REPRODUCTIVE HEALTH

According to WHO, reproductive health is defined as the total well being in all aspects of reproduction i.e. physical, emotional, behavior and social.

Reproductive health is a state of physical, emotional, behavioral and social fitness for leading a responsible, safe and satisfying reproductive life.

Briefly speaking, reproductive health refers to healthy reproductive organs with normal functions.

REPRODUCTIVE HEALTH-PROBLEMS AND STRATEGIES:

a) PROBLEMS OF REPRODUCTIVE HEALTH:

1. Taboos: In India, religions, traditions and society set up do not allow much dissemination of knowledge about reproduction health to children.
2. Early Marriage: Children were often married off as soon as they attained puberty. The teenage lady is not physically fit to bear the foetus and nourish it properly.
3. Career: After marriage, the couple would not pursue studies. The career of the two would be blocked, especially of the lady.
4. Sexually Transmitted Diseases (STDs): The children who have married early, do not have proper knowledge of reproductive organs, hence STDs are common in these persons.
5. Deformities: Deformities are common in children of early marriage. Maternal Mortality Rate (MMR) and Infant mortality Rates (IMR) are high in early marriage as females are not physically fit for pregnancy.

b) STRATEGIES: India was the first country of the world to initiate plans and programmes for attaining reproductive health through family planning in 1951. A more comprehensive and improved programme was launched in 1977 under popular name of reproductive and child health care (RCH). It has three goals- reproductive health, child care and fertility regulation.

The main aims of RCH:

i) Creating awareness about health related issues in the society.
ii) Providing facilities and supports to build a reproductively healthy society.

Some important steps to achieve these aims are:

1. General Awareness: With the help of audio visual aids, print media, primary health centers, both government and non government agencies are engaged in creating general awareness among people about various aspects of reproduction.

2. Elders: It is the duty of parents, other close relatives, teachers and friends to provide sex related information to young children.

3. Sex Education: Proper sex education helps in removing myths and misconceptions about various sex related aspects, reproductive organs, changes during adolescence, harms of early sex, hygienic sexual practices, STDs etc.

4. Family Welfare Information: Fertile couples and all others persons of marriageable age must be educated about available birth control options, reasons for fertility control, care during pregnancy, post-natal-care of mother and child, importance of breast feeding, providing equal opportunities to male and female children and desired size of the family where every child can be given due attention, care and education.

5. Infrastructure: Strong infrastructural facilities, professional expertise and material support are registered to attain proper attractive health through providing assistance in reproductive health related problems like pregnancy, delivery, contraception, abortion, menstrual problems, infertility and STDs.

6. Marriageable age: Child marriages have been banned in India. The minimum marriageable age is now 21 for boys and 18 for girls.

7. Research: It should be encouraged and supported to find out new methods. *Saheli*, a new non-steroid contraceptive, once a week pill has been developed by Central Drug Research Institute (CDRI), Lucknow, India.

AMNIOCENTESIS: It is a foetal sex determination and disorder test based on the chromosomal pattern in the amniotic fluid surrounding the developing foetus.

Procedure: Amniotic fluid contains cells from the skin of the foetus and other sources. These cells can be used to determine the sex of the infant, to identify some abnormalities in the number of chromosomes and to detect certain biochemicals and enzymatic abnormalities. If it is established that the child is likely to suffer from a serious incurable congenital defect, the mother should get the foetus aborted.

Misuse of Amniocentesis: It is being used to kill the normal female foetus. It is, therefore, legally banned for the determination of sex.

(EXPLANATION; Keep A Gap of ½ page)

Indications of Improved Reproductive Health:

i) Medically assisted deliveries.
ii) Better post – natal care.
iii) Decrease MMR.
iv) Decrease IMR.
v) Increase number of couples with small families.
vi) Detection and cure of STDs.
vi) Overall increase in medical facilities.

POPULATION EXPLOSION AND BIRTH CONTROL:

The rapid increase in population over a relatively short period is called population explosion.

Reasons for population explosion:

1. Decline in the death rate, maternal mortality rate (MMR), and infant mortality rate (IMR).
2. An increase in number of people in reproductive age.
3. Certain religions are against family planning.
4. Better health care and greater medical attention.
5. Protection from natural calamities.
6. Development in agriculture, improvement in food storage condition and better means of transport.
7. Despite ban on childhood marriages, early marriages do occur, especially to rural areas.

MEASURES TO CONTROL OVER POPULATION:

1. Education: People, particularly of reproductive age group, should be educated about the advantage of small family.
2. Marriageable Age: Raising the age of marriage is more effective means to control the population.
3. Incentives: Couples of small families should be given incentives.
4. Family planning: There are many birth control measures which can check birth rate.

Contraception: They are devices which prevent conception or pregnancy without in any way interfering in reproductive health of the individuals.

Characteristics of an ideal contraceptive are:

i) User friendly. ii) Easily available
iii) Effective and reversible. iv) Without any or with at least side effects.
v) Should not interfere with sexual drive desire and sexual act of user.

BIRTH CONTROL:

A) TEMPORARY METHODS OF BIRTH CONTROL:

1. Natural or Traditional methods: These methods avoid meeting sperm and ovum.
   a) Avoidance of Sex (Periodic abstinence): It is one such method in which the couples avoid or abstain from coitus (copulation) from day 10 to 17 of the menstrual cycle, because ovulation can occur during this period.
   b) Withdrawal or Coitus interruptus: Male withdraws his penis from vagina just before ejaculation to avoid insemination so that the semen is carried outside the vagina.
   c) Lactational amenorrhea (absence of menstruation): The menstrual cycle, and therefore, ovulation do not occur during intense lactation following parturition. (However this method is effective only upto maximum period of 6 months after child birth).

(EXPLANATION; Keep A Gap of 1 page)

2. Barrier methods: In these methods ovum and sperms do not meet due to barriers.

a) Condoms: It is tubular latex sheath which is role over the male copulatory organ during sex. e.g. Nirodh.

Advantages of Using condom:

i) It provides protection against STDs including AIDS.
ii) It is used to prevent conception.
iii) It is disposable and can be self-inserted thereby giving privacy to the user.

b) Diaphragm: It is a soft rubber cup that covers entrance to uterus. It prevents a sperm from reaching an egg; and holds spermicide.

c) Femidom (Female Condom): The device is polyurethane pouch with a ring at either end. The inner ring is smaller and present at the inner close end.

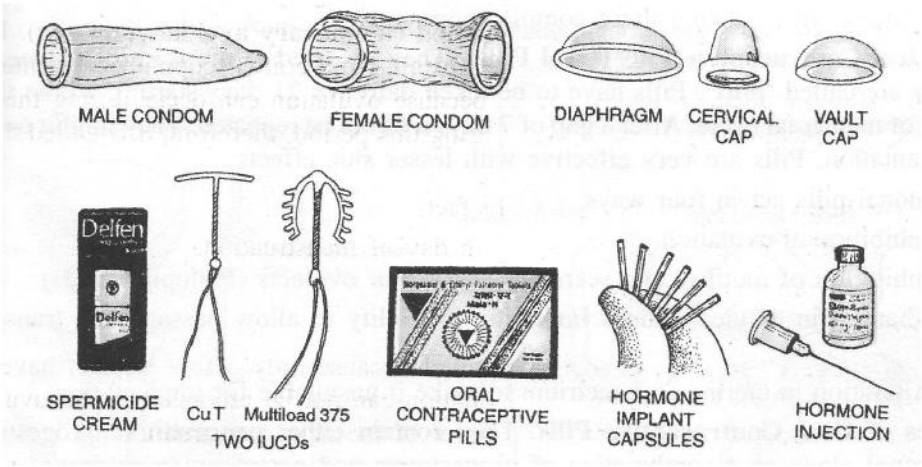

Fig: Some commonly used contraceptive devices

d) Cervical Cap: It is a miniature diaphragm which is fitted over the cervix and is designed to remain there by suction and holds spermicide. The device prevents the entry of sperms into uterus.
e) Vault Cap: It is hemispheric dome like rubber or plastic cap with a thick rim which is meant for fitting over the vaginal vault over the cervix.

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3. Chemical methods: In these methods, foam tablets, creams, jellies and pastes are inserted in the vagina before intercourse to prevent sperms from entering the uterus. They contain spermicides. Sponge ("Today") is a foam suppository or tablets containing nonoxynol as spermicide. Delfin is also available in the form of cream.
4. Intra Uterine Contraceptive Devices (IUCDs)/Intra Uterine Devices (IUDs): These devices are inserted by doctors in the uterus through vagina. IUDs are of three types – inert, copper releasing and hormone releasing.
i) Non-medicated (inert) IUDs consist of a plastic wire bent in a series of S shape. It needs to be straightened when it is being inserted into the uterus but it resumes its shape once inside it. e.g. Lippes loop. (Non-medicated (inert) IUDs are made of polyethylene impregnated with barium sulphate or stainless steel).

(EXPLANATION; Keep A Gap of ½ page)

ii) Copper IUDs commonly called copper Ts (Cu-T, Multiload 375) have ionized copper (which slowly diffuses at the rate of some 50 mg/day). The Cu ions released suppress sperm motility and the fertilising capacity of sperms.

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iii) Hormone releasing IUDs include progesterone IUD (e.g. progestasert) and levonorgestrel IUD (e.g. LNG-20). The hormone releasing IUCDs make the uterus unstable for implantation and the cervix hostile to the sperms.

IUCDs are ideal contraceptive methods used by the female. In India it is one of the most widely accepted method of contraceptive.

(EXPLANATION; Keep A Gap of ½ page)

Drawbacks of IUCDs:
i) Their presence may act as a minor irritant and this makes the egg to move down the oviducts (Fallopian tube) and uterus before fertilization or implantation.
ii) Their spontaneous expulsion, even without the woman's knowledge.
iii) They can cause excess menstrual bleeding and pain.
iv) Risk of perforation of uterus.
v) Tubal pregnancy in plantation of embryo in the oviduct (Fallopian tube).
vi) Risk of infection.

Q. a) Expand IUD.

b) Why is hormone releasing IUD considered a good contraceptive to escape children?

Ans:- The hormone releasing IUDs make

i) the uterus unsuitable for implantation. ii) the cervix hostile to the sperms.

iii) IUDs also increase phagocytosis of sperms within the uterus.

5) ORAL CONTRACEPTIVES (Oral pills): They are preparation containing either progestin (=progestogen=progesterone) alone or a combination of progestogen and oestrogen. They are used in the form of tablets, therefore they are called pills. Hormonal pills act in four ways:

i) inhibition of ovulation.

ii) prevention of implantation.

iii) Changes the quality of cervical mucus to prevent/ retard entry of sperms.

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TYPES OF ORAL CONTRACEPTIVE PILLS: Oral contraceptive pills are of two types: combined pills and mini pills.

i) Combined Pills: They contain synthetic progesterone and oestrogen to check ovulation. Pill **Mala D** and **Mala N** are commonly used combined contraceptive pill. These Pills have to be taken daily for 21 days starting 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.

(EXPLANATION; Keep A Gap of ½ page)

ii) Mini Pills: They contain progestin only (with no oestrogen). *Saheli*, the new oral contraceptive for the female contains a non steroidal preparation called *'centchroman'* which is taken once in a week after an initial intake of twice a week dose for 3 months. It has high contraceptive value with very little side effects.

Drawbacks: Pills increase the risk of intravascular clotting. Therefore, they are not recommended for women with a history of disorders of blood clotting, cerebral blood vessel damage, hypertension, liver malfunction, heart disease, or cancer of breast or reproductive system.

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6. Subcutaneous Implants (Norplant): A new contraception is a subcutaneous (under the skin) implantation of synthetic progesterone. It acts similarly to oral contraceptives by blocking ovulation and thickening the cervical mucus to prevent sperm transport. The new contraceptive, once implanted, is effective for five years.

It is safe, convenient, and effective, and long lasting (5 years). The woman has irregular periods or periods may be absent. Minor surgical procedure is needed for insertion and removal.

7. Hormone Injection (Depo-Provera): Theses are progesterone-derivative injections. Injections are given once every 3 months, that releases a hormone slowly and prevents ovulation.

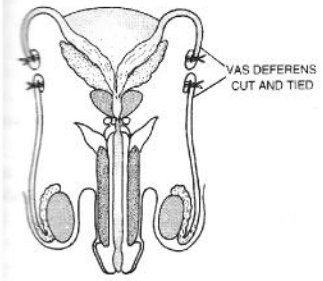
8. Morning After Pills: Implantation can also be checked by so called morning after pills, also known as emergency contraceptive. These pills can prevent pregnancy if taken within 72 hours, not just the morning after unprotected sexual intercourse. E.g. i – pills, PILL – 72 and UNWANTED – 72 are commonly used.

B) TERMINATION or PERMANENT METHODS OF BIRTH CONTROL:

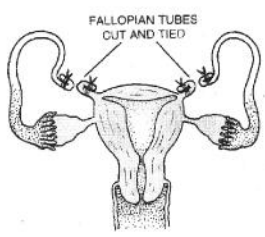
Surgical Methods of family Planning: The techniques are also sterilization procedures. They are of following types:-

a) Vasectomy: It is surgical method of sterilization of male. Vasa deferentia are cut and tied up them so that sperms are unable pass down the male reproductive system.

b) Tubectomy: It is surgical procedure of female sterilization where a portion of both the fallopian tube is cut and tied up to block the passage of ovum through them.



Vasectomy



Tubectomy

(EXPLANATION; Keep A Gap of ½ page)

Vasectomy	Tubectomy
1. It is a surgical sterilization technique for male. 2. The two vasa deferentia are cut and tied up. 3. Passage of sperms is prevented.	1. It is a surgical sterilization technique for female. 2. The two fallopian tubes (oviducts) are cut and tied up. 3. Passage of ova is prevented.

Medical Termination of Pregnancy (MTP): Voluntary or intentional termination of pregnancy before full term is known as Medical Termination of Pregnancy (MTP) or induced abortion.

MTP is comparatively safe upto 12 weeks (the first trimester) of pregnancy. It becomes risky after the first trimester period of pregnancy, as the foetus becomes intimately associated with the maternal tissues.

WHY MTP? MTP is done to get rid of unwanted pregnancy due to

i) Casual unprotected intercourse.

ii) Failure of the contraceptive used during coitus and

iii) Rapes

MTPs are also essential in cases where continuation of pregnancy could pose threat to the life of either mother or foetus or both.

Significance:

1. It helps in getting rid of unwanted pregnancies and such pregnancies which may be harmful or even fatal either to the mother or to the foetus or both.
2. MTP plays a significant role in decreasing the human population.

(EXPLANATION; Keep A Gap of ½ page)

INFERTILITY: It is the failure to conceive when after 1-2 years of regular unprotected sex. The reasons for this may be physical, immunological or even psychological.

Specialized health care units (fertility clinics) can help in the treatment of these disorders and enable these infertile couples to have children. In cases where treatments are not possible, they can be assisted to have children through certain techniques called the Assisted Reproductive Technologies (ART). Some of them are-

1) Test Tube Baby Programme: The babies produced by conceiving in a culture dish and nursing in the uterus are called test tube babies. In this method, ova from wife or donor female and sperms from the husband or donor male are introduced to form zygote in the laboratory. The zygote is allowed to divide forming 8 blastomeres. The zygote or early embryo is transferred into Fallopian tube (ZIFT- Zygote Intra Fallopian Transfer).

If the zygote is with more than 8 blastomeres, the embryo is transferred into the uterus (IUT- Intra Uterine Transfer) to complete its development. Thus this is in vitro fertilization (IVF-fertilization outside the body in almost similar condition as that in the body) followed by embryo transfer (ET).

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2) Intra-Cytoplasmic Sperm Injection (ICSI): Intra-Cytoplasmic Sperm Injection (ICSI) is another specialized technique to form zygote and then an embryo in the laboratory. In this a sperm is directly injected into the ovum to form the zygote.

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3. Gamete Intra Fallopian Transfer (GIFT): This method involves the transfer of an ovum collected from a donor female into the fallopian tube of another female, who cannot produce ova but can provide suitable condition for fertilization and further development of the foetus.

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4. Artificial Insemination: Infertility in male is either due to inability to achieve an erection of penis to inseminate the female or due to a very low sperm count in the semen. This can be corrected by artificial insemination (AI) technique.

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.

(EXPLANATION; Keep A Gap of ½ page)

SEXUALLY TRANSMITTED DISEASES (STDs): Diseases or infections which are transmitted through sexual intercourse are collectively called Sexually Transmitted Diseases (STDs) or Venereal Diseases (VD) or Reproductive Tract Infections (RTI).

Mode of Transmission: STDs are transmitted by

i) Sexual intercourse with infected persons,
ii) sharing of injection needles, surgical instruments, etc. and
iii) transfusion of blood from an infected mother to the foetus.

For prevention, following **simple principles** should be followed:

i) Avoid sex with unknown partners/ multiple partners.
ii) One should always use condoms during intercourse.
iii) If a person is in doubt, he/she must consult a qualified doctor. If STD is detected, one should get complete treatment.

Confirmatory Tests for Sexually Transmitted Diseases: These include:

i) Culture and microscopic observation with specific staining.
ii) Detection of specific antigen/antibody using Enzyme Linked Immunosorbant Assay (ELISA) like technique.
iii) DNA hybridization.
iv) Polymerase Chain Reaction (PCR).

SOME STDS, PATHOGENS AND SYMPTOMS:

1. STDs Caused by Bacteria:

i) Syphilis:

Pathogen: *Treponema pallidum*

Symptoms:

i) In the first stage there is indurated infectious and painless ulcer or chancre on the genitals and swelling of local lymph glands.
ii) In the second stage, chancre is healed and there are skin lesions, rashes, hair loss, swollen joints and flu like illness occasionally.
iii) In the tertiary stage chronic ulcers appear on the palate, nose and lower leg.
iv) In the latent syphilis, there is no evidence of the disease.

Transmission: It through sexual contact and from mother to children.

Treatment: It is curable through appropriate antibiotics, e.g. Penicillin, tetracycline.

ii) Gonorrhoea:

Pathogen: *Nisseria gonorrhoeae*

Symptoms: The bacterium lives in genital tubes, produces pus-containing discharge, pain around genitalia and burning sensation during urination. It may lead to arthritis and eye infection in children of gonorrhea afflicted mothers.

Transmission: It is spread through sexual contact, common toilets and under clothes.

Treatment: Disease can be cured through use of appropriate antibiotics, e.g. Penicillin, Ampicillin.

2. STDs caused by Protozoa:

i) Trichomoniasis:

Pathogen: *Trichomoniasis vaginalis*

Symptoms: The parasite infects both males and females. In females it causes vaginitis with foul smelling, yellow vaginal discharge and burning sensation. In males it causes urethritis, epididymitis and prostatitis resulting in pain and burning sensation.

Transmission: Through sexual intercourse.

Treatment: Standard treatment is *metronidazole* but partners be treated simultaneously. Arsenic and iodine drugs, and antibiotics like Aureomycin, Terramycin and metronidazole have been found effective.

3. STDs caused by Viruses:

i) AIDS:

ii) Hepatitis B:

Pathogen: *Hepatitis B Virus (HBV)*

Symptoms: Its symptoms include fatigue, jaundice (yellowing skin), persistent low grade fever, rash and abdominal pain. It can cause cirrhosis and possibly liver cancer.

Diagnosis: Hepatitis can be diagnosed by Australian antigen test which is now also called Hepatitis-B surface antigen (HBSAg). It is also diagnosed by ELISA.

Transmission: Mode of transmission may be blood transfusion, sexual contact, saliva contact, tears, intravenous drug abuse, tattooing, ear and nose pierceing, sharing of razors.

Treatment: Rest, alpha interferon. Vaccines produced through recombinant DNA technology are available to prevent hepatitis B infection.

Hepatitis C and Hepatitis D are also STDs caused by HCV (Hepatitis-C Virus) and HDV (Hepatitis-D Virus) respectively.

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