Hormone Therapy

What is hormone therapy?
Hormones are chemicals produced by glands, such as the ovaries and testicles. Hormones help some types of cancer cells to grow, such as breast cancer and prostate cancer. In other cases, hormones can kill cancer cells, make cancer cells grow more slowly, or stop them from growing. Hormone therapy as a cancer treatment may involve taking medications that interfere with the activity of the hormone or stop the production of the hormones. Hormone therapy may involve surgically removing a gland that is producing the hormones.

How does hormone therapy work?
Your physician may recommend a hormone receptor test to help determine treatment options and to help learn more about the tumor. This test can help to predict whether the cancer cells are sensitive to hormones.

The hormone receptor test measures the amount of certain proteins (called hormone receptors) in cancer tissue. Hormones (such as estrogen and progesterone that naturally occur in the body) can attach to these proteins. If the test is positive, it is indicating that the hormone is probably helping the cancer cells to grow. In this case, hormone therapy may be given to block the way the hormone works and help keep the hormone away from the cancer cells (hormone receptors). If the test is negative, the hormone does not affect the growth of the cancer cells, and other effective cancer treatments may be given. Always discuss the results of the hormone receptor test with your physician.

If the test indicates that the hormones are affecting your cancer, the cancer may be treated in one of following ways:
- treating cancer cells to keep them from receiving the hormones they need to grow
- treating the glands that produce hormones to keep them from making hormones
- surgery to remove glands that produce the hormones, such as the ovaries that produce estrogen, or the testicles that produce testosterone

The type of hormone therapy a person receives depends upon many factors, such as the type and size of the tumor, the age of the person, the presence of hormone receptors on the tumor, and other factors.

When is hormone therapy given?
Your physician may prescribe hormone therapies before some cancer treatments or after other cancer treatments. If hormone therapy is given before the primary treatment, it is called neoadjuvant treatment. Neoadjuvant treatments help to kill cancer cells and contribute to the effectiveness of the primary therapy. If hormone therapy is given after the primary cancer treatment, it is called adjuvant treatment. Adjuvant therapy is given to improve the chance of a cure.

With some cancers, patients may be given hormone therapy as soon as cancer is diagnosed, and before any other treatment. It may shrink a tumor or it may halt the advance of the disease. And in some cancer, such as prostate cancer, it is helpful in alleviating the painful
and distressing symptoms of advanced disease. The National Cancer Institute (NCI) states that although hormone therapy cannot cure prostate cancer, it will usually shrink or halt the advance of disease, often for years.

**What medications are used for hormone therapy?**

Hormone therapy may be used to prevent the growth, spread, and recurrence of breast cancer. The female hormone estrogen can increase the growth of breast cancer cells in some women. Tamoxifen (Nolvadex®) is a medication used in hormone therapy to treat breast cancer by blocking the effects of estrogen on the growth of malignant cells in breast tissue. However, tamoxifen does not stop the production of estrogen.

Hormone therapy may be considered for women whose breast cancers test positive for estrogen and progesterone receptors.

Drugs recently approved by the US Food and Drug Administration (FDA), called aromatase inhibitors, are used to prevent the recurrence of breast cancer in postmenopausal women. These drugs, such as anastrozole (Arimidex®) and letrozole (Femara®), prevent estrogen production. Anastrozole is effective only in women who have not had previous hormonal treatment for breast cancer. Letrozole is effective in women who have previously been treated with tamoxifen. Possible side effects of these drugs include osteoporosis or bone fractures.

Another new drug for recurrent breast cancer is fulvestrant (Faslodex®). Also approved by the FDA, this drug eliminates the estrogen receptor rather than blocking it, as is the case with tamoxifen, letrozole, or anastrozole. This drug is used following previous antiestrogen therapy. Side effects for fulvestrant include hot flashes, mild nausea, and fatigue.

Men who have breast cancer may also be treated with tamoxifen. Tamoxifen is currently being studied as a hormone therapy for treatment of other types of cancer.

With prostate cancer, there may be a variety of medications used in hormone therapy. Male hormones, such as testosterone, stimulate prostate cancer to grow. Hormone therapy is given to help stop hormone production and to block the activity of the male hormones. Hormone therapy can cause a tumor to shrink and the prostate-specific antigen (PSA) levels to decrease.

**What are the side effects of hormone therapy?**

The following are some potential side effects that may occur with hormone therapy. However, the side effects will vary depending upon the type of hormone therapy that is given. Every person’s hormone treatment experience is different and not every person will experience the same side effects. Discuss the potential side effects of your hormone therapy with you physician.

As each person’s individual medical profile and diagnosis is different, so is his/her reaction to treatment. Side effects may be severe, mild, or absent. Be sure to discuss with your cancer care team any/all possible side effects of treatment before the treatment begins.

For prostate cancer, either the surgical removal of the testes or hormone drug therapy can improve the cancer. Both surgery and drugs may cause the following side effects:

- hot flashes
- impotence
- a loss of desire for sexual relations
- male breast enlargement

For breast cancer, some women may experience side effects from tamoxifen that are similar to the symptoms some women experience in menopause. Other women do not experience any side effects when taking tamoxifen. The following are some of the side effects that may occur when taking tamoxifen:

- hot flashes
- nausea and/or vomiting
- vaginal spotting (a blood stained discharge from the vagina that is not part of the regular menstrual cycle)
- increased fertility in younger women
- irregular menstrual periods
- fatigue
- skin rash
- loss of appetite or weight gain
- headaches
- vaginal dryness or itching and/or irritation of the skin around the vagina

Taking tamoxifen also increases the risk of endometrial cancer (involves the lining of the uterus) and uterine sarcoma (involves the muscular wall of the uterus), both cancers of the uterus. There is also a very small risk of blood clots and stroke, eye problems such as cataracts, and liver toxicities. Tamoxifen should be avoided during pregnancy.

Tamoxifen is used to treat men with breast cancer as well. As each person’s individual medical profile and diagnosis is different, so is his/her reaction to treatment. Side effects may be severe, mild, or absent. Be sure to discuss with your cancer care team any/all possible side effects of treatment before the treatment begins.

Men may experience the following side effects:

- headaches
- nausea and/or vomiting
- skin rash
- impotence
- decrease in sexual interest