

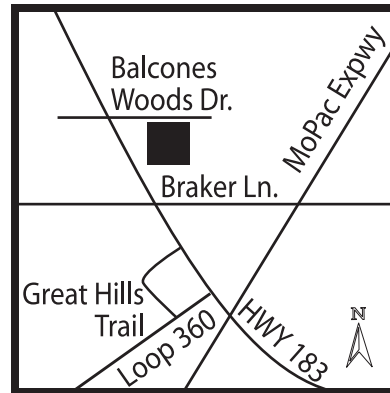
AN OVERVIEW OF CONCEPTION

Conception is a complex event depending on several factors. For conception to occur, an egg must be released at the right time. Sperm must be present in sufficient quantity and quality. The environment for the sperm must be hospitable. Finally, the egg and sperm must have clear pathways of travel in order to meet.

Infertility is a condition which affects many couples. Treating infertility requires knowing its cause. Most often both partners of a couple have suboptimal fertility, therefore both must seek medical care. Infertility is typically diagnosed if a couple has not been able to conceive after one year of trying, or if the female is over 35 years old, after six months of trying.

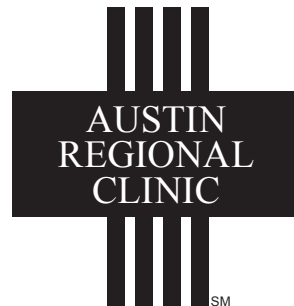


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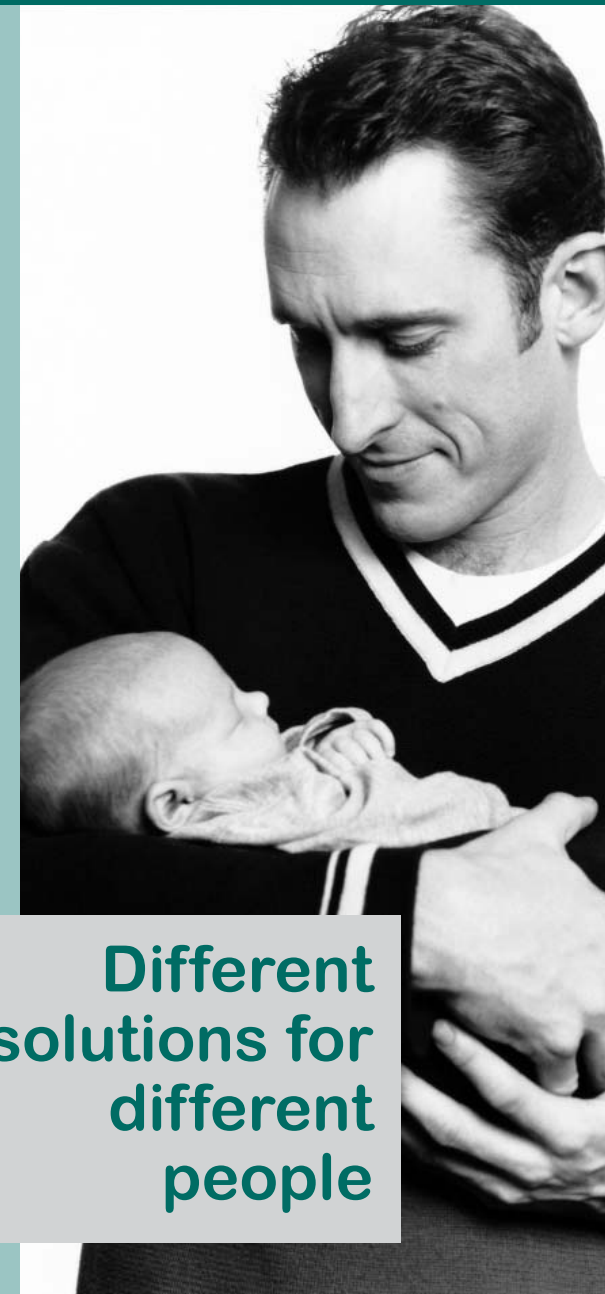


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CONCEPTION

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HORMONES AND CONCEPTION

Many of the factors in reproduction are controlled by hormones. Several glands throughout the body secrete hormones which control ovarian and testicular function. These glands include:

- Pituitary - which is the 'master' gland and regulates all the other glands. The pituitary makes the thyroid stimulating hormone TSH, the adrenal stimulating hormone ACTH, and the gonadal stimulating hormones FSH and LH.
- Thyroid - which regulates metabolism of all the cells in the body.
- Adrenal - which regulates blood pressure and makes male hormones.
- Gonads - which are the primary reproductive organs: the testes in the male and the ovaries in the female. These organs are responsible for producing the sperm and ova.

Several of these hormones are present in both women and men; for example, both men and women normally produce both estrogen and testosterone. Infertility is frequently a result of some of these hormones being out of balance. For instance, a menstrual cycle that is not 28 days in length usually implies a hormone imbalance. If this is corrected fertility usually improves.

In some women, hormone imbalance may be due to impending menopause. Menopause does not occur overnight at a set age, but occurs over several years, called the perimenopausal period. The pituitary gland produces a hormone called FSH which increases during early menopause in response to decreasing ovarian function. The higher the FSH, the less likely that pregnancy will occur.

An imbalance of the hormone Prolactin can contribute to "premature menopause" in some women. This can be a subtle problem but there are tests to detect this (a TRH Stimulation test may be performed). This test entails being in a fasting state, having an intravenous line placed, and several blood tests being drawn after medication is given. Premature menopause can occasionally be postponed with medication.

TREATMENT OF INFERTILITY

The first step in infertility treatment involves detecting and treating any underlying hormone imbalance. Frequently, these treatments increase fertility without the need for more risky, invasive interventions.

For some couples, other medications may be needed.

Clomiphene Citrate (Clomid, Serophene)

Clomiphene Citrate (Clomid, Serophene) is an oral medication usually taken by women, occasionally by men. This drug can stimulate the ovaries or testes. There is a small but finite risk for complications in women on clomid, including ovarian cyst formation. Rarely, more severe complications arise.

Human Menopausal Gonadotropins, or HMG

This is a form of purified FSH, a hormone which stimulates the ovarian follicles to grow. HMG is given by a series of injections over several days. Treatment with HMG requires close monitoring with several office visits and ultrasounds during the cycle. This treatment carries a higher risk for problems, including multiple births.

Intrauterine Insemination

Intrauterine insemination is a procedure conducted if there is insufficient sperm, or poor sperm survival. It is easily conducted in the office. In heterosexual couples, the female's mucus is checked close to the time of ovulation. If the mucus and sperm are not compatible, then insemination is planned near the time of the woman's ovulation. Secretions and antibodies which can potentially cause a woman to have an allergic reaction are also removed from the sperm.

Male infertility is more difficult to treat than female infertility today. The same hormones that affect female ovulation affect male sperm production. If these malfunction, then the ultimate outcome would be a low total sperm count, a low sperm motility (movement) or poor morphology (shape). Most medical reproductive endocrinologists are trained to treat males with an abnormal sperm count. Many urologists also treat male infertility.

ULTRASOUND

An ultrasound (also called a sonogram), is a very useful tool in treating infertility. Many patients ask, "Why do I need so many ultrasounds?" Ultrasound has vastly changed how well we can treat infertility. Ultrasound is the use of sound waves to create an image. Using this safe, non-invasive test, we can determine if and when ovulation is occurring. The follicles surrounding the female eggs can actually be seen and measured, showing whether the ovaries are functioning properly. The uterine lining can also be evaluated to determine its thickness and quality. Impediments to sperm travel such as polyps and fibroid tumors of the uterus can also be detected.

Prior to ultrasound, we had to guess what the uterus and ovaries were doing. Now we have a window into their functioning and can implement better treatment. Ultrasound is performed by someone specially trained in its use. Ultrasound has become an indispensable tool in the treatment of infertility.

Infertility is a complex and unique medical problem. Reproductive assistance is a field with many exciting developments on the horizon. Treatment can be time consuming, expensive and emotionally challenging, but the rewards can be great.

