



**TRAINING ON
INFERTILITY AND ASSISTED
REPRODUCTION
AT KAIRUKI GREEN IVF**

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INFERTILITY(A BASIC OVERVIEW)

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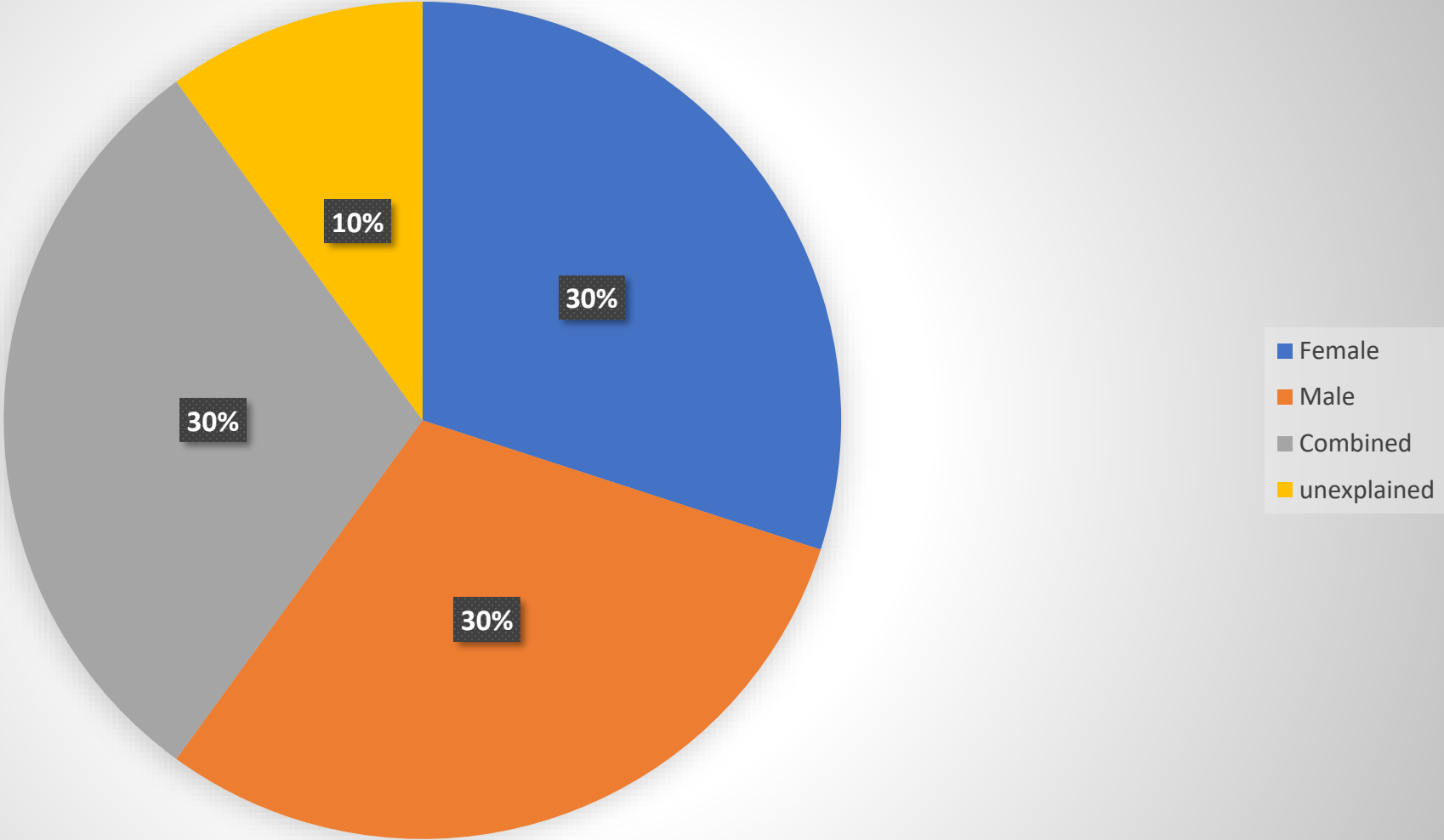
Learning objectives

- Define infertility
- Describe types of infertility
- Understand causes and risk factors of infertility
- Management and treatment options of infertility
- Conclusion

Introduction

- Infertility is defined as the incapacity to fulfill pregnancy after a reasonable time (>1yr) of sexual intercourse with no contraceptive measures taken.
- Infertility was recently declared a “disease“ as per WHO guidelines and around 17.5% of the adult population roughly 1 in 6 worldwide experience infertility
- Fecundability is the likelihood of conception occurring with one cycle of appropriately timed mid-cycle intercourse. With the female partner age 20, the fecundity rate is 20%. By age 35, the rate drops to 10%.
- Infertility is rarely absolute so the term subfertility may be more appropriate. About 84% of couples would conceive within 1 year of trying for pregnancy another 8% would conceive in the in the next year giving a cumulative pregnancy rate of 92% at the end of 2 years.
- The single most important determinant of a couple’s infertility is the age of female partner. At the age of upto 25yrs CCR(cumulative conception rate) is 60% and 85% at 6 months and 1 yr respectively and at the age of 35yrs or more CCR is 60% and 85% at 1yr and 2 yrs respectively.
- Effect of age on male fertility however is less clear. Any change in the prevalence of subfertility in recent years is a difficult question to answer however male fertility is DECLINING

Prevalance of Infertility

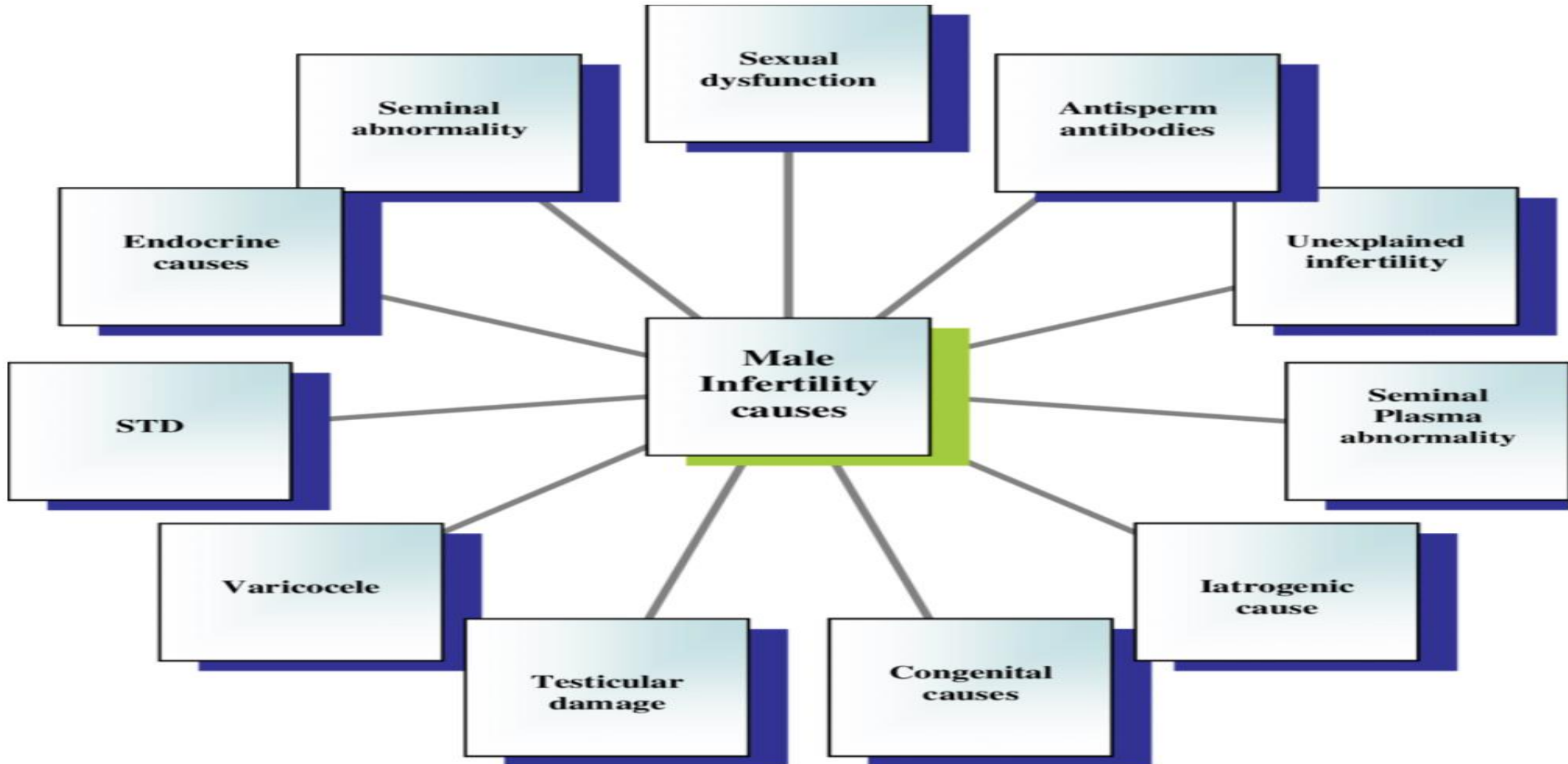


Types of infertility

Infertility can be categorized into two different types that is;

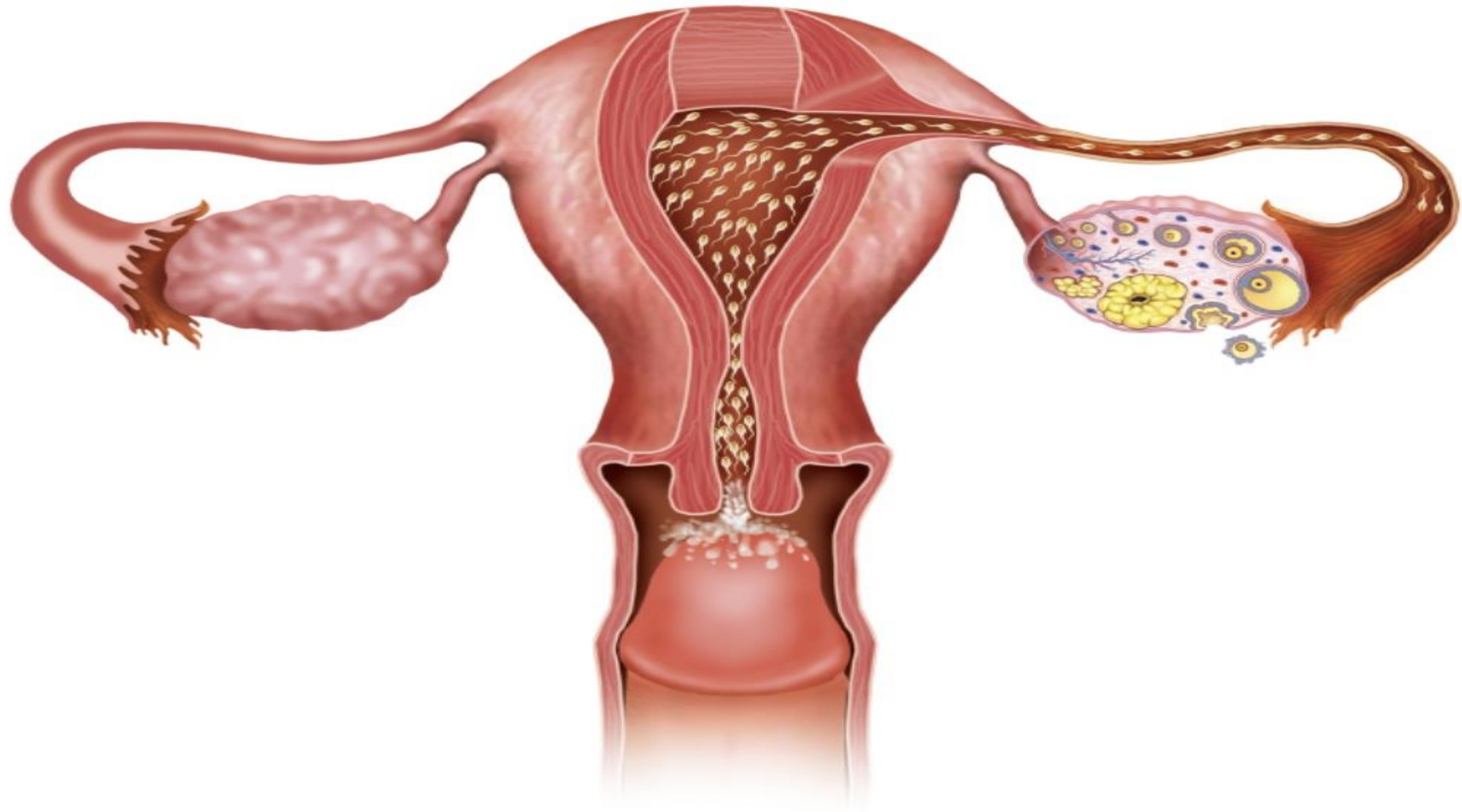
- **Primary infertility:** You've never been pregnant and can't conceive after one year (or six months if you're 35 or older) of regular, unprotected sexual intercourse.
- **Secondary infertility:** inability of getting pregnant again after having at least one successful pregnancy.
- **Unexplained infertility;** Fertility testing hasn't found a reason that a person or couple is unable to get pregnant. It should only be diagnosed after following conditions are satisfied;
 - Ovulation is established
 - Tubes are patent with adequate sperm cervical mucus interaction
 - No endometriosis or adnexal adhesions
 - No intrauterine pathology
 - Male partner has demonstrated normal spermatogenesis

Causes of Infertility



Female Infertility

- For a successful pregnancy, each step of the human reproductive process must occur correctly. These stages include:
 1. Ovulation, where an ovary releases an egg.
 2. The egg is picked up by the fallopian tube.
 3. Sperm swims through the cervix, uterus, and fallopian tube to reach the egg.
 4. Fertilization occurs when a sperm penetrates the egg's outer layer.
 5. The fertilized egg moves through the fallopian tube to the uterus.
 6. The fertilized egg (embryo) implants in the uterine wall and develops.



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Various factors can disrupt these stages, leading to female infertility. Some common causes include:

1. Ovulation Problems

- Ovulation is a crucial part of the monthly menstrual cycle when an ovary releases an egg. Hormones control this process. Conditions that can lead to ovulation issues include:
- Polycystic ovary syndrome (PCOS)
- Hypothalamic dysfunction
- Primary ovarian insufficiency
- Elevated prolactin levels

2. Fallopian Tube Damage

- Damaged or blocked fallopian tubes can prevent sperm from reaching the egg or block the fertilized egg's path to the uterus. Causes include pelvic inflammatory disease and surgical history.

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3. Uterine or Cervical Issues

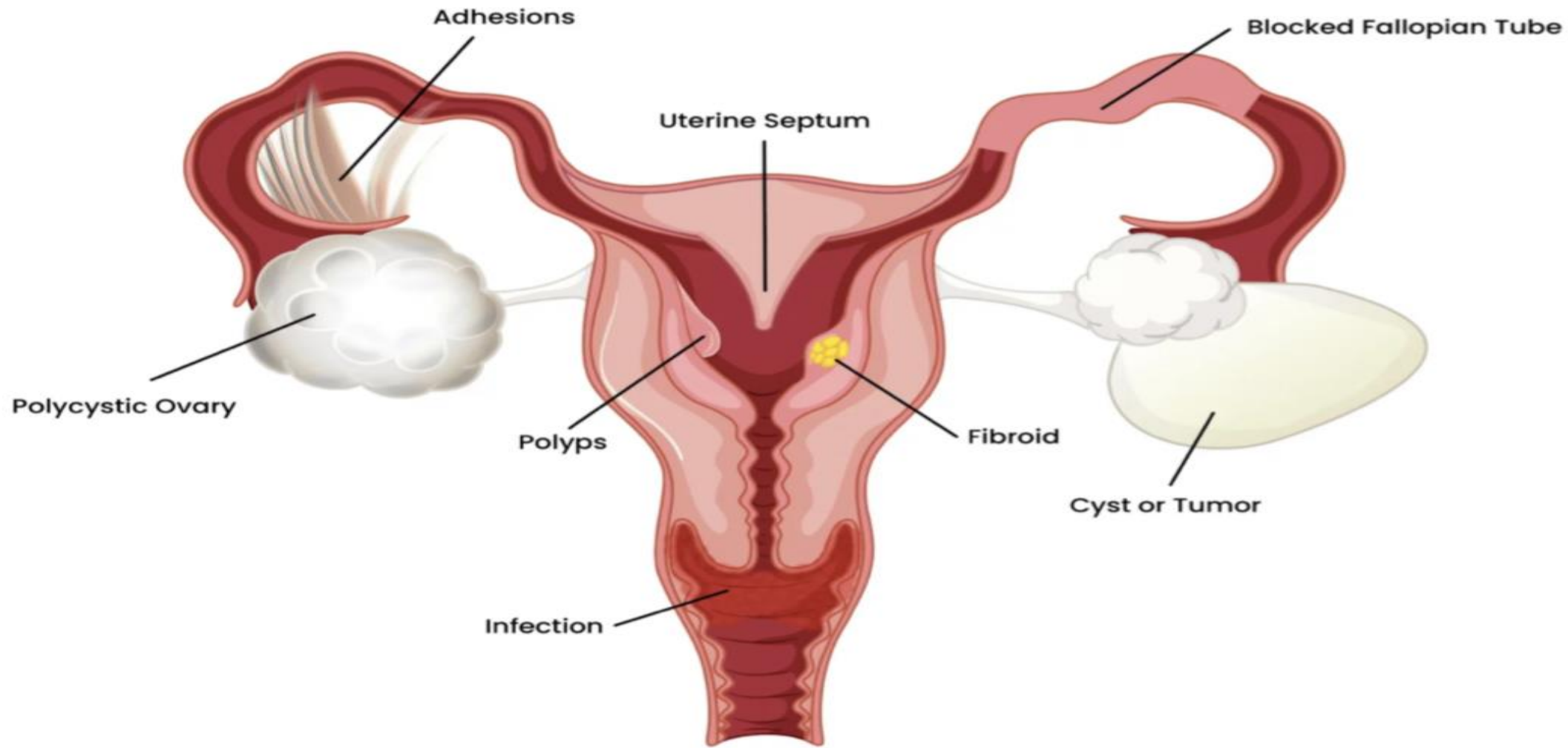
- Problems within the uterus or cervix can hinder implantation or increase the risk of miscarriage. These issues can include uterine polyps, congenital abnormalities, and cervical stenosis.

4. Endometriosis

- Endometriosis is a condition where tissue similar to the uterine lining grows outside the uterus. It can lead to pain and scarring that may affect fertility.

5. Unexplained Infertility

- In some cases, the exact cause of infertility remains unknown. It might be due to a combination of minor factors. However, proper medical evaluation and treatment are recommended regardless.

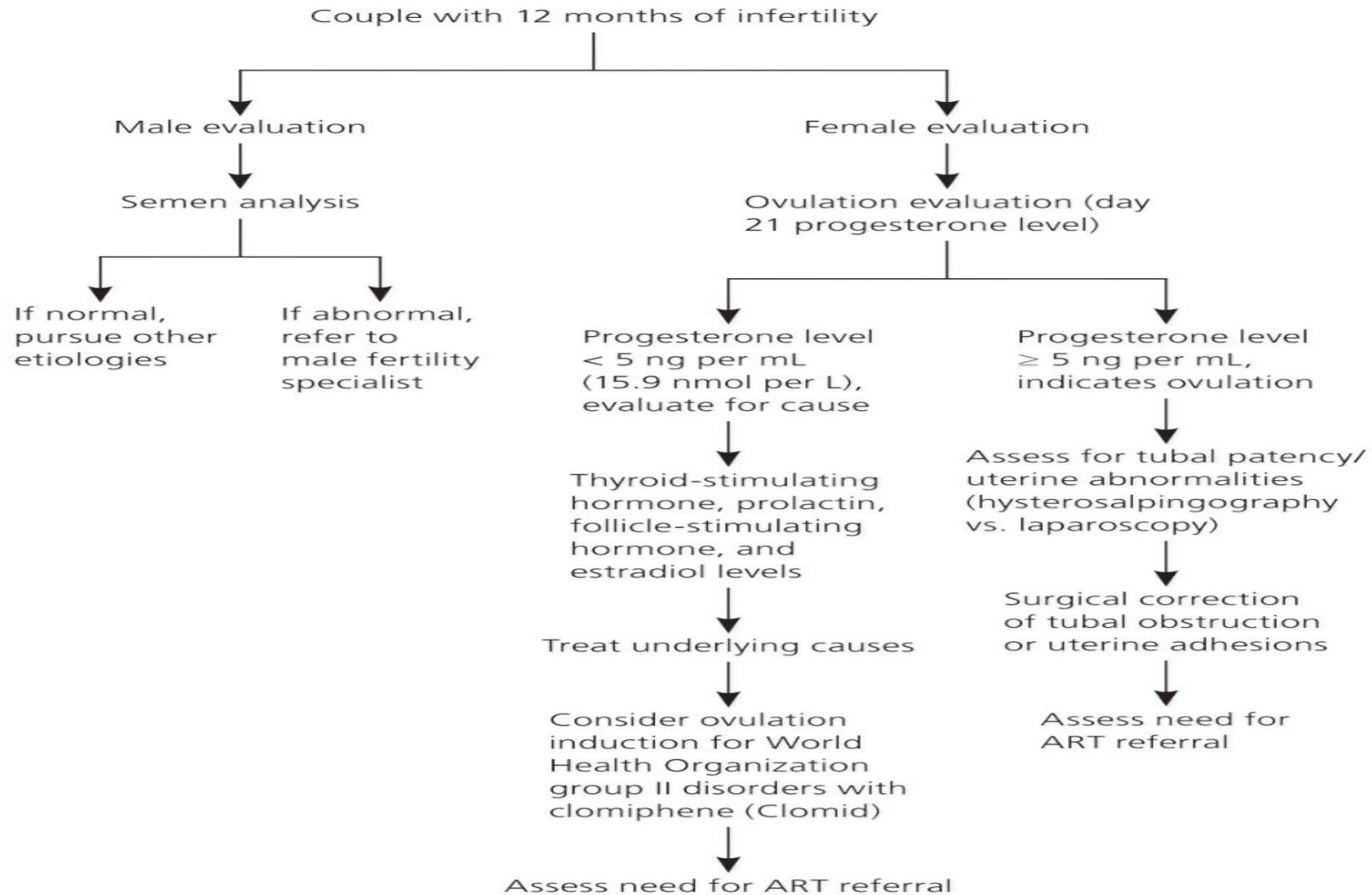


Risk factors of infertility

Many of the risk factors for both male and female infertility are the same. They include:

- Age.
- Tobacco use.
- Alcohol use.
- Being overweight.
- Being underweight.
- Exercise issues.
- Occupation

Management of infertile couple



Algorithm for infertility evaluation. (ART = assisted reproductive technology.)

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- With ART, the process of sexual intercourse is bypassed either by artificial insemination or fertilization of the oocytes in the laboratory environment (i.e., in vitro fertilization)
- ART to include "all fertility treatments in which both eggs and sperm are handled
- In general, ART procedures involve surgically removing eggs from a woman's ovaries, combining them with sperm in the laboratory, and returning them to the woman's body or donating them to another woman."
- According to CDC, "they do not include treatments in which only sperm are handled (i.e., intrauterine—or artificial—insemination) or procedures in which a woman takes medicine only to stimulate egg production without the intention of having eggs retrieved.
- ART techniques majorly include conventional IVF and ICSI
- Treatment plan of the infertile couple depends upon the cause of infertility after thorough investigation is being conducted.

Take home message

- Female and male factors are equally responsible for infertility. **DO NOT IGNORE MALE FACTOR**
- Thorough investigation is to be done so as to provide best treatment to the couple and maximise their chances of achieving parenthood the **EARLIEST**.
- Counselling on the outcome of fertility treatment should be discussed in detailed prior to recruiting a couple for any ART technique
- The patient/client is **ALWAYS RIGHT** as a specialist in the fertility field always do your best to satisfy their doubts/needs.
- Always **CUSTOMISE/INDIVIDUALISE** the treatment protocol for each client so as to maximise chances of success since one shoe size doesn't fit all.

References

- Textbook of infertility by Kamini Rao
- Infertility journal by Marck Felliz
- WHO 5th manual edition for semen analysis 2021



Thank you

