

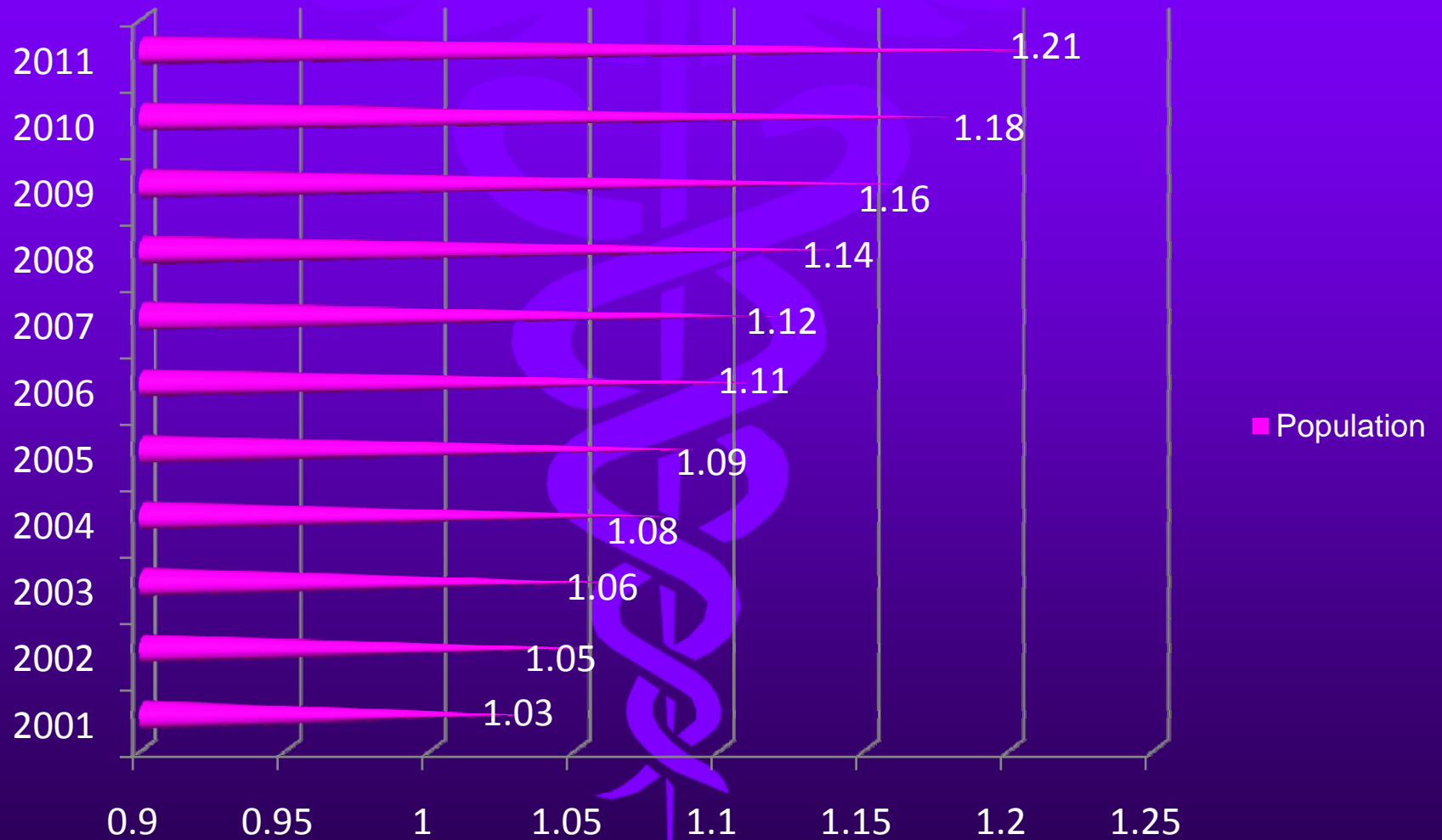
Contraceptive Methods

Definition-

“Methods & practices that allow intercourse yet prevent conception are called contraception”



India Population Trends





Rajasthan / India : Decade wise Population growth

Year	India	Rajasthan
1901	2380	102
1911	2520	109
1921	2510	102
1931	2790	117
1941	3190	138
1951	3610	159
1961	4390	201
1971	5480	257
1981	6830	342
1991	8460	440
2001	10270	565
2011	12100	686

Contraception: condus: a vessel to store

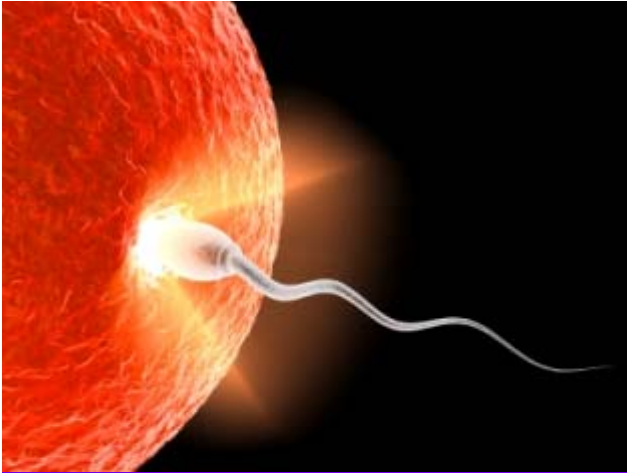


- First recorded -end of the 19th century,
- Onanism- synomymous with Masturbation and coitus interruptus) as an act of sexual intercourse so performed that, with ejaculation, procreation cannot result. (biblical story of Onan (Gen. 38: 4-10)
- Intentional prevention of fertilization of an ovum by special devices or drugs

1827

Discovery of the existence of the female egg -- the ovum. Prior to this, it is only known that semen must enter the female body for conception to occur.

1843



Scientists learn that conception occurs in human reproduction when the sperm enters the female egg. Prior to this it was assumed that men created life and women just provided the home for it.



Historical Perspective

- 1850 BC , Greek & Egypt
- Bible, Genesis Chapter 38, 'coitus interruptus'



- Ebers Papyrus, 1550 BC mentioned lint tampons soaked in the fermented tips of acacia shrubs.
- Gabrielle-15 century- first used the condom

Early Developments



- Japan-Tortoise shell, horn or leather cover
- Romans- first century- goat's bladder
- Fallopius(Italian anatomist), Male Condom (Linen) in 1504
- Dr. Condom- to King Charles-II: animal intestine sheaths
- 1918, Marie Stopes,- rubber cap to be used with quinine pessaries or a pad of cotton wool smeared with petroleum jelly.
- Vulcanized rubber in the 1840's, by Goodyear
- Rubber condoms became available in 1880,
- 1930 liquid latex

Resistance to Contraception

*No Catholic theologian **has ever taught**, “Contraception is a good act.” The teaching on contraception is clear and apparently fixed forever.*



John T. Noonan, Professor at the law school of the [University of California, Berkeley](#)
Contraception, 1968

Context and Quality changed

- 1990
 - Condom quality
 - Sizes
 - Colors
 - Flavors



Luther on Contraception



Martin Luther
German priest
and professor of
theology

- The **purpose** of marriage is not pleasure and ease but the **procreation** and education of children and the support of a family.... People who do not like children are swine, dunces, and blockheads, not worthy to be called men and women, because they despise the blessing of God, the Creator and Author of marriage. (Christian History, Issue 39, p. 24).

Luther on Contraception



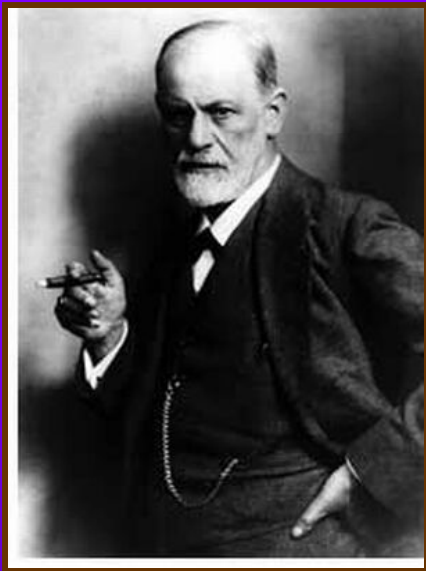
The exceedingly foul deed of Onan(s/o Judah, founder of Israelite Tribe) is a most disgraceful sin. It is far more atrocious than incest and adultery. For Onan goes into her (Tamar, his brother's widow); and when it comes to the point of insemination, **spills the semen**, lest the woman conceive.



Surely at such a time the order of nature established by God in procreation should be followed. Accordingly, it was a most disgraceful crime. . . . Consequently, he deserved to be killed by God. He committed an evil deed. Therefore, God punished him.

(Lectures on Genesis: Chapters 38-44; 1544; LW, 7, 20-21)

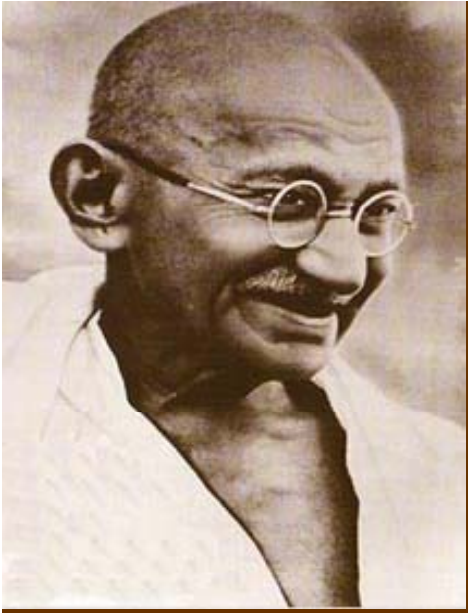
SIHFW: an ISO 9001: 2008 certified institution



Sigmund
Freud

The abandonment of the reproductive function is the common feature of all perversions. We actually describe a sexual activity as perverse if it has given up the aim of reproduction and pursues the attainment of pleasure as an aim independent of it.

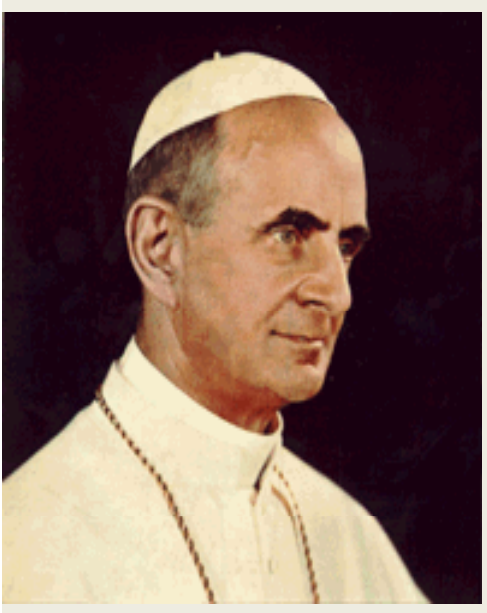
[Freud, *Introductory Lectures on Psychoanalysis* (Norton) (1966, 317)]



- There can be no two opinions about the necessity of birth-control. But the only method handed down from ages past is **self-control**.... It is an infallible, sovereign remedy doing good to those who practice it and medical men will earn the gratitude of mankind if, instead of devising artificial means of birth-control, they will find out the means of self-control.



- In 1950- Gregory Pincus -“ideal” oral contraception, tested on women from Haiti and Puerto Rico.
- 1960- first oral contraception, Enovid 10, launched in the US



1968

- Pope Paul VI has confirmed a ban on the use of contraceptives by Roman Catholics in spite of a Church commission's recommendation for change.

Major Events in the Birth Control Movement and Pill Development



1914: Margaret Sanger (1879–1966), American birth control activist arrested, dissemination information

1915: National Birth Control League formed (NY)

1916: Sanger opens clinic in Brooklyn

1918; Marie Stopes opens clinic in London



1927: Sanger's World Population Congress

1950: McCormick writes to Sanger regarding funding of contraceptive research

1951; PPFA sponsors 200 clinics; Sanger meeting with Stone and Pincus for "perfect contraceptive

Ancient Practices

- Tree Barks & Gums
- Excreta of animals
- Fruits and Vegetable juices (Lemon, Orange)
- Dates, Honey, Sugar
- Salt water douches
- Chemicals like lactic acid anhydride

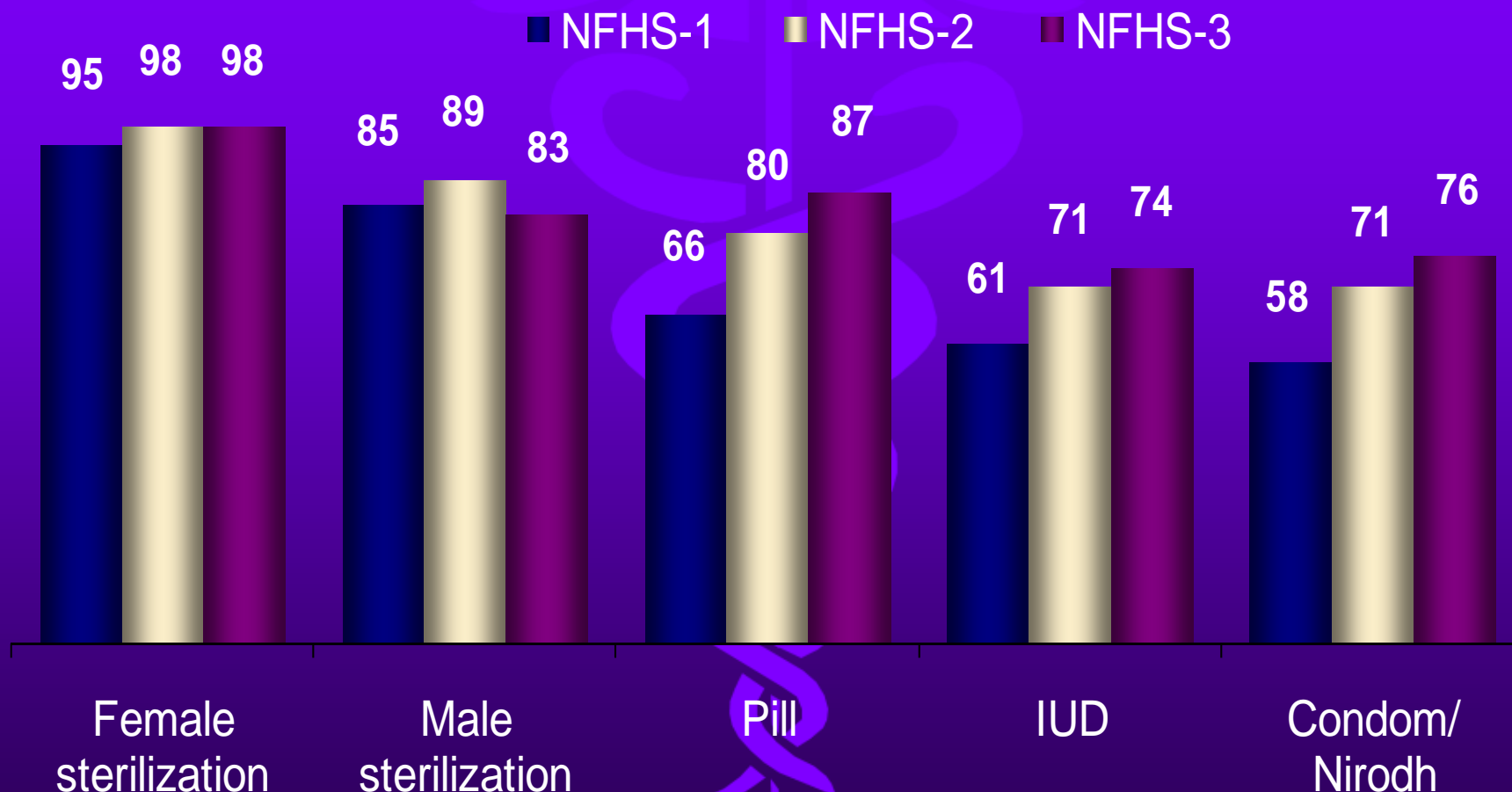
All oriented at





Prevalence and Use

Trends in Knowledge of Modern Contraceptive Methods

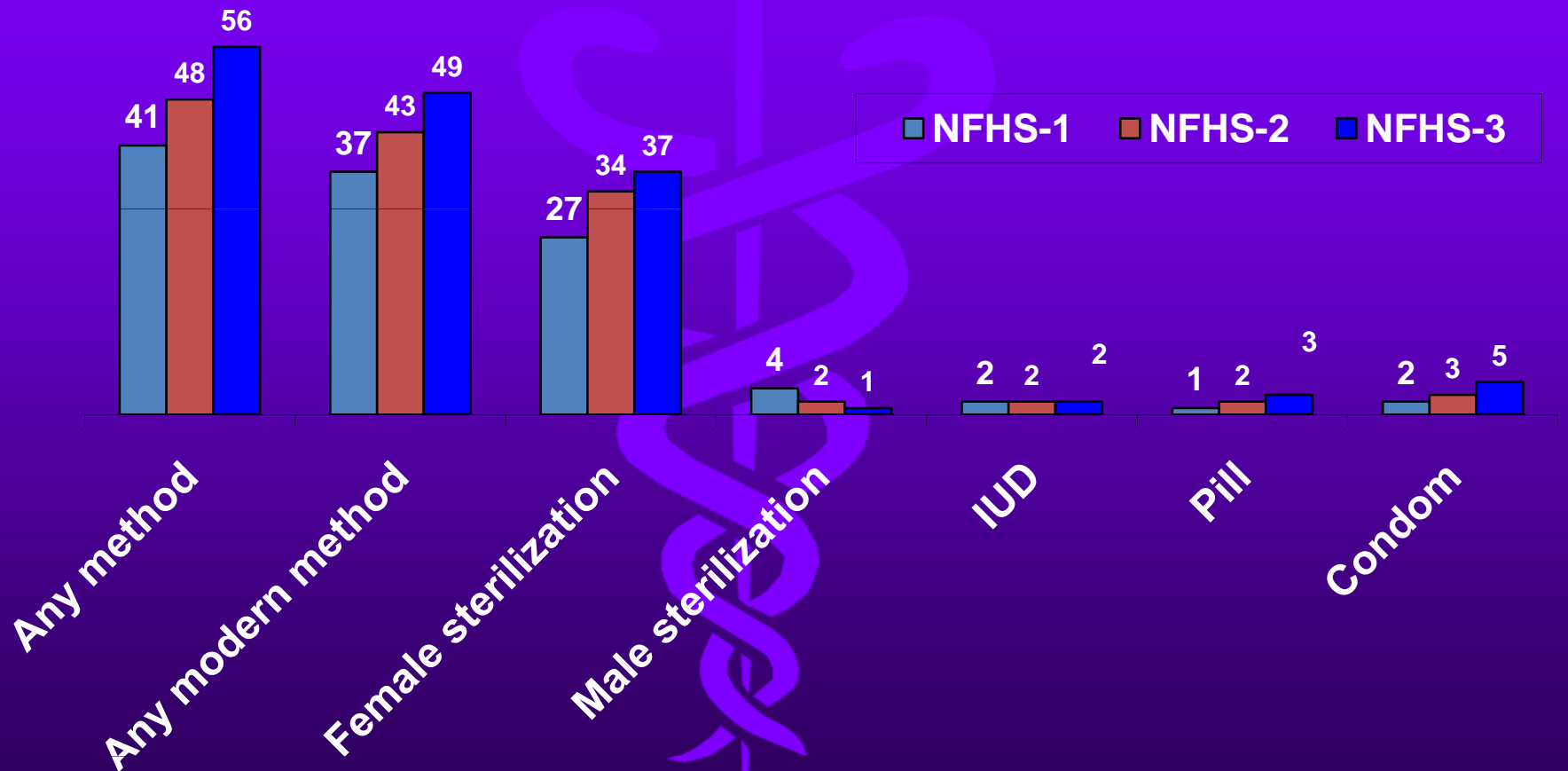


Source : NFHS

Trends in Contraceptive Use by Method



Percent of currently married women age 15-49



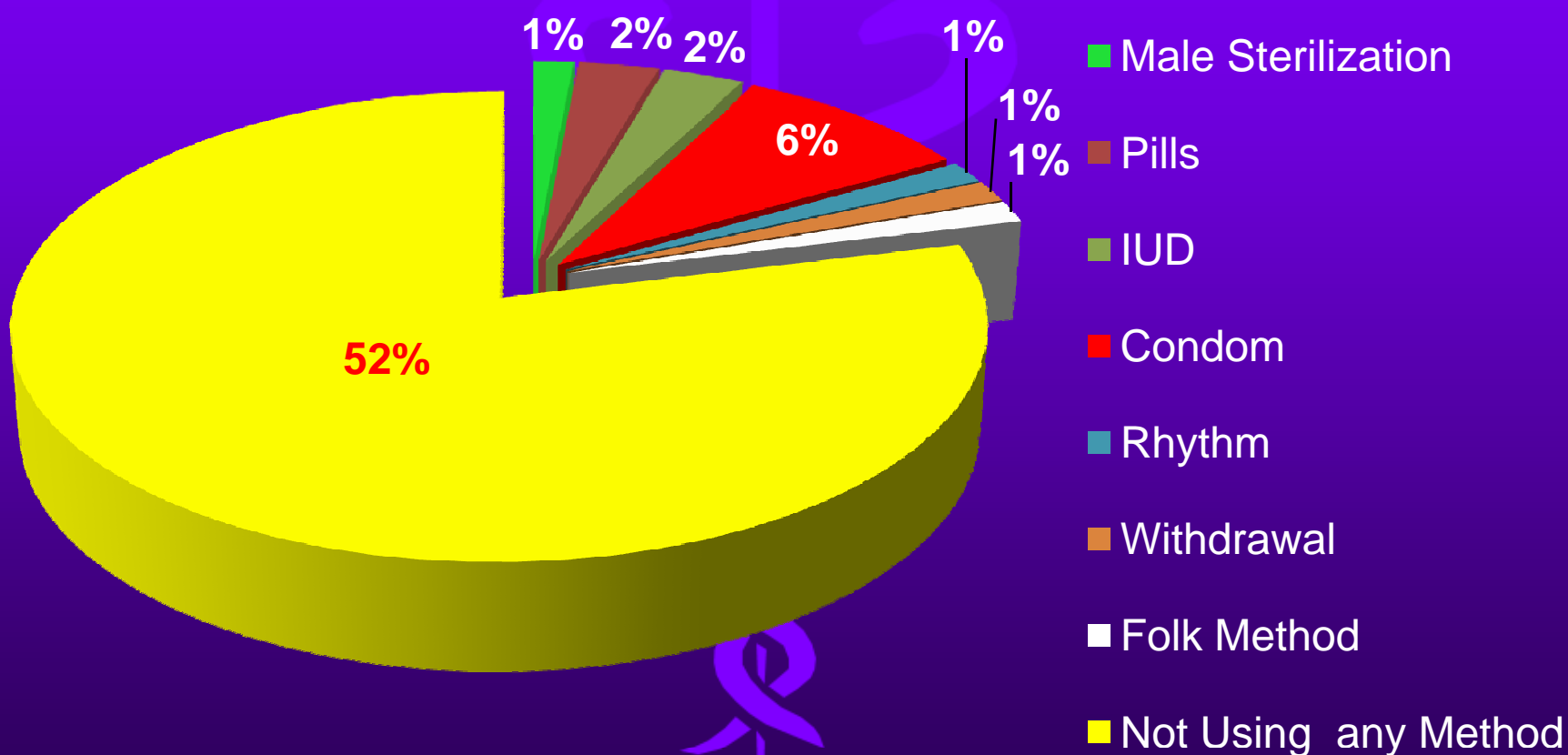
Source : NFHS

SIHFW: an ISO 9001: 2008 certified institution

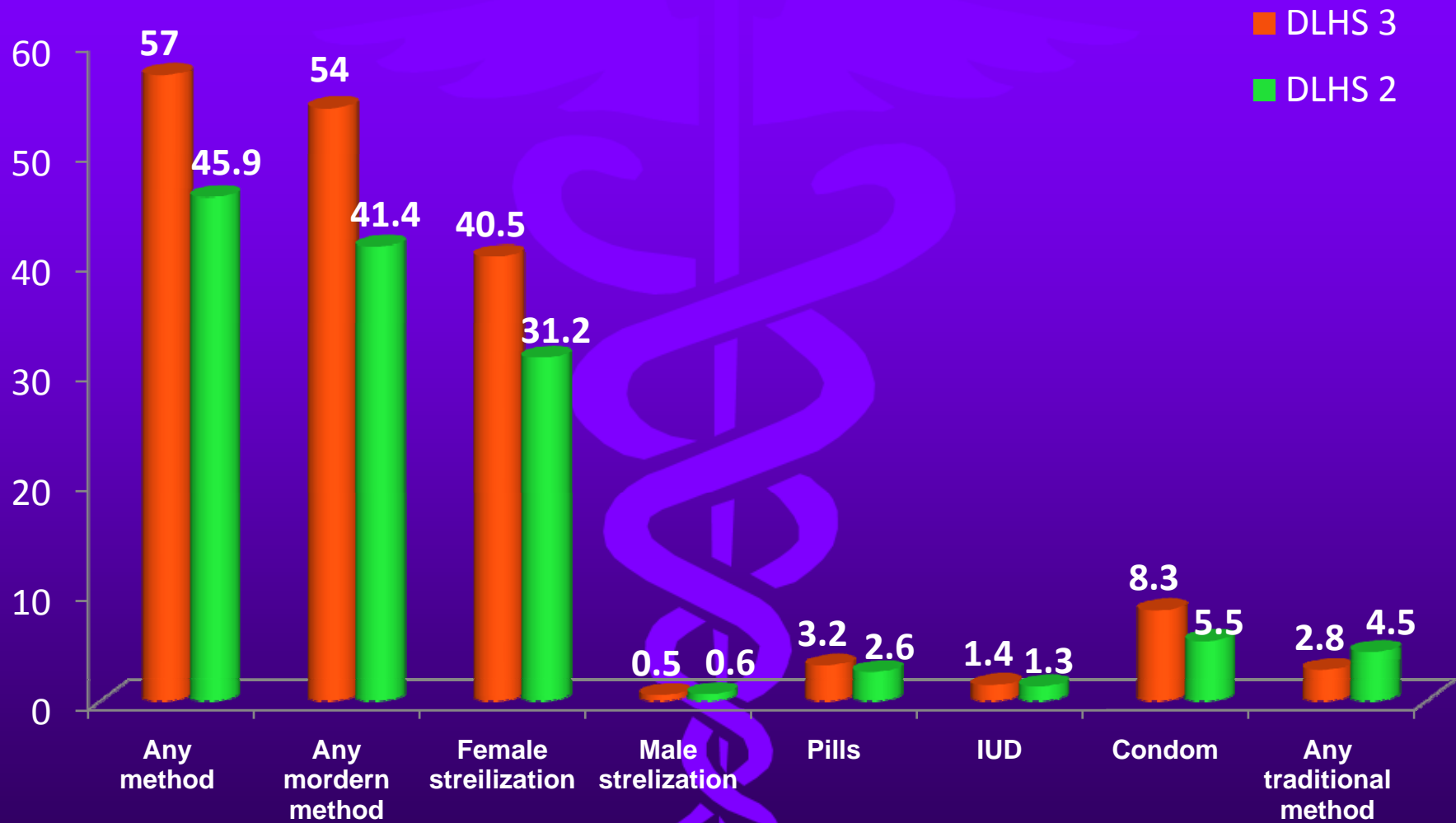


Trends in Contraceptive Use by Method

Percent of currently married women age

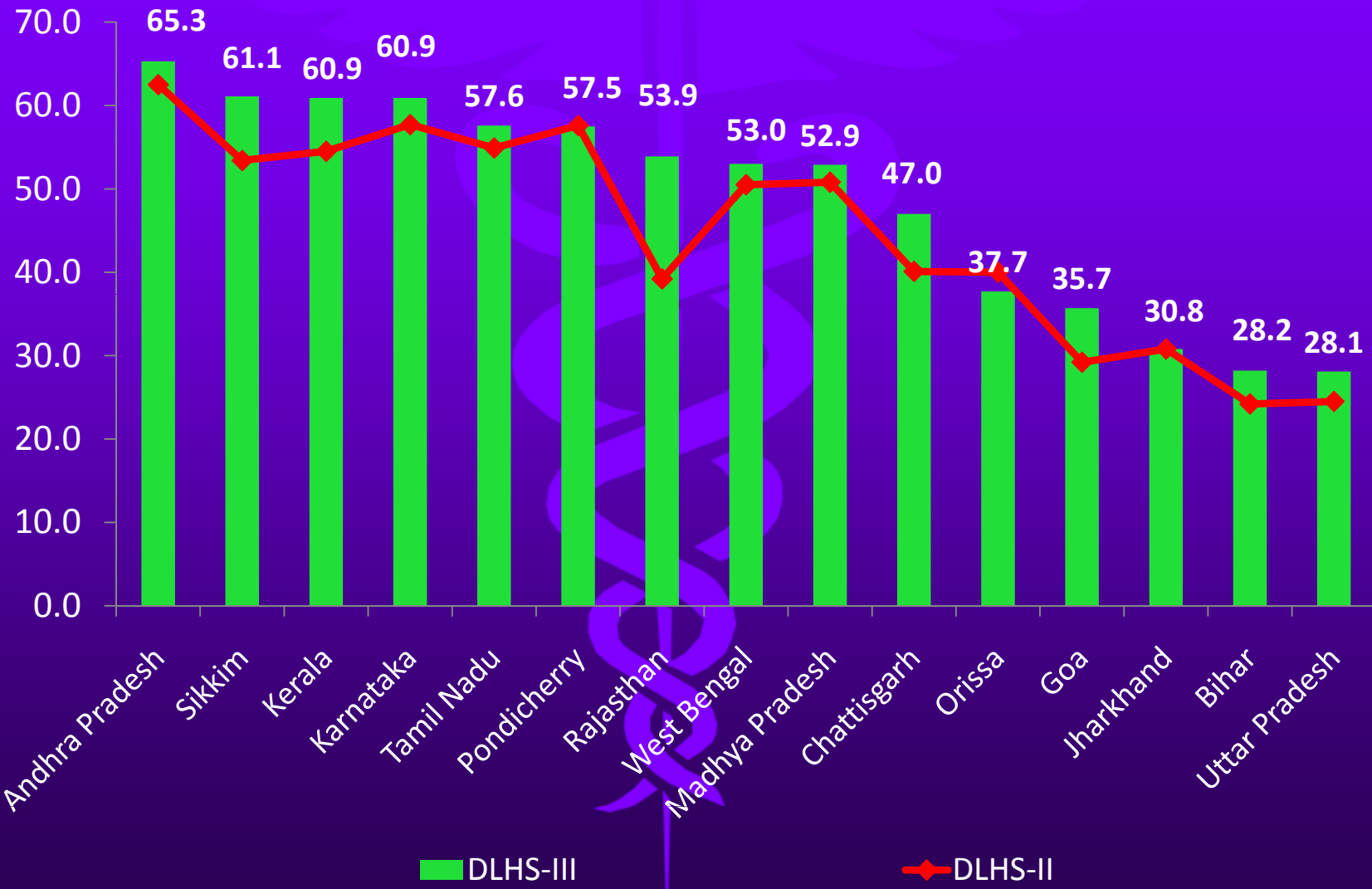


Use Of Family Planning Methods





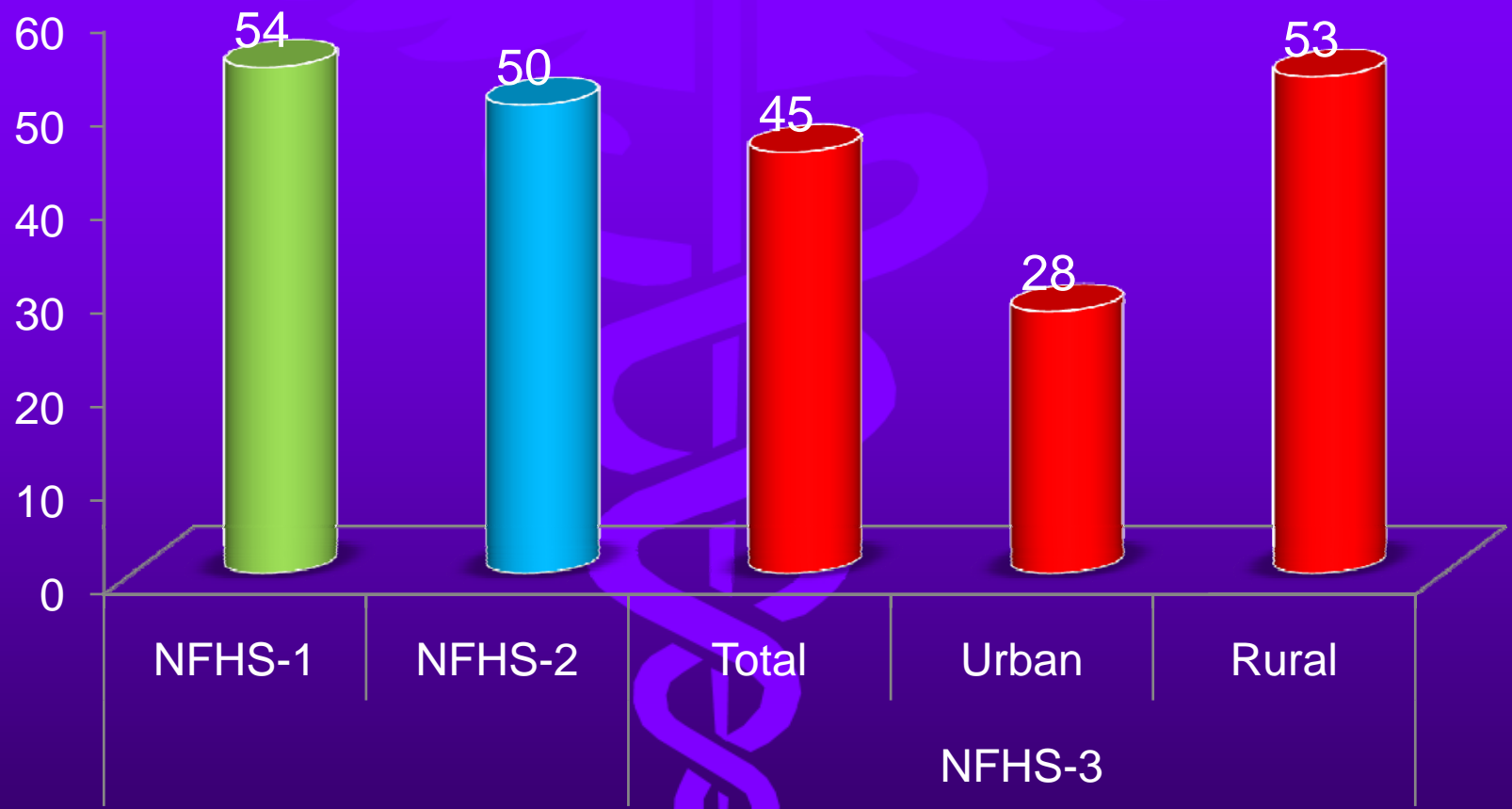
Modern Contraceptive Prevalence



Source : DLHS

SIHFW: an ISO 9001: 2008 certified institution

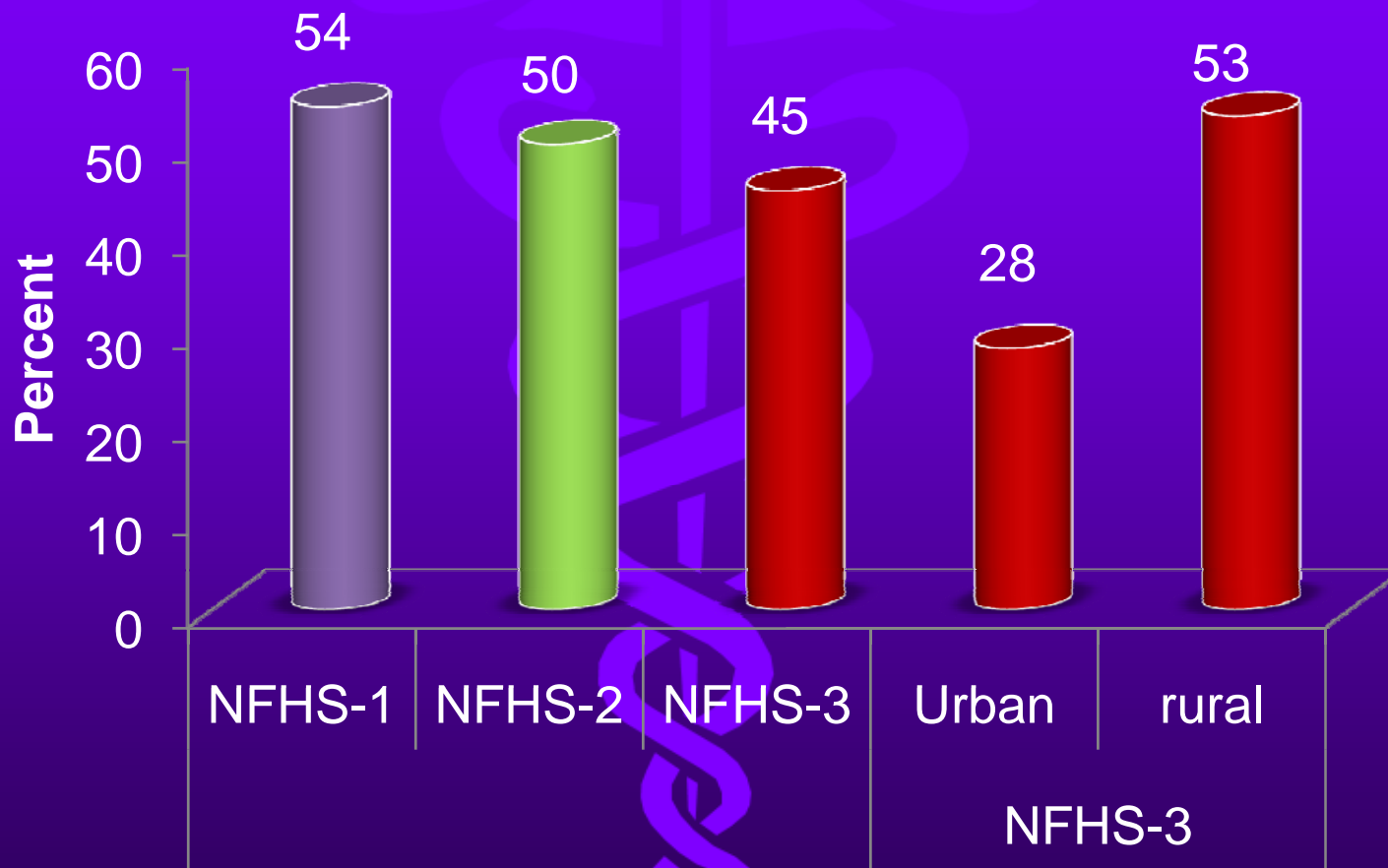
Age at Marriage



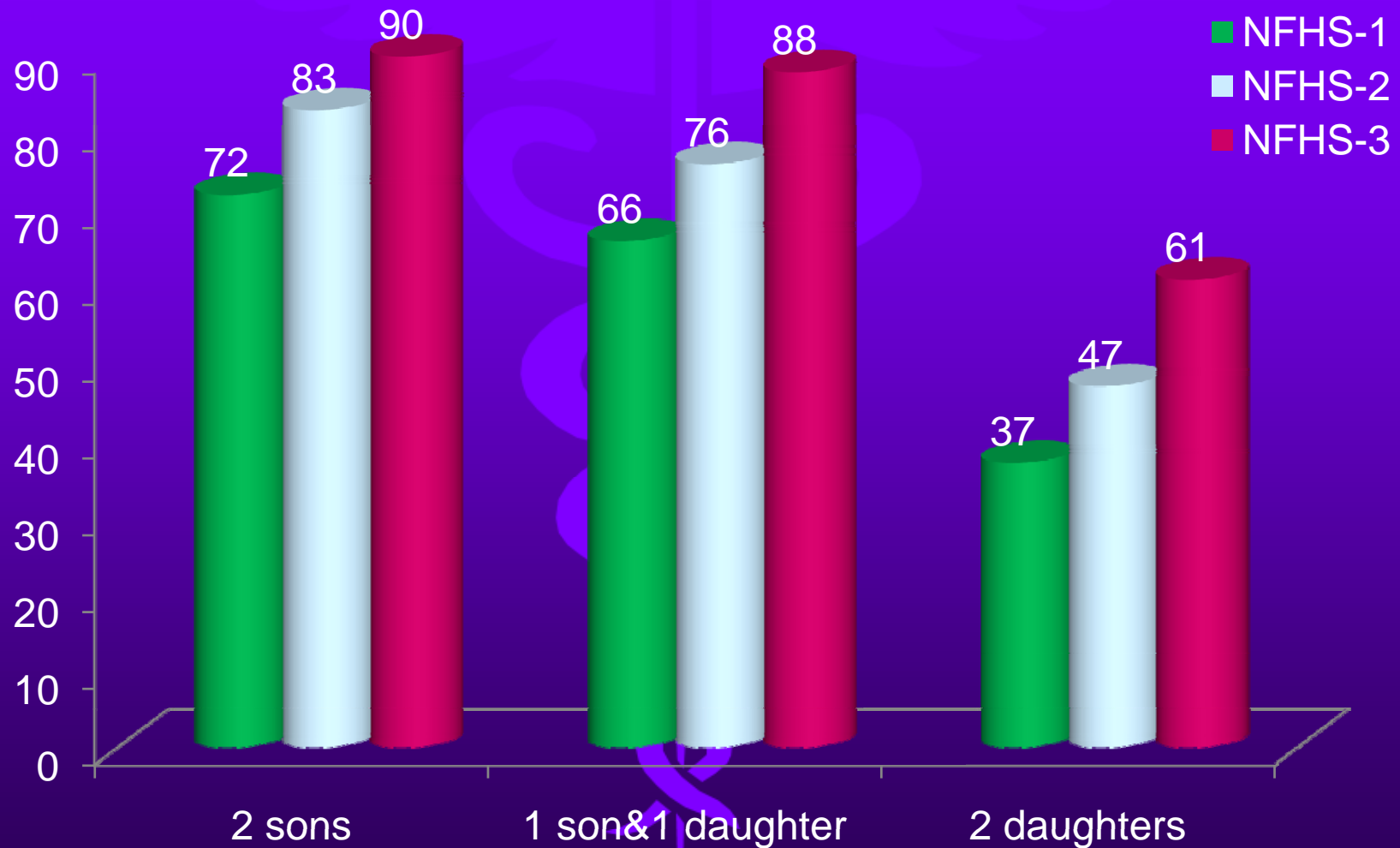
Percentage of women age 20-24 married by age 18

Marital Status

Percent of women age 20-24 married by age 18

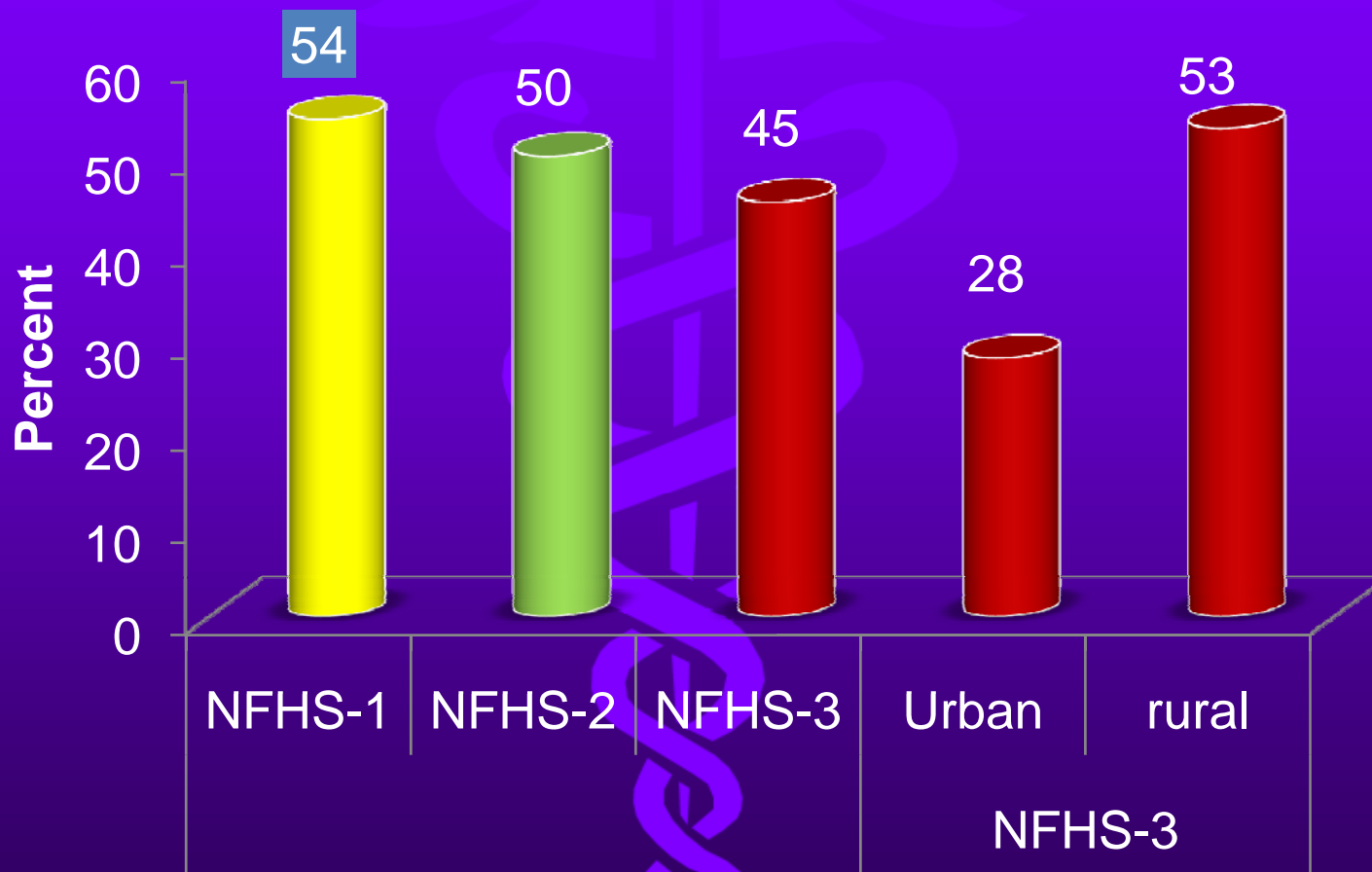


Desire for No More Children among Women with 2 Children



Marital Status

Percent of women age 20-24 married by age 18





Contraceptive Methods

Classification

1. Spacing methods:

used for spacing between two children or to delay birth of first child.

2. Terminal methods:

used when family is completed & couples desire no more children.

Spacing Methods

- 1. Barrier methods:** Male condom, Female condom.
- 2. Vaginal methods:** Spermicides, Diaphragm, Cervical cap.
- 3. Intrauterine devices (IUDs):** Lippes loop, Cu T-200, ML-Cu-250. CuT-380A
- 4. Hormonal methods:** OCPs, POP, Injectable, Implants etc.



Spacing methods: cont..

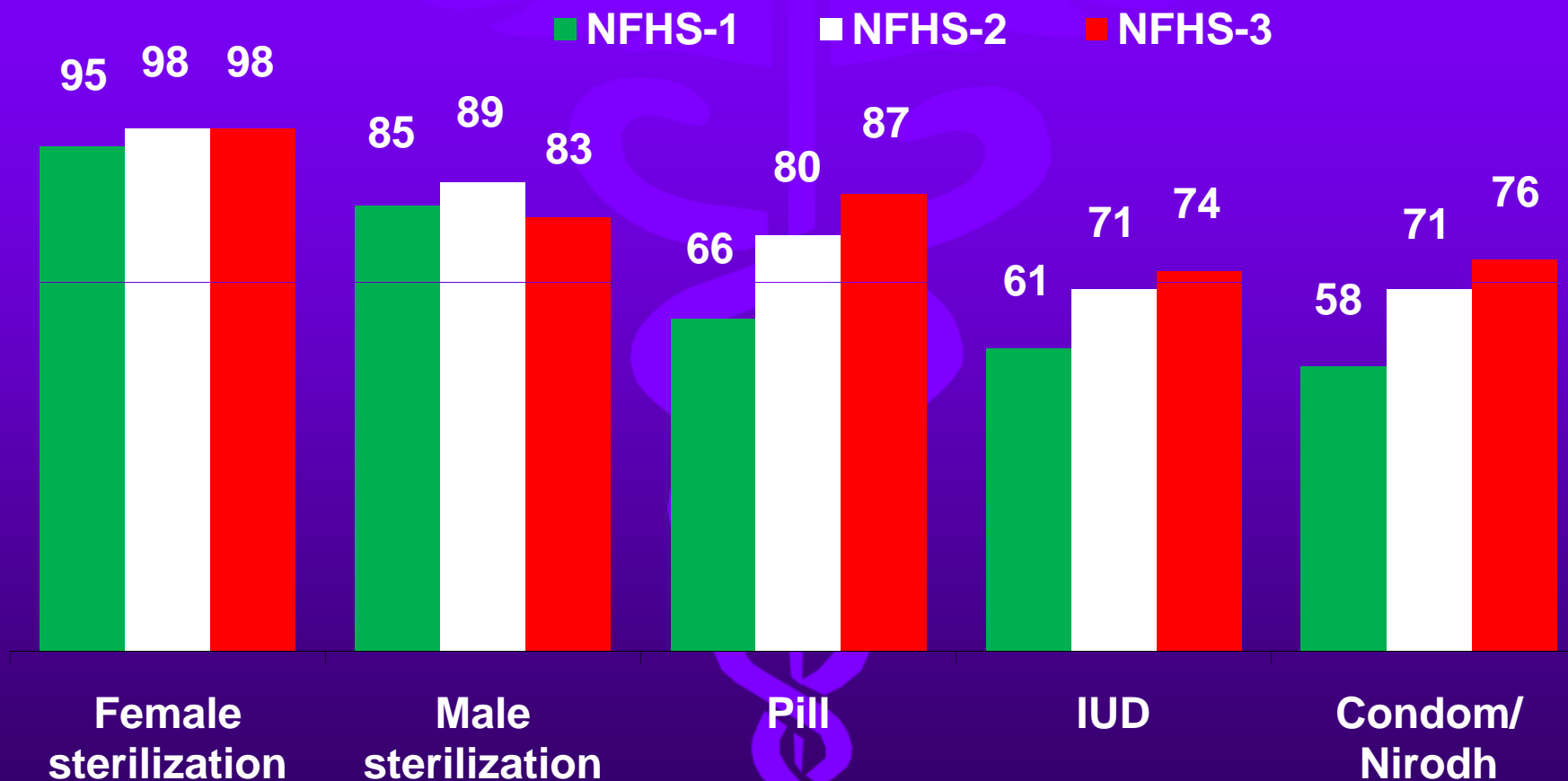
5. Non hormonal contraceptive pill
6. Emergency contraception- Post-coital
7. Natural methods
8. LAM



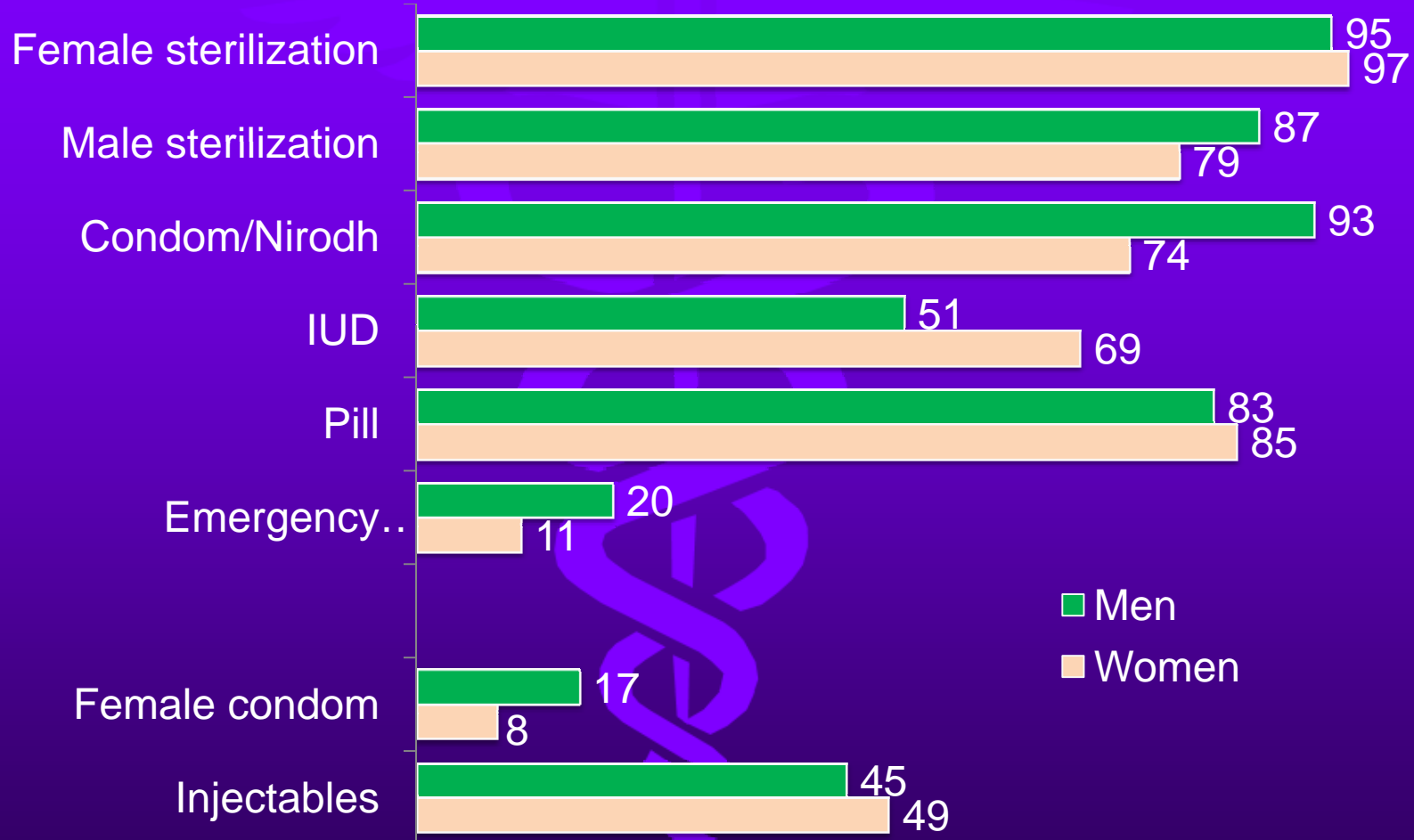
Terminal Methods

1. Male Sterilization (Vasectomy)
2. Female Sterilization (Tubectomy)

Trends in Knowledge of Modern Contraceptive Methods



Knowledge of Modern Methods



Percent of women and men 15-49 aware of family planning methods



1. Barrier Methods

A. Male Condom

Composition:

Sheath or covering of latex rubber made to fit over a man's erect penis before intercourse

Mode of action:

Prevents the semen from being deposited in vagina

Advantages:

1. Inexpensive, easily available
2. Easy to use
3. Protects against STDs/ HIV
4. No hormonal side effects

Male condom contd.

Disadvantages:

- Require high degree of motivation
- Interferes with sex sensation
- May slip off, tear during coitus due to incorrect use

Contraindication:

- Only contraindication is severe allergy to latex

B. Female Condom

Composition:

Pouch made of polyurethane

Mode of action:

Prevents semen from being deposited in vagina

Advantages:

1. Prevents STDs
2. No side effects, no allergic reactions

Disadvantages:

1. Expensive
2. Less effective than male condom



2.Vaginal Methods

- Contraceptives that a woman places in her vagina shortly before intercourse.



A. Spermicides

- **Composition:** Surface-active agents, in form of foams, cream, jelly, suppositories, melting films.
- Most commonly used agent is nonoxynol-9.
- **Mode of action:** These attach themselves with spermatozoa & inhibit oxygen uptake & kill sperms.

Advantages:

1. No hormonal side effects.
2. Easy to use.

Disadvantages:

1. High failure rates.
2. May cause irritation and do not prevent STDs effectively.

B. Diaphragm/Cervical cap

Composition:

Shallow cup made of synthetic rubber or plastic

Mode of action:

Inserted in vagina to cover the cervix before intercourse & must remain in place for not less than 6 hrs after

Advantages:

No side effects & medical contraindication.

Can be inserted up to 6 hours before sex

Disadvantages:

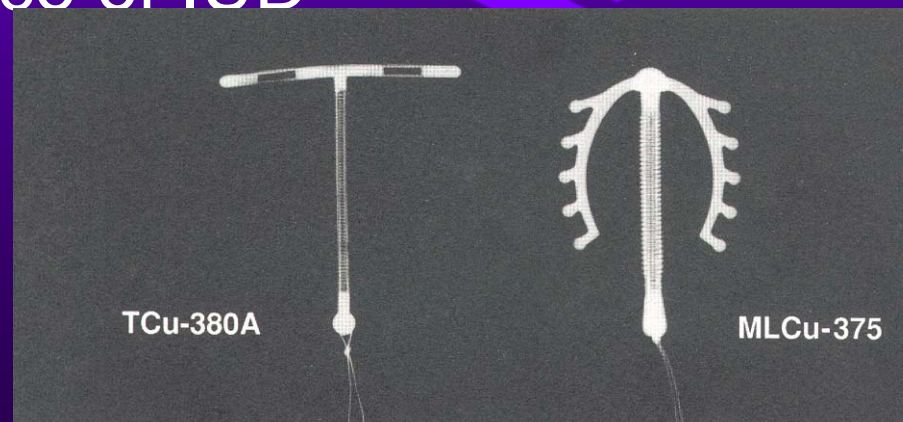
Requires medical supervision

Should be washed with soap & water after each use.

Needs careful storage.

3. Intrauterine Devices (IUDs)

- An IUD usually is a small, flexible plastic frame, often has copper wire or sleeves on it & inserted into a woman's uterus through her vagina.
- IUDs have 1 or 2 strings which hang through the opening of cervix into the vagina to check the presence of IUD



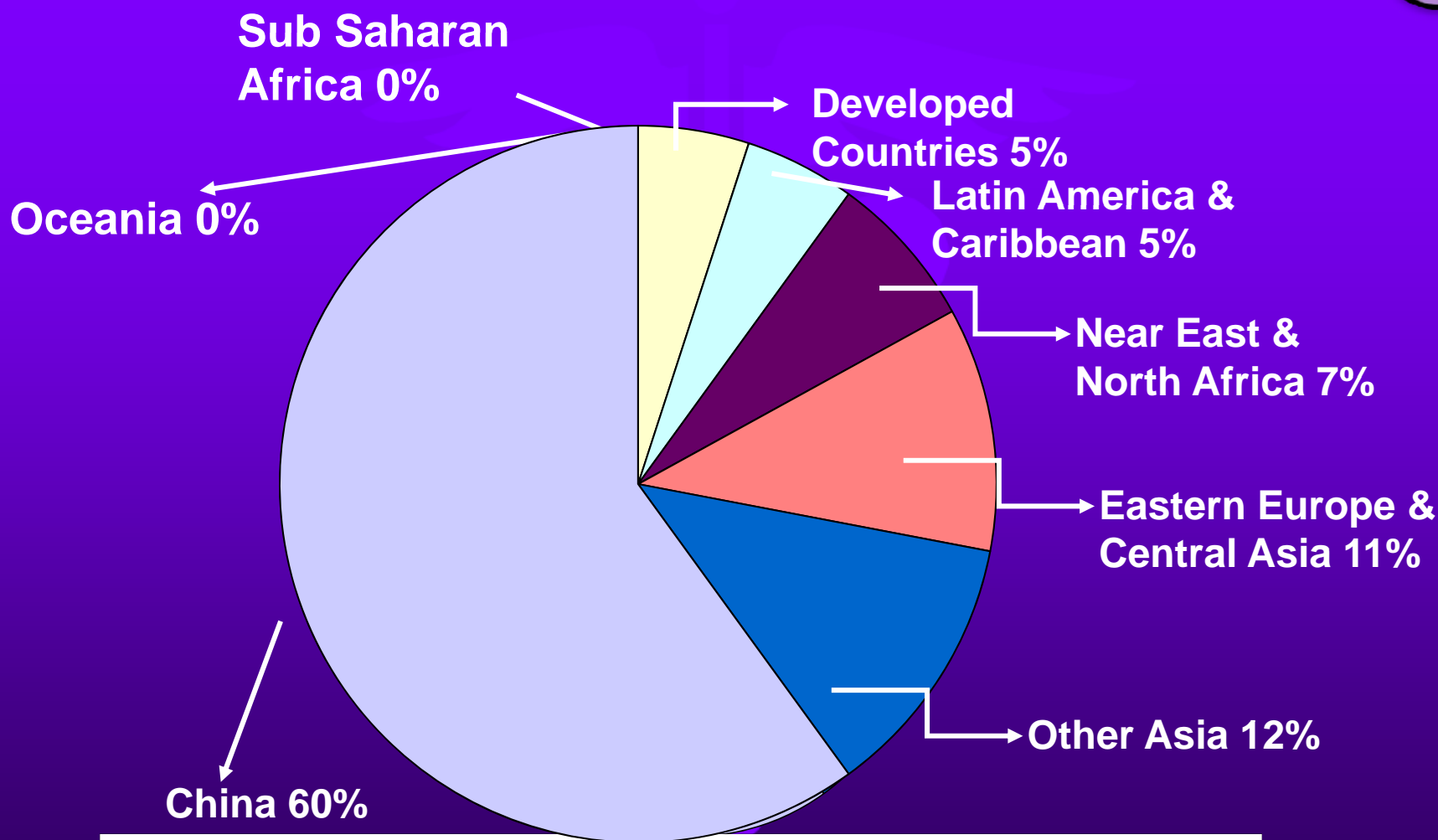
History of IUCDs



- Grafenberg-1929-Ring of silkworm gut & silver wire
- Ota of Japan-gold plated silver
- 1959—Oppenheimer reintroduced; this time—INERT devices
- 1962-2nd IN Conf. On IUCDs MARGUILLES Rings & LIPPES Loop were presented
- In 1964 the 2nd IN Conf. On IUCDs many devices of different shapes were presented
- The first medicated devices were developed in 1969 using Copper *and there is no looking back since then*



Global Use of IUCD



■ Oceania	■ Sub Saharan Africa
■ Developed Countries	■ Latin America & Caribbean
■ Near East & North Africa	■ Eastern Europe & Central Asia
■ Other Asia	■ China

Types / Mode of Action of IUD



1st generation IUDs

- Inert or non medicated (Lippes loop)
- Foreign body reaction in the uterus

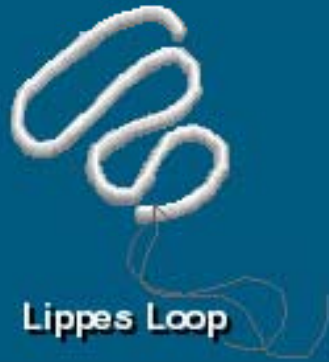
2nd generation IUDs

- Contain copper wire or sleeve (CuT-200, CuT-220C, ML-375, Cu-T380A)
- Foreign body reaction Plus alteration in composition of cervical mucus, reduced sperm motility and survival due to copper ions

3rd generation IUDs

- Hormone releasing IUDs (Progestasert and LNG 20)
- Increased cervical mucus viscosity thus preventing sperm entry in cervix
- High level of progesterone and low level of estrogen thus making the endometrium unfavorable for implantation.

Early IUDs

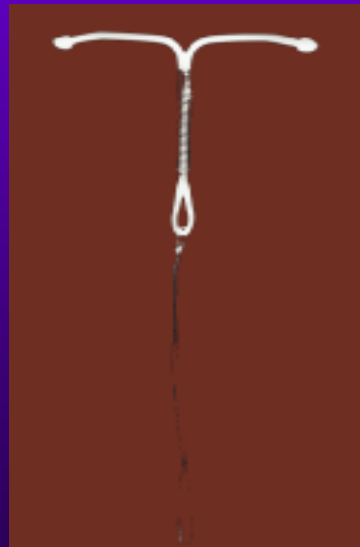
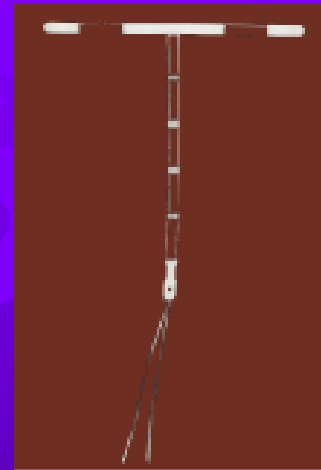


Copper - T

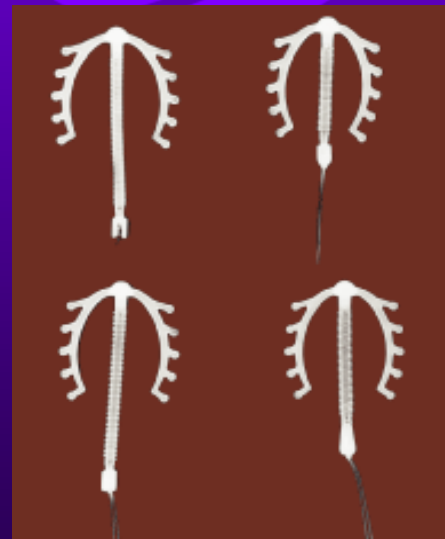
• CU T 200-B



• CU T 220-C



• NOVA T



• ML CU 250,375



• CU T 380-A

Copper IUDs



Lippes Loop

Polyethylene. Available in four sizes, designated A (left) through D (right).

Date first marketed: 1962.

- Length: A—26.2 mm; B—25.2 mm; C—27.5 mm; D—27.5 mm.
- Width: A—22.2 mm; B—27.4 mm; C—30.0 mm; D—30.0 mm.
- Strings: Two; A—blue, B—black, C—yellow, D—white
- Areas of major use: Formerly, worldwide except China; currently, Indonesia.



TCu-200 and TCu-200B

- Polyethylene with barium sulfate added for visibility on x-rays. 200 mm² copper wire wrapped around stem. The TCu-200B (shown) has a ball at the tip

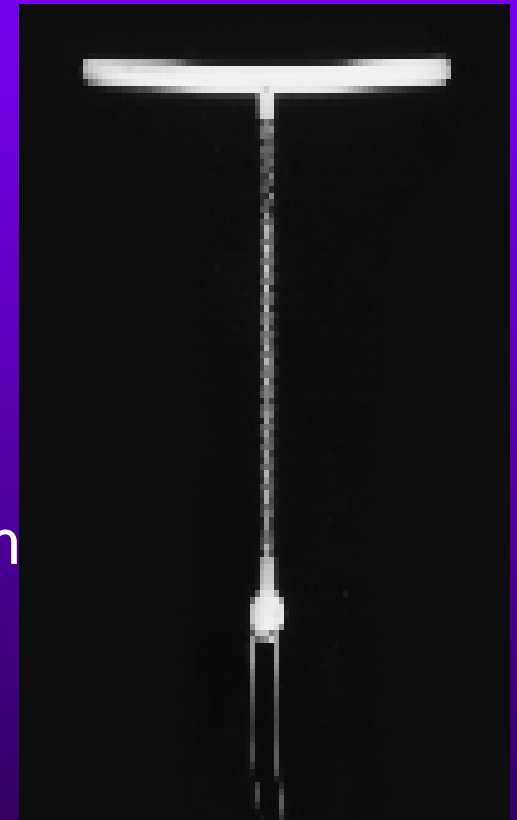
Length: 36 mm.

Width: 32 mm.

Insertion type and diameter: Withdrawal; 4.4 mm

Date first marketed: 1972.

Approved lifespan: US, 4 years



Multiload-250 (MLCu-250) and 375 (MLCu-375)



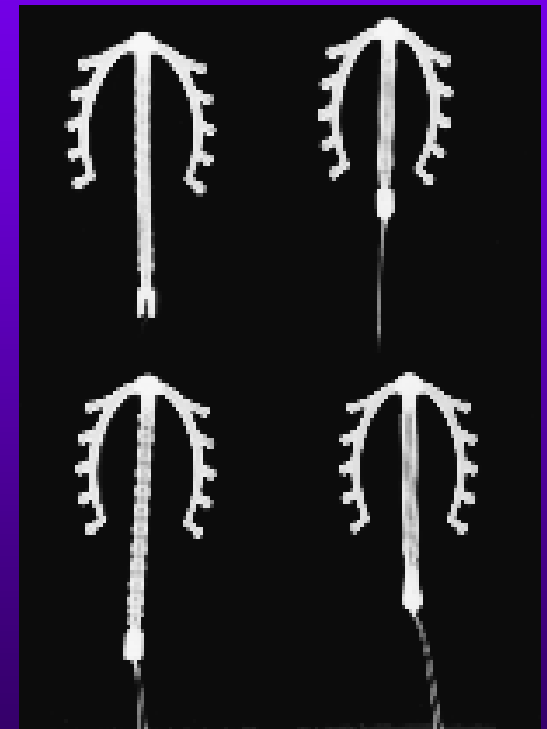
- Polyethylene. The MLCu-250 has 250 mm² copper wire on the stem and is available in 2 sizes.

Date first marketed: 1974.

Length: Standard (250 and 375)—35 mm; 375SL—29 mm; 250 Short—24 mm.

Width: All types—18 mm.

Approved lifespan: MLCu-250—3 years; MLCu-375—5 years.



CuT-220C

- Polyethylene.220 mm² copper in 7 copper sleeves—2 on the arms and 5 on the stem.

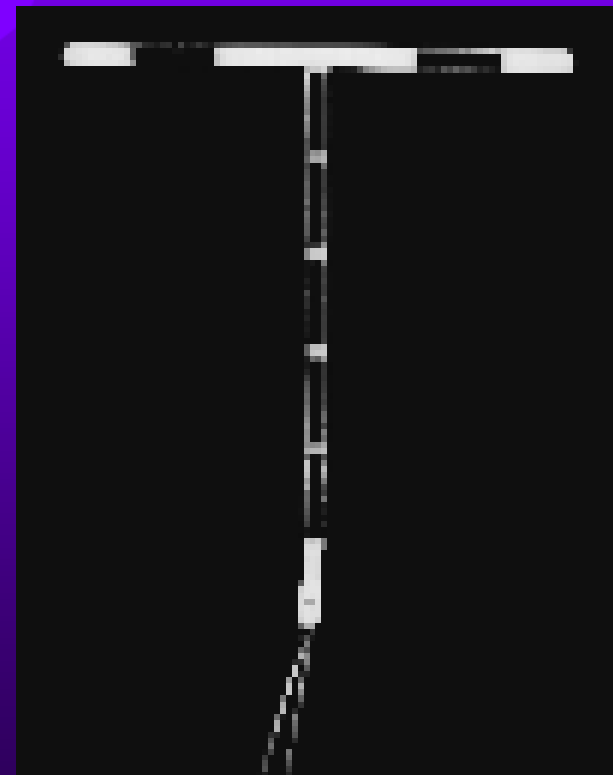
Date first marketed: 1980.

Length: 36 mm.

Width: 32 mm.

Strings: Two

Approved lifespan: Mexico, 3 years.



CuT-380A & CuT-380



- **Description:** Polyethylene rays.
- 314 mm² copper wire on vertical two 33mm² transverse arm.

Length: 36 mm.

Width: 32 mm

Strings: Two white (formerly blue).

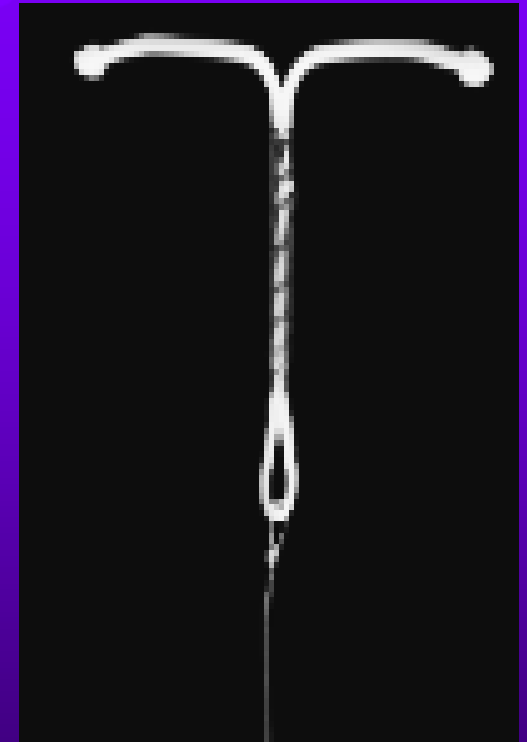
Inserter type and diameter: Withdrawal; 4.4 mm



Approved lifespan: TCu-380A—US, 10 years

Nova T and CuNovaT

- Nova T (shown) has 200 mm² copper wire with a silver core wrapped around the stem. CuNovaT has 380 mm² wire wrapped around the stem.



Date first marketed: Nova T—1979; CuNovaT—1994

Length: 32 mm.

Width: 32 mm.

Approved lifespan: Nova T and CuNovaT—5 years in various European countries

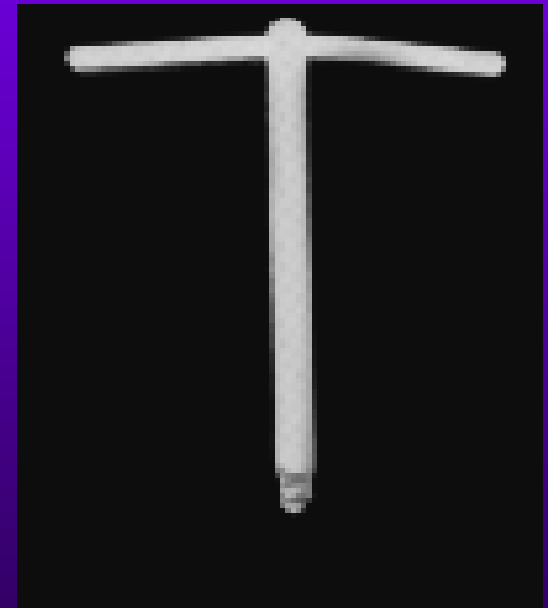
Progestasert Intrauterine Progesterone Contraceptive System

- Ethylene vinyl acetate copolymer. Vertical stem contains a reservoir of 38 mg progesterone and barium sulfate. Releases 65 micrograms progesterone per 24 hours.

First marketed: 1976

Length: 36 mm.

Width: 32 mm



Approved lifespan: US, one year; France, 18 months

Levonorgestrel (LNG-20) Intrauterine System (Mirena/Levonova)

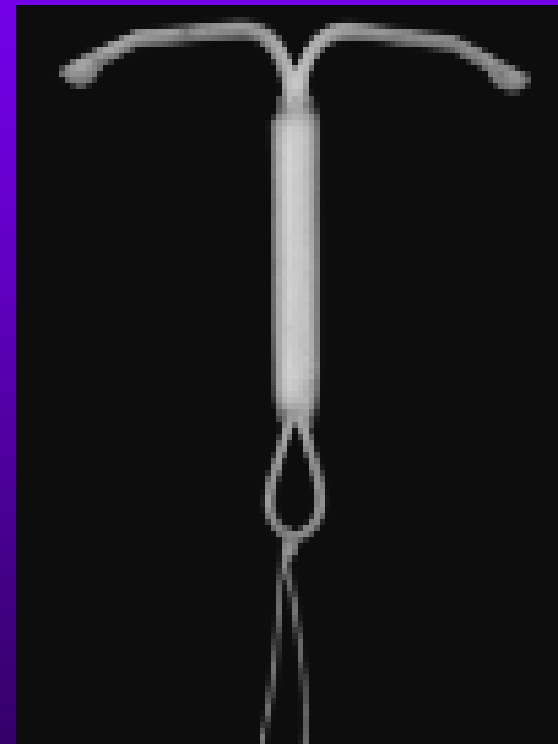
- Polyethylene T frame surrounded by a levonorgestrel-containing cylinder. The cylinder is covered with a rate-controlling membrane. The release rate is 20 micrograms levonorgestrel per 24 hours.

Date first marketed: 1990 in Finland.

Length: 32 mm. Width: 32 mm.

Hormone cylinder: length 19 mm, outer diameter 2.8 mm, inner diameter 1.2 mm.

Approved lifespan: UK, 3 years; other countries, 5 years



New Frameless Design

Several copper cylinders strung together are anchored into the uterus.



Timing of Insertion

- During menstruation or within 10 days of beginning of menstruation

Postpartum insertion:

- Immediate postpartum: first week
- Post Puerperal: after 6 weeks (advisable as more safe and easy)

After abortion insertion:

Immediately after legal 1st trimester abortion ***but not immediately after 2nd trimester abortion***

Advantages

- Simple and inexpensive procedure
- Single partner motivation required
- Long term effect
- Reversible contraception
- Free from systemic side effects of hormonal contraceptives
- No interference with sex

Disadvantages

Side effects and complications

- Heavy/ abnormal menstrual bleeding
- Lower abdominal pain
- Pelvic inflammatory diseases
- Uterine perforation
- Ectopic pregnancy
- Expulsion
- Does not protect against STDs, HIV/AIDS
- Requires trained person for insertion & removal

Contraindications

- **Absolute:** pregnancy, PID, undiagnosed vaginal bleeding, Carcinoma cervix & uterus, previous ectopic pregnancy, Suspected
- **Relative:** Anemia, menorrhagia, Purulent cervical discharge, unmotivated person



4. Hormonal methods

Trends in Hormonal Contraceptive Development Over the Years

- Decreased estrogen dose
- Decreased progestin dose
- Newer progestational agents
- New Delivery Systems

Hormonal Contraceptive Methods



LNG IUS



Implants



Injectables

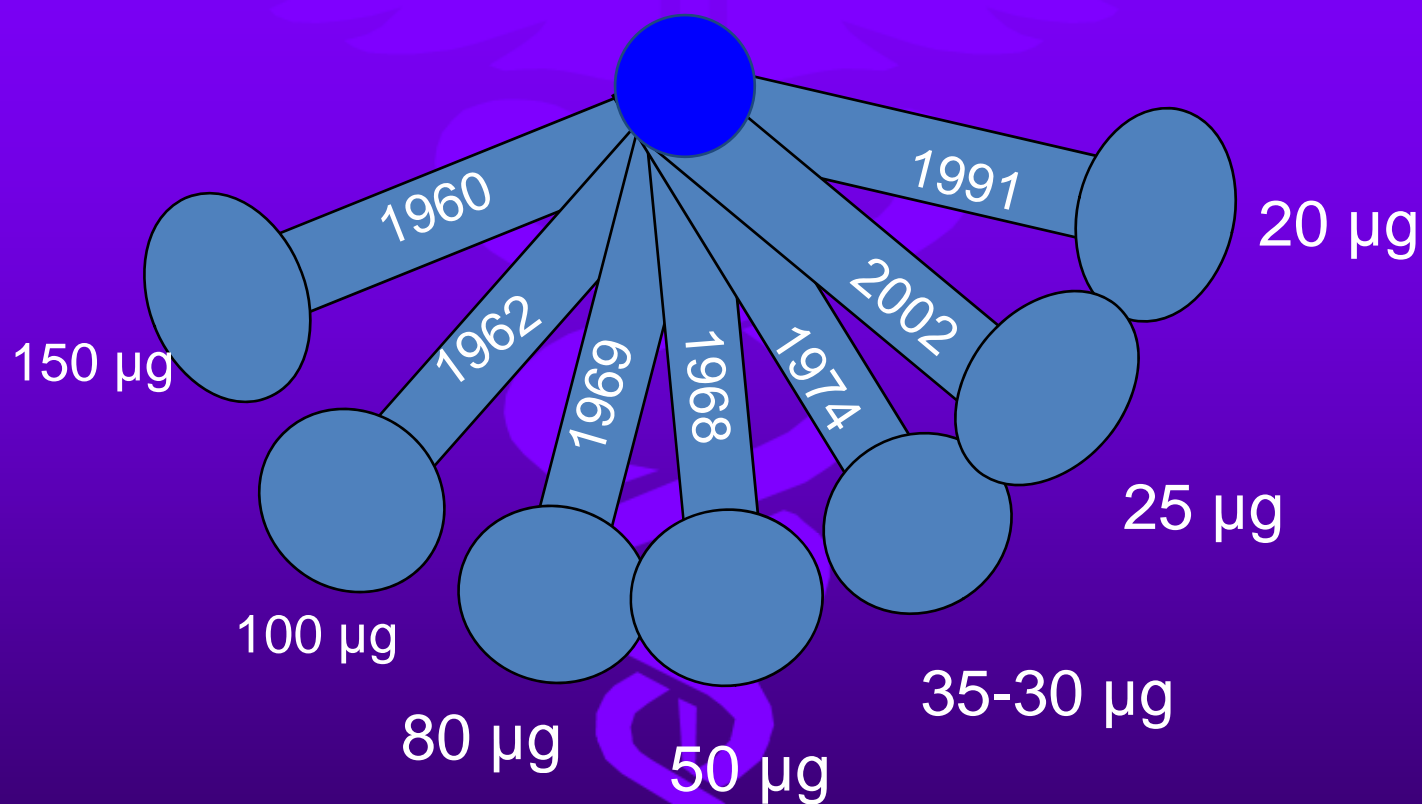


Vaginal Ring



Patch

The Estrogen Dose Pendulum



Hormonal Methods

A. Oral Contraceptives pills (OCPs)

- Low dose combined oral contraceptives-
 - Monophasic: Standard dose, low dose and very
 - low dose pills
 - Multiphasic: Biphasic, Triphasic pills
- Progestogen-only pill

B. Depot methods

- Injectables
- Implants

Content of Pills

- Estrogen as ethinyl estradiol
- Progesterone as Medroxyprogesterone acetate and megestrol
- Norethisterone group: norethisterone, norethynodrol,
 - Norethisterone acetate, Ethinodiol diacetate
- Norgestrel group: d-Norgestrel, L-Norgestrel
- Newer Progesterones: Desogestrel, gestodene, and
 - norgestemate. Contraceptive effect similar to other
 - progesterones but almost no androgenic or anabolic effect.



Combined Oral Contraceptive pills

Mechanism of action:

- ✓ Inhibition of ovulation by suppressing FHS and LH
- ✓ Alteration of endometrium to make it unsuitable for implantation even if the ovum is fertilized.
- ✓ Changes in cervical mucous which make it hostile for sperms

Health Benefits



Fertility related benefits

- ✓ Prevention of pregnancy
- ✓ Offers protection against ectopic pregnancy

Menstrual benefits

- ✓ Menstrual cycle stabilization
- ✓ Reduced iron deficiency anaemia due to lighter menstrual cycles
- ✓ More regular menstrual cycles
- ✓ Less dysmenorrhea
- ✓ Less severe pre-menstrual symptoms

Health Benefits

- Protection from some cancers e.g. endometrial and ovarian cancer
- Protection against benign diseases e.g. benign breast diseases like fibrocystic and fibroadenomatosis disease decreased by 50-70%
- Other possible health benefits
 - Protection against pelvic inflammatory diseases
 - Reduces risk of follicular cyst by 50% and corpus luteal cyst by 80%.
 - Past contraceptive use protects women after they reach menopause; reduced risk of low bone mineral density was documented
 - Reduction in acne

Side Effects

- Nausea, vomiting, decreased appetite; usually pass off after 2-3 months of use
- Breakthrough bleeding-common with low dose progesterone pills due to low or absent estrogen.
- Oligo and ammenorrhoea due to lack of proliferation of endometrium of cycle. Common among women who had menstrual problems before starting oral contraceptive pills.

- Breast changes- oedema, heaviness and tenderness.
- Vaginal discharge due to congestion and hypertrophy of cervical epithelium.
- Weight gain in some cases due to estrogen and progesterone.
- Chloasma

Who can use COCs?

- Have no children
- Heavy, Irregular, painful menstrual periods or anemia
- Benign breast disease or ovarian tumor
- Diabetes without vascular, kidney, eye or nerve disease
- Mild headaches or Varicose veins
- Thyroid disease
- Pelvic inflammatory disease
- Endometriosis
- Uterine fibroids
- Past ectopic pregnancy
- Tuberculosis (unless taking Rifampicin)

Who cannot use COCs?

Women who have

- Complicated pulmonary hypertension, risk of atrial fibrillation, history of subacute bacterial endocarditis
- Migraine with aura
- Current breast cancer
- Diabetes with neuropathy, retinopathy, nephropathy and other vascular disease
- Multiple risk factors for arterial cardiovascular disease
- Acute hepatitis or severe cirrhosis of liver or benign or malignant liver tumours



- Hypertension with systolic BP 140-159 and diastolic 99 and those having vascular disease.
- Clear history of deep vein thrombosis (DVT), pulmonary thrombosis or current DVT or pulmonary thrombosis.
- Known thrombogenic mutations.
- Current history of ischemic heart disease or known hyperlipidaemias
- Women who are breastfeeding within 6 weeks postpartum
- Are age 35+ and smoke more than 15 cigarettes per day



Major Evidences and Clarifications

- COC users who smoke were at increased risk of cardiovascular diseases, specially Myocardial
 - infarction.

- Desirable to have blood pressure measured before initiation of COC use but the women should not be denied use of COCs simply because their blood pressure cannot be measured.

- Among women with proven hypertension, COCs should
 - be not be used unless other more appropriate methods
 - are not available or not acceptable

Continue.....

- COCs are not recommended for women having
 - ❑ Known thrombogenic mutations, as there is higher risk of thrombosis than for non-users
 - ❑ Migraine and age above 35 years and those having migraine with aura



Continue.....

- Women with depressive disorders can safely use COCs
- If there is heavy or prolonged bleeding/ unexplained vaginal bleeding, evaluate for pregnancy or underlying pathological condition (such as pelvic malignancy).
- No increased risk among women with dysmenorrhoea compared to women not using COCs .
- Safe for women having trophoblast disease, benign breast disease, family history of cancer, pelvic inflammatory disease, STIs and HIV.
- Women having diabetes without non-vascular disease can generally use COC

Continue.....

- If taking Rifampicin or certain anticonvulsants,
 - COCs should be prescribed only if any other appropriate contraceptive is not available or acceptable.
- Interaction of these drugs with COCs is not harmful but is likely to reduce effectiveness of COCs.
- Use of other contraceptives should be encouraged for the women who are long-term users of any of these drugs.

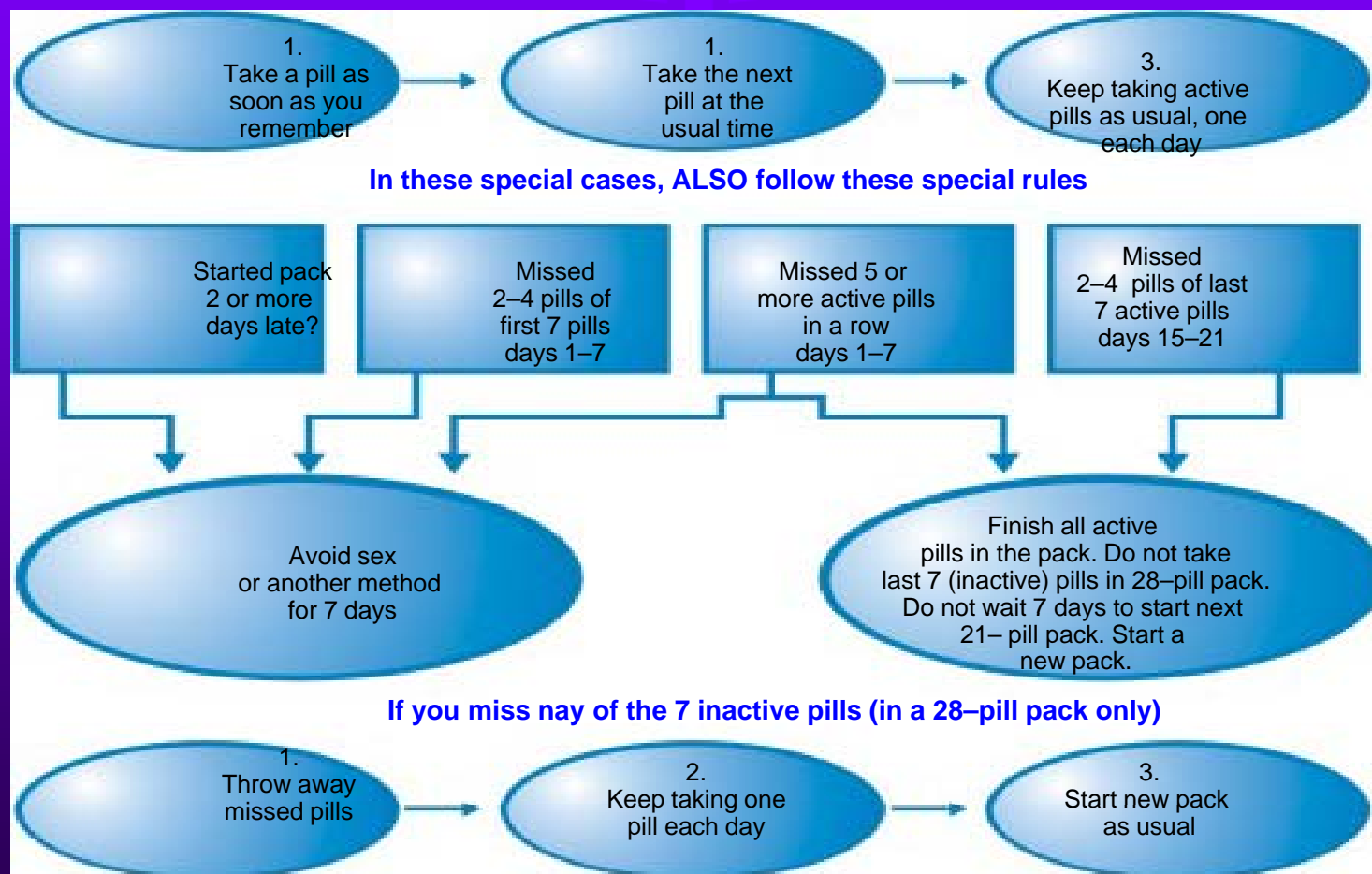


When can a woman start COCs?

- During a menstrual cycle
- Between 2 menstrual cycles
- Amenorrhoea
- Breastfeeding
- Switching to another hormonal method
- Switching from non-hormonal method
- Switching from IUD (including hormonal)
- After miscarriage or abortion

Pills Missed?

- **WHAT TO DO IF YOU MISS ONE OR MORE PILLS**
Every time you miss one or more active pills (days 1-



Source: Johns Hopkins University Bloomberg School of Health, Population information program

SIHFW: an ISO 9001: 2008 certified institution



B. Depot Methods

A. Injectable Contraceptives

I. Progestogen only:

a. DMPA: IM injection of depot medroxy progesterone acetate, 150 mg given in every 3 months.

b. NET-EN: IM injection of norethistetrone enantate, 200 mg is given in every 2 months.

Injectable Contraceptives contd.

II. Combined injectable contraceptives:

- Contains both progestogen & estrogen
- Given at monthly interval, plus or minus 3 days.

B. Implants (Norplant)

Composition:

- A set of 6 small silastic (silicone rubber) capsules, containing 35 mg (each) of levonorgestrel.
- More recent device comprise of 2 small rods:
Norplant (R)-2
- **Mode of action:** same as POPs

Implants (Norplant) contd.

Advantages:

- Provides long term pregnancy prevention, up to 5 years, no daily pill taking.

Disadvantages:

- Minor surgical procedures required to insert & remove capsules.
- Other disadvantages are same as hormonal contraceptive pills.

5. Non Hormonal Contraceptive Pill

Composition:

- Pills containing non hormonal contraceptive called “CENTCHROMAN”

Mode of action:

- Prevents implantation through endometrial changes. It has a strong anti-estrogenic action at peripheral receptor level.

Cont....



Dose:

- 30 mg started on 1st day of menses and taken twice weekly for 12 weeks and weekly thereafter

Side effect:

- Prolonged cycles and oligomenorrhoea in 8%

Advantages: No hormonal side effects



6. Post-coital Contraception (Emergency Contraception) (ECPs)

Emergency contraception:

Is method of contraception used before missing a period to prevent pregnancy. It is also called “morning after” or post-coital contraception.

Indications for Using Emergency Contraception



A woman who had unprotected sex, and wants to prevent pregnancy. For example:

- Not using any contraception
- Forced sex
- Failure of contraceptive
- Missed pills
- Delay for contraceptive injection

Pills Used as ECPs?

- Progestin-only dedicated products:
Levonorgestrel pills are generally used
- Several commercial preparations available in market
- GOI emergency contraceptive pills also available through public systems



Levonorgestrel alone EC pills– A Dedicated Product

- 0.75 mg of tablets Levonorgestel available in India.
- The current recommendation: 1 pill of LNG 0.75 mg to be taken as soon as possible after unprotected coitus (within 72 hours) followed by another pill 12 hours later.
- Method highly effective, has only mild and less frequent side effects
- A single dose of LNG 1.5 mg was tried in a WHO multicentric randomized trial. Found as effective as 2 doses given 12 hours apart up to 120 hours after exposure.



GOI Guidelines

The Government of India recommend use of Levonorgestrel (progestogen only) LNG 0.75 mg as a “dedicated product” for effective emergency contraception.

The Drug Controller of India has approved only Levonorgestrel for use as ECP.

How do ECPs Work?



Probable mechanisms are:

- Inhibition or delay of ovulation
- Thickening of cervical mucous
- Direct inhibition of fertilization
- Histological and biochemical alteration in endometrium leading to impaired endometrial receptivity to implantation of the fertilized egg
- Alteration in transport of egg, sperm and embryo
- Interference with corpus luteum function and luteolysis

When Should ECPs be Taken?

ECPs should be taken as soon as possible after unprotected intercourse. The first dose should be taken within 72 hours after intercourse

After Effects of ECP

Nausea: Eat something soon after taking the pills to reduce nausea.

Vomiting: If the woman vomits within 2 hours of taking the pills, she may take another dose.

Next menstruation: May start a few days earlier or later than expected.

When should the user return to the healthcare provider



if her next period is quite different from usual especially if:

- There is unusually light bleeding (possibly pregnancy)
- Bleeding does not start within 4 weeks (Possible pregnancy)
- Unusually painful (possibly ectopic pregnancy). But emergency oral contraception does not cause ectopic pregnancy.

If there are symptoms of sexually transmitted diseases.

Some Facts About ECPs

- Will not disrupt an established pregnancy
- No medical conditions rule out ECPs.
- Do not provide continuing protection from pregnancy.
- No protection against STIs.



Providing ECPs: Key steps

- Help the client feel at ease.
- Ask when unprotected sex took place.
- Give and explain how to take pills
- If she vomits within 2 hours of taking pills, take another dose.
- Explain and discuss important points about ECPs.
- Discuss her ongoing need for contraception

7. Fertility Awareness–Based Methods



Various methods are:

1. Calendar calculation:

A woman can count calendar days to identify the fertile time.

The shortest cycle minus 18 days gives the first day of fertile period and longest cycle minus 10 days gives the last day of fertile period

2. Cervical secretions:

Also known as “Billings method”: When a woman sees or feels cervical secretions, she may be fertile.

Contd.

3. **Basal body temperature:**

A woman's resting body temperature goes up slightly around the time of ovulation

4. **Feel of the cervix:**

As the fertile time begins, the opening of the cervix feels softer, opens slightly, and is moist.

A combination of all these methods can also be used to be more effective.

Advantages

- No physical side effects
- No cost required
- Once learned, may be no require help from health care providers.
- Immediately reversible
- No hormonal side effects
- No effect on breast feeding

Disadvantages

- Not an effective method
- Takes time to learn the duration of menstrual cycle
- Can become unreliable or hard to use if the woman has a fever, has a vaginal infection or is breast feeding
- May not be effective for women with irregular menstrual cycles
- Does not protect against STDs, HIV/AIDS



8. Lactational Amenorrhea Method

- Use of breast feeding as a temporary family planning method.
- A female is naturally protected against pregnancy when:
 - a. Her baby gets at least 85% of his or her feedings as breast milk and she breastfeeds her baby often, both day and night
 - b. Her menstrual periods have not returned
 - c. Her baby is less than 6 months old

Advantages

- Effectively prevents pregnancy for at least 6 months
- Encourages the best breastfeeding practices
- No need to do anything at time of sexual intercourse
- No hormonal side effects
- No direct costs, supplies or procedures

Disadvantages

- Effectiveness after 6 months is not certain
- No protection against sexually transmitted infections including HIV/AIDS.
- If the mother has HIV, there is a chance that breast milk will pass HIV to the baby

2. Terminal Methods

- Effective contraceptive procedure for couples who have completed their family size
- Currently female sterilization accounts 85 % and male sterilization 10-15% of all sterilizations in India

Male Sterilization

Method:

Done under LA, a small incision is made in scrotal skin and a piece of vas at least 1 cm removed after clamping and ends ligated and folded back on themselves and sutured into position.

Mode of action:

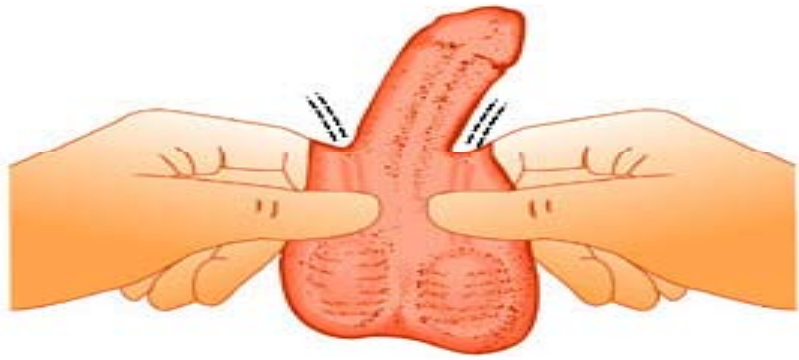
No sperm in semen.

Precaution:

Use additional contraceptive procedure until approx. 30 ejaculations or for 3 months after the procedure



The Vasectomy Procedure



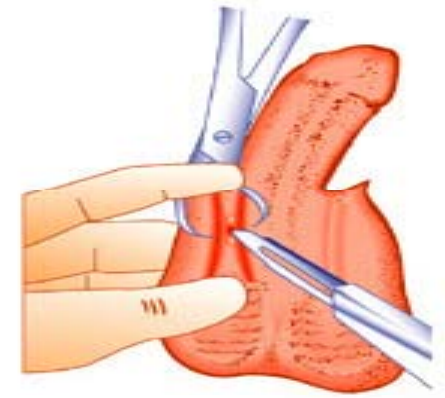
Simultaneous identification of each vas deferens

(a)



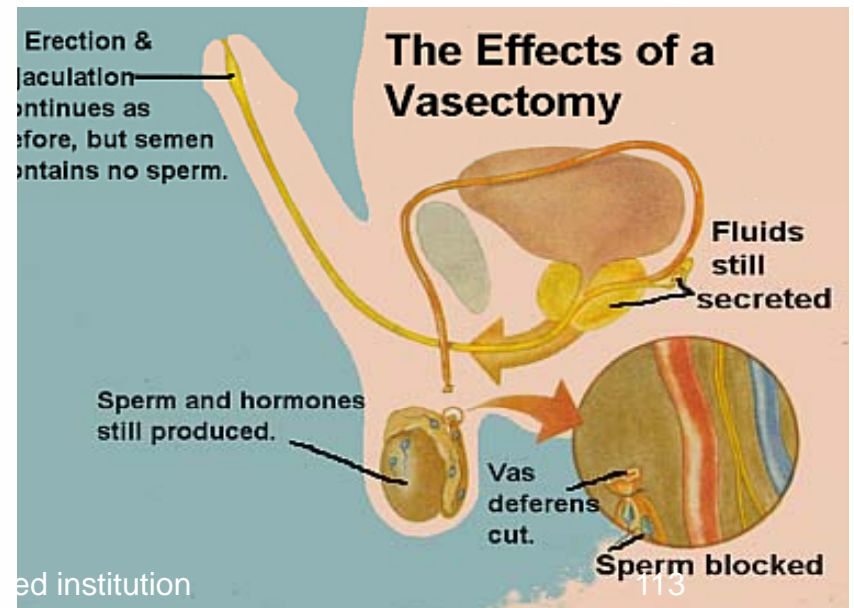
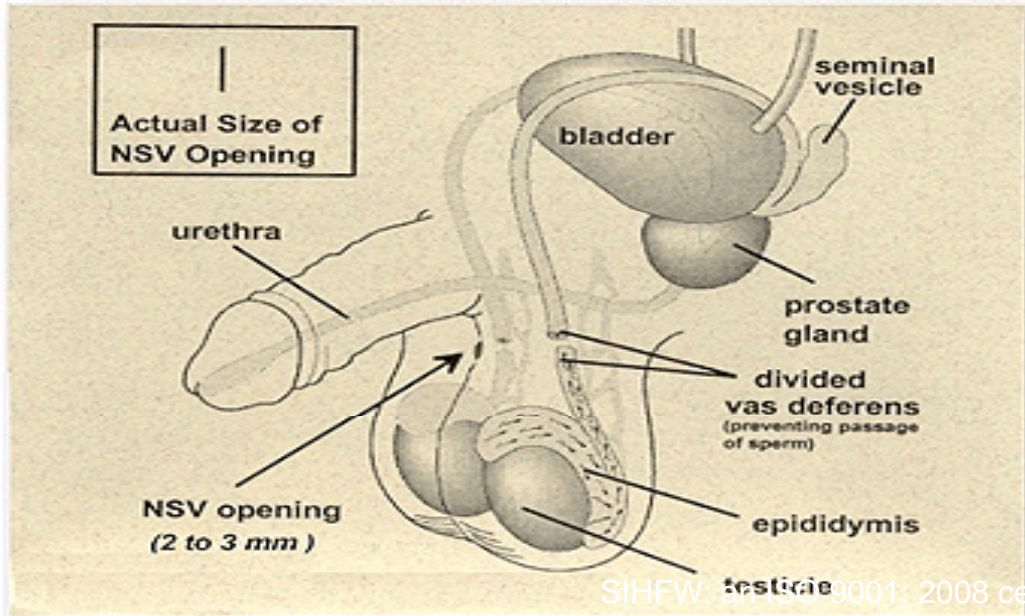
Vas injected with anesthetic

(b)



Small incision made over vas

(c)



Advantages

- Very effective
- Permanent: a single, quick procedure leads to lifelong, safe, and very effective family planning
- No interference with sex.
- No apparent long term health risks.
- No supplies to get, and no repeated clinic visits required

Disadvantages

1. Complications:

- a. Common complications: pain in scrotum, swelling and bruising
- b. Sperm granules
- c. Spontaneous recanalization (0-6 %)
- d. Autoimmune response to sperm
- e. Psychosocial effects

2. Requires minor surgery by a specially trained provider

3. Reversal is difficult

4. No protection against STDs including HIV/AIDS

No Scalpel Vasectomy

- Eliminates the need to cut the patient's skin in order to reach the vas deferens.
- Tubes under the skin are isolated with a specialized clamp - after the anesthesia
- Make a tiny puncture to reach vas deferens. The vas deferens from each side are pulled through the hole one at a time and cut and blocked.
- Very little bleeding and scarring, no stitches



Benefits of NSV:

- ✓ No-incision and no-stitch is a popular option
- ✓ Less trauma, less complications
- ✓ Fast recovery period and early return to work
- ✓ During the whole operation testicles are not interfered with at all.

What are the potential complications

- ✓ Infections
- ✓ Congestion
- ✓ Sperm Granuloma
- ✓ Recanalization
- ✓ Internal Bleeding (Hematoma)



Female Sterilization

Two procedures:

- 1. Laparoscopy:** First the abdomen is distended with CO₂ or NO₂. A small sub naval incision is made and laparoscope is inserted, after accessing the tubes, they are closed by a clip, a ring, or by electro coagulation.
- 2. Minilap operation:** A small incision (under LA) is made in abdomen just above pubic hair line, uterus is raised and turned with an elevator to bring fallopian tubes under the incision and then each tube is tied and cut, or else closed with a clip or ring.

Contd.

Mode of action:

Prevents ovum from being fertilized by the sperm.

“Postpartum tubal ligation” is one of the most effective female sterilization techniques. (failure rate: 0.05 pregnancies per 100 women during the first year after the procedure)”

Advantages

- Very effective
- Permanent: a single procedure leads to lifelong, safe and very effective family planning
- Nothing to remember, no supplies needed, and no repeated clinic visits required
- No interference with sex
- No long term or hormonal side effects
- No effect on breast feeding

Disadvantages

1. Complications:

- a: Pain after the procedure or local infection or bleeding
- b: internal infection or bleeding
- C: Injury to internal organs

2. Requires physical examination and minor surgery by a specially trained provider

3. Reversal surgery is difficult, expensive and not available in most areas

4. No protection against STDs including HIV/AIDS



Method	Failure Rate
A. Spacing Methods	
1. Barrier Method	
I. Condom-Male	14%
ii. Condom-Female	5-21%
2. Vaginal Method	
i. Diaphragm/ Cervical Cap	20%
ii. Spermicides	26%
3. Intrauterine Device	
I. Intrauterine Device	2 %



Method	Failure Rate
4. Hormonal Method	
I. Combined Oral Contraceptive (estrogen/progestin)	0.3%
II. Oral Contraceptive progestin only pills (POPs)	5%
5. Injectables	
I. Implants	0.3%
6. Non Hormonal Contraceptive pills	
I. Non Hormonal Contraceptive pills	1.83
7. Post-coital contraception (Emergency contraception)	0%
8. Fertility Awareness	25%
9. LAM	2%

Method	Failure Rate
B. Terminal methods	
I. Male Sterilization-	
a. Vasectomy	0.15%
b. No Scalpel Vasectomy	5-10%
II. Female Sterilization	
a. Laproscopy	0.5%

Family Planning (Currently Married Women, age 15–49) Indicators: India



Family Planning (Currently Married Women, age 15–49) Indicators	Urban Poor	Urban Non Poor	Urban	Rural	State Total	Urban Poor NFHS-2
Any modern method (%)	48.7	58.0	55.8	45.3	48.5	43.0
Spacing method (%)	7.6	19.8	16.9	7.2	10.1	4.6
Permanent sterilization method rate (%)	41.1	38.2	38.9	38.1	38.3	38.4
Total unmet need (%)	14.1	8.3	10.0	14.6	13.2	16.7
a. For spacing (%)	5.7	4.1	4.5	6.9	6.2	8.5
b. For limiting (%)	8.4	4.2	5.2	7.2	6.6	8.2

Family Planning (Currently Married Women, age 15–49) Indicators: Raj



Family Planning (Currently Married Women, age 15–49) Indicators	Urban Poor	Urban Non Poor	Urban	Rural	State Total	Urban Poor NFHS-2
Any modern method (%)	53.1	63.7	62.0	38.0	44.4	28.9
Spacing method (%)	10.5	22.6	20.6	5.3	9.4	2.9
Permanent sterilization method rate (%)	42.6	41.0	41.3	32.7	35.0	26.2
Total unmet need (%)	16.1	8.5	9.8	16.3	14.6	23.9
a. For spacing (%)	6.2	5.0	5.2	8.0	7.3	10.3
b. For limiting (%)	9.9	3.5	4.6	8.3	7.3	13.6



Marriage and Fertility Indicator : Rajasthan

Marriage and Fertility-Indicator	Urban Poor	Urban Non Poor	Urban	Rural	State Total	Urban Poor NFHS-2
Women age 20-24 married by age 18 (%)	65.1	30.6	35.8	65.7	57.1	70.0
Women age 20-24 who became mothers before age 18 (%)	16.2	8.7	9.8	27.5	22.4	37.3
Total fertility rate (children per woman)	3.4	2.0	2.2	3.6	3.2	5.1
Higher order births (3+ births) (%)	39.0	11.2	17.8	36.0	33.9	85.6
Birth Interval (median number of months between current and previous birth)	29.5	29.0	29.0	30.0	30.0	31.0

Marriage and Fertility Indicator : India



Marriage and Fertility-Indicator	Urban Poor	Urban Non Poor	Urban	Rural	State Total	Urban Poor NFHS-2
Women age 20-24 married by age 18 (%)	51.5	21.2	28.1	52.5	44.5	63.9
Women age 20-24 who became mothers before age 18 (%)	25.9	8.3	12.3	26.3	21.7	39.0
Total fertility rate (children per woman)	2.8	1.8	2.1	3.0	2.7	3.8
Higher order births (3+ births) (%)	28.6	11.4	16.3	28.1	25.1	29.5
Birth Interval (median number of months between current and previous birth)	29.0	33.0	32.0	30.8	31.1	31.0



NRHM Initiatives

- Rajiv Gandhi Population Mission
- PCTS: Eligible couple tracking for two child norm
- Post Partum-IUCD linked to institutional deliveries
- Static Centers strengthening –MOs to be trained for Mini lap
- Online complete monitoring system to make PCPNDT Act effective (hamaribeti.nic.in)
- IEC for Spacing methods to be promoted
- Strengthening of Jan Mangal program (38300 couples)

Expanding Contraceptive Choice in RCH -II



Addition of new contraceptive choices

- Injectable contraceptives (DMPA-SC 104, NET- EN)
- Sub dermal implants (Norplant)
- Vaginal Rings
- The Lactation Amenorrhea Method (LAM)
- Standard Days Method (SDM)
- Centchroman



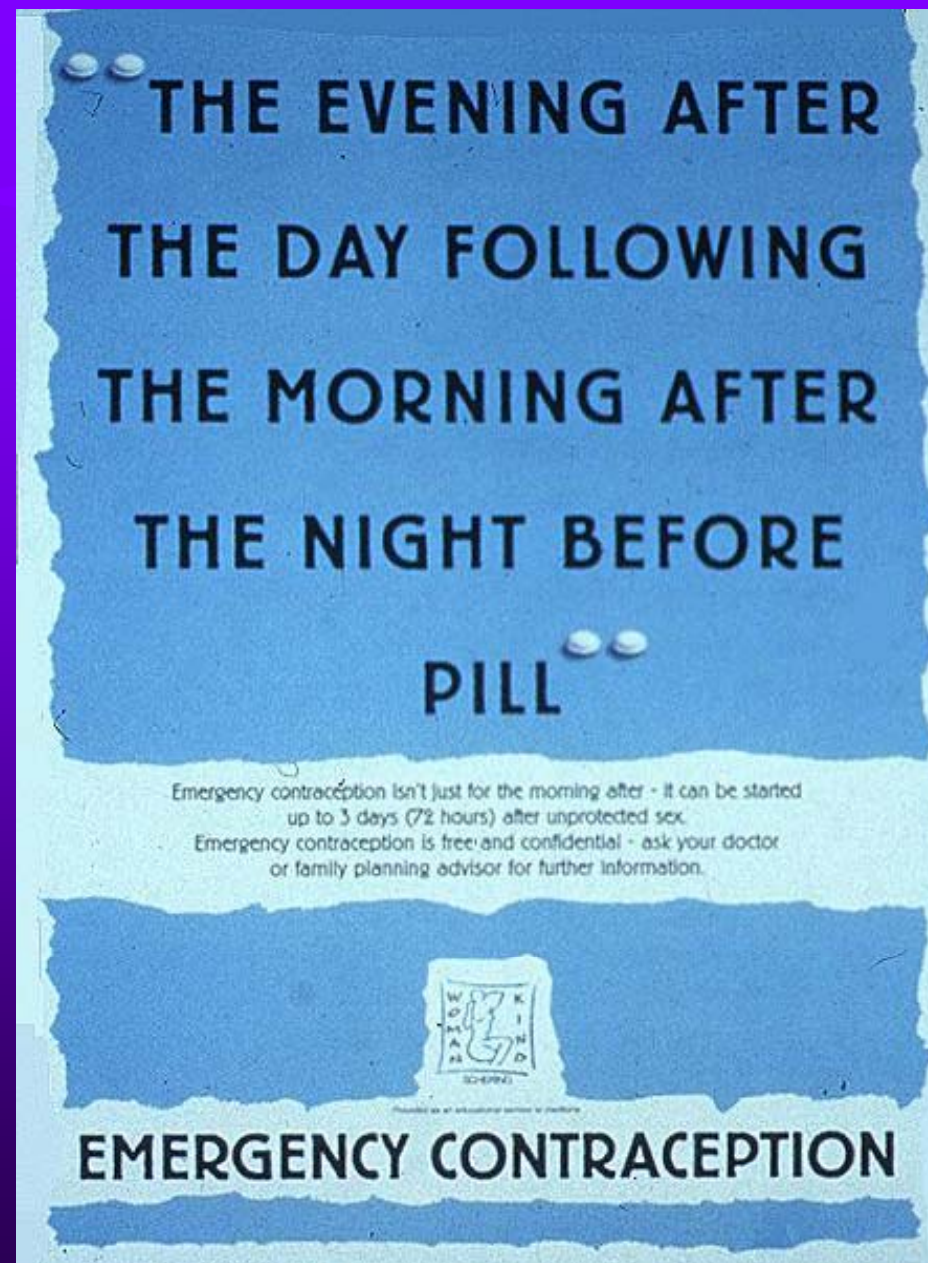
Strategies to Expand Contraceptive Choice in RCH II

- One MO trained in one sterilization method at each CHC and PHC
- Improving and integrating RCH services in PHCs and Sub-centers
- Training of District hospital/CHC/PHC staff:
- Forging linkages with ICDS division
- Engaging the private sector to provide quality family planning services
- Involving Panchayati Raj Institutions, Urban local bodies and NGOs

- Stimulating demand for quality Family Planning services
 - Increasing compensation
 - In case of failure of permanent methods eligibility for safe MTP & compensation of Rs. 5000
 - Using the media.
 - Involving satisfied users.
 - Increasing the gender awareness of providers and increasing male involvement.
 - Social Marketing.
- Studies and Operational Research



Emergency Contraception

An advertisement for emergency contraception pills. The main text is arranged in a vertical stack on a blue, torn-edge paper background. At the top, two white pills are shown. The text reads: 'THE EVENING AFTER', 'THE DAY FOLLOWING', 'THE MORNING AFTER', 'THE NIGHT BEFORE', and 'PILL' with two more pills below it. Below this, a white text box contains the following information: 'Emergency contraception isn't just for the morning after - it can be started up to 3 days (72 hours) after unprotected sex. Emergency contraception is free and confidential - ask your doctor or family planning advisor for further information.' At the bottom of the white box is the 'WOMAN' logo, which consists of a stylized female figure with the word 'WOMAN' written vertically on either side. Below the logo, it says 'Available as an educational resource to healthcare providers.' The entire advertisement is framed by a white border with a torn edge effect.

THE EVENING AFTER

THE DAY FOLLOWING

THE MORNING AFTER

THE NIGHT BEFORE

PILL

Emergency contraception isn't just for the morning after - it can be started up to 3 days (72 hours) after unprotected sex. Emergency contraception is free and confidential - ask your doctor or family planning advisor for further information.

WOMAN

Available as an educational resource to healthcare providers.

EMERGENCY CONTRACEPTION

Emergency Contraceptives

- Prevent pregnancy after unprotected intercourse
- Inhibit ovulation, fertilization, or implantation
- Do not cause an abortion
- Will not interrupt an established pregnancy
- Do not protect against STIs

Emergency Contraceptive Effectiveness

If 1000 women have unprotected sex once in the second or third week of their cycle

- 80 (8%) will become pregnant without treatment
- 20 (2%) will become pregnant following use of combined ECPs (a 75% reduction)
- 10 (1%) will become pregnant following use of progestin-only ECPs (an 88% reduction)
- 1 (0.1%) will become pregnant following emergency IUD insertion (a 99% reduction)

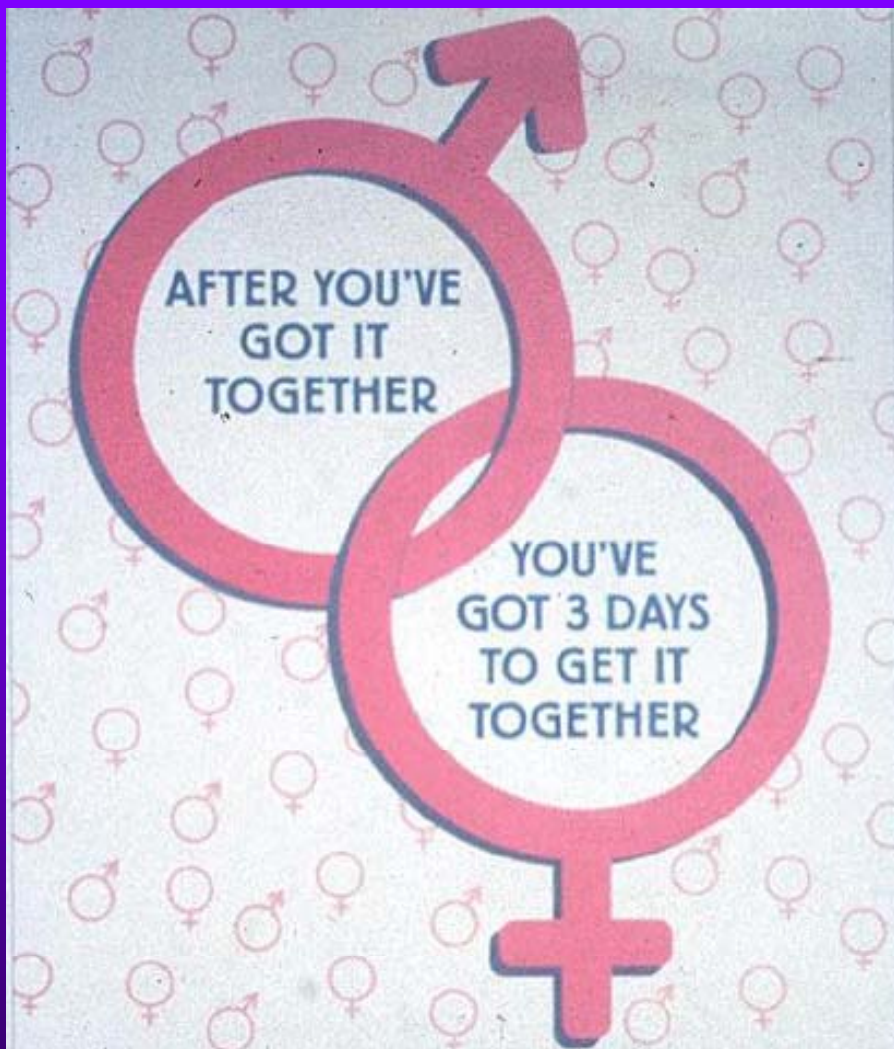
Progestin-Only Emergency Contraceptive Pills



- Dedicated product (Plan B) containing only LNG, 1 tablet/dose
- Birth control pills containing only LNG, 20 tablets/dose
- 2 doses of LNG 750 mcg (total of 1.5 mg)
- First dose ASAP after unprotected coitus
 - Should be within 72 hours
 - second dose 12 hours later
 - Take both pills (doses) at same time
 - Take each pill (dose) 24 hours apart
- Less nausea and vomiting than combined ECPs

Copper IUD Insertion

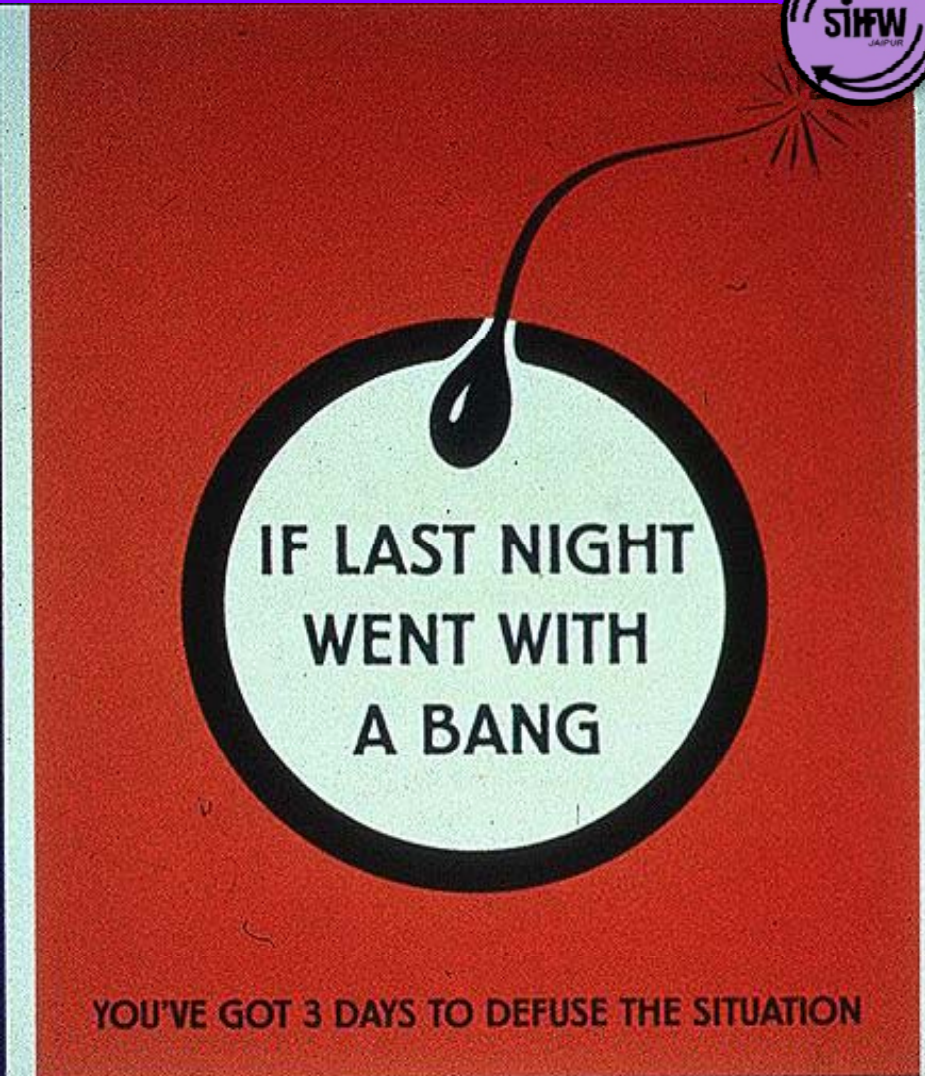
- Copper-T 380A IUD
- Insertion within 5 days after unprotected intercourse
- 10 more years of highly effective contraception
- Reduces the risk of pregnancy by 99%



Emergency contraception isn't just for the morning after - it can be started up to 3 days (72 hours) after unprotected sex. Emergency contraception is free and confidential - ask your doctor or family planning advisor for further information.



EMERGENCY CONTRACEPTION



YOU'VE GOT 3 DAYS TO DEFUSE THE SITUATION

Emergency contraception isn't just for the morning after - it can be started up to 3 days (72 hours) after unprotected sex. Emergency contraception is free and confidential - ask your doctor or family planning advisor for further information.



**IF
YOU
FORGOT
THIS**



**REMEMBER
THIS**

Emergency contraception isn't just for the morning after - it can be started up to 3 days (72 hours) after unprotected sex. Emergency contraception is free and confidential - ask your doctor or family planning advisor for further information.



Provided as an educational service to members

IF YOU'VE BEEN SWEEPED OFF YOUR FEET



**YOU'VE GOT 3 DAYS TO GET THEM
BACK ON THE GROUND**

Emergency contraception isn't just for the morning after - it can be started up to 3 days (72 hours) after unprotected sex. Emergency contraception is free and confidential - ask your doctor or family planning advisor for further information.



Provided as an educational service to members



Evaluation of Contraceptive methods

Evaluation of Contraceptive methods

- Measuring the number of unplanned pregnancies that occur during a specified period of exposure and use of a contraceptive method.
 - Pearl index
 - life- table analysis.



Pearl index

Identified as the number of “failures per 100 women years of exposure (HWY)”

$$\text{Failure rate per HWY} = \frac{\text{Total accidental pregnancies}}{\text{Total months of expenditure}} \times 1200$$

Total fertility rate

- Total Fertility Rate : Average number of children a women would have if she were to pass through her reproductive years bearing children at the same rate as the women in each age group

- Computed as :

$$TFR = \frac{5 \times \sum_{15-19}^{45-49} ASFR^*}{1000}$$

*ASFR : Age specific fertility rate

- **TFR** : Total no. of children a women has borne at a point in time
- **Fertility**: Actual bearing of children

India	Total fertility rate
Rural	2.06
Urban	2.98

Source : NFHS 3

Major Issues: Reducing TFR

- Early age of marriage (40% - DLHS III) and high adolescent fertility rate (16 %)
- Lack of motivation of the Couples to adopt limiting methods after having two children
- Son preference
- Meeting the unmet need of family planning through regular provision of FP services

- Need to Shift from Camp Approach to Fixed Day approach
- Lack of service providers for fixed day approach at CHCs - 50% vacancy of Gynecologists and 53% vacancy of Surgeons at CHCs
- Need for focus on promoting spacing methods



TFR – Declining Trend

S.No.	States	TFR (SRS)					Average Reduction in TFR (04-08)
		2004	2005	2006	2007	2008	
	All India	2.9	2.9	2.8	2.7	2.6	-0.075



Thank You

**For more details log on to
www.sihfwrajasthan.com**

or

**contact : Director-SIHFW on
sihfwraj@yahoo.co.in**