

FISH Sperm Analysis

Chromosome Abnormalities In Sperm May Cause Infertility And Recurrent Miscarriage

Although the vast majority of abnormalities originate in the oocyte, it is estimated that 1 in 5 chromosomal abnormalities detected in embryos from infertile couples are the result of abnormalities in spermatozoa commonly referred to as sperm. Often, sperm cells are not genetically examined during infertility treatment. Instead, abnormal sperm have reduced the likelihood of full-term pregnancy and resulted in failed cycles almost entirely in secret. Up until recently, it has not been possible to distinguish chromosomally normal spermatozoa from others that carry abnormalities.

Reprogenetics, the leader in Preimplantation Genetic Diagnosis (PGD), now offers a simple test that assesses the frequency of abnormalities in five chromosomes (X, Y, 13, 18, and 21) in 500 cells. This test can provide patients with important information that can help reduce the likelihood of repeated failed cycles and miscarriages.

Who is a candidate for testing sperm testing?

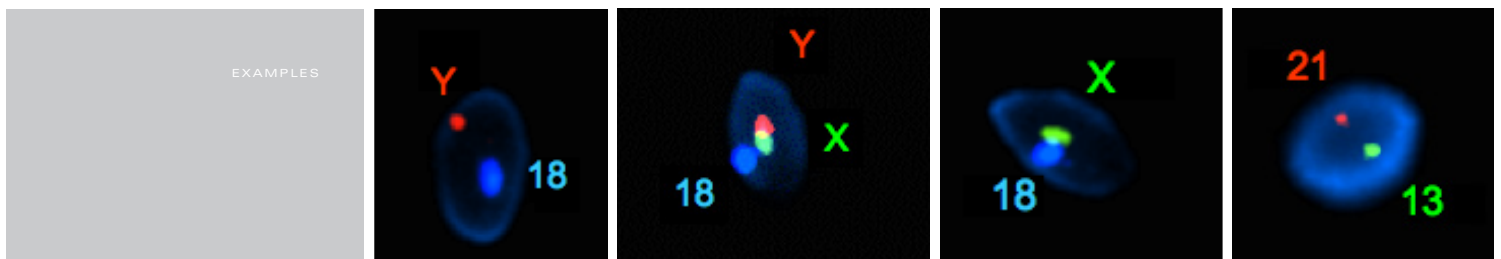
Regular semen analysis only assesses sperm concentration, motility, morphology and vitality, but these parameters have not been definitively linked with chromosome abnormalities. While spermatozoa with chromosomal abnormalities are more frequent in men with severe oligoasthenozoospermia (fresh sperm concentration $< 1 \times 10^6$ /ml, motility $< 30\%$), even men with normal semen parameters can have high rates of abnormalities in their sperm cells. Therefore, sperm cell testing is most appropriate for couples with multiple unexplained losses and men with male factor infertility.

How are chromosomal sperm abnormalities tested?

A semen sample needs to be produced and shipped to Reprogenetics for this analysis. Reprogenetics will assess the frequency of abnormalities in five chromosomes (X, Y, 13, 18 and 21). If the frequency of abnormalities for these chromosomes is significantly higher than the control, the test result will be considered positive. Test results are typically available in less than three weeks.

What should you do if the test is positive?

A positive test result indicates the couple undergoing infertility treatment is more likely to produce chromosomally abnormal embryos. Treatment possibilities include the use of donor sperm with proven fertility, or IVF combined with Preimplantation Genetic Screening (PGS). PGS enables selection and replacement of embryos that are chromosomally normal for the chromosomes tested. For more information on PGS please contact Reprogenetics at 973-436-5004 or clientservices@reprogenetics.com.



KEY WORDS:

ASTHENOZOOSPERMIA: Poor motility in sperm. World Health Organization (WHO) definition is defined as $< 25\%$ rapid motility or $< 50\%$ progression in a semen sample

KARYOTYPE: The characterization of the chromosomal complement of an individual or a species, including number, form, and size of the chromosomes.

MALE FACTOR INFERTILITY: Infertility in men that affects sperm production and maturation. It can result from various factors including endocrine or immunological disorders, infectious diseases (for ex, mumps), environmental factors, genetic diseases and anatomical abnormalities.

OLIGOZOOSPERMIA: Used to describe semen samples with a sperm concentration of $< 20 \times 10^6$ /ml (see severe oligozoospermia).

OOCYTE: Unfertilized gamete or egg obtained from a female.

SEVERE OLIGOZOOSPERMIA: Used to describe semen samples with a sperm concentration of $< 5 \times 10^6$ /ml (see oligozoospermia).

SPERMATOZOEA: Gamete from male that when joined with the oocyte creates an embryo.

Reprogenetics, LLC
3 Regent Street , Suite 301
Livingston, NJ 07039
tel: 973.436.5004
fax: 973.992.1308

Reprogenetics-CA, LLC
400 Oyster Bay Boulevard, Suite 212
South San Francisco, CA 94080
tel: 650.871.4101
fax: 650.871.4125

www.reprogenetics.com