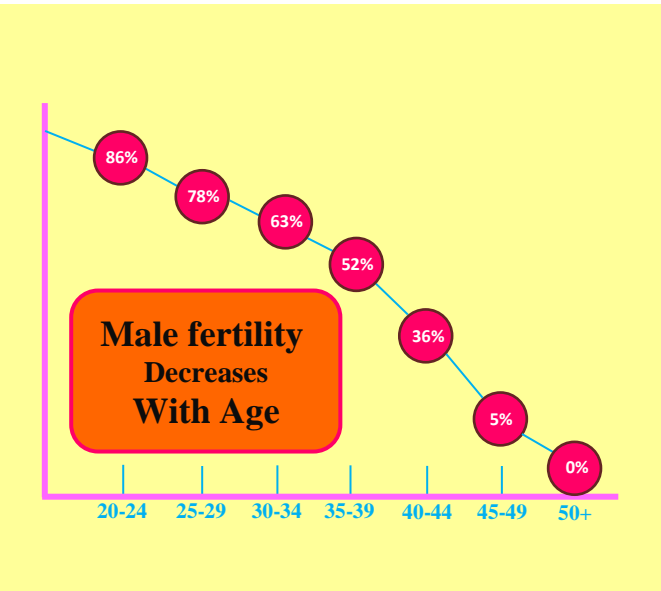
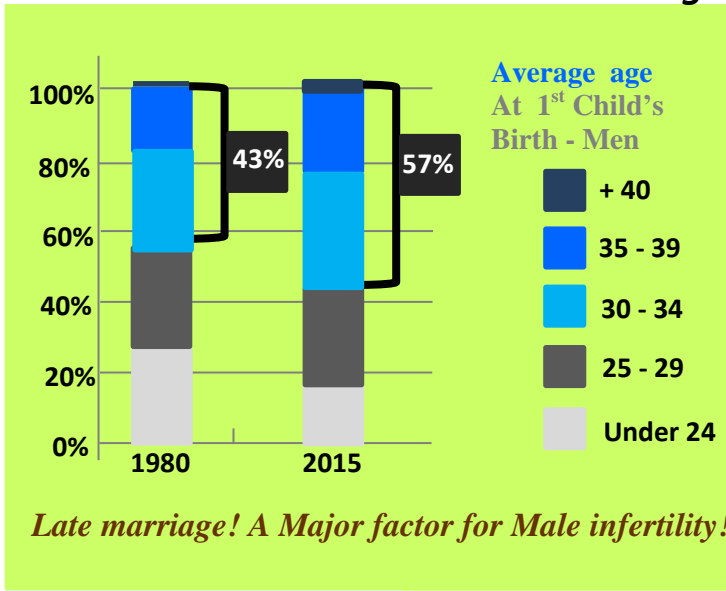


## MALE INFERTILITY-

*His biological clock ticks too!*



### Causes of Male Infertility:

**Male infertility** refers to a male's inability to cause pregnancy in a fertile female. Quality & Quantity of sperm is a surrogate measure of male fecundity.

*Thinking that Male Infertility affects **only to economically & socially weak???** Think Again!!*

**WORLD RENOWNED CELEBRITIES ARE FIGHTING MALE INFERTILITY**

Sperm production problems

Chromosomal or genetic causes  
Undescended testes  
Infections  
Torsion (twisting of the testis in scrotum)  
Varicocele (varicose veins of the testes)

Blockage of sperm transport

Infections  
Prostate-related problems  
Absence of vas deferens  
Vasectomy

Sexual problems (erection and ejaculation problems)

Retrograde and premature ejaculation  
Failure of ejaculation  
Erectile dysfunction  
Infrequent intercourse  
Spinal cord injury

Hormonal problems

Pituitary tumours  
Congenital lack of LH/FSH (pituitary problem from birth)  
Anabolic (androgenic) steroid abuse

Sperm antibodies

Vasectomy  
Injury or infection in the epididymis



**15%** of  Men with low / absent sperm counts suffer from microdeletions

An initiative by:

## Lower limits of the accepted reference values for semen analysis.

Parameter	Reference value
On at least two occasions	
Ejaculate volume	1.5 mL
pH	7.2
Sperm concentration	$15 \times 10^6$ spermatozoa/mL
Total sperm number	$39 \times 10^6$ spermatozoa/ejaculate
Percentage motility	40%
Forward progression	32%
Normal morphology	4% normal
And	
Sperm agglutination	Absent
Viscosity	$\leq 2$ cm thread after liquefaction

Note: Data from World Health Organization, 2010 (10).

## Diagnostic Evaluation of the infertile male<sup>1</sup>

- Semen analysis is corner stone in male infertility diagnosis.
- An endocrine evaluation is indicated for men having:
  - Abnormal semen parameters (particularly when sperm concentration is  $< 10$  million/ml)
  - Impaired sexual function.
- Specialised tests like sperm viability tests, sperm DNA fragmentation tests and Test for Anti-sperm antibodies are also carried out.
- Genetic Screening tests like Cystic fibrosis gene mutations, Karyotypic abnormalities, Y chromosome microdeletions can be performed.

## Basal hormone levels in various clinical states.

Clinical condition	FSH	LH	T	PRL
Normal spermatogenesis	Normal	Normal	Normal	Normal
Hypogonadotropic hypogonadism	Low	Low	Low	Normal
Abnormal spermatogenesis <sup>a</sup>	High/normal	Normal	Normal	Normal
Complete testicular failure/hypergonadotropic hypogonadism	High	High	Normal/low	Normal
PRL-secreting pituitary tumor	Normal/low	Normal/low	Low	High

<sup>a</sup> Many men with abnormal spermatogenesis have a normal serum FSH, but a marked elevation of serum FSH is clearly indicative of an abnormality in spermatogenesis.

- Cystic fibrosis (CF):
- It is a fatal autosomal-recessive disorder.
  - All men with clinical CF exhibit CBAVD.
  - Prevalence of CFTR mutation is increasing among men with azoospermia.

## GENETIC EVALUATION SHOULD BE CONSIDERED<sup>2</sup>

### Karyotyping:

- Frequency of chromosomal abnormalities is 10-15% in azoospermic men.
- 5% in severe oligospermic men
- 1% in normal fertile men.

Klinefelter syndrome account for 2/3<sup>rd</sup> of all chromosomal abnormalities in infertile men.



### Y chromosome micro deletion found in

- 7% of infertile men
- 2% of fertile men
- 16% in azoospermic and severe oligospermic men

Sperm DNA aneuploidy (FISH) reveal that men with the highest risk of sperm aneuploidy are those with karyotypic abnormalities, severely abnormal sperm morphology and non-destructive azoospermia.

## TESTS OFFERED BY METROPOLIS HEALTHCARE LTD. FOR MALE INFERTILITY

Infertility Profile - Male	Sperm antibody-Total
Karyotyping by G-banding	Sperm DNA fragmentation
Y chromosome Microdeletion Analysis	Routine examination - semen
Aneuploidy - Sperm	Cystic fibrosis
Genetic counselling	FSH-LH-Prolactin-Testosterone