

# **ADHIKAANSH ACADEMY (IITJEE NEET IX X XI XII)**

**RUN BY:**

**DEEPAK SAINI SIR**

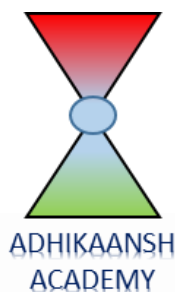
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# **BIOLOGY NOTES (CLASS 12<sup>TH</sup>)**



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**सही समय और सही दिशा में कड़ी मेहनत, तो सफलता पक्की!**

*So why  
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**DIRECTOR**  
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**और Class 11<sup>th</sup> से ही शुरू करें,  
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## CHAPTER 4 - REPRODUCTIVE HEALTH

WHO - WORLD HEALTH ORGANISATION HAS DEFINED IT AS A TOTAL WELL-BEING IN ALL ASPECTS OF REPRODUCTION, I.E., PHYSICAL, EMOTIONAL, BEHAVIORAL & SOCIAL.

REPRODUCTIVE HEALTH – PROBLEMS AND STRATEGY:

- INDIA WAS AMONG THE 1ST COUNTRIES TO INITIATE ACTIONS & PLANS TO ATTAIN TOTAL REPRODUCTIVE HEALTH AS SOCIAL GOAL.
- THESE PROGRAMMES ARE CALLED AS ' FAMILY PLANNING '
- IMPROVED PROGRAMMES CURRENTLY IN OPERATION HAVE A POPULAR NAME 'REPRODUCTIVE & CHILD HEALTH CARE PROGRAMMES' (RCH).

HOW HAS THE GOVERNMENT TAKEN MEASURES?

- THROUGH THE HELP OF AUDIO-VISUALS & PRINT MEDIA.
- EVEN FAMILY MEMBERS, CLOSE RELATIONS ARE INVOLVED IN THE AWARENESS.
- SEX EDUCATION WAS INTRODUCED IN SCHOOLS TO PROVIDE AWARENESS
- PROPER INFORMATION ABOUT REPRODUCTIVE ORGANS, ADOLESCENCE & RELATED CHANGES , SAFE & HYGIENIC SEXUAL PRACTICES, SEXUALLY TRANSMITTED DISEASES, AIDS ETC.

AMNIOCENTESIS

IT IS A TECHNIQUE USED TO FIND OUT CHROMOSOMAL ABNORMALITIES IN DEVELOPING EMBRYO BY USING AMNIOTIC FLUID.

- IT IS ALSO MISUSED TO CHECK FOETAL SEX DETERMINATION BASED ON THE CHROMOSOMAL PATTERN IN THE AMNIOTIC FLUID SURROUNDING THE DEVELOPING EMBRYO.

POPULATION EXPLOSION & BIRTH CONTROL:

- THE WORLD'S POPULATION BEING 2 BILLION IN 1900 WAS RELOCATED TO 6 BILLION IN 2000...
- INDIA'S POPULATION WAS ABOUT 350 MILLION DURING INDEPENDENCE & ALMOST REACHED BILLION .

- A RAPID DECLINE IN DEATH RATE, MMR & IMR AS AN INCREASE IN NUMBER OF PEOPLE IN REPRODUCIBLE AGE ARE THE REASON FOR THIS .

WHY SUCH POPULATION EXPLOSION?

- MOST OF THE URBAN PEOPLE ARE UNEDUCATED.
- GIRLS WERE GIVEN INTO EARLY MARRIAGES AT 18 YRS OF AGE.

CONTRACEPTIVE METHODS:

- THROUGH MEDIA – HUM DO HAMARE DO!!!! (WE 2 , OUR 2)
- SAHELI - IT IS A CONTRACEPTIVE METHOD DEVELOPED BY SCIENTISTS IN CDRI - CENTRAL DRUG RESEARCH INSTITUTE.

CONTRACEPTIVE METHODS:

- NATURAL METHODS
- BARRIERS
- I U D
- ORAL CONTRACEPTIVES
- INJECTABLE IMPLANTS
- SURGICAL METHODS

1. NATURAL METHODS:

AVOIDS MEETING OF SPERM & OVUM.

- PERIODIC ABSTINENCE - AVOID COITUS FROM DAY 10 – 17 OF MENSTRUAL CYCLE WHEN OVULATION IS EXPECTED. BECAUSE CHANCES OF FERTILITY IS VERY HIGH DURING THIS PERIOD, HENCE KNOWN AS FERTILE PERIOD.
- WITHDRAWAL OR COITUS INTERRUPTUS - MALE PARTNER WITHDRAWS HIS PENIS FROM VAGINA BEFORE EJACULATION AVOIDING INSEMINATION OF SPERMS
- LACTATIONAL AMENORRHEA-ABSENCE OF MENSTRUAL CYCLE DURING FIRST SIX MONTHS OF INTENSE LACTATIONAL PERIOD.

## 2. BARRIER METHODS:

- CONDOMS - THIN RUBBER USED TO COVER PENIS IN MALE OR VAGINA & CERVIX IN FEMALES.
- DIAPHRAGMS, CERVICAL CAPS & VALUTS ARE ALL BARRIERS FOR FEMALES TO COVER CERVIX DURING COITUS.

### ADVANTAGES OF BARRIER METHODS:

1. THEY ARE DISPOSABLE.
2. THEY CAN BE SELF -INSERTED.
3. THEY ARE REUSABLE.
4. PREVENTS CONCEPTION BY BLOCKING ENTRY OF SPERM THRU CERVIX.

### 3. INTRA UTERINE DEVICES (IUD'S):

- DEVICES INSERTED BY DOCTORS OR NURSES IN UTERUS THRU VAGINA.

### EXAMPLES. CU T, CU7, MULTILOAD 375, LIPPES LOOP.

- CU IONS RELEASED SUPPRESS SPERM MOTILITY & FERTILIZING CAPACITY OF SPERMS.
- HORMONE RELEASING IUDS MAKES THE UTERUS UNSUITABLE FOR IMPLANTATION & CERVIX HOSTILE TO THE SPERM.

## 4. ORAL PILLS:

- PILLS ARE TAKEN DAILY FOR 21 DAYS.
- THEY ARE VERY EFFECTIVE WITH LESS SIDE EFFECTS.
- SAHELI - NEW ORAL CONTRACEPTIVE CONTAINS A NON-STEROIDAL PREPARATION.
- IT IS A 'ONCE A WEEK' PILL WITH HIGH CONTRACEPTIVE VALUE.
- INJECTION OR IMPLANTATION OF PROGESTERONE /ESTROGEN UNDER THE SKIN.

## 5. SURGICAL METHOD:

- THIS METHOD IS ALSO CALLED AS STERILISATION.
- IT IS ADVISABLE FOR MALE/FEMALE PARTNER AS A TERMINAL METHOD TO PREVENT ANY MORE PREGNANCIES.
- IN MALE, THEY'RE CALLED VASECTOMY, WHERE THE VAS DEFERENS IS CUT OR TIED.

- IN FEMALE, IT IS CALLED TUBECTOMY, WHERE A SMALL PART OF THE FALLOPIAN TUBE IS CUT OR TIED UP.
- THIS METHOD IS HIGHLY EFFECTIVE BUT THEIR REVERSIBILITY IS VERY POOR.

#### SIDE EFFECTS OF CONTRACEPTIVE METHOD:

- IT IS VERY IMPORTANT THAT THE SELECTION OF CONTRACEPTIVE METHOD SHOULD BE TAKEN UNDER THE CONSULTATION OF THE DOCTORS.
- HOWEVER, THEIR POSSIBLE ILL-EFFECTS LIKE NAUSEA, ABDOMINAL PAIN, BREAKTHROUGH BLEEDING, IRREGULAR MENSTRUAL BLEEDING OR EVEN BREAST CANCER.
- THESE SYMPTOMS SHOULD NOT BE TOTALLY IGNORED.

#### WHAT IS MTP?

INTENTIONAL OR VOLUNTARY TERMINATION OF PREGNANCY BEFORE FULL TERM IS CALLED MEDICAL TERMINATION OF PREGNANCY (MTP) OR INDUCED ABORTION.

#### WHY MTP?

- MTP IS DONE TO GET RID OF UNWANTED PREGNANCIES DUE TO CASUAL UNPROTECTED INTERCOURSE OR FAILURE OF THE CONTRACEPTIVE USED DURING COITUS OR RAPE.
- MTPs ARE ALSO ESSENTIAL IN CERTAIN CASES WHERE CONTINUATION IN PREGNANCY COULD BE HARMFUL OR EVEN FATAL TO THE MOTHER OR TO THE FOETUS OR BOTH.

#### SEXUALLY TRANSMITTED DISEASES ( STDs)

DISEASES OR INFECTIONS WHICH ARE TRANSMITTED SEXUALLY THROUGH SEXUAL INTERCOURSE ARE CALLED AS SEXUALLY TRANSMITTED DISEASES (STDs) OR VENEREAL DISEASES (VDs) OR REPRODUCTIVE TRACT INFECTIONS. STDs CAN BE CLASSIFIED AS VIRAL, BACTERIAL, PROTOZOAN, FUNGAL, ETC.

#### HOW ARE STDS CAUSED?

DEPENDING ON THE DISEASE, STDs CAN BE SPREAD WITH ANY TYPE OF SEXUAL ACTIVITY. STDs ARE MOST OFTEN CAUSED BY VIRUSES AND BACTERIA.

#### VARIOUS TYPES OF SEXUALLY TRANSMITTED DISEASES:

THE VARIOUS TYPES OF SEXUALLY TRANSMITTED DISEASES INCLUDE GONORRHOEA, SYPHILIS, GENITAL HERPS, CHANCROID AND OF COURSE THE MOST COMMON HIV LEADING TO AIDS.

## CHLAMYDIASIS

- CHLAMYDIASIS IS A SEXUALLY TRANSMITTED DISEASE IN HUMANS CAUSED BY THE BACTERIUM CHLAMYDIA TRACHOMATIS. CHLAMYDIASIS IS A MAJOR INFECTIOUS CAUSE OF HUMAN GENETAL AND EYE DISEASES.
- CHLAMYDIASIS WAS ONCE THE MOST IMPORTANT CAUSE OF BLINDNESS. THE INFECTION CAN SPREAD FROM EYE TO EYE BY FINGERS, SHARED TOWELS, EYE SEEKING FLIES, AND CLOTHS ETC.

## PREVENTION

STDs ARE A MAJOR THREAT TO A HEALTHY SOCIETY. THEREFORE EARLY DETECTION OR PREVENTION AND CURE OF THESE DISEASES ARE GIVEN PRIME CONSIDERATION UNDER REPRODUCTIVE HEALTH-CARE PROGRAMMES THOUGH ALL PERSON ARE VULNERABLE TO THESE INFECTIONS, THEIR INCIDENCES ARE REPORTED TO BE VERY HIGH AMONG THE AGE GROUP OF 15-24 YEARS. THESE INFECTIONS CAN BE PREVENTED BY FOLLOWING A FEW SIMPLE RULES WHICH INCLUDE:

- AVOID SEX WITH UNKNOWN PARTNERS OR MULTIPLE PARTNERS
- ALWAYS USE CONDOMS DURING COITUS
- IN CASE OF DOUBT, GO TO A QUALIFIED DOCTOR FOR EARLY DETECTION AND GET COMPLETE TREATMENT IF DIAGNOSED WITH DISEASE.

## INFERTILITY

A LARGE NO OF COUPLES ALL OVER INDIA ARE INFERTILE, I.E., THEY ARE UNABLE TO PRODUCE CHILDREN IN SPITE OF UNPROTECTED SEXUAL CO-HABITATION. THE REASONS FOR THIS COULD BE MANY-PHYSICAL, CONGENITAL, DISEASES, DRUGS, IMMUNOLOGICAL OR EVEN PSYCHOLOGICAL.

ASSISTED REPRODUCTIVE TECHNOLOGIES (ART) ARE SPECIAL TECHNIQUES THAT ASSIST COUPLES TO HAVE CHILDREN.

VARIOUS TYPES OF ASSISTED REPRODUCTIVE TECHNOLOGIES (ART) INCLUDE:

- IN-VITRO FERTILISATION (IVF)
- ZYGOTE INTRA FALLOPIAN TRANSFER (ZIFT)
- INTRA CYTOPLASMIC SPERM INJECTION (ICSI)
- GAMETE INTRA FALLOPIAN TRANSFER (GIFT)
- ARTIFICIAL INSEMINATION (AI)

### 1) IN VITRO FERTILIZATION (IVF)

IT IS THE FERTILIZATION OUTSIDE THE BODY IN ALMOST SIMILAR CONDITIONS AS THAT IN THE BODY. IN THIS METHOD, POPULARLY KNOWN AS TEST TUBE BABY PROGRAMME, OVA FROM THE WIFE / DONOR (FEMALE) AND SPERMS FROM THE HUSBAND / DONOR (MALE) ARE COLLECTED AND ARE INDUCED TO FORM THE ZYGOTE UNDER SIMULATED CONDITIONS IN THE LAB. THE ZYGOTE OR EARLY EMBRYOS COULD THEN BE TRANSFERRED INTO THE FALLOPIAN TUBE (ZIFT -ZYGOTE INTRA FALLOPIAN TRANSFER)

## 2) ZYGOTE INTRA FALLOPIAN TRANSFER (ZIFT)

THE ZYGOTE WITH 8 BLASTOMERES CAN BE TRANSFERRED INTO THE FALLOPIAN TUBE.

## 3) INTRA CYTOPLASMIC SPERM INJECTION (ICSI)

INTRA CYTOPLASMIC SPERM INJECTION (ICSI) IS ANOTHER SPECIALIZED PROCEDURE TO FORM AN EMBRYO IN THE LAB IN WHICH A SPERM IS DIRECTLY INJECTED INTO THE OVUM.

## 4) GAMETE INTRA FALLOPIAN TUBE (GIFT)

TRANSFER OF AN OVUM COLLECTED FROM A DONOR INTO THE FALLOPIAN TUBE OF ANOTHER FEMALE WHO CANNOT PRODUCE ONE, BUT CAN PROVIDE SUITABLE ENVIRONMENT FOR FERTILISATION AND FURTHER DEVELOPMENT IS ANOTHER METHOD ATTEMPTED.

## 5) ARTIFICIAL INSEMINATION (AI)

INFERTILITY CASES EITHER DUE TO INABILITY OF THE MALE PARTNER TO INSEMINATE THE FEMALE OR DUE TO VERY LOW SPERMS COUNTS IN THE EJACULATES COULD BE CORRECTED BY ARTIFICIAL INSEMINATION.

IN THE TECHNIQUE, THE SEMEN COLLECTED EITHER FROM THE HUSBAND OR A HEALTHY DONOR IS ARTIFICIALLY INTRODUCED INTO THE VAGINA OR INTO THE UTERUS (IUI - INTRA UTERINE INSEMINATION) OF THE FEMALE.

## 6) ADOPTION – CAN BE DONE FROM ORPHANAGE / RELATIVES.

### COUNSELING AND INFORMATION ON INFERTILITY

IT IS IMPORTANT TO INVOLVE BOTH PARTNERS IN ALL ASPECTS OF MANAGEMENT. DISCUSSIONS OF WISHES, PLANS, BELIEFS AND MOTIVES ARE IMPORTANT.



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