

# **FAMILY PLANNING-ROLE OF PHARMACIST**

## **LEARNING OBJECTIVES**

- Know the objectives of family planning.
- Understand various methods of family planning.
- Appreciate the role of pharmacist in family planning.

Family planning is often used as a synonym for birth control and usually applied to the circumstance of couples who wish to space between the children they want to have. Family planning is a technique that delays the pregnancy rather than preventing the pregnancy entirely. World Health Organization (WHO) defines 'family planning' as a way of living and thinking that is adopted voluntarily upon the basis of knowledge, attitudes and responsible decisions of individuals and couples in order to promote the health and welfare of the family group and thus contributes effectively to the social development of a country. WHO has appreciated the role of pharmacists in educating the patients' about advantages of family planning and useful techniques the couple can adopt suiting to their family conditions.

## **OBJECTIVES OF FAMILY PLANNING**

Following are the objectives of family planning.

- To avoid unwanted births
- To bring about wanted births
- To regulate intervals between the pregnancies
- To determine the number of children in the family
- To control pregnancies in relation to the age of the parent
- To prevent the frequent pregnancies induced stress on the physical and psychological health of the mother.

## CONTRACEPTIVE METHODS

Dated back to the history, individuals adopted various techniques to prevent the pregnancy. Various oldest forms of birth control included coitus interruptus, and the ingestion of herbs that were believed to be abortifacients. The earliest records of birth control use were found in Egypt about the use of a contraceptive pessary. Various methods are practiced currently to prevent unwanted pregnancies temporally or permanently. However a contraceptive method should be safe, effective, acceptable, and easy to use and should be economical to the user.

## CLASSIFICATION OF CONTRACEPTIVE METHODS

### A. Temporary methods (spacing methods)

1. Barrier methods
  - Physical methods
  - Chemical methods
  - Combined methods
2. Intra uterine devices (IUD)
3. Hormonal contraceptives
4. Post conceptual methods
5. Miscellaneous

### B. Permanent methods

Male sterilization (vasectomy)

Female sterilization (Tubectomy)

### Temporary Methods

1. **Barrier methods:** Barrier methods are available for both sexes. The mechanism of action is that they prevent the union of ovum with sperm either mechanically or chemically.

**Physical methods:** These include condom, diaphragm, and vaginal sponge.

**Condom:** It is a male contraceptive made from latex. Some condoms are coated with a dry lubricant or with spermicide. Different sizes, shapes, colors and textures may be available. It fits over a man's erect penis.

#### Precautions

- Must be free from tears and leaks
- Must be discarded after single use

#### Advantages:

- Inexpensive
- Safe



- Easy to use and reliable
- Gives protection against STD and AIDS
- No side effects
- Light, compact and easily disposable
- It is safe and has no hormonal side effects.
- Can be used by men of all ages.

**Disadvantages:** Latex used to manufacture condoms or the lubricants used in the condoms may cause itching in few individuals who are allergic to latex or the lubricants.

- Incorrect use of the condom may slip off or tear during the coitus
- Some men have expressed that condom interferes with their sexual pleasure.

### Diaphragm

It is a vaginal barrier used by women made of a synthetic rubber or plastic material. It has a flexible ring made of spring. It is inserted in to the vagina before coitus.

### Precautions

- The diaphragm must remain in place for not less than six hours after the intercourse

### Advantages

- Total absence of risks and medical contraindications

### Disadvantages

- Initially the physician or a trained person's support is required to demonstrate the method of insertion
- Privacy is required for the insertion
- If it is left in the vagina for a longer period, it may produce a toxic shock syndrome

### Vaginal Sponge

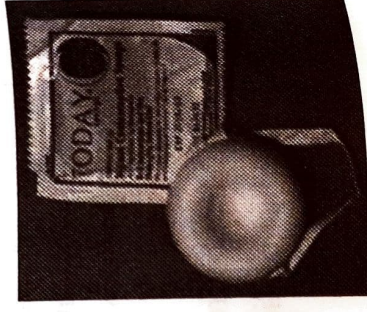
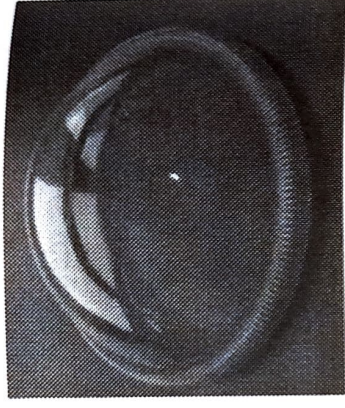
It is a small polyurethane sponge saturated with spermicidal, monoxynol-9. It is put in vagina just before coitus.

**Disadvantages:** Less effective than diaphragm

### Chemical Methods

They make use of chemical spermicidal agents. They are used in the form of

- Foams



- Creams, pastes, jellies
- Suppositories
- Soluble film

**Mechanism:** The preparations contain surface active agents, which attach to the spermatozoa and inhibit the oxygen uptake thereby killing the sperms.

**Advantages:** Safe, and every needy woman can use because they are all woman controlled methods.

- Helps in preventing some of the sexually transmitted diseases.

#### **Disadvantages**

- High failure rate
  - Mild irritation, burning and uneasiness
  - Must be used immediately before coitus
- physical and chemical methods alone cannot be useful, can be used in combination called combined method to reduce the failure rate.

## 2. Intra-Uterine Devices (IUD):

An intrauterine device (IUD) usually is a small, flexible plastic frame.

#### Types of IUD

**First generation IUD's:** They are made of polythene and they are inert and non-medicated. They appear in various sizes and shapes like loops, spirals, coils and rings. Lippes loop is commonly used one which is available in an S shaped device.

#### **Advantages**

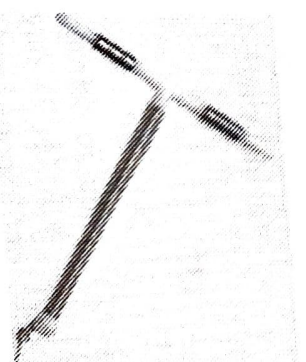
- Simple and easy insertion
- Economical
- Reversible method
- Does not interfere with sexual pleasure

#### **Disadvantages**

- Needs a trained person for insertion
- Needs adequate follow up
- Should be replaced periodically
- Rarely it can produce cancer of uterus and fibroid

#### **Second generation IUD**

These are copper containing devices. Older devices are copper-7 and copper -T-200, newer ones are Nova-T and multi loaded devices.



### Advantages

- Low expulsion rate
- Lower evidence of side effects like pain and bleeding
- Easier to fit even in nulliparous women
- Increased contraceptive effect

### Third generation IUD

These devices act by releasing a hormone. The currently used devices are Progestasert. It is a T-shaped device filled with progesterone. It acts by releasing 65 micrograms of hormone daily in the uterus.

3. **Hormonal Contraceptives:** Hormonal contraceptives are the most effective spacing methods of contraception. These can be administered orally by ingestion or as an implant. Combined oral contraceptives contain two hormones similar to the natural (COC) hormones in a woman's body an estrogen and a progestin. These contraceptives contain a combination of both estrogen and progesterone or progesterone only. Also called combined pills, COC's, OC's, the pill and birth control pills.

### Mechanism

- Stop ovulation (release of eggs from ovaries).
- Also thicken cervical mucus, making it difficult for sperm to pass through.
- They do not work by disrupting existing pregnancy

### Classification of hormonal contraceptives

#### Oral pills:

- Combined pill
- Progesterone only pill
- Post coital pill
- Once in a month pill
- Male pill

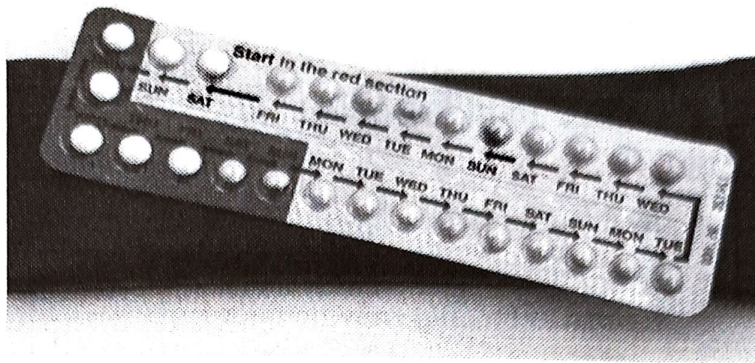
#### Depot formulations

- Injectable
- Sub dermal implants
- Vaginal rings

### Oral Pills

- (a) **Combined Oral Contraceptive (COC) pills:** These pills contain 30-35 mcg of a synthetic estrogen and 0.1-1mg of progesterone. One pill daily should be taken orally for 21 days beginning of the fifth day of the menstrual cycle. COC pills are not recommended for women feeding the babies, because COC may affect the quality and quantity of secreted milk. Chronic use of COC pills may cause stroke,

blood clots in deep veins of the legs or heart attack. Women with high blood pressure and are older than 35 years of age and chronic smokers are at high risk to develop the ischemic attacks. E.g., Mala -N, Mala-D



- (b) **Progesterone-only pills:** It contains very small amounts of only one kind of hormone, a progestin. Again, they contain only one-half to one tenth as much progestin as combined oral contraceptives. They do not contain estrogen. These are known as progestin-only pills (POPs), POPs and mini pills. Progestin-only contraceptives are best recommended for breast-feeding women. They do not interfere in milk production. Progestin-only oral contraceptives do not disrupt existing pregnancy.
- (c) **Emergency pill:** After an unprotected sex, emergency oral contraception can prevent the pregnancy. Thus they are called as postcoital or 'morning after' contraception pills. Emergency pills mainly stop ovulation (release of egg from ovary) but perhaps also work in other ways. It does not disrupt existing pregnancy. Up to 72 hours after unprotected sex, the woman is asked to take 4 low-dose or 2 "standard-dose" combined oral contraceptives, and then take another equal dose after 12 hours. It contains either a high dose of estrogen or double dose of standard combined pills. Many reports have suggested that Emergency pill have prevented about three-fourths of pregnancies that would otherwise have occurred.
- (d) **Once in a month pill:** It contains a long acting estrogen in combination with short acting progesterone.
- (e) **Male pill:** It contains gossypol, which is a derivative of cottonseed oil. It acts by decreasing sperm production and sperm count.

### Adverse Effects of Oral Contraceptives

Adverse drug effects associated with oral contraceptive pills are

- Myocardial infarction,
- Thromboembolic complications,
- Breast cancer,
- Hyperglycemia,
- Hypertension,
- Jaundice,
- Weight gain,
- Nausea and vomiting.

*Advantages*

- Ease to use orally
- Almost 100% effective

*Disadvantages*

- Reduces breast milk
- Side effects and contraindications
- Return to fertility may be failed.

**Depot Formulations**

(a) **Injectable contraceptives:** Two drugs are available, they are

- DMPA (Depot –Medroxy Progesterone Acetate)
- NET-EN (Nor-ethisterone Enanthate)

They are progesterone and require administration once in every 3 months.

1. Mechanism: It mainly stops ovulation (release of eggs from ovaries).
2. It thickens the cervical mucus, making it difficult for sperm to pass through.
3. It does not disrupt existing pregnancy

*Advantages*

- It is very effective; one injection can prevent pregnancy for 3 months.
- It does not interfere with sex and can be used at any stage.
- It has no estrogen side effects. It does not increase the risk of estrogen related complications such as heart attack.

*Disadvantages*

- These injections may cause weight gain
- Headaches, breast tenderness, moodiness, nausea, and hair loss in some women.
- Does not protect against sexually transmitted diseases including HIV/AIDS.

*Contra indications*

- Cancer of breast or genital tract
- Unexplained vaginal bleeding

(b) **Sub dermal implants:** The available drug is Norplant. It contains levonorgestrel. The capsules are placed under the skin of a woman's upper arm. They provide effective contraception for 5 years.

**Mechanism:** Norplant capsules thicken the cervical mucus making it difficult for sperm to pass through. It stops ovulation (release of eggs from ovaries) in about half of the menstrual cycles after the first year of use.

**Disadvantages:** Irregularities of menstrual bleeding and surgical procedures are necessary for insertion and removal.

(c) **Vaginal rings:** They contain levonorgestrel which is slowly absorbed through the vaginal mucosa. It bypasses the digestive tract and liver so an effective contraception is felt with small dose.

4. **Post-Conceptional methods**

Menstrual regulation  
Menstrual induction

5. **Miscellaneous methods**

(a) **Behavioral methods:** Behavioral methods are

(a) Abstinence (refraining from the sexual intercourse),

(b) Coitus interruptus (withdrawing the penis from vagina just before the ejaculation)

(c) Safe period method (avoiding sexual intercourse during day 9-14 of the menstrual cycle. During one of these days the ova may be released)

(b) **Natural method:** They include an increase in basal body temperature during which sexual intercourse should be avoided and the same applies for cervical mucus method.

## PERMANENT METHODS

### Sterilization

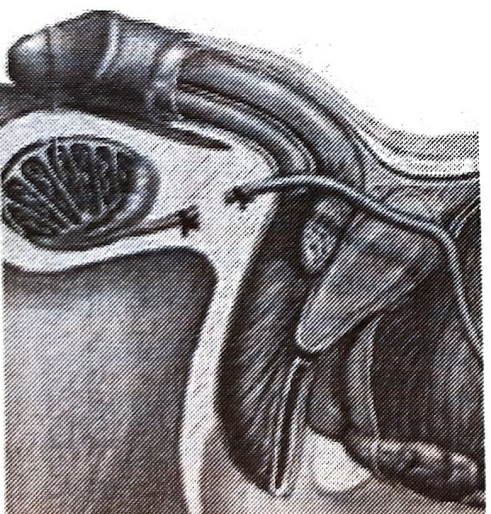
Sterilization can be done for both male and female. The advantages of the sterilization are:

- One time method
- Does not require continued motivation
- Complications are less if done properly
- Most cost effective

### Male Sterilization (Vasectomy)

Vasectomy provides permanent contraception for men who decide they do not want children any more. It is a safe, simple and quick surgical procedure and can be done in a clinic or physician's office with proper infection prevention procedures.

During Vasectomy, a piece of vas deferens of about 1cm length is removed after clamping. The ends are ligated and then folded back on and then sutured.



Vasectomy

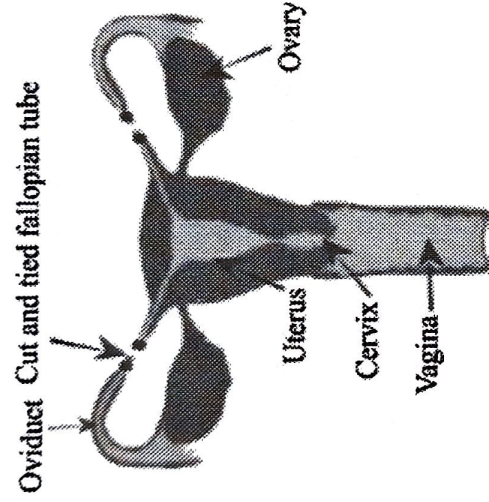


### Complications

- Operative complications like hematoma and infections
- Sperm granuloma accompanied by pain and swelling
- Spontaneous recanalisation
- Psychological disturbance like loss of sexual vigor, impotence, fatigue

### Female Sterilization (Tubectomy)

Female sterilization provides permanent contraception for women who do not want children any more. It is a safe and simple surgical procedure and can usually be done with local anesthesia and light sedation. It is done by two procedures:



### Laparoscopy

It is done through abdominal approach with a specialized instrument called laparoscope. The abdomen is inflated with gas then the instrument is introduced in to abdomen cavity to visualize the fallopian tubes. The tubes are occluded with fallopian rings.

Advantages are short operating time, shorter stay in hospital and a small scar. Rarely complications may develop.

### Mini Laparotomy

It is a modification of abdominal Tubectomy. It is a very simple procedure, which requires a very small incision, it is safe, efficient and easy procedure with less complications.

## ROLE OF PHARMACIST IN FAMILY PLANNING

Pharmacist serves as a link between public and doctors. Therefore it is likely that pharmacist can come across a number of people with their own beliefs about family planning. The illiterate or less educated people are not aware of the benefits and ease of family planning. Most of them have a psychic fear that sterilization is painful, dangerous and harmful to health. The pharmacist can play a vital role in dispelling these fears.

Pharmacist can promote family planning by:

- Displaying family planning posters in hospitals and drug stores
- Advising people about the importance of family planning, spacing of children etc
- By distributing pamphlet about family planning
- Explaining about oral contraceptives and family planning techniques

India is a country with more than one billion population and second to China. Population explosion affects the country's resources. Thus pharmacist can control this rising population through counseling the people and conducting educational programs that highlight the problems associated with high population. Pharmacist can assist the individuals and couples to know about various family planning measures that are available in the market at affordable prices. Pharmacist can educate the people and convince them about the advantages of having small families.

### SUGGESTED READINGS

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