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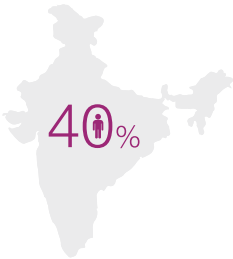
LifeCell Diagnostics

LifeCell Diagnostics' Advanced Male Infertility Test Panel

(Designed to solve the puzzle on infertility in men)



"LifeCell Diagnostics' Advanced Male Infertility Test Panel" is a comprehensively devised test package to detect the presence of all adverse genetic variants leading to male infertility. In India, nearly **10-14%** of the Indian population are affected by infertility, of which male infertility problems account to nearly **40%**[1].

15% of male infertility problems are caused by azoospermia[2]. Investigation of these problems when done thoroughly, based on the symptoms can help in administration of targeted therapy that can treat the real cause. To suffice all the gene based reasons for male infertility and to help in precise diagnosis by the practitioner, our **"Advanced Male Infertility Test Panel"** includes: Y- Chromosomal Microdeletion Test, Chromosomal Analysis & Cystic Fibrosis Transmembrane Conductance Regulator (CFTR) Gene Testing

Tests Included in the Panel:

- Y- Chromosomal Microdeletion Test (YCMDT)
- Chromosomal Analysis
- CFTR Gene Testing

Test Indications

- Low Sperm Count <15 million/ml & increased serum FSH level confirmed by semen analysis
- Couple recommended for Assisted Reproductive Treatment (ART)

Facts About Azoospermia & Male Reproductive Genetic Testing

Y- Chromosome Microdeletion Test	Karyotype + qf-PCR / Chromosomal Microarray Analysis	Cystic Fibrosis Transmembrane Conductance Regulator (CFTR) Gene Testing
• Looks for missing genetic material responsible for spermatogensis on long arm of Y chromosome • Present in approximately 15% of men with non-obstructive azoospermia • Regions: AZFa, AZFb, AZFc & AZFd • Complete microdeletions of AZFa or AZFb: spermatogenesis is absent: sperm extraction procedures should not be pursued • Microdeletions of AZFc: 50% chance of spermatogenesis	• Klinefelter syndrome (47,XXY): Present in 1:500 male births • Accounts for 15% of cases of non-obstructive azoospermia • The clinical "triad": small firm testes, gynecomastia, and azoospermia (may not be uniformly present in all affected patients) • Less common chromosomal anomalies associated with infertility include 46,XX male, chromosomal translocations, mixed gonadal dysgenesis (mosaic 45,X / 46,XY)	• Over 70% of males with congenital bilateral absence of the vas deferens will have at least one CFTR gene mutation • Men harbouring a single copy of a CFTR gene mutation may present with unilateral or bilateral absence of the vas deferens or focal unilateral or bilateral epididymal obstruction • Semen analysis for congenital bilateral absence of the vas deferens: low ejaculate volume, low semem pH (<7.0), azoospermia, negative semen fructose • Cystic Fibrosis (CF) gene mutation testing should be performed on both the male patient and partner, given the risk of CF in offspring with two abnormal gene copies

Preferred Specimen(s)
Whole blood collected in an EDTA tube

A Guide To Fatherhood

LifeCell Diagnostics' YCMD TEST (Y-Chromosome Microdeletion Test)

The major portion of the genetic causes of male infertility are attributed to tiny deletions in the Y chromosome, that controls testicular development and sperm production. Sometimes however, in the natural shuffling of our genetic decks tiny pieces of the Y chromosome get lost which in turn can affect a man's sperm quality.

The Y chromosome is particularly susceptible to micro deletions that cannot be detected by cytogenetic studies such as karyotyping, but require specialized molecular tests such as Advanced YCMD Test.

YCMD Test Panel Recommended by all Professional Organizations:

- American Society for Reproductive Medicine
- European Academy of Andrology
- European Association of Urology
- American Urological Association

Panel Details :

- Panel analyzes four regions of the Y Chromosome – AZFa, AZFb, AZFc and AZFd

Methodology & Advantage

- Multiplexing Real Time PCR using melting curve analysis

Test Indications

To determine the cause of infertility in men with:

- Nonobstructive azoospermia
- Moderate or severe oligospermia

To predict the effectiveness of Assisted Reproductive Technologies in men with specific Y chromosome microdeletions

Tests to Consider

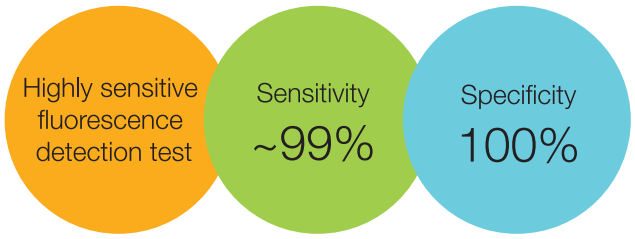
Primary Test

- LifeCell Diagnostics' YCMD Test

Related Test

- LifeCell Diagnostics' Male Infertility Test Panel: YCMD, CMA & CFTR Gene Testing

LifeCell Diagnostics' Advanced YCMD Test Advantage :



Consult With LifeCell's Genetic Clinic About Testing Options

Our Genetic counselors bring value to proper test utilization by making sure the most appropriate test has been ordered after proper understanding and counselling of the affected family.

Our genetic counsellors are available to:

- Support the ordering process
- Provide additional information about testing options
- Offer results interpretation
- Assist with case review and coordination

References:

1. Male infertility problems account to nearly 40% & In India, nearly 10-14% of the Indian population are affected with infertility https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4691969/
2. 15% of male infertility problems are caused by azoospermia https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3583174/

LC/DIA/YCMD/FLY/0518/V001