

MALE INFERTILITY

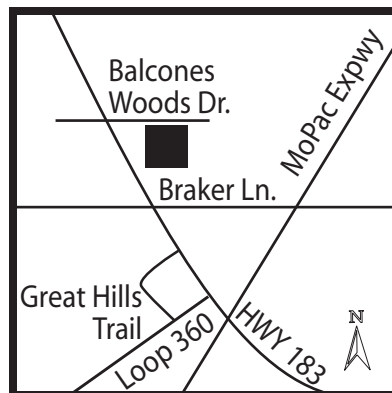
Our office is here to help you get the most out of life. Educating you about male infertility is one of the ways we can help. This brochure contains information about the causes of and possible solutions for male infertility.

The production of sperm is the result of a complex interaction between the reproductive system, part of the endocrine (hormone producing glands) and the urogenital system. This interaction regulates the maintenance of reproductive function and appropriate hormonal environment in men. Decreased sperm production is a symptom of a problem lurking somewhere in the two systems, reproductive or endocrine. Many disorders can result in reduced sperm numbers.

We can use headaches as an analogy. Headaches can be caused by stress, neck strain, eye fatigue, vascular disease, brain tumors, and many other problems. The nature of the headache may not reveal its cause, which may be in any one of the above involved systems: vision, vascular, brain, etc.

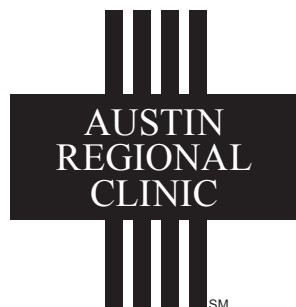
With decreased sperm counts, as with the headaches, the decreased count is not specific for a particular problem in the body. It may be the end result of a disease in any one of different organs. To understand the causes for male infertility we must first review the physiologic regulation of sperm production. The most obvious organ involved in sperm production is the testicle. The testicle contains cells which produce sperm and testosterone. Sperm production is controlled by testosterone production, which is, in turn, controlled by the pituitary gland. The pituitary gland relays hormone signals to the testicle to produce sperm and the hormones testosterone and estrogen.

AUSTIN REGIONAL CLINIC
AT SETON NORTHWEST
11111 Research Blvd., Suite 485
Austin, TX 78759



Located in the Seton Northwest Health Plaza, to the right at the main entrance.

For more information, CALL
(512) 338-8181 or
ARC-INFO 272-4636



www.austinregionalclinic.com

Maya B. Bledsoe, M.D., F.A.C.E.
11111 Research Blvd., Suite 485
Austin, TX 78759 (512) 338-8181

MALE INFERTILITY

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Learning
About
Causes and
Solutions

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SPECIFIC CONDITIONS WHICH MAY BE RESPONSIBLE FOR LOW SPERM COUNTS:

PROBLEMS AT BIRTH:

Several problems may be apparent at birth. The testicle may be malformed. It may not have descended correctly during embryological times (undescended testicles, called cryptorchidism), and this will often lead to decreased sperm counts in the adult male. Some men who have had undescended testicles also may experience other testicular problems including testicular cancers.

OTHER PROBLEMS:

The testicles are regulated primarily by two hormones: FSH (Follicle Stimulating Hormone), produced in a cyclic fashion by the pituitary gland, and LH (Leutinizng Hormone). Malfunction of either of these hormones can result in infertility.

The testicles may fail to function for a variety of reasons. The most serious one is lack of sperm producing cells (spermatogonia). This will often result in a zero sperm count. This is a very rare disorder. A lower number of spermatogonia may be caused by testicular poisons -- alcohol and marijuana are common examples.

"Male menopause" is a condition characterized by high FSH levels. Just like female menopause, sex hormones decrease in amount. In this condition, the testicle is unable to respond to the instructions by the pituitary to produce sperm. The high FSH levels reflect an attempt by the pituitary to further stimulate the testicle. Conversely, an elevation in LH is seen more often in men who do not produce adequate amounts of testosterone which can in turn also lead to subnormal sperm production and low testosterone levels.

PITUITARY DISORDERS:

Disturbances in the pituitary can result in testicular disturbances, and thus a low testosterone or a low sperm count. The release of the pituitary hormones FSH and LH are controlled by a center in the brain called the hypothalamus. The hypothalamus produces a hormone called GnRH, which is released in a pulsatile fashion. This pulsating release of GnRH ultimately regulates testicular function. Disturbances of the release of GnRH in the pituitary itself may result in an inadequate or inappropriate production of FSH and LH, resulting in abnormal testicular function. Laboratory findings can show low FSH and LH levels. These are clues that a problem exists in the higher regulatory centers. Causes for such abnormalities include certain drugs, anorexia nervosa, chronic malnutrition, severe or excessive exercise, tumors, head injuries, or genetic disorders.

Another pituitary hormone, prolactin, if present in high amounts, can interfere with testicular function. This may be caused by pituitary tumors or various medications. The nature of the particular disorder dictates specific evaluation and appropriate therapy. In cases of prolactin-secreting tumors, medical therapy is often effective in reducing the prolactin levels and shrinking the tumor if present. In some cases, however, surgery may be considered. In some patients with normal prolactin levels excess amounts of prolactin may be released in response to stress or to drugs.

THE ADRENAL GLANDS:

The adrenal glands may influence testicular function through the production of male hormones. In some patients the amount of male hormones produced by the adrenal glands is excessive. This may be due to a tumor in the pituitary gland, tumor in the adrenal gland itself or a metabolic disorder. Most commonly the adrenal glands overproduce male hormones due to a metabolic disorder. The cause of this condition is not always clear, but is most likely a genetic problem that might have been present for years. Excessive male hormones may produce a variety of symptoms such as oily skin, acne, or increased body hair growth. This condition can be treated by androgen suppression therapy under the careful watch of an endocrinologist trained in treating this type of disorder.

THYROID DISORDERS:

Both under and over activity of the thyroid gland can lead to low sperm counts. Thyroid hormone levels can affect the metabolisms of male hormones and interfere with the regulation of testicular function. Thyroid disorders can be properly evaluated by the use of specific laboratory tests. The most reliable test of thyroid function is the ultrasensitive TSH assay, which tests the pituitary gland's response to the circulating levels of the thyroid hormone.

SUMMARY:

The regulation of testicular function is complex. Low sperm counts can suggest other underlying diseases. An attempt to improve sperm counts must be preceded by an evaluation for the causes of low sperm counts. Donor insemination is an option for some couples. An appropriate evaluation of these problems requires a specialist in Endocrine Disorders.