

• Acc. to WHO Reproductive health = wellbeing in all aspects of Reprodⁿ (physical + emotional + social + behavioural)

• Reproductive Health - Problems & Strategies:

• India was among the 1st countries in world to initiate actⁿ plans & programme at national level to attain reproductive health as social goal.

• "Family Planning" initiated in 1951. Under Reproductive & Child Health Care (RCH)

• Statutory ban on Amniocentesis for sex determination to legally check increasing menace of ♀ foeticide, massive child "immunity".

• In this some of the Amniotic fluid of developing fetus is taken to analyse fetal cells. Used to test genetic disorder such as - Down's syndrome, Haemophilia, Sickle cell Anemia.

performed after 15 weeks of pregnancy b/w 16-20 weeks of gestatⁿ

• Saheli - Mestranol contraceptive

Developed at Central drug research inst. (CDRI), Lucknow.

→ ♂ = 21 yrs ♀ = 18 yrs (acc. to law) marriage.

→ "Ham do thama red" "one child norm"

Reproductive Health

Population Stabilisation

• Average Annual Growth rate = $\frac{P_2 - P_1}{P_1 \times N} \times 100$

P_1 = prev. census populⁿ
 P_2 = present " "
 N = No. of yrs b/w 2 censuses.

• World populⁿ :-
 2 billion = 1900
 6 billion = 2000
 7.2 billion = 2011

• India's populⁿ :-
 350 million = Independence
 1 billion = 2000
 1.2 billion = May 2011

Acc. to 2011 census report Growth rate < 2% or 20/1000/year.

- Populⁿ growth rate indicated by;
 (i) Annual Avg growth rate
 (ii) Doubling time.

- Growth rate depend fertility (Birth rate)

• Mortality (Death rate)
 • Migratⁿ
 • Age-sex ratio.

1. fertility (Natality):
 No. of babies/1000. It is never -ve while Growth rate can be -ve.

• TFR (Total fertility rate)
 Avg no. of children an women can give birth during life time.

• RL (Replacement level).
 no. of children a couple produce to replace themselves

RL = 2.1 = Developed countries
 2.7 = Developing countries.

2. Mortality :-
 Death rate per 1000

$\frac{\text{Crude Birth rate}}{\text{No. of live Birth/1000 in middle of given yr (July 01)}}$
 Crude Death rate

$\frac{\text{No. of death/1000 in middle of yr (July 01)}}{\text{rate of natural increase}}$

CBR - CDR. If it is 0 then = Demographic transition.

Occurs in Developed countries

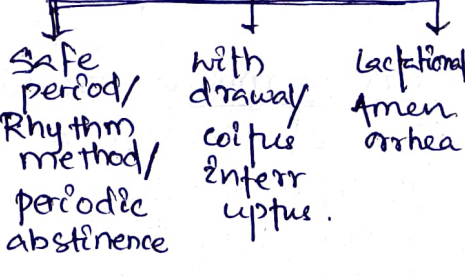
Age & Sex Structure



Methods of Birth Control :-

Ideal Contraceptive
 • User friendly
 • Absence of side effect
 • Reversible
 • Completely effective against pregnancy

1) Natural Method :-



Natural methods Work on
 principle of avoiding chances of ova & sperm meeting.

(a) periodic Abstinence / Safe period :-
 Method in which the couples avoid/abstain from coitus from 10-17 day of Menstrual cycle. When ovulation could be expected as chances of fertilisation are very high during this period hence conception prevented.

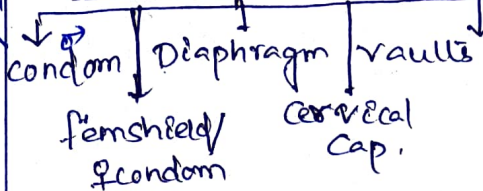
(b) Withdrawal / coitus interruptus :-
 withdrawal of penis from vagina before ejaculation to prevent insemination.

(c) Lactational Amenorrhoea :-
 Absence of menstruation, ovulation & cycle don't occur during period of intense lactation following parturition.

As long as the mother breast feeds the child fully, chances of conceptions are almost nil.
 Max^m effect upto 6 months

**** A positive Spinbarkeet test help to establish the time of ovulation.**
Cervical mucus around time of ovulation is stringy & stretchy as a result of ↑ Estrogen level.
 During ovulation Basal body temp by 1°F.

2. Barrier Method :-



Condom method :-
 Ovum & sperm are prevented from physically meeting with help of Barriers

(a) Condoms :-
 Thin rubber latex sheath used to cover penis in male.
 Common one: Nirodh
 provides protection against STIs including AIDS.

(b) Female condoms :-
 polyurethane pouch with ring at either end protects from STDs

(c) Diaphragm :-

(d) Cervical cap :-

(e) Vaults :-
 made of Rubber inserted into female reproductive tract to cover cervix during coitus. prevent conception by blocking entry of sperm through Cervix. Reusable.

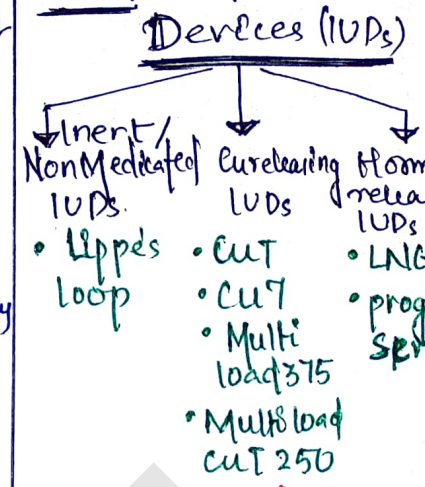
3. chemical Method :-

- Spermicidal cream (delfen), Jellies (perceptin, volpar paste).
- foam tablets (Aerosol foam, chloriminT, contab)

Used along with these Barriers to ↑ Contraceptive Efficiency.

e.g. Sponge (Today)
 nonoxyhol-9 (spermicide) kill sperm by disrupting membs.

4. Intrauterine Devices (IUDs)



**** IUDs one of the most widely accepted method of Contraception in India.**

The devices are inserted by Doctors / expert nurses in uterus through Vagina.

(a) Inert IUDs :-

- Increase phagocytosis of sperm within uterus.

(b) Hormone releasing IUDs :-

- Make uterus unsuitable for implantation & Cervix hostile to sperm.

- Inc. sperm phagocytosis within uterus.

(c) Copper releasing IUDs :-

- Cu ion released suppress sperm motility & fertilising capacity of sperm.

- Inc. Sperm phagocytosis within uterus.

IUDs are ideal contraceptive for female who want to delay pregnancy / space children.

5. Oral Contraceptive (Oral Pills)

contains either (small doses)
• progestogen
• progestogen-estrogen combn.

- In the form of tablet hence called pills.

Taken orally daily for a period of 21 days

• starting from 5th day ending on 25th day.

⇒ starting preferably from 1st days of Menstrual cycle.

⇒ After a gap of 7 days (during which menstrⁿ occurs) it has to be repeated in same pattern till ♀ desire to prevent concepⁿ.

Action:-

- (i) Inhibit ovulation
- (ii) Implantation as well
- (iii) as alter quality of Cervical mucus to prevent/retard entry of sperms.

2 types.

(1) Combined Pills:

Both Estrogen + progestin.
e.g. Levonorgestrel,
estrogestrel

In monophasic Combined pill (estrogen = progestin)

e.g. Mala-D,
Mala-L.

In Multiphasic Combined

pill, estrogen is maintained at same level. Amt of progestin inc. gradually

e.g. Loquilar
Orthonovum

(ii) Minipills:-

progestin only pills (with no estrogen).
e.g. POP, ~~Orthonovum~~

Saheli:- - A non-steroidal

prepⁿ taken Once a Week after initial Intake of twice-a-week dose for 3 months.

6. Injections:- - DMPA
progestin + oestradiol
month

7. Implants:-

Implanted subdermally (under skin). Effective period much longer. years.

8. Emergency Contraceptive

Administration of progestogens/progestogen estrogen combinations or IUDs within 72 hours of coitus have been found to be very effective as emergency contraceptives

e.g. Morning after pill (family welfare programme since 2002-2003).

They could be used to avoid possible pregnancy due to rape or casual unprotected intercourse

9. Surgical methods:-

(sterilisation) are generally advised for ♂/♀ partners as a terminal method to prevent any more pregnancy.

- Surgical Intervention blocks Gamete transport & thereby prevent Conception.

♂	↳	♀
<u>Vasectomy</u>		<u>Tubectomy</u>
a small part of the vas-deferens is removed / tied up through a small incision on scrotum.		a small part of the fallopian tube is removed / tied up through a small incision in abdomen / through vagina.

These technique are highly effective but reversibility is poor.

Ill effects of Contraceptives:-

- Nausea.
- Abdominal pain
- Break through Bleeding.
- Irregular Menstrual Bleeding
- Breast Cancer.

MTP: (Medical Termination of Pregnancy)

Intentional/voluntary termination of pregnancy before full term is MTP or Induced abortion.

40-50 Million MTPs are performed in a year all over world account to 1/5th of total conceived pregnancy in a year.

Govt of India
 Legalised MTP
 in 1971 with some
 strict conditions to
 avoid its misuse for
 illegal female
 foeticide.

- MTPs are essential
 when :-
- Casual unprotected intercourse / failure of contraceptive used during coitus
 - rapes.
 - pregnancy continuation could be harmful or even fatal to mother or foetus or both.

MTPs relatively safe
 during 1st trimester
 (i.e., upto 12 weeks of pregnancy)
2nd trimester
 abortion are much
 more riskier performed
 by 2 Registered
Medical practitioners

Sexually transmitted
 infections / Venereal
 Diseases (STD) /
 Reproductive
 tract Infection (RTI)

Infection transmitted
 through Sexual
 intercourse.

* Hepatitis-B
Genital Herpes
HIV Infections } Not Curable.

- Hepatitis-B & HIV
 transmitted by
- Sharing of Injection Needles
 - Surgical instrument with infected person.
 - Blood transfusion
 - Infected Mother to foetus.

Early symptoms :-

- Itching
 - fluid Discharge.
 - slight pain
 - Swelling
- in Genital Regions.

Infected ♀ are
Asymptomatic &
hence remain Undetected
for long.

If STIs not treated it
 lead • pelvic Inflammatory
 diseases (PID)

- Abortion
- Still Birth
- Ectopic pregnancy
- Infertility.
- Cancer of Reproductive tract.

⇒ These infections are
 reported high among
 age group 15-24 yrs.

- Avoid sex with Unknown partner / multiple partners.
- Try to use condom during coitus
- In doubt Go to doctor

Infertility :-
 ↓ (sterility)

failure to conceive
 even after 1-2 yrs of
 regular, Unprotected sex.

1° Infertility never
 conceived
 2° Infertility previously
 conceived.

In ♂ :-

- (a) oligospermia - low sperm count
- (b) Azospermia - Near absence of sperm
- (c) Asthenozoospermia - low sperm motility
- (e) teratozoospermia - Defective sperm morphology

- cryptorchidism.
- blockage of vas deferens
- higher scrotal temp.
- Infectⁿ like mumps etc.

In ♀ :-

- Anovulⁿ = no ovulⁿ
- oligoovulⁿ = deficient ovulⁿ.
- Implantatⁿ Inhibition etc.

ART

(Assisted reproductive technologies).

- IVF.
- ICSI
- GIFT
- ZIFT
- AI
- Surrogacy
- Donor egg / embryo.

1) In vitro fertilisation

fertilisⁿ Outside Body followed by Embryo transfer (ET)

Test Tube Baby Programme

Ova (♀ wife/donor) → Induced to form Zygote or early Embryo (upto 8 Blastomere) transferred to fallopian tube. (ZIFT)

Eq Embryo with more than 8 Blastomere transferred to uterus (IUT)

2) In vivo fertilisation

fusion of 2 Gametes within females could also transfer to another ♀ to assist those who can't conceive. Woman who carry Embryo is surrogate mother

3) GIFT: - (Gamete Intra fallopian transfer)

Transfer of ovum collected from donor to fallopian tube of ♀ who can't produce one but can provide suitable envt. for fertilisⁿ.

4) ICSI: - (Intracytoplasmic spermisⁿ)

To form an embryo in lab in which a Sperm is directly injected to ovum.

5) AI: - (Artificial Inseminⁿ)

infertility cases either due to very low sperm counts in ejaculates or inability of ♂ partner to inseminate ♀ corrected by AI

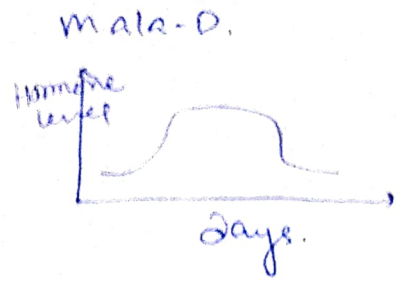
6) IUI: -

(Intrauterine Inseminⁿ) Semen collected either from husband or a healthy donor is artificially introduced either into vagina or uterus of ♀.

Imp. STIs :-

1. Chlamydiae
Chlamydia trachomatis (Bacteria).
Gram staining of discharge, Antigen detⁿ
2. Gonorrhoea
Neisseria Gonorrhoea (Bacteria)
Gram staining of discharge.
3. Syphilis
Treponema pallidum (Bacteria)
Antibody detⁿ; VDRL
4. Chancroid
Haemophilus Ducrei (Bacteria)
clinical culture
5. Trichomoniasis
Trichomonas vaginalis (Protozoa)
microscopic examinⁿ, culture.
6. Genital Herpes
Herpes Simplex Virus (Virus)
clinical, Antigen test, PCR
7. Genital warts
Human papilloma virus (Virus)
clinical, Antibody detⁿ, culture, DNA hybridisⁿ

• Suppressⁿ of release of gonadotropins by high level of prolactin
↓
lactational amenorrhoea



• STDs that don't affect reproductive organs
↓
AIDS, hepatitis B

• Use RU (Mifepristone)
↓
186
Blockⁿ progesterone

• SAHEU: -
Block estrogen receptors in uterus preventing eggs from getting implanted.

• Symptomless / latent period for syphilis
↓
20 years.

• Progesterone blocked by the use of Mifepristone.

• Progesterone
↓
Required throughout pregnancy or gestation period known as pregnancy hormone.

• Saheli: -
→ Once a week pill
→ Nonsteroidal preparation
→ chemical compound: Centchroman

• skin rash, fever, aches in joints & muscles characterised by 2^o stage of syphilis

• Developing countries
• High fertility
• Very young age at marriage
• Rapid popⁿ growth
• Rapid fall in mortality rate