

Reproductive Health

WHO definition - reproductive health = state of complete physical, emotional, behavioural and social well-being in all matters of reproduction.

Reproductively HEALTHY Society

People with physically + functionally normal reproductive organs + normal emotional & behavioural interactions among them.

Why India needs RH programmes

- ① Rapid population growth
- ② High maternal + infant mortality
- ③ Spread of Sexually Transmitted Diseases
- ④ Lack of awareness on sex / contraception
- ⑤ Need for safe motherhood + child care
- ⑥ Misuse for sex-selective abortion

India's Initiatives

- 1951 - Family Planning programmes started (India 1st)
1990s - Renamed RCH (Reproductive & Child Health)
2017 - Mission Indradhanush, JSSK, JSY

STRONG INFRASTRUCTURE + PUBLIC AWARENESS →
reproductively healthy society.

RCH Programme - Components

Strategies launched by Govt of India under RCH :

(i) Awareness Creation

Audio-visual + print media on sex, contraception, STDs, family planning, adolescent issues.

Sex education in schools ~~avoided~~ strongly encouraged.

(ii) Improved RHealth Care

Counselling + Medical assistance + care of pregnant mothers, safe delivery, post-natal care of mother and child, infertility treatment.

(iii) Maternal & Child Health

Immunisation, breast-feeding support, growth monitoring, maternal nutrition (anaemia control).

(iv) Birth Control / Family Planning

Spacing between children + small family.

(v) Prevention of Sex Abuse

Strict laws - PCPNDT Act (Pre-Conception &

Pre-Natal Diagnostic Techniques Act, 1994)

Prevents sex-selective abortion (female foeticide).

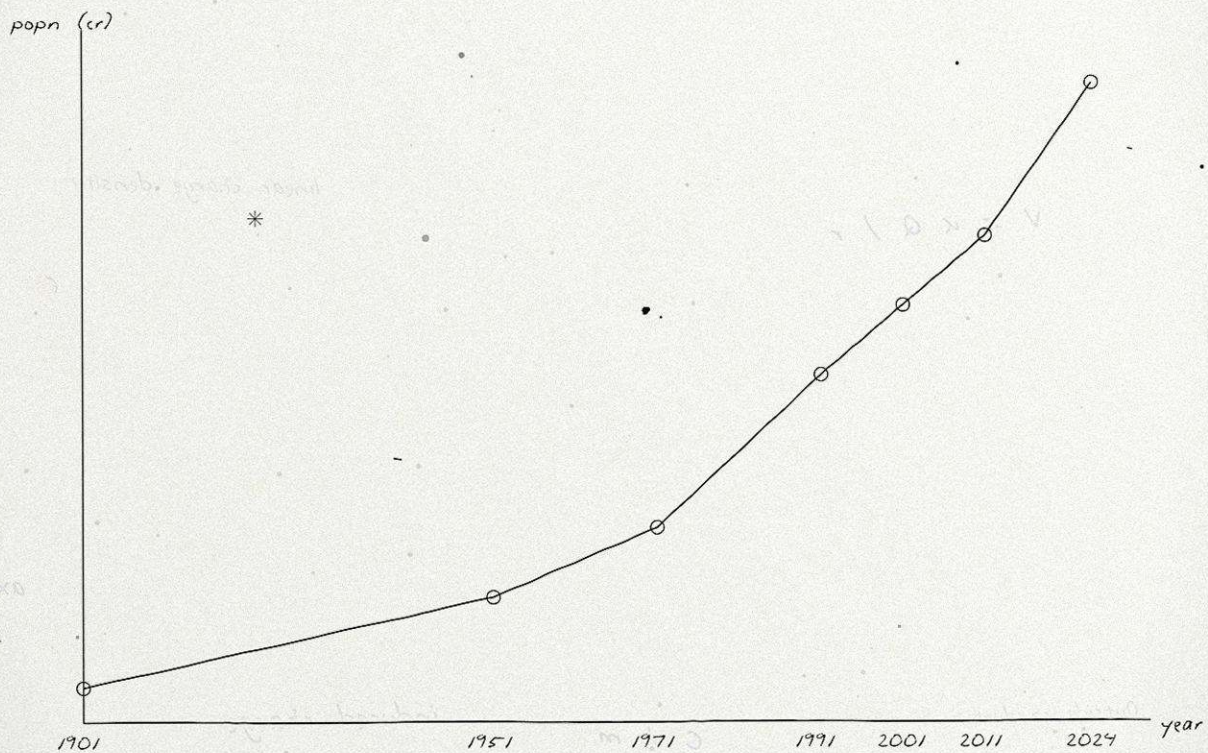
Beti Bachao Beti Padhao scheme (2015).

Population Explosion

World population went from 2 b (1900) to 8 b (2022). India alone 1.4 billion.

Indian growth rate - 1 % per year (still high).

Indian Population Growth



Causes of Boom

- (i) Reduced MMR (maternal mortality rate)
- (ii) Reduced IMR (infant mortality rate)
- (iii) Increase in adults of reproductive age
- (iv) Lack of awareness, ~~good~~ inadequate use of contraception

Statutory Measures

Govt Measures to Stabilise Population

Legal age for Marriage

Female = 18 years

Male = 21 years

(Under Hindu Marriage Act, 1955, amended 1978).

Incentives

Couples adopting small family norm rewarded :

- ① Tax benefits, medals
- ② Free education incentives
- ③ Cash awards, loans

Slogans / Programmes

"Hum do, hamare do" (small family)

"Beti bachao, beti padhao"

Mission Indradhanush - immunisation drive

Janani Suraksha Yojana - safe delivery

Janani Shishu Suraksha Karyakram - mother + baby care

Birth Rate vs Death Rate

Population growth depends on Birth Rate - Death Rate.

India : BR 17 / 1000 ; DR 7 / 1000

Net Growth 1 % / year (still adding 14 mn / year)

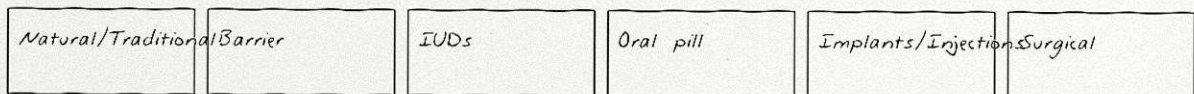
Demographic Dividend

Contraception - 6 Categories

An IDEAL contraceptive should be :

- ① User-friendly
- ② Easily available
- ③ Effective + REVERSIBLE
- ④ No / minimal side effects
- ⑤ Should not interfere with sexual drive / act

Categories



Mode of Action

- (a) Prevent ovum and sperm meeting (barriers)
- (b) Stop sperm formation (vasectomy)
- (c) Prevent fertilisation (spermicides)
- (d) Prevent ovulation (hormonal pills)
- (e) Prevent implantation (IUDs, ECPs)

Counselling Importance

Use only after proper medical advice + counselling.

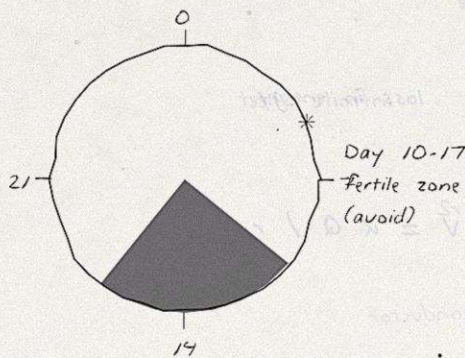
Side effects = ~~none~~ nausea, mild pain, bleeding, etc.

Natural / Traditional Methods

No drugs / devices; just observation + restraint.

(a) Periodic Abstinence

Avoid coitus during day 10-17 of menstrual cycle (when ovulation occurs - high fertility period).



(b) Coitus Interruptus / Withdrawal

Male withdraws penis just before ejaculation.

High failure rate - pre-ejaculate may contain sperm.

(c) Lactational Amenorrhea

Intense breast feeding \rightarrow no ovulation due to high prolactin levels.

Works for FIRST 6 MONTHS only after delivery.

Reliable only if ~~any~~ EXCLUSIVE breast feeding.

Advantages

Barrier Methods

Ova + sperm physically prevented from meeting.

(a) Condoms (Male / Female)

Male - thin rubber sheath on penis before coitus

Female - rubber sheath lining vagina / cervix

Brand : Nirodh (Male - distributed by Govt of India)

DUAL benefit - prevents pregnancy + STIs incl. AIDS.

Disposable \rightarrow safe, no side effects.

(b) Diaphragms / Cervical caps / Vaults

Rubber barriers placed in vagina to cover cervix.

Reusable; often used with spermicidal jelly/foam. *



Diaphragm (covers cervix)



* Cervical cap

Spermicides

Creams / jellies / foams that KILL sperm on contact.

Used along with diaphragms to boost reliability.

Advantage

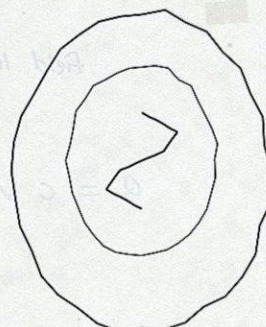
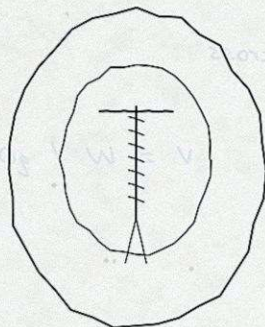
Intra Uterine Devices (IUDs)

Inserted in uterus by doctor or expert nurse.

Highly effective + reversible. Most-used in India.

Types

- (i) NON-MEDICATED - Lippes loop (plastic)
- (ii) CU-RELEASING - CuT, Cu7, Multiload 375
- (iii) HORMONAL - LNG-20, Progestasert



Mode of Action

- ① All IUDs - increase phagocytosis of sperm in uterus
- ② Cu IUDs - Cu ions hamper sperm motility + fert. capa
- ③ Hormonal IUDs - thicken cervical mucus + make endometrium unsuitable for implantation.

Effective

Oral Contraceptive Pills (OCP)

Small dose of hormones taken orally.

Daily for 21 days, then 7 days off (during menses).

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Composition

- (a) Progestogen ONLY (mini-pill)
- (b) Progestogen + Estrogen (combined pill)

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Mode of Action

- ① Inhibit OVULATION (suppress LH surge)
- ② Inhibit IMPLANTATION (unsuitable endometrium)
- ③ Thicken cervical mucus (sperm blocked)

Saheli - Indian innovation

Made by CDRI (Central Drug Research Institute), Lucknow.

Non-steroidal preparation; ~~daily~~ WEEKLY pill.

Very few side effects, high contraceptive value.

Emergency Contraception (ECP)

Pills taken within 72 hours of unprotected coitus

OR rape - prevents pregnancy.

Brand : i-Pill, Unwanted-72 ; high-dose progestogen.

Side Effects

Nausea, headache, breast tenderness, irreg. bleeding.

Implants & Injectable Hormones

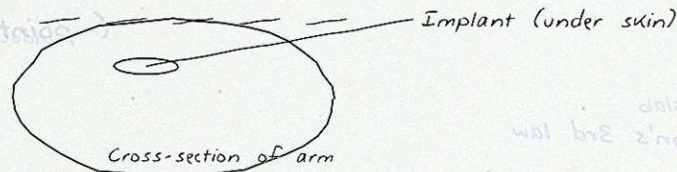
Same hormonal principle as oral pills but LONGER lasting.

Implants

Small rod-like implant inserted under skin of arm.

Releases progestogen slowly over 3-5 years.

Brand - Norplant, Implanon.



Injectable Contraceptives

Brand - Depo-Provera, Met-En.

Injected every 1-3 months - inhibits ovulation.

Side effects - irreg. bleeding, ~~less~~ more amenorrhea.

Reversibility

All hormonal methods (oral / implants / injectables) are FULLY reversible - normal fertility returns after stopping. *

Choosing a Method

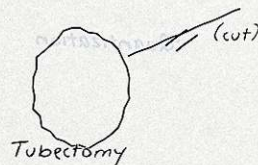
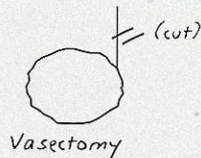
Surgical Sterilisation

Surgical methods - **TERMINAL** contraceptive (irreversible).
Recommended only for couples not wanting more children.

Vasectomy (Male)

Small part of **VAS DEFERENS** is cut + tied through a small incision in scrotum.

— Sperm cannot pass from testis to ejaculatory duct.



Tubectomy (Female)

Small part of fallopian tube cut and tied.

Ovum cannot reach uterus - no fertilisation.

Effectiveness

Highly effective; ~~reversible~~ irreversible (very hard to undo).

Failure rate < 1 %.

Risks

Medical Termination of Pregnancy (MTP)

Intentional / Voluntary termination of pregnancy before full term - also called induced abortion. *

When MTP is Done

- ① Unwanted pregnancy (rape, failed contraception)
- ② Mother's life at risk (severe disease)
- ③ Foetal abnormalities (serious genetic disorders)

Legal Status in India

MTP Act, 1971 - legalised MTP under specific conditions to reduce ILLEGAL abortions.

Amendment (2003) - more accessible & safe.

Amendment (2021) - upper limit raised to 24 weeks in special cases.

Safe Period for MTP

Best in 1st trimester (up to ~~3rd~~ 12th week).

After 12 weeks - riskier.

Beyond 24 weeks - rarely permitted.

Misuse

MTP misused for FEMALE FOETICIDE in India (after amniocentesis reveals sex of foetus).

PCPNDT Act (1994) bans sex determination.

Sexually Transmitted Infections

Also called VD (venereal diseases) or RTIs.

Transmitted through sexual contact.

Common STIs

Gonorrhoea	Bacteria (Neisseria)
Syphilis	Bacteria (Treponema)
Genital herpes	Virus (HSV)
Chlamydia	Bacteria (Chlamydia)
Genital warts	Virus (HPV)
Trichomoniasis	Protozoa (Trichomonas)
Hepatitis-B	Virus (HBV)
AIDS	Virus (HIV)

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Routes of Transmission

- (i) Sexual contact (most STIs)
- (ii) Sharing needles (Hep-B, AIDS)
- (iii) Blood transfusion (Hep-B, AIDS)
- (iv) Mother to foetus (Hep-B, AIDS, syphilis)

Vulnerable Groups

Persons 15-24 yrs at highest risk.

Awareness is key prevention.

STI Symptoms & Complications

Early Symptoms

- (a) Itching / soreness in genital region
- (b) Discharge from genitalia
- (c) Burning during urination
- (d) Slight pain in lower abdomen
- (e) Sometimes **ASYMPTOMATIC** (especially in females)

Complications if Untreated

Pelvic Inflammatory Disease (PID)

Infertility (blocked tubes / vas)

Ectopic pregnancy

Still births, abortions

Cancer (HPV → cervical cancer)

Curability

***CURABLE** if detected early :

Gonorrhoea, Syphilis, Chlamydia,

Trichomoniasis - antibiotics work.

NOT CURABLE : Hep-B, Herpes, AIDS.

(only ~~cured~~ managed with antivirals).

Prevention - Triple Strategy

(i) Avoid coitus with unknown / multiple partners

(ii) Use condoms ; (iii) Early diagnosis + treatment

Infertility

Inability to conceive even after 1-2 years of regular, unprotected coitus.

Approximately 10-15 % couples affected.

Causes - Male side

Low sperm count (oligospermia)

Defective sperm motility

Azoospermia, varicocele

Cryptorchidism (undescended testes)

Hormonal imbalance, infections, smoking

Causes - Female side

Anovulation (no ovulation)

Blocked fallopian tubes

Endometriosis, fibroids

Hormonal imbalance, PCOS

Genetic abnormalities, age >35

Counselling First

Specialised health centres + counselling - identify if problem is correctable (drugs / surgery).

If not correctable -> ART techniques offered.

Adoption ~~test~~ also strongly encouraged.

Assisted Reproductive Technologies (ART)

Special techniques to help infertile couples have children. Six main types :

- ① IVF-ET (In Vitro Fert. + Embryo Transfer)
- ② ZIFT (Zygote Intra-Fallopian Transfer)
- ③ IUT (Intra-Uterine Transfer of embryo)
- ④ GIFT (Gamete Intra-Fallopian Transfer)
- ⑤ ICSI (IntraCytoplasmic Sperm Injection)
- ⑥ IUI (Intra-Uterine Insemination)
- ⑦ AI (Artificial Insemination - donor/husband)

IVF-ET

Ova + sperm collected, mixed in lab dish, the zygote / 8-cell embryo transferred to uterus.

Used - blocked tubes, low sperm count, etc.

World's 1st test tube baby - Louise Brown (1978)

by Robert Edwards & Patrick Steptoe.

India's 1st - Durga (Kolkata, 1978) - Subhash Mukherjee.

ZIFT vs IUT

ZIFT - zygote / early embryo (~~>8~~ ≤ 8 cell) put in fallopian tube

IUT - embryo (> 8 cell) put directly in uterus

GIFT

GIFT, ICSI & AI

GIFT

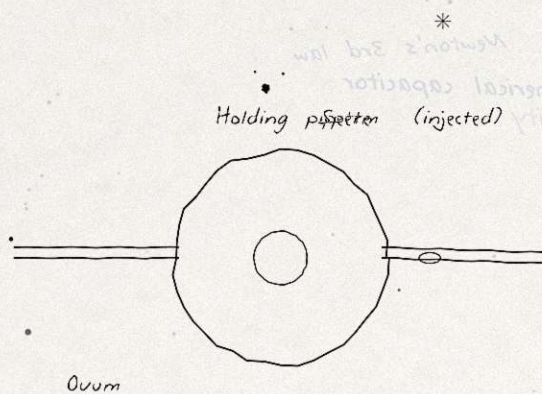
Healthy donor ovum + recipient's husband sperm transferred to recipient's fallopian tube.

Used when recipient cannot produce ova.

ICSI

Single sperm directly injected into cytoplasm of ovum. Resulting embryo transferred to uterus.

Used when sperm motility / count is very low.



AI / IUI

AI (Artificial Insemination) : semen from husband or donor is artificially put into the vagina / uterus (IUI) of the female.

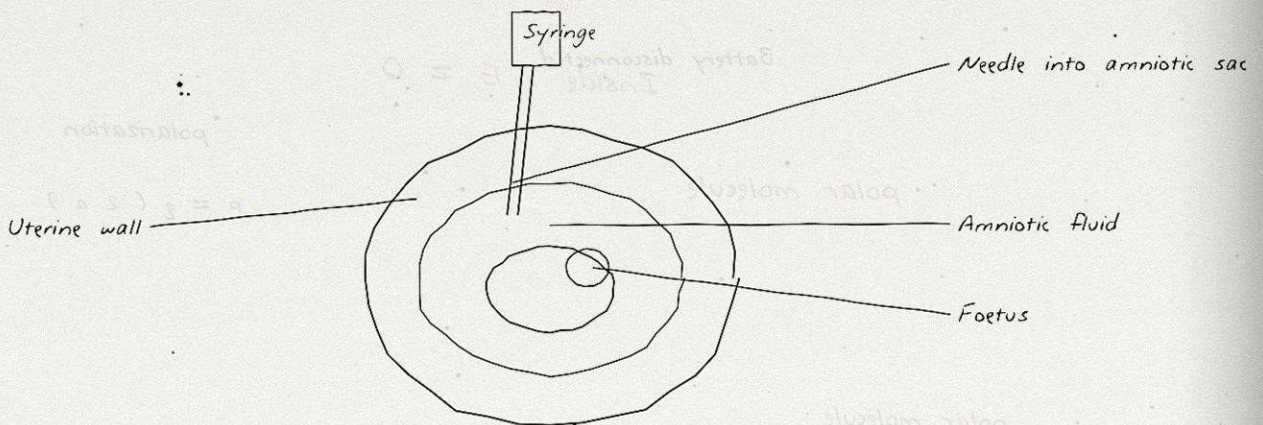
Used when sperm count is very low / cannot deposit.

Limitations of ART

Amniocentesis

Foetal sex determination + diagnostic test.

Sample of amniotic fluid drawn from uterus - contains foetal cells \rightarrow karyotyped*.



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Fig. Amniocentesis procedure

Uses

- (a) Detect chromosomal disorders (Down's, etc.)
- (b) Detect metabolic disorders
- (c) Detect Y-chromosome (sex of foetus)

Misuse - Female Foeticide

Tragically used for ~~safety~~ sex-selective abortion.

Banned for sex selection by PCPMDT Act (1994).

CVS, NIPT

Adolescence & Reproductive Health

Adolescence = 10 to 19 yrs ; transition phase.
Body + mind undergo dramatic changes.

Common Issues

- ① Identity confusion + emotional turmoil
- ② Peer pressure → risky behaviour
- ③ Drug + alcohol abuse
- ④ Early sexual activity → teen pregnancy
- ⑤ STIs, including HIV

Sex Education in Schools

Important so children get RIGHT information.

Topics - body changes, menstrual hygiene,

STIs, contraception, safe sex, consent.

Discourages ~~ignorance~~ myths and unsafe practices.

Adolescent Sensitivity Training (AST)

Parents + teachers must be approachable.

Discuss without taboo - emotional, physical, behavioural changes are normal.

Awareness Materials

- Audio-visual, print media, school programmes,
- NGO efforts, govt campaigns (Saheli ki Saheli).

Quick Recap - RH Numbers

Key Dates

- 1951 - India started Family Planning prog.
- 1971 - MTP Act passed
- 1990s - RCH programme launched
- 1994 - PCPMDT Act (anti sex-selection)
- 2003 - MTP Act amended
- 2021 - MTP Act further amended (24 weeks)

Marriage Age in India

Female - 18 yrs ; Male - 21 yrs

Key Numbers

- Contraceptive should fail < ? - ideally < 1 %
- Safe MTP up to : 12 weeks (1st trimester)
- ECP within : 72 hours of unprotected sex
- Lactation amenorrhea : first 6 months
- Infertility defined after : 1-2 years
- 1st test tube baby (world) : Louise Brown 1978
- 1st test tube baby (India) : Durga 1978

Mode of Action - Recap

- Condoms - barrier ; Pills - no ovulation
- IUDs - phagocytosis / hostile uterus
- Vasectomy / Tubectomy - surgical block