

Emerging evidence suggests that the Pill is a major health threat and is linked to rising breast cancer rates in young women. Breast cancer, once considered a disease of older women, is now claiming the lives of younger women. Research demonstrates that long-term Pill users are at a higher risk of breast cancer. Oestrogen initiates tissue growth and cell proliferation in specific areas in the body, but too much of this activity can be detrimental.

A health-promoting diet is paramount. Certain foods, notably dairy products and animal fat, aggravate PMS and should be avoided. Consuming red meat and eggs treated with artificial hormones and antibiotics increases oestrogen levels. Avoid refined

carbohydrates, including white sugar and bleached white flour products, as these foods result in rapid blood sugar swings. Caffeine from coffee, tea, cola, energy drinks, and chocolate should be avoided.

Chasteberry (*Vitex agnus castus*), is a traditional European herbal remedy commonly recommended to relieve PMS. Chasteberry balances hormonal fluctuations and restores progesterone levels. Use over several cycles to allow hormonal levels to normalise. B vitamins and magnesium are important nutrients for PMS; they are also necessary for the proper detoxification of oestrogen.

Menopause and oestrogen therapy

As women age, the ovaries' production of oestrogen diminishes greatly. Disruptions to this finely tuned balance are associated with feeling tired, loss of muscle mass and emotional disturbances. Most conventional doctors believe the symptoms of menopause are due to the drop in oestrogen production. In their view, the solution is oestrogen supplementation – i.e. hormone replacement therapy (HRT) – which utilises synthetic oestrogen.

The history of HRT contains a tragic example of the effects of oestrogen excess. Millions of women around the world stopped using HRT after the Women's



WOMAN ON STRINGS: GETTY IMAGES; ALL OTHER IMAGES: ISTOCK IMAGES

Health Initiative (WHI) study established a link with increased breast cancer rates. The WHI was a population study of 161,808 healthy post-menopausal women. In Australia, HRT use dropped by 40 per cent between 2001 and 2003 due to concerns raised by this study. Pharmaceutical companies continue to downplay the evidence but cancer specialists uphold the risk.

The fact is, maintaining hormone balance is complex. When oestrogen and progesterone are doing their jobs, they work well together.

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REDUCING OESTROGEN EXCESS: WHAT YOU CAN DO

- Speak to your natural healthcare practitioner about alternatives to HRT and the oral contraceptive.
- Consume a variety of phytonutrients from a broad range of seasonal fruit and vegetables.
- Eliminate processed foods high in sugar and fat that contribute to hormone chaos.
- Fruit, vegetables, legumes and whole grains are an abundant source of fibre. Dietary fibre binds and excretes oestrogen from the body, preventing re-circulation.
- Organic broccoli and green tea cleanse the liver of built-up toxins, plus their antioxidant power pumps up your immune system.
- Organic food is a simple way to reduce your exposure to noxious environmental toxins. You are also supporting farmers committed to a cleaner environment.
- Increase good fats. All steroid hormone production begins with cholesterol, the critical building block.
- Have a daily dose of probiotics. Friendly bacteria assist clearance of oestrogen via the gastrointestinal tract.
- Eat organic meat and eggs free from hormone residues.
- Avoid all dairy products. These common allergens disrupt hormones.
- Drink filtered water to flush your body. Avoid plastic bottles and never use them after they have been sitting in the hot sun for any length of time.
- Reduce alcohol consumption; it increases breast cancer risk.
- Quit smoking. Cigarettes contain toxic chemicals that accelerate ageing.
- Unrelenting stress could be sabotaging hormone harmony. Exercise is a great way to de-stress.
- Cosmetics can contain carcinogens or reproductive toxins. Your health food or organics store has skincare products and cosmetics that won't damage your health.



How much or how little of each hormone is made at any one time relies on a complicated feedback system between the ovaries, adrenal glands and the brain, specifically the hypothalamus and the pituitary gland which release LH (luteinising hormone) and FSH (follicle stimulating hormone). Stress, diet and environmental pollution affect that feedback system, directly impacting on hormone balance.

Breast cancer risk

Breast cancer is a serious concern for all women. Oestrogen is implicated in the rise of breast cancer in industrialised countries over the last four decades, as most breast cancers are oestrogen-receptor positive. Unfavourable changes to breast tissue are fuelled by the hormone oestrogen, with HRT considered a major trigger.

More alarming is the prediction that breast cancer will rise in women taking HRT with a history of taking the oral contraceptive. This will have an increasing impact on post-menopausal breast cancer risk as the proportion of women with former oral contraceptive use increases.

Women carrying the BRCA1 and BRCA2 genes are considered more susceptible to breast cancer. However, 'bad genes' do not necessarily come from parents. They often mutate in response to environmental influences. It has been proposed that the inherited genetic fault associated with the BRCA1 and BRCA2 genes may be triggered by genotoxicity, with certain environmental chemicals blocking important repair of the delicate genetic material.

Studies by a Belgian toxicologist found that women diagnosed with breast cancer were six to nine times more likely to have dangerous levels of the pesticides dichloro diphenyl trichloroethane (DDT) or hexachlorobenzene in their bloodstream and were more likely to relapse after exposure to organochlorine pollutants.

'Good' and 'bad' oestrogen

It is not just excess oestrogen that poses health risks. Powerful oestrogen metabolites may also initiate and promote hormone-related disease. Oestradiol and oestrone are metabolised and eliminated down three major pathways. The 2-hydroxyoestrone metabolites are considered the 'good' oestrogen forms. In contrast, the 4-hydroxyoestrone and 16-alpha-hydroxyoestrone metabolites are considered 'bad'. These forms increase oxidative stress and promote cancer. Optimal oestrogen metabolism is implicated in cancer prevention and healthy ageing.

The common symptoms of oestrogen excess can be due to underactive oestrogen metabolism and overproduction of unfavourable oestrogen metabolites. The active 2-hydroxyoestrone metabolites are

protective, reducing the risk of hormone-related cancers.

Understanding the different forms of oestrogen can help women reduce their risk of reproductive cancers. It is particularly important for women at higher risk of breast cancer to measure the major oestrogen metabolites via a spot urine sample. The 2, 4 and 16 urinary metabolite test should be discussed with your doctor or naturopath.

Nature provides vegetables that possess unique phytochemical constituents which modify oestrogen metabolism. These vegetables contain indoles, and increased consumption of these biologically active compounds is associated with a lower risk of cancer. Indole-rich vegetables include broccoli, Brussels sprouts, cabbage, cauliflower, kale and bok choy. Diindolylmethane (DIM) is one of the most abundant and potent dietary indoles derived from cruciferous vegetables. In supplemental form, DIM can have a powerful effect on detoxifying oestrogen down the protective pathway. In contrast, indole-3-carbinol (I3C) is not advocated. Recent evidence suggests that I3C is highly unstable and may promote the production of 4-hydroxyoestrone metabolites.

The obesity connection

Oestrogen plays a chief role in regulating fat deposition and energy metabolism. Oestrogen causes fat to accumulate, especially around the hips, thighs and abdomen. This central obesity greatly increases the risk of diseases such as insulin resistance, type 2 diabetes, and cancer. Obesity alters metabolism of oestrogen, resulting in products that retain oestrogenic potency. Consequently, the oestrogen-sensitive tissues of obese women are exposed to more stimulation than those in leaner women.

Oestrogen also plays a primary role in regulating fat deposition in males. An increase in body fat is

associated with greater activity of the aromatase enzyme that irreversibly converts testosterone to oestrogen, leading to diminished testosterone levels. This favours the preferential deposition of fat around the belly and chest. The location of this excess fat greatly increases the risk of obesity-related diseases. Gynaecomastia is an altered oestrogen:testosterone balance that signals oestrogen excess.

Environmental pollutants

Xenoestrogens are chemicals that have a powerful oestrogenic effect on the body. They are fat-soluble, non-biodegradable, and dangerously toxic. Xenoestrogens include a wide range of substances, both natural and man-made. Pharmaceuticals, dioxin and dioxin-like compounds, polychlorinated biphenyls, pesticides and plasticisers such as bisphenol A all harm the endocrine system. Xenoestrogens can be found in many everyday products, such as plastic containers, metal food cans, detergents, flame retardants, food, toys, cosmetics and pesticides. Extremely damaging pesticides can be found in imported crops and foods as some developing countries still use prohibited pesticides.

There is increasing concern that environmental and occupational exposure to synthetic oestrogen-mimicking chemicals has a negative impact on male reproductive health. Scientists believe these oestrogenic pollutants underlie disturbing trends such as decreasing sperm count and function, decreasing testosterone production and testicular malformations. Pesticides are the most pervasive environmental chemicals. These contaminants operate through hormonal or genotoxic pathways to affect male reproduction. Pesticides penetrate the blood testis barrier to potentially affect sperm production, either by affecting genetic integrity or hormone production. n&h

ARE YOU AT RISK?

In women:

- Premenstrual syndrome (PMS)
- Mood swings and irritability
- Memory loss and 'fuzzy thinking'
- Early puberty/late menopause
- Irregular or absent periods (amenorrhoea)
- Unusually heavy or long lasting periods (menorrhagia)
- Menstrual cramps (dysmenorrhoea)
- Cyclical migraine headaches
- Fatigue
- Depression
- Weight gain
- Infertility and miscarriage
- Fibrocystic breasts
- Uterine fibroids
- Endometriosis
- Low thyroid function
- Breast cancer



In men:

- Prostate problems
- Erectile dysfunction
- Low sex drive
- Weight gain
- Gynaecomastia, or benign enlargement of the male breast, or 'man-boobs'



SCARY NUMBERS

If a woman makes 1 unit of oestrogen per day, the estimated daily dose of active oestrogen from the contraceptive pill is 16,675 units and from hormone replacement therapy (HRT) is 3,350. This is a dangerous level of exposure to synthetic oestrogen, possibly over many years. This increases the serious risk of breast cancer and reproductive health problems.



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References available on request.



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