



Some medical and holistic practitioners connect a number of conditions such as endometriosis, fibroids, endometrial hyperplasia and fibrocystic breasts) with an excess of estrogen. There are several ways that estrogen levels in a woman's body are affected.

### 1. Thyroid

The thyroid produces a hormone which is used for the regulation of estrogen in the body. A deficiency of iodine may lead to stimulation of the ovaries with a resulting elevation of estrogen production.

### 2. Liver

Estrogen production takes place mainly in the ovaries and fat cells (a little is produced by the adrenals.) The liver processes about 50% of usable estrogen. It takes potentially carcinogenic estrogen (ESTRADIOL) and degrades it into ESTRADIOL. Undegraded estradiol can stimulate cell growth inappropriately.

Holistic practitioners think that the ability of the liver to effect this conversion is directly dependent upon the adequacy of a woman's diet.

Supposedly women with more fat on their body have higher estrogen levels because estrogens are produced from hormones in fat cells.

### 3. Prostaglandins

Prostaglandins are types of naturally occurring fatty acids which are thought to perform a number of functions including the stimulation and inhibition of uterine and other smooth muscle contractions, the ability to lower blood pressure, to control inflammation, to regulate the functions of some hormones and to regulate body temperature. They are formed from essential fatty acids (EFAs) which are nutrients not naturally produced in the body which must be provided by the diet to maintain good health.

Prostaglandins were discovered in the thirties and named such because they were first thought to be derived only from the secretions of the male prostate gland. Since then, prostaglandin production has been established in both sexes, in many different parts of the body, and in some animals as well. In recent years, the functions of approximately twenty different prostaglandins (PG's) have been studied. The most important prostaglandins for our purposes belong to the E and F families.

Prostaglandin study is still in its infant stage. How and in what combinations all of these prostaglandins work is not yet known. It seems that it is important to maintain certain ratios of prostaglandins which work together to perform various functions and that an imbalance in the ratio can contribute to health problems.

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Prostaglandin function, therefore, is a highly complex subject in which some experts disagree and in which some studies conflict.

The greatest amount of prostaglandin in the female reproductive tract is produced by the endometrium, the inside lining of the uterus, but the ovary also is thought to produce some.

The endometrium seems to produce prostaglandins of the E and F families throughout the menstrual cycle. Prostaglandin E seems to have more influence in the first two weeks of the cycle and prostaglandin F in the second two weeks of the cycle.

It is also thought that members of the E family have the ability to decrease uterine and cervical contraction while the F family increases these contractions. An increase in prostaglandin  $F_2$ , one of the F family, during the menstrual period is thought to account for most of the pains and cramps due to increased hard contractions of the uterus.