

26. Reproductive Health

1. Introduction

According to the World Health Organisation (WHO), reproductive health means a total well-being in all aspects of reproduction, i.e., physical, emotional, behavioural and social. Reproductive health refers to the diseases, disorders and conditions that affect the functioning of the male and female reproductive systems during all stages of life. This implies that men and women ought to be informed of and to have access to safe, effective, affordable and acceptable methods of birth control; also access to appropriate health care services of sexual, reproductive medicine and implementation of health education programs to stress the importance of women to go safely through pregnancy and child birth could provide couples with the best chance of having a healthy infant.

2. Reproductive Health- Problem and Strategies

2.1. Reproductive Health- Problem

- Main problem of India is its excess population which is directly connected with reproductive health.
- Early child bearing can have health risk for women and their infants.
- A girl before 18 years of age is not matured with respect to her reproductive system to bear a child.
- Early marriages lead to several diseases in mothers. Deformities are common in children of early marriages.
- Maternal Mortality Rate and Infant Mortality Rate are also high in early marriages.
- Sexually transmitted diseases occur in early marriages due to lack of proper knowledge of reproductive organs.

2.2. Reproductive Health- Strategies

To achieve total reproductive health, some plans and programmes were started. Family planning programme was initiated in 1951 and was periodically assessed. These programmes were popularly named Reproductive and Child Health Care (RCH) programmes. The major tasks carried out under these programmes are :

- (1) To provide facilities and support for building up a reproductively healthy society.
- (2) To create awareness among the people about various reproductions related aspects.
- (3) With the help of audio-visual and the print-media governmental and non-governmental agencies have taken various steps to create awareness among the people about reproduction-related aspects. Parents, other close relatives, teachers and friends, also have a major role in the dissemination of the above information.
- (4) Sex education in schools should also be introduced and encouraged to provide right information about myths and misconceptions about sex-related aspects.
- (5) Fertile couples and people of marriageable age group should know about available birth control devices, care of pregnant mothers, postnatal (after birth) care of the mother and child, importance of breast feeding, equal importance for the male and female child, etc.
- (6) Awareness of problems due to uncontrolled population growth, social evils like sex abuse and sex-related crimes, etc. need to be created so that people should think and take up necessary steps to prevent them and thereby build up a reproductively healthy society.
- (7) For successful action plans to attain reproductive health requires good infra structural facilities, professional expert knowledge and material support. These are necessary to provide medical help and care for reproduction related problems like menstrual problems, infertility, pregnancy, delivery, contraception, abortions, and sexually transmitted diseases (STDs), etc. Implementation of better techniques and new strategies are also required to provide better care and to help people for reproductive health.
- (8) **Amniocentesis** is a foetal sex determination and disorder test based on the chromosomal pattern in the amniotic fluid surrounding the developing embryo. It is being used to kill the normal female foetus. It is legally banned for the determination of sex to avoid female foeticide.
- (9) Research in reproductive health area should be encouraged and supported to find out new methods. "Saheli" a new oral contraceptive for the females was developed by our scientists at Central Drug Research Institute (CDRI) in Lucknow, India.

3. Human Population Growth

Growth is usually thought of as a linear process: an increase by a constant amount over a period of time. The new amount is not influenced by the amount already present. For exponential growth, when cells divide, there will be a constant doubling of the cells already present. In terms of population growth, the numbers of people already present always influences the number of children born in any country. It is however not a simple matter of a constant doubling of the amount. Other factors, such as fertility and mortality rates, influence population growth, and the sex and age of people already present, and rational decisions influence whether or not people will actually have one or more children. This can be represented as follows:

Population growth = birth rates – death rates.

Global human population growth amounts to be around 83 million annually, or 1.1% per year.

3.1. Population Explosion

The tremendous increase in size and growth of population is called population explosion. The world population which was around 2 billions (2000 million) in 1900 rocketed to about 6 billions by 2000. A similar trend was observed in India too. Our population which

was approximately 350 million at the time of our independence reached close to the billion marks by 2000 and crossed 1 billion in May 2000. That means, every sixth person in the world is an Indian.

(1) Factors favouring population explosion are :

- Better medical facilities.
- Decline in death rate.
- Decline in maternal mortality rate and infant mortality rate.
- Better nutrition and life amenities.
- Increase in number of people in reproductive age.
- Lack of education in developing countries.
- Lack of entertainment and gainful employment in under-developed countries.
- Early marriage, child labour.
- Desire of male child, traditional religious beliefs.

(2) Consequences of over population

Over population leads to a number of not only national but also individual problems. Some of them are described below :

- It increases poverty in the family as well as in the country.
- If the production of food does not increase it will lead to a shortage of food supply.
- Rapid increase in population leads to unemployment and educational problem.
- It is very difficult to provide house for everyone in case of rapid increase in population.
- Over population causes eco-degradation in more than one way, such as rise in pollution, unhygienic condition and deforestation, etc.
- Increase in population has created energy crisis. The demand of fuel wood, oil, gas, coal and electricity is increasing.

According to the 2001 census report, the population growth rate was still around 1.7 percent i.e., 17/1000/year, a rate at which our population could double in 33 years. Such an alarming growth rate could lead to an absolute scarcity of even the basic requirements. Therefore, the government was forced to take up serious measure to check this population growth rate.

4. Method of Birth Control

Birth control refers to restricting the number of children by various methods designed to control fertility and prevent conception. This can be done by following methods.

4.1. Birth control methods

- People, particularly those in the reproductive age group, should be educated about the advantages of a small family.
- Raising the age of marriage is more effective means to control the population (now marriageable age of female is 18 Years and that of male is 21 years).
- By using contraceptive methods (birth control methods). Contraceptive methods are preventive methods to help woman avoid unwanted pregnancies. An ideal contraceptive should be user-friendly, easily available, effective and reversible with no or least side-effects. It should also in no way interfere with the sexual drive, desire and/or the sexual act of the user. The contraceptive methods are of following types :

4.2. Natural methods

These methods avoid meeting of sperm and ovum and include periodic abstinence, coitus interrupts and lactational amenorrhea.

- (1) **Periodic abstinence** is one such method in which the couples avoid or abstain from coitus from day 10 to 17 of the menstrual cycle when ovulation could be expected. As chances of fertilization are very high during this period, it is called the fertile period. Therefore, by abstaining from coitus during this period, conception could be prevented.
- (2) **Withdrawal or coitus interrupts** involves withdrawal of the penis by the male before ejaculation so that semen is not deposited in the vagina and there is no fertilization.
- (3) **Lactational amenorrhea** (absence of menstruation) method is based on the fact that there is no menstrual cycle, and therefore, ovulation, does not occur during intense lactation following parturition. However, this method is effective only up to maximum period of six months after child birth. As no medicines or devices are used in these methods, side effects are almost nil. Chances of failure, though, of these methods are also high.

4.3. Barrier methods

In these methods, ovum and spermatozoa are prevented from coming closer with the help of barriers so that fertilization does not occur. These methods are available for both male and female.

- (1) **Condoms** are barriers made of thin rubber latex sheath to cover erect penis in male or vagina and cervix in female, just before coitus so that the ejaculated semen would not enter into the female reproductive tract. This can prevent conception. 'Nirodh' is a popular brand of condom for the male. Condoms also have an additional benefit of protecting the user from contracting STDs and AIDS. The condoms are disposable, can be self-inserted and thereby give privacy to the user.
- (2) **Diaphragm, cervical cap and vaults** are rubber covers that are fitted on the cervix in the female's vagina, which check the entry of sperms into the uterus. They are reusable. Spermicidal creams, jellies and foam are usually used along with these barriers to increase their contraceptive efficiency.

(3) **Intra Uterine Devices (IUDs)** Intra uterine devices are plastic or metal objects placed in the uterus through vagina by a doctor or expert nurse. These intra uterine devices are presently available as the non-medicated IUDs (e.g., Lippes loop), copper releasing IUDs (CuT, Cu7, Multiload 375) and the hormone releasing IUDs (Progestasert, LNG-20).

- They prevent the fertilization of the egg or implantation of the embryo. IUDs increase phagocytosis of sperms within the uterus and the Cu ions released alter the biochemical composition of cervical mucus, and thus affects sperm motility, capacitation and survival.
- Hormone releasing devices increases the viscosity of the cervical mucus and thereby prevents sperm from entering the cervix. They also make the uterus unsuitable for implantation. IUDs are one of the most widely accepted methods of contraception in India.

4.4. Oral contraceptives

(1) **Birth control pills** (oral contraceptives) check ovulation by inhibiting the secretion of follicle-stimulating hormone (FSH) and luteinizing hormone (LH) that are necessary for ovulation. These pills contain progestogens or progestogen – estrogen combinations. Pills have to be taken daily for a period of 21 days starting preferably within the first five days of menstrual cycle. After a gap of 7 days (during which menstruation occurs) it has to be repeated in the same pattern till the female desires to prevent conception. They inhibit ovulation and implantation as well as alter the quality of cervical mucus to prevent/retard entry of sperms.

Saheli contains a non-steroidal preparation and is taken once a week after an initial intake of twice a week dose for 3 months. It has a high contraceptive value with very little side effects.

(2) **Injections and implants** Progestogens alone or in combination with estrogen can also be used by females as injections or implants under the skin. Injection is given once every 3 months, that releases hormone slowly and prevents ovulation. They are convenient and highly effective with no serious side effects. Implants under the skin or subcutaneous implants are six match stick-sized capsules containing the steroids. They are inserted under the skin of the inner arm above the elbow. The capsules slowly release the synthetic progesterone for about five years. Minor surgical procedure is needed for insertion and removal. It is very safe, convenient, effective, and long-lasting (5 years). The woman has irregular periods or periods may be absent.

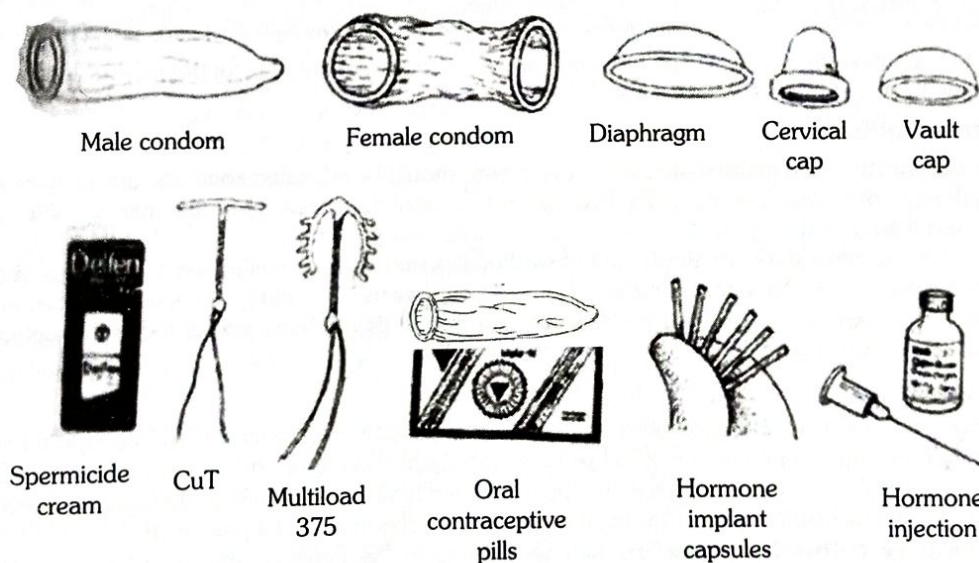


Figure : Some commonly used contraceptive devices

(3) **Morning after pills** Implantation can also be checked by so-called morning after pills, also known as emergency contraceptive. The first term is actually a misnomer because these pills can prevent pregnancy if taken within 72 hours, not just the morning after unprotected sexual intercourse. The most common form of emergency contraceptive is a kit consisting of a high dose of birth control pills. These kits are for emergency use only, for instance, if a condom breaks or in the case of rape.

(4) **Surgical / Sterilization methods** - Surgical intervention blocks gamete

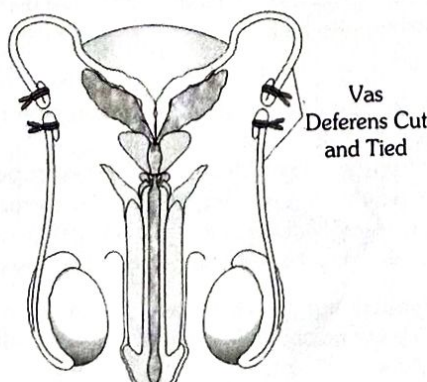


Figure : Vasectomy

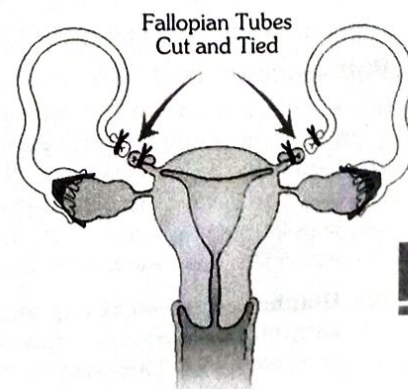


Figure : Tubectomy

transport and thereby prevents conception. It is called vasectomy in man and tubectomy in woman. Vasectomy involves removing or tying up of vas deferens through a small incision on the scrotum. Tubectomy involves removal or tying up of Fallopian tube through a small incision in the abdomen or through vagina. These techniques are highly effective but their reversibility is very poor.

It needs to be mentioned here that the selection of a suitable contraceptive method and its use should always be undertaken in consultation with qualified medical professionals. No doubt, the widespread uses of these methods have a significant role in checking uncontrolled growth of population. However, their possible ill-effects like nausea, abdominal pain, breakthrough bleeding, irregular menstrual bleeding or even breast cancer, though not very significant, should not be totally ignored.

5. Medical Termination of Pregnancy (MTP)

Medical termination of pregnancy or abortion is the intentional or voluntary termination of pregnancy before the foetus becomes viable. Certain pills act as abortants. They function by inducing menstruation which checks the implantation of the zygote or detaches the implanted egg.

MTP has a significant role in decreasing the population though it is not meant for that purpose. Government of India legalised MTP in 1971 with some strict conditions to avoid its misuse. Such restrictions are all the more important to check indiscriminate and illegal female foeticides which are reported to be high in India. MTP is done to get rid of unwanted pregnancies either due to casual unprotected intercourse or failure of the contraceptive used during coitus or rapes. MTPs are also essential in certain cases where continuation of pregnancy could be harmful or even fatal either to the mother or to the foetus or both. MTPs are considerably relatively safe during the first trimester, i.e., upto 12 weeks of pregnancy.

6. Sexually Transmitted Diseases (STDs)

Sexually transmitted diseases or reproductive tract infections (RTI) or venereal disease (VDs) are the diseases or infections which are transmitted through sexual intimacy. e.g., gonorrhea, syphilis, genital herpes, genital warts, trichomoniasis, hepatitis B and AIDS.

Some of these infections like Hepatitis B and HIV can also be transmitted from one person to another by sharing of injection needles, surgical instruments etc., transfusion of blood or from an infected mother to the foetus too.

1. **Gonorrhea** is caused by diplococcus bacterium, *Neisseria gonorrhoeae*. The bacterium passes into genital tubes, forms pus containing discharge, pain over genitalia and burning during urination.
 2. **Trichomoniasis** is due to tetraflagellate protozoan called *Trichomonas vaginalis*. In females it causes foul smelling vaginitis with yellowish discharge, vulvar erythema and burning dysuria. In males, the pathogen produces urethritis, epididymitis, prostatitis and burning dysuria.
 3. **Genital warts** is caused by *Human Papilloma virus* (HPV). It produces warts over the skin, external genitalia and perianal area. Genital herpes is caused by *Herpes simplex virus*. There are vesiculopustular lesions and then clusters of reddish ulcers over external genitalia and perianal areas, swelling of inguinal lymph nodes, itching, pain, vaginal and urethral discharges, dysuria and headache.
 4. **Syphilis** is caused by spirochaete *treponema pallidum*. An infectious but painless primary ulcer or chancre develops on the genitals. Lymph nodes swell up. Soon the primary ulcer heals up. Skin lesions, rashes, swollen joints and flu-like illness, and hair loss occur in the secondary stage. In tertiary stage chronic ulcers develop on nose, lower leg a palate. Damage to internal organs also occurs.
 5. **AIDS** is caused by human immunodeficiency virus (HIV). The symptoms of AIDS include fever, lethargy, pharyngitis, weight loss, nausea, headache, rashes, etc. Because HIV attacks helper T lymphocytes, the patient gets immune deficiency and he/she is unable to protect himself/herself against infections.
 6. **Hepatitis B** is caused by hepatitis B virus (HBV). Its symptoms include fatigue, jaundice (yellowing skin), persistent low grade fever, rash and abdominal pain. It can cause cirrhosis and possibly liver cancer.
- All these diseases except hepatitis B, genital herpes and AIDS, are completely curable if detected early and treated properly. Absence or less significant symptoms in the early stages of infection and the social stigma attached to the STDs, deter the infected persons from going for timely detection and proper treatment. This could lead to complications later, which include pelvic inflammatory diseases (PID), abortions, still births, ectopic pregnancies, infertility or even cancer of the reproductive tract. STDs can be prevented by the following ways :
- (1) Use condoms during coitus.
 - (2) Do not have sex with unknown partners/multiple partners.
 - (3) In case of doubt, go to a qualified doctor for early detection and get complete treatment if diagnosed with disease.

7. Infertility

A large number of couples are infertile. It means that they are unable to produce children in spite of unprotected sexual activities. Thus inability to conceive or produce children in spite of unprotected sexual cohabitation is called infertility.

The World Health Organization defines Infertility as "a disease of the reproductive system defined by the failure to achieve a clinical pregnancy after 12 months or more of regular unprotected sexual intercourse (and there is no other reason, such as breastfeeding or postpartum amenorrhea). Primary infertility is infertility in a couple who have never had a child. Secondary infertility is failure to conceive following a previous pregnancy. Infertility may be caused by infection in the man or woman, but often there is no obvious underlying cause. There are many reasons for this. These reasons may be physical, immunological or even psychological. In India, often the female is blamed for the couple being childless, but more often than not, the problem lies in the male partner.

7.1. Infertility in men

Infertility in men can be caused by different factors and is typically evaluated by a semen analysis. A specialist will evaluate the number of sperm (concentration), motility (movement), and morphology (shape). A slightly abnormal semen analysis does not mean that a man is necessarily infertile. Instead, a semen analysis helps determine if and how male factors are contributing to infertility.

7.2. Infertility in women

Infertility in women can be caused by different factors : The ability to conceive starts to fall around the age of 32 years. Smoking significantly increases the risk of infertility in both men and women, and it may undermine the effects of fertility treatment. Smoking during pregnancy increases the chance of pregnancy loss. Passive smoking has also been linked to lower fertility. Any amount of alcohol consumption can affect the chances of conceiving. Being obese or overweight can increase the risk of infertility in women as well as men. If an eating disorder leads to serious weight loss, fertility problems may arise. A lack of folic acid, iron, zinc, and vitamin B-12 can affect fertility. Women who are at risk, including those on a vegan diet, should ask the doctor about supplements. Both too much and too little exercise can lead to fertility problems. Sexually transmitted infections (STIs) i.e. Chlamydia can damage the fallopian tubes in a woman and cause inflammation in a man's scrotum. Some other STIs may also cause infertility. Exposure to some chemicals such as pesticides, herbicides, metals, such as lead, and solvents have been linked to fertility problems in both men and women. A mouse study has suggested that ingredients in some household detergents may reduce fertility. Mental stress may affect female ovulation and male sperm production and can lead to reduced sexual activity.

Specialized infertility clinics can help in diagnosis and proper treatment of some of these disorders and enable these couples to have children. However, where such diagnosis and treatment are not possible, the couples can be assisted to have children through certain special techniques called the assisted reproductive technologies (ART).

8. Assisted reproductive technologies (ART).

8.1. Test tube baby programme

In this method, ova from the wife/donor female and sperms from the husband/donor male are induced to form zygote in the laboratory. The zygote is allowed to divide forming 8 blastomeres. The zygote or early embryo is transferred into the Fallopian tube (ZIFT-Zygote Intra Fallopian Transfer). If the embryo is with more than 8 blastomeres it is transferred into the uterus (IUT-Intrauterine Transfer) to complete its further development. Thus this is *in vitro* fertilization (IVF- fertilization outside the body in almost similar conditions as that inside the body) followed by embryo transfer (ET).

Embryo formed by *in vivo* fertilization (fusion of gametes within the female) can also be used for such transfer. Implantation of embryo takes place in the uterus where it develops into a foetus which forms a child. The mother will give birth to a normal child on the completion of gestation. This is test tube baby to assist those females who cannot conceive.

8.2. Artificial Insemination Technique (AIT)

Infertility in male is either due to inability of male partner to achieve an erection of penis to inseminate the female or due to very low sperm count in the semen. This can be corrected by artificial insemination technique (AIT). In artificial insemination the semen collected either from the husband or a healthy donor is artificially introduced either into the vagina or into the uterus (IUI- Intrauterine insemination) of the female.

8.3. Gamete Intra Fallopian Transfer (GIFT)

Transfer of an ovum collected from a donor into the Fallopian tube of another female who cannot produce ova but can provide proper environment for fertilization and further development is another method.

8.4. Intra Cytoplasmic Sperm Injection (ICSI)

Intra-cytoplasmic sperm injection (ICSI) is a technique, in which a sperm is directly injected into the ovum to form the zygote and then an embryo in the laboratory. The embryo is later transferred by ZIFT or IUT in woman.

All these techniques require extremely high precision handling by specialized professionals and expensive instrumentation. Obviously their benefits is affordable to only a limited number of people. Emotional, religious and social factors are also deterrents in the adoption of these methods.

In India we have so many orphaned and destitute children, who would probably not survive till maturity, unless taken care off. Our laws permit legal adoption and it is as yet, one of the best methods for couples looking for parenthood.

Important-

World health organization (WHO) set up in Geneva (Switzerland) on 7 April 1948 with the aim of attaining highest possible level of health for all people.

Govt. of India enforced the Pre-natal Diagnostic Techniques (Regulation and Prevention of Misuse) Act., 1994, since January 1, 1994 under which all genetic counselling centers and laboratories are required to apply for registration.

Depo medroxyprogesterone acetone (DMPA) and Nor-ethiosterone enantate (NET-EN); are two injectable hormonal contraceptives. December 1 – World AIDS Day.

NACO (National AIDS Control Organisation) was established in 1992.

Vitamin E maintains normal functioning of reproductive organs hence vitamin E is also called antisterility vitamin.

Manganese is important for normal reproduction. Its deficiency causes infertility.

The first test tube baby Louise Joy Brown, was born to Lesley and Gilbert Brown on July 25, 1978, in Oldham, Lancashire, England by the help of Dr. Patrick Steptoe and Dr. Robert Edwards. Later on test tube babies were also born in other countries.

India's first test tube baby was born on August 6, 1986, at K.E.M. Hospital, Mumbai. Her name is Kum Harsha. The credit for India's first test tube baby goes to Dr. Indra Hinduja.

26. Reproductive Health – Multiple Choice Questions

1. Reproductive Health

- If India's population is increasing at the rate of 13.6 million per year, then what percentage of total increase in world's population in one calendar year is contributed by the Indians
(a) 10% (b) 17%
(c) 15% (d) 20%
- The term 'Health' is defined in many ways. The most accurate definition of the health would be
(a) Health is the state of body and mind in a balanced condition
(b) Health is the reflection of a smiling face
(c) Health is a state of complete physical, mental and social well-being
(d) Health is the symbol of economic prosperity
- 'Sex ratio' means
(a) Number of males/1000 females
(b) Number of females/1000 males
(c) Both
(d) None
- According to the last census (2001), the state to show poorest sex ratio is
(a) Kerala (b) U.P.
(c) West Bengal (d) Haryana
- What is the full form of RCH
(a) Reproduction and Child Health Care
(b) Reproduction, Contraception and Health
(c) Reproductive and Child Health
(d) None
- When environmental conditions are non-limiting what will happen
(a) Maximum mortality and minimum natality
(b) Mortality minimum
(c) Natality minimum
(d) Mortality maximum

2. Sexually Transmitted Disease

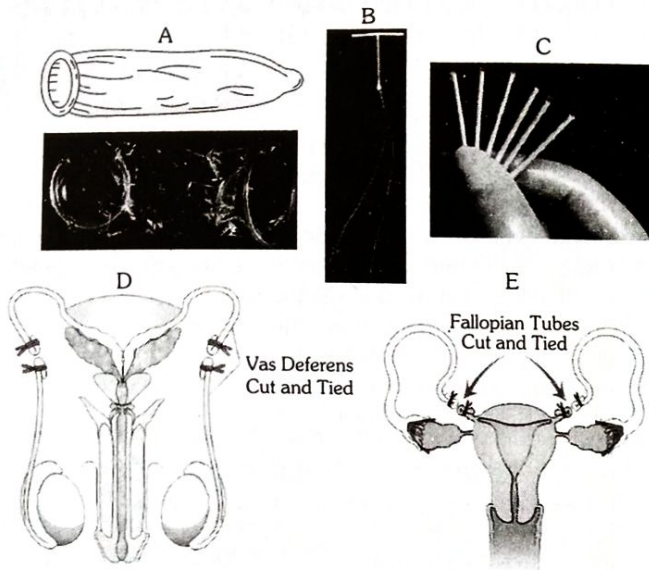
- Which one of the following groups includes are sexually transmitted diseases
(a) AIDS, syphilis, cholera
(b) HIV, malaria, trichomoniasis
(c) Gonorrhoea, hepatitis-B, chlamydiasis
(d) Hepatitis-B, haemophilia, AIDS
- Which of the following is an STD
(a) Measles (b) Syphilis
(c) Diphtheria (d) Cancer
- STDs lead to
(a) Itching, fluid discharge, slight pain, swellings etc.
(b) Pelvic inflammatory Diseases (PID), ectopic pregnancies, still births, infertility, abortions etc.
(c) Both (a) and (b)
(d) None

3. Method of birth control

- Progesterone pill helps in preventing pregnancy by not allowing
(a) Ova formation (b) Fertilization
(c) Implantation (d) None of these

- Surrogate mother is used for
(a) Induction of lactation
(b) Artificially inseminated female
(c) Future mother with transplanted embryo
(d) Artificial insemination
- Diaphragms are contraceptive devices used by the females. Choose the correct option from the statement given below
(i) They are introduced into the uterus
(ii) They are placed to cover the cervical region
(iii) They act as physical barriers for sperm entry
(iv) They act as spermicidal agents
Choose the correct options :
(a) (i) and (ii) (b) (i) and (iii)
(c) (ii) and (iii) (d) (iii) and (iv)
- Emergency contraceptives are effective if used within
(a) 72 hrs of coitus (b) 72 hrs of ovulation
(c) 72 hrs of menstruation (d) 72 hrs of implantation
- The method of directly injecting a sperm into ovum assisted by reproductive technology is called
(a) GIFT (b) ZIFT
(c) ICSI (d) ET
- The correct surgically produced contraceptive method is
(a) Ovariectomy (b) Hysterectomy
(c) Vasectomy (d) Castration
- Condoms are one of the most popular contraceptives because of the following reasons
(a) These are effective barriers for insemination
(b) They do not interfere with coital act
(c) These help in reducing the risk of STDs
(d) All of the above
- What is true for natural methods of contraception
(a) They increase phagocytosis of sperms
(b) They employ barriers to prevent fertilization
(c) They are natural ways of avoiding chances of fertilization
(d) They are surgical methods and are terminal methods
- MTP is practised mainly to
(a) Get rid of unwanted female child legally
(b) Get rid of unwanted pregnancies due to failure of contraception or rapes
(c) Both (a) and (b)
(d) Decrease population size
- Birth control pills check ovulation in female by inhibiting the secretion of
(a) Follicle stimulating hormone
(b) Luteinizing hormone
(c) Both
(d) None
- Surgical methods of contraception prevent
(a) Gamete formation (b) Gamete motility
(c) Both (a) and (b) (d) Spermatogenesis only
- What is false for ZIFT
(a) ZIFT – Zygote intrafallopian Transfer
(b) It follows IVF
(c) Zygote or early embryo
(d) Embryos with more than 8 blastomeres are transferred to the uterus
- "Saheli" – a new oral contraceptive for the females, was developed by the scientists at which institute
(a) C.D.R.I. – Lucknow (b) I.I.Sc. - Bangalore
(c) C.S.I.R. - New Delhi (d) I.C.M.R. - New Delhi

14. Match the following figures with the related method of birth control



- | | |
|--------------|------------------|
| 1. Tubectomy | 2. Vasectomy |
| 3. Implants | 4. Condoms |
| 5. Copper T | 6. Cervical caps |

- (a) A - 6, B - 5, C - 4, D - 1, E - 2
 (b) A - 4, B - 5, C - 3, D - 2, E - 1
 (c) A - 3, B - 5, C - 4, D - 1, E - 2
 (d) A - 6, B - 5, C - 3, D - 2, E - 1

15. Intensely lactating mothers do not generally conceive due to the

- (a) Suppression of gonadotropins
 (b) Hyper secretion of gonadotropins
 (c) Suppression of gametic transport
 (d) Suppression of fertilisation

16. Choose the right one among the statements given below

- (a) IUDs are generally inserted by the user herself
 (b) IUDs increase phagocytosis reaction in the uterus
 (c) IUDs suppress gametogenesis
 (d) IUDs once inserted need not be replaced

17. Following statements are given regarding MTP. Choose the correct options given below

- (i) MTPs are generally advised during first trimester
 (ii) MTPs are used as a contraceptive method
 (iii) MTPs are always surgical
 (iv) MTPs require the assistance of qualified medical personnel
- | | |
|-------------------|--------------------|
| (a) (i) and (iii) | (b) (ii) and (iii) |
| (c) (i) and (iv) | (d) (i) and (ii) |

3. Which one of the following statements is correct regarding Sexually Transmitted Diseases (STD) [2013]

- (a) A person may contract syphilis by sharing milk with one already suffering from the disease
 (b) Hemophilia is one of the STD
 (c) Genital herpes and sickle-cell anaemia are both STD
 (d) The chances of a 5 year boy contracting a STD are very little

4. Which of the following is not a sexually transmitted disease [2015]

- (a) Acquired Immunodeficiency Syndrome (AIDS)
 (b) Trichomoniasis
 (c) Encephalitis
 (d) Syphilis

5. Which one of the following correctly matches a sexually transmitted disease with its pathogen [94, 96, 97, 98, 2006]

- (a) Urethritis - *Bacillus anthracis*
 (b) Soft sore - *Bacillus brevis*
 (c) Syphilis - *Treponema pallidum*
 (d) Gonorrhoea - *Entamoeba histolytica*

6. Tubectomy is a method of sterilization in which [2014]

- (a) Small part of vas deferens is removed or tied up
 (b) Uterus is removed surgically
 (c) Small part of the fallopian tube is removed or tied up
 (d) Ovaries are removed surgically

7. What is the function of copper-T [2000]

- (a) Checks mutation
 (b) Stops fertilization
 (c) Stops zygote formation
 (d) Stops obliteration of blastocoel

8. Test tube baby means a baby born when [2003]

- (a) It develops from a non-fertilized egg
 (b) It developed in a test tube
 (c) It is developed through tissue culture method
 (d) The ovum is fertilised externally and thereafter implanted in the uterus

9. Which one of the following is tested by the technique of amniocentesis [1997, 2002]

Or

The permissible use of the technique amniocentesis is for [2010]

- (a) Biochemical abnormalities in the foetus
 (b) Errors of metabolism in the foetus
 (c) Chromosomal abnormalities (genetic abnormality) in the foetus (Karyotype)
 (d) All of the above

10. Foetal sex can be determined by examining cells from the amniotic fluid by looking for [1997]

- (a) Barr bodies (b) Autosomes
 (c) Chiasmata (d) Kinetochore

11. Cu ions released from copper-releasing Intra Uterine Devices (IUDs) [2010]

- (a) Prevent ovulation
 (b) Make uterus unsuitable for implantation
 (c) Increase phagocytosis of sperms
 (d) Suppress sperm motility

12. The technique called gamete intrafallopian transfer (GIFT) is recommended for those females [2011, 2015]

- (a) Whose cervical canal is too narrow to allow passage for the sperms
 (b) Who can not provide suitable environment for fertilisation
 (c) Who can not produce an ovum
 (d) Who can not retain the foetus inside uterus

13. Which one of the following is the most widely accepted method of contraception in India, as at present [2011]

- (a) IUDs' (Intrauterine devices)
 (b) Cervical caps
 (c) Tubectomy
 (d) Diaphragms

4. NEET

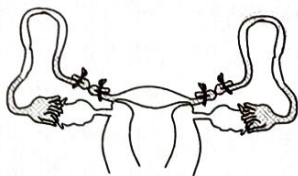
1. The long term planning for human civilization is [1996]

- (a) Increase in food production
 (b) Colonisation of rarely populated area
 (c) Control of human diseases
 (d) None of the above

2. In a growing population of a country, [2018]

- (a) Pre-reproductive individuals are less than the reproductive individuals
 (b) Reproductive and pre-reproductive individuals are equal in number
 (c) Reproductive individuals are less than the post-reproductive individuals
 (d) Pre-reproductive individuals are more than the reproductive individuals

14. What is the figure given below showing in particular [2012]



- (a) Ovarian cancer (b) Uterine cancer
(c) Tubectomy (d) Vasectomy
15. Medical Termination of pregnancy (MTP) is considered safe up to how many weeks of pregnancy [2011]
(a) Six weeks (b) Eight weeks
(c) Twelve weeks (d) Eighteen weeks
16. One of the legal methods of birth control is [2013]
(a) By a premature ejaculation during coitus
(b) Abortion by taking an appropriate medicine
(c) By abstaining from coitus from day 10 to 17 of the menstrual cycle
(d) By having coitus at the time of day break
17. One of the following is **not** a method of contraception-which one [2013]
(a) Condoms
(b) Pills of a combination of oxytocin and vasopressin
(c) Lippes loop
(d) Tubectomy
18. Assisted reproductive technology, IVF involves transfer of [2014]
(a) Zygote into the uterus
(b) Embryo with 16 blastomeres into the fallopian tube
(c) Ovum into the fallopian tube
(d) Zygote into the fallopian tube
19. In context of Amniocentesis, which of the following statement is incorrect [2016]
(a) It is usually done when a woman is between 14-16 weeks pregnant
(b) It is used for prenatal sex determination
(c) It can be used for detection of Down syndrome
(d) It can be used for detection of Cleft palate
20. The Test-tube Baby Programme employs which one of the following techniques [2012]
(a) Intracytoplasmic sperm injection (ICSI)
(b) Intrauterine insemination (IUI)
(c) Gamete intrafallopian transfer (GIFT)
(d) Zygote intrafallopian transfer (ZIFT)
21. Which of the following **cannot** be detected in a developing foetus by amniocentesis [2013]
(a) Jaundice (b) Klinefelter syndrome
(c) Sex of the foetus (d) Down syndrome
22. Artificial insemination means [2013]
(a) Introduction of sperms of a healthy donor directly into the ovary
(b) Transfer of sperms of a healthy donor to a test tube containing ova
(c) Transfer of sperms of husband to a test tube containing ova
(d) Artificial introduction of sperms of a healthy donor into the vagina
23. Consider the statements given below regarding contraception and answer as directed thereafter
A. Medical Termination of Pregnancy (MTP) during first trimester is generally safe
B. Generally chances of conception are nil until mother breast-feeds the infant upto two years
C. Intrauterine devices like copper-T are effective contraceptives
D. Contraception pills may be taken upto one week after coitus to prevents conception

Which two of the above statements are correct [2008]

- (a) A, C (b) A, B
(c) B, C (d) C, D

24. Given below are four methods (A-D) and their modes of action (a-d) in achieving contraception. Select their correct matching from the four options that follow

Method	Mode of Action
A. The pill	(a) Prevents sperms reaching cervix
B. Condom	(b) Prevents implantation
C. Vasectomy	(c) Prevents ovulation
D. Copper T	(d) Semen contains no sperms

[2008]

Matching :

- (a) A-(c), B-(d), C-(a), D-(b)
(b) A-(b), B-(c), C-(a), D-(d)
(c) A-(c), B-(a), C-(d), D-(b)
(d) A-(d), B-(a), C-(b), D-(c)

25. Which of the following approaches does not give the defined action of contraceptive [2016]

(a)	Barrier methods	Prevent fertilization
(b)	Intrauterine devices	Increase phagocytosis of sperms suppress sperm motility and fertilizing capacity of sperms
(c)	Hormonal contraceptives	Prevent/retard entry of sperms prevent ovulation and fertilization
(d)	Vasectomy	Prevents spermatogenesis

26. Which of the following is a hormone releasing Intrauterine Device (IUD) [2014]

- (a) Cervical cap (b) Vault
(c) Multiload 375 (d) LNG-20

27. The contraceptive 'SAHELI' [2018]

- (a) Is a post-coital contraceptive
(b) Is an IUD
(c) Increase the concentration of estrogen and prevents ovulation in females
(d) Blocks estrogen receptors in the uterus, preventing eggs from getting implanted

28. July 11 is observed as [2003]

- (a) World population day (b) No tobacco day
(c) World environment day (d) World health day

5. Assertion and Reason

Read the assertion and reason carefully to mark the correct option out of the options given below :

- (a) If both the assertion and the reason are true and the reason is a correct explanation of the assertion
(b) If both the assertion and reason are true but the reason is not a correct explanation of the assertion
(c) If the assertion is true but the reason is false
(d) If both the assertion and reason are false
(e) If the assertion is false but reason is true

1. Assertion : Natality rate increases the population size and population density both.

Reason : Natality increases the number of individuals in an area by births.

2. Assertion : Biologically, woman is superior to man.

Reason : A woman provides nutrition to developing foetus during gestation and also nourishes the baby on her milk after its birth.