

Updates on Contraceptive Technology Part 2

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Key Facts about family planning/contraception

- ❑ 214 million women of reproductive age in developing countries who want to avoid pregnancy are not using a modern contraceptive method (unmet need for modern contraception).
- ❑ Some family planning methods, such as condoms, help prevent the transmission of HIV and other sexually transmitted infections.
- ❑ Family planning / contraception reduces the need for abortion, especially unsafe abortion.
- ❑ Family planning reinforces people's rights to determine the number and spacing of their children.
- ❑ By preventing unintended pregnancy, family planning /contraception prevents deaths of mothers and children.

Main benefits of family planning/contraception

- ❑ Secures the well being and autonomy of women
- ❑ Supports the health and development of communities
- ❑ Prevents unplanned pregnancy and pregnancy-related health risks of women
- ❑ Prevents adolescent pregnancy
- ❑ Reduces infant mortality and prevents HIV/AIDS transmission to newborns
- ❑ Empowers people and enhances education
- ❑ Slows population growth

Unmet need for contraception

Definition

- Women with unmet need are those who are **fecund and sexually active** but are **not using any method of contraception**, and report **not wanting any more children or wanting to delay the next child**.
- The concept of unmet need points to the gap between women's **reproductive intentions** and their **contraceptive behavior**.

Unmet need is especially high among groups such as.

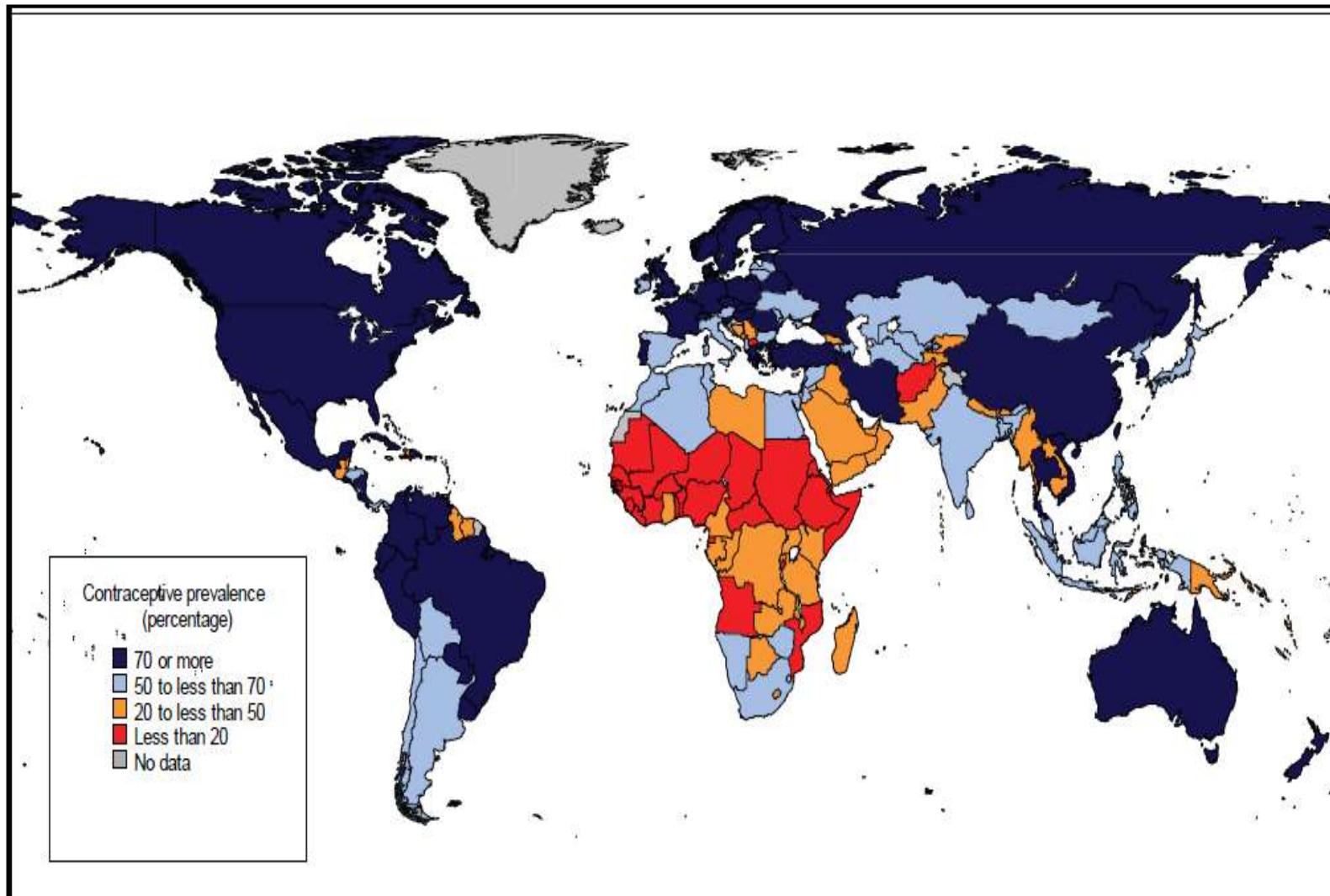
- Adolescents
- Migrants
- Urban slum dwellers
- Refugees
- Women in the postpartum period

Reasons for unmet need for modern FP/ C

- ❑ limited choice of methods;
- ❑ limited access to contraception, particularly among young people, poorer segments of populations, or unmarried people;
- ❑ fear or experience of side-effects;
- ❑ cultural or religious opposition;
- ❑ poor quality of available services;
- ❑ users and providers bias;
- ❑ gender-based barriers.

World contraceptive use

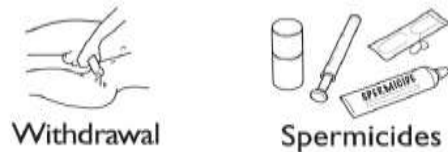
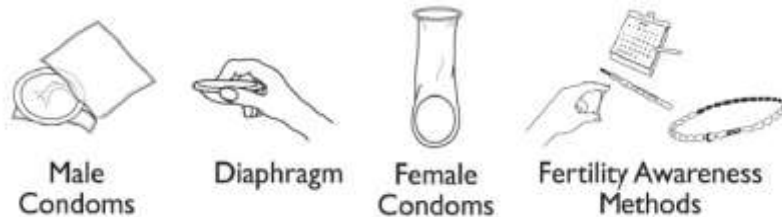
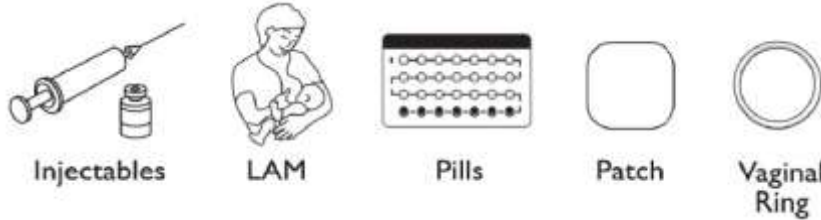
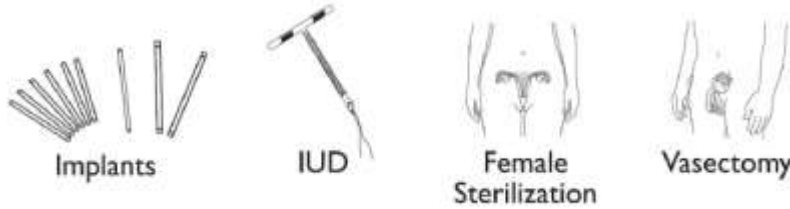
Percentage of women using some method of contraception among those aged 15-49 who are married or in a union



Comparing Effectiveness of Family Planning Methods

More effective

Less than 1 pregnancy per 100 women in one year



Less effective

About 30 pregnancies per 100 women in one year

How to make your method more effective

Implants, IUD, female sterilization:

After procedure, little or nothing to do or remember

Vasectomy: Use another method for first 3 months

Injectables: Get repeat injections on time

Lactational Amenorrhea Method (for 6 months):

Breastfeed often, day and night

Pills: Take a pill at the same time each day

Patch, ring: Keep in place, change on time

Condoms, diaphragm: Use correctly every time you have sex

Fertility awareness methods: Abstain or use condoms on fertile days. Standard Days Method and Two-Day Method may be easier to use.

Withdrawal, spermicides: Use correctly every time you have sex

Outline and objectives

- ❑ Description of the method
- ❑ Mechanism of action
- ❑ Effectiveness
- ❑ Eligibility criteria
- ❑ Benefits and side effects
- ❑ Interventions for associated effects

Methods

- ❑ Combined oral contraceptives
- ❑ Injectable contraceptives, progestin-only
- ❑ Injectable contraceptives, combined
- ❑ Hormonal implants

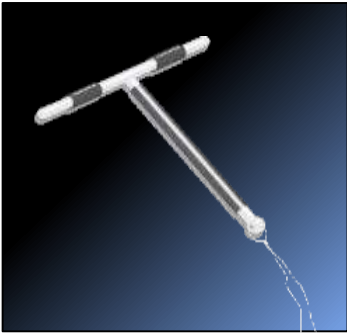
- ❑ **IUDs (copper bearing)**
- ❑ **LNG IUS**
- ❑ **Male and female condoms**
- ❑ **Other barrier methods**
- ❑ **Fertility awareness, lactational amenorrhea**
- ❑ **Emergency contraception**
- ❑ **Tubal ligation and vasectomy**
- ❑ **Other methods**

Copper Intrauterine Contraceptive Devices (IUDs or IUCDs)



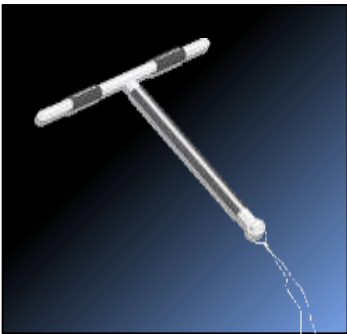
Copper T 380A

What is a Copper IUD?



- ❑ Small plastic device with copper sleeves or wire around it, inserted through the vagina and cervix into the uterus
 - Safe
 - Highly effective
 - Long acting (up to 12 years)
 - Require trained provider to insert and remove

Copper-bearing IUD



Copper T-380A

TCu-380A, “Copper T” is most widely used copper IUD



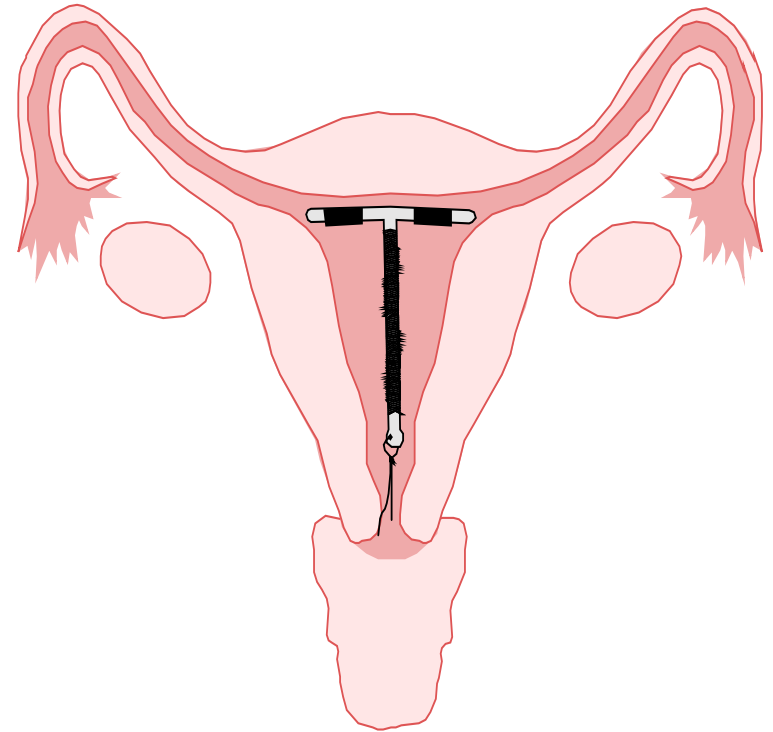
Multiload 375

Multiload 375 – less commonly available

Copper T: Mechanism of Action

Prevents fertilization by:

- ❑ Impairing the viability of the sperm
- ❑ Interfering with movement of the sperm



Source: Ortiz, 1996

Copper IUDs: Characteristics

- ❑ Safe and highly effective
- ❑ Require no user action
- ❑ Long-acting (up to 12 years)
- ❑ Rapid return to fertility
- ❑ No systemic effects
- ❑ Other health benefits
- Potential side effects
- Require pelvic exam
- Trained provider needed to insert and remove
- Possible pain or discomfort during insertion
- Do not protect against STIs/HIV
- Rare complications

Source: CCP and WHO, 2011

Copper IUDs: Possible Side Effects

Some women may experience:

- ❑ More cramps and pain during menstruation
- ❑ Increased or prolonged menstrual bleeding
- ❑ Bleeding between menstrual periods



Side effects are most common during the first 3–6 months.

Source: CCP and WHO, 2011; Larsson, 1993; DeMaeyer, 1989; WHO, 2004, updated 2008; WHO Special Programme of Research Development and Research Training in Human Reproduction, 1997.

Copper IUDs: Health Benefits

IUDs are known to:

- ❑ Reduce risk of ectopic pregnancy
 - Rate in all IUD users is 12 in 10,000 (2 in 10,000 for Copper T380A users)
 - Rate in women using no contraception is 65 in 10,000
- ❑ Help protect against endometrial cancer

Source: CCP and WHO, 2011; Sivin, 1991.

Potential Complications

- ❑ Perforations—Very rare, 1 in 1,000 insertions
 - Linked to skill and experience of provider
 - Reduced through supervised training
- ❑ PID—Rare, most due to gonorrhea or chlamydia at time of insertion
- ❑ Expulsions—Related to provider skill, age and parity of woman and insertion factors

Expulsion Rates Are Higher for Postpartum Insertion

Timing of Insertion	Expulsion Rates
Interval (more than 6 weeks after delivery)	Low (3% for skilled provider)
Immediate postpartum (within 10 minutes)	Slightly higher
Early postpartum (between 10 minutes and 48 hours)	Moderately higher
Late Postpartum (48 hours to 4 weeks)	High - Generally not recommended

Source: Chi, et al, 1985.

Who Can Initiate Copper IUDs

WHO MEC category 1 and 2 examples

WHO MEC Category	Conditions (selected examples)
Category 1	≥20 years, cervical ectopy, uterine fibroids without distortion of the uterine cavity, irregular bleeding without heavy bleeding, breastfeeding > 6 weeks, history of PID
Category 2	Menarche to <20 years, nulliparous, heavy or prolonged bleeding, severe dysmenorrhea, anemia, HIV/AIDS infection, with or without ARV therapy

Source: WHO, 2004; updated 2008.

Who Should Not Initiate Copper IUDs

WHO MEC category 3 and 4 examples

WHO MEC Category	Conditions (selected examples)
Category 3	48 hours to <4 weeks postpartum, ovarian cancer/if initiating use, high individual risk of STI/ if initiating use
Category 4	pregnancy, unexplained vaginal bleeding (prior to evaluation), current PID or cervical infection, endometrial or cervical cancer/if initiating use

Source: WHO, 2004; updated 2008.

Timing of IUD Insertion

Interval insertion

- ❑ Within the first 12 days of menstrual cycle
- ❑ Any other time if woman is not pregnant

Postpartum insertion

- ❑ Immediately after vaginal or cesarean delivery if no infection or bleeding complications
- ❑ Within 48 hours or delay at least 4 weeks

Postabortion insertion

- ❑ Immediately or within 12 days if no infection

Source: WHO, 2004; updated 2008.

Side Effects

- ❑ Common side effects:
 - Heavier and/or prolonged menstrual bleeding
 - Menstrual cramping
 - Spotting between periods

- ❑ Side effects:
 - Are not signs of illness
 - Usually become less within the first 3–6 months

Correcting Misconceptions

IUDs:

- Rarely lead to PID
- Do not increase risk of STIs, including HIV
- Do not work by causing abortion
- Do not make women infertile
- Do not move to the heart or brain
- Do not cause birth defects
- Do not cause pain for either partner during sex
- Significantly reduce risk of ectopic pregnancy

Source: CCP and WHO, 2011.

Signs of Possible IUD Complications

- Bleeding and severe abdominal cramping within a few days post-insertion → perforation
- Irregular bleeding or pain every cycle → partial expulsion, perforation
- Fever, unusual vaginal discharge, low abdominal pain → infection
- Missing IUD strings, missed period → expulsion, pregnancy

Source: CCP and WHO, 2011.

Heavy, Prolonged or Irregular Bleeding

Counseling and reassurance are key

Problem	Action/Management
Heavy or prolonged bleeding	<ul style="list-style-type: none">● Reassure client that this is common and not harmful, usually diminishes after few months● For short-term relief offer 5-day course of tranexamic acid or NSAIDs (not aspirin)● Provide iron tablets
Irregular bleeding	<ul style="list-style-type: none">● Reassure client● For short-term relief offer ibuprofen or indomethacin 2 times daily after meals for 5 days

Managing IUD Side Effects or Complications: Cramping and Mild Pain

Counseling and reassurance are key

Problem	Action/Management
Cramping and mild pain	<ul style="list-style-type: none">● She can expect cramping and pain in first 1–2 days after insertion● Reassure client that this is common in first 3–6 months, not harmful, usually decreases over time● Suggest ibuprofen, other pain reliever (not aspirin if she also has heavy bleeding)● If cramping continues, occurs outside of menstruation, evaluate, treat or refer● If cramping is severe but no underlying condition, discuss removing the IUD

Source: CCP and WHO, 2011.

Managing IUD Side Effects or Complications:

Severe Pain in Lower Abdomen (Rare)

- ❑ Rule out PID, ectopic pregnancy or perforation.
- ❑ If PID is suspected, treat with appropriate antibiotics for gonorrhoea, chlamydia and anaerobic bacterial infection. There is no need to remove the IUD.
- ❑ If ectopic pregnancy is suspected, refer immediately.

Source: CCP and WHO, 2011.

Managing IUD Side Effects or Complications: Suspected Perforation

- ❑ Stop procedure immediately, remove IUD
- ❑ Observe vital signs for an hour; check for signs of bleeding
 - If rapid pulse, falling blood pressure, or increased pain: refer
- ❑ Provide alternative contraception
 - Advise avoid sex for 2 weeks
- ❑ Follow-up in a week or as needed

Source: CCP and WHO, 2011.

Missing Strings

- ❑ Determine risk of pregnancy
- ❑ Perform pelvic exam, probe for strings in cervical canal
- ❑ If cannot locate strings, consider X-ray or ultrasound, or refer
- ❑ Give choice of another contraceptive method
- ❑ Insert another IUD if expulsion is confirmed and
 - Woman is not pregnant
 - She still wants to use an IUD

Source: CCP and WHO, 2011.

Suspected Pregnancy

- ❑ Assess for pregnancy, including ectopic pregnancy
- ❑ If the client is pregnant and wishes to continue the pregnancy:
 - Explain that using an IUD during pregnancy increases the risk of preterm delivery or miscarriage
 - If possible, remove the IUD
 - If not possible to remove, advise close follow-up for signs of septic miscarriage

Hormonal intrauterine device



LNG-IUS

Hormonal IUDs



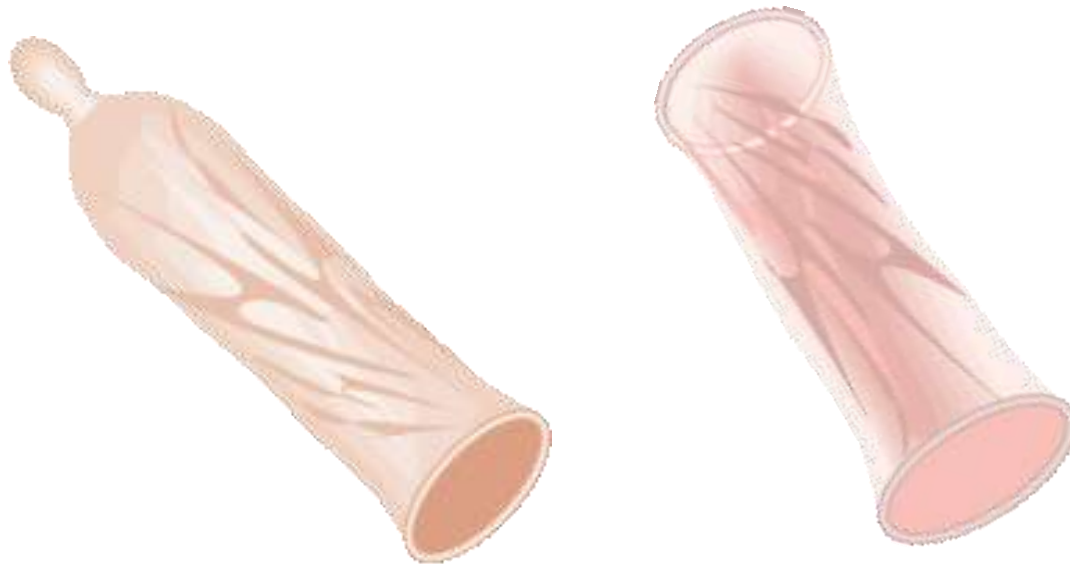
- ❑ Steadily release a progestin
- ❑ Levonorgestrel IUD (LNG-IUD) most common hormonal IUD
- ❑ Also known as LNG-intrauterine system (LNG-IUS)
- ❑ Immediately reversible
- ❑ Effective for 5 years
- ❑ Category 4 if immediate post-septic abortion, before evaluation of unexplained vaginal bleeding, or with malignant trophoblastic disease, with current breast cancer

Other features of the LNG IUS

- ❑ Works primarily by suppressing the growth of the lining of the uterus
- ❑ Needs to be inserted into a uterus by a trained health care provider

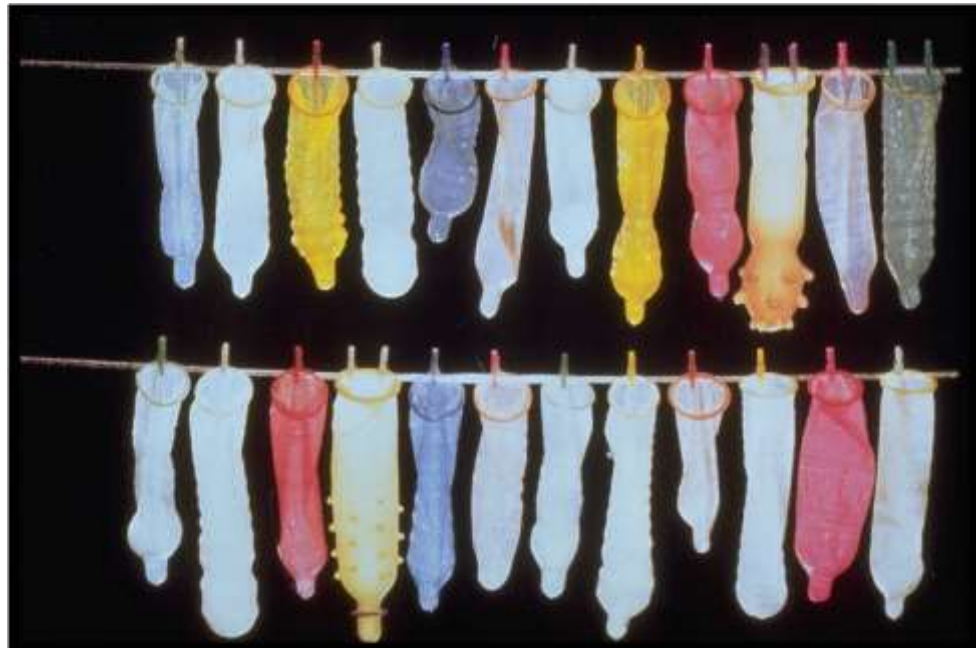
- ❑ Some report lighter, fewer or even absent bleeding days
- ❑ Also infrequent reports of headaches, breast tenderness or pain, acne

Male and Female Condoms



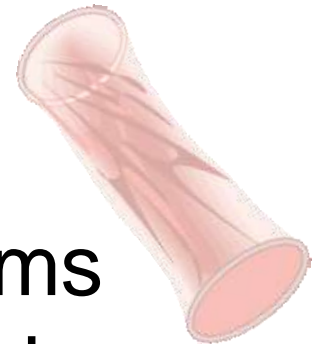
What Is a Male Condom?

- ❑ A sheath that fits over a man's erect penis
- ❑ Most are made of thin latex rubber
- ❑ Other materials include natural skin and various synthetics



What Is a Female Condom?

- A transparent sheath that fits loosely inside a woman's vagina
- Most common type is FC2 —made of thin, soft, synthetic rubber film
 - Has flexible rings at both ends
- Also natural latex female condoms (Cupid) available in some countries

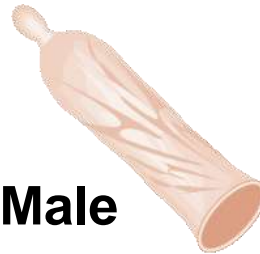


Comparing Effectiveness of Male and Female Condoms

In real-life situations, correct and consistent use may be difficult to achieve

Pregnancy rates:

Male



Female

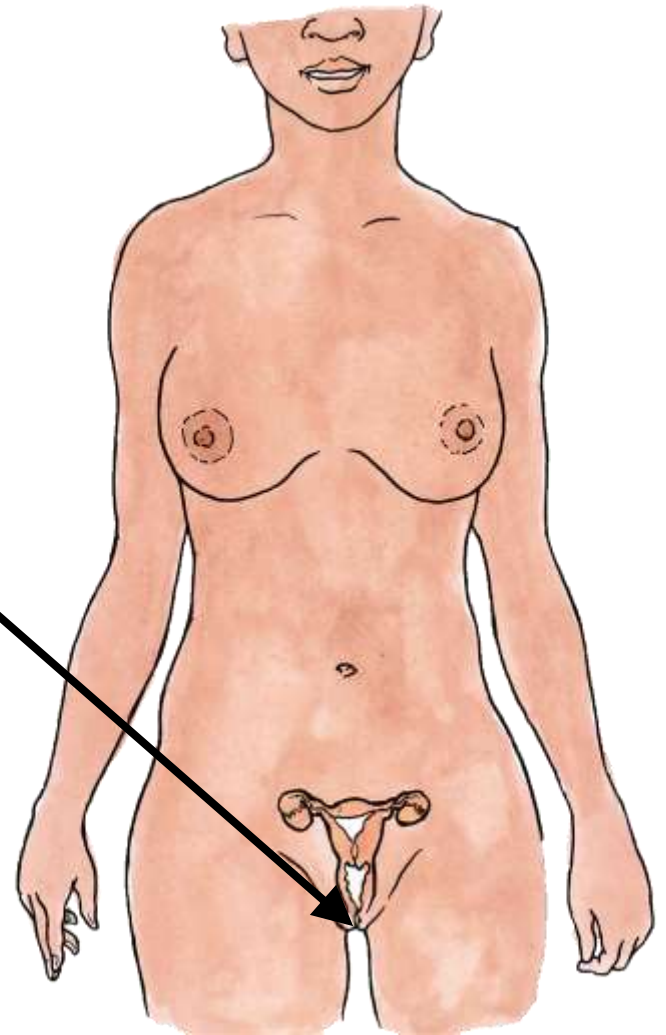


perfect use	2%	5%
typical use	15%	21%

Source: Hatcher, 2007.

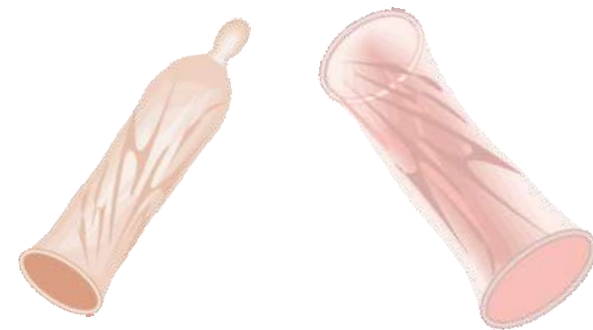
Condoms: Mechanism of Action

- ❑ **Create a barrier that keeps sperm from entering the vagina, thus preventing pregnancy**
- ❑ **Also form a barrier against STIs including HIV**



Male and Female Condoms

Dual Protection



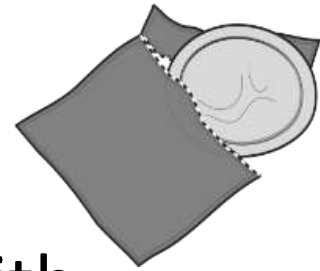
Condoms are the *only* FP method that provides **dual protection**:

- ❑ Protection from pregnancy *and*
- ❑ Protection from transmission of HIV and other STIs between partners

Effectiveness for Preventing HIV and STIs

- ❑ The consistent, correct use of condoms significantly reduces the risk of HIV infection in men and women
- ❑ When used correctly with every act of sex, condoms are 80%–95% effective in preventing HIV infection
- ❑ Condoms prevent STIs transmitted through body fluids such as gonorrhea and chlamydia
- ❑ Condoms are less effective for preventing STIs transmitted by skin-to-skin contact, such as herpes and warts

Characteristics of Male Condoms



- ❑ Safe and easy to use
- ❑ Widely available
- ❑ Effective when used consistently and correctly
- ❑ Provide dual protection
- ❑ No hormonal side effects
- ❑ Can help men with premature ejaculation
- ❑ Do not require provider's help
- ❑ Can be used as temporary backup method
- ❑ Protect women from conditions caused by STIs

Characteristics of Male Condoms

- ❑ As typically used, less effective than many other methods
- ❑ Require partner communication and cooperation
- ❑ Can be damaged by oil-based lubricants, heat, humidity or light
- ❑ May reduce sensation
- ❑ Can interrupt sex



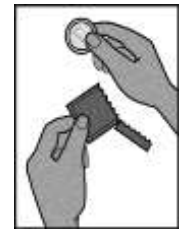
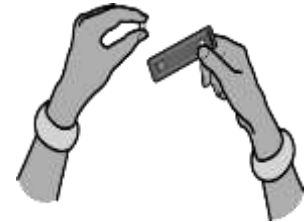
Who Can Use Male Condoms

- All men and women can safely use male condoms, *except* those with severe allergic reaction to latex
 - Extremely rare among both men and women
 - Non-latex condoms are available in some countries



Managing Problems

- If condom not used—Offer emergency contraception
- If slipping or breaking—Ask about practices, behaviors
- If difficulty putting on—Ask client to demonstrate, correct errors
- Difficulty persuading partner to use—Help her choose approaches that will work
Suggest adding another method



Managing Problems

Mild irritation or mild allergic reaction to condom—Itching, redness, rash and/or swelling

- Try another brand of condoms
- Put lubricant or water on the condom
- If symptoms continue, assess or refer for possible vaginal infection or STI
- If no infection, may have allergy to latex

Characteristics of Female Condoms

What Men and Women Like

What Women Like:

- ❑ Female-controlled
- ❑ Texture feels more natural than latex male condoms
- ❑ Offer STI/HIV protection
- ❑ Outer ring provides stimulation
- ❑ Do not require provider's help

What Men Like:

- ❑ Can be inserted in advance
- ❑ Are not tight or constricting
- ❑ Do not dull sensation
- ❑ Do not have to be removed immediately

What Men and Women Don't Like

Limitations:

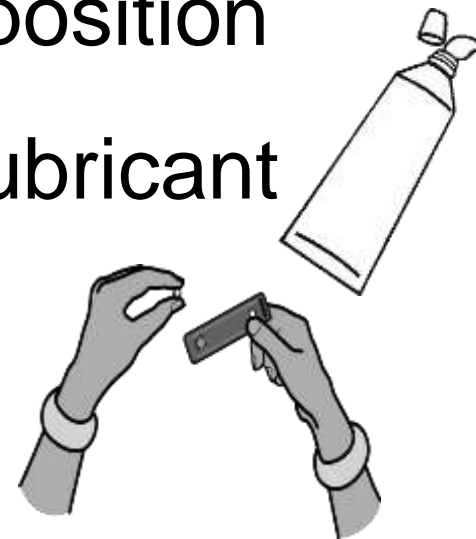
- ❑ May be difficult to insert at first, require practice
- ❑ Not as effective as other methods
- ❑ More expensive than male condoms
- ❑ Less available than male condoms

Who Can Use Female Condoms

- All men and women can use FC2
- Latex female condoms: Severe allergic reaction to latex is the only condition that prevents use
 - Extremely rare

Managing Problems

- If having trouble inserting: Ask her to demonstrate
- If uncomfortable: Reinsert or reposition
- If condom squeaks: Use more lubricant
- If condoms slips or is not used correctly: Offer emergency contraception
- Difficulty persuading partner: Help her choose approaches that will work



Managing Problems

(Continued)

- ❑ Mild irritation in or around the vagina or penis (itching, redness, rash)
 - Usually goes away on its own
 - Suggest added lubricant inside condom or on penis
 - If symptoms persist, assess and treat for possible vaginal infection or STI

Responding to Myths and Fears

Male condoms:

- ❑ Do not make men impotent, weak, or decrease sex drive
- ❑ Do not cause illness in men because sperm “back-up”

Female condoms:

- ❑ Are not difficult to use, but correct use needs to be learned
- ❑ Do not cause illness in women because they prevent semen from entering the body

Responding to Myths and Fears

(continued)

Both male and female condoms:

- ❑ Cannot get lost in woman's body
- ❑ Do not have holes that HIV can pass through
- ❑ Are not intended only for use outside of marriage, but also used by married couples

Other barrier methods

- ❑ **Diaphragm** – is placed deep in the vagina before sex, covering the cervix as a barrier, usually used with a spermicide
- ❑ When used correctly with every act of sex, 6 pregnancies per 100 women using the diaphragm over the first year.
- ❑ **Cervical caps** – is also placed deep in the vagina before sex, covering the cervix as a barrier.
- ❑ Not as effective, with 20 pregnancies per 100 women in the first year.



Other barrier methods

- ❑ Spermicide – applied deep in the vagina before every act of sex
 - Usually Nonoxynol 9, but other substances also available
 - Work by causing the membrane of sperm cells to break, killing them or slowing movement.
 - One of least effective methods, may be a primary or a back up method.
- ❑ Microbicide (either anti-infective alone or dual protection)



Fertility awareness methods

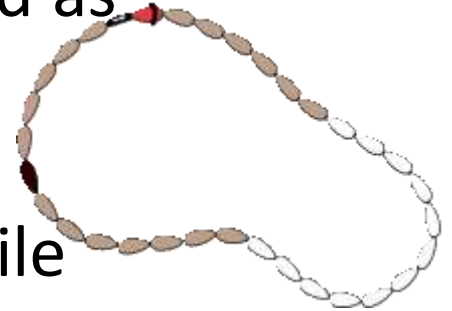
- ❑ Requires the cooperation of both partners, with a commitment to abstain or use another method on fertile days
 - Periodic abstinence
 - Natural family planning
- ❑ Must be aware of the body changes or keep track of days, according to rules of the specific methods.
- ❑ No side effects.

Fertility awareness methods

- ❑ Calendar based methods
 - Standard days methods
 - Calendar rhythm methods
- ❑ Symptoms based methods
 - Cervical secretions
 - Basal Body Temperature
 - Increase noted slightly after release of the egg or ovulation
 - Two day method
 - Sympto-thermal method

Standard Days Methods

- ❑ 95% effective with consistent and correct use
- ❑ A woman can use the SDM if most of her menstrual periods are 26 to 32 days long.
- ❑ Days 8 to 19 of each cycle are considered as fertile days.
- ❑ The couple can use cycle beads, a color-coded string of beads that indicates fertile and nonfertile days.



How to use cycle beads



- Move ring to RED bead when period starts

1



- Move ring to next bead every day. Move ring even on bleeding days

2



- Use condoms or abstain when ring is on WHITE beads

3



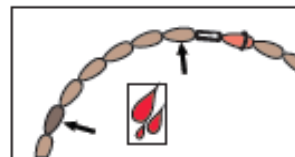
- BROWN beads are safe days of no pregnancy

4



- When period starts again move ring to red bead to begin again.

5



- Always check your period comes between dark brown bead and last brown bead.



Lactational amenorrhea

- ❑ A family planning method based on breastfeeding
- ❑ Can be effective when all the following conditions are present
 - Infant is less than 6 months old,
 - as long as monthly bleeding has not returned and
 - the woman is fully breastfeeding.
- ❑ Provides an opportunity to offer a woman an ongoing method for continuously 6 months

Lactational amenorrhea

- ❑ A woman with the following may want to consider other methods:
 - Has HIV infection
 - Especially if the woman is not taking ARVs, not fully breastfeeding, newly infected or has advanced disease.
 - Using certain medications (mood-altering drugs, reserpine, ergotamine, anti-metabolites, cyclosporine, high dose corticosteroids, bromocriptine, radioactive drugs, lithium and certain anticoagulants)
 - A newborn with a condition that makes it difficult to breastfeed

Emergency contraception

- ❑ Emergency contraceptive pills help to prevent pregnancy, if taken up to 5 days after unprotected sex and other situations such as
 - forced sex (rape) and contraceptive mistakes (condom slippage or breakage, misplaced IUD, late for injections, etc.)
- ❑ Do not disrupt an existing pregnancy
- ❑ Safe for all women
- ❑ Provide an opportunity for women to start using an ongoing FP method
- ❑ Effectiveness (no method = 8 pregnancies/100 woman years)
 - Progestin only ECPs – 1 pregnancy per 100 women years
 - Combined estrogen progestin ECPs – 2 pregnancies per 100 women years.

Emergency contraception

- ❑ Contains a progestin alone (levonorgestrel or ulipristal) or a progestin and an estrogen together
- ❑ Works primarily by preventing or delaying ovulation
- ❑ Does not work if the woman is already pregnant.

- ❑ Copper IUD effective as emergency contraception, when inserted up to 7 days after unprotected sex
- ❑ IUDs when used as emergency contraception, can then be continued to be regular contraception

Pill type	Total dosage to provide
Levonorgestrel-only dedicated product	<ul style="list-style-type: none"> • 1.5 mg of levonorgestrel in a single dose.⁶
Estrogen-progestin dedicated product	<ul style="list-style-type: none"> • 0.1 mg ethinyl estradiol + 0.5 mg levonorgestrel. Follow with same dose 12 hours later.
Progestin-only pills with levonorgestrel or norgestrel	<ul style="list-style-type: none"> • Levonorgestrel pills: 1.5 mg levonorgestrel in a single dose. • Norgestrel pills: 3 mg norgestrel in a single dose.
Combined (estrogen-progestin) oral contraceptives containing levonorgestrel, norgestrel, or norethindrone	<ul style="list-style-type: none"> • Estrogen and levonorgestrel pills: 0.1 mg ethinyl estradiol + 0.5 mg levonorgestrel. Follow with same dose 12 hours later. • Estrogen and norgestrel pills: 0.1 mg ethinyl estradiol + 1 mg norgestrel. Follow with same dose 12 hours later. • Estrogen and norethindrone pills: 0.1 mg ethinyl estradiol + 2 mg norethindrone. Follow with same dose 12 hours later.

Family Planning Global Handbook

Correcting misconceptions about Emergency contraception

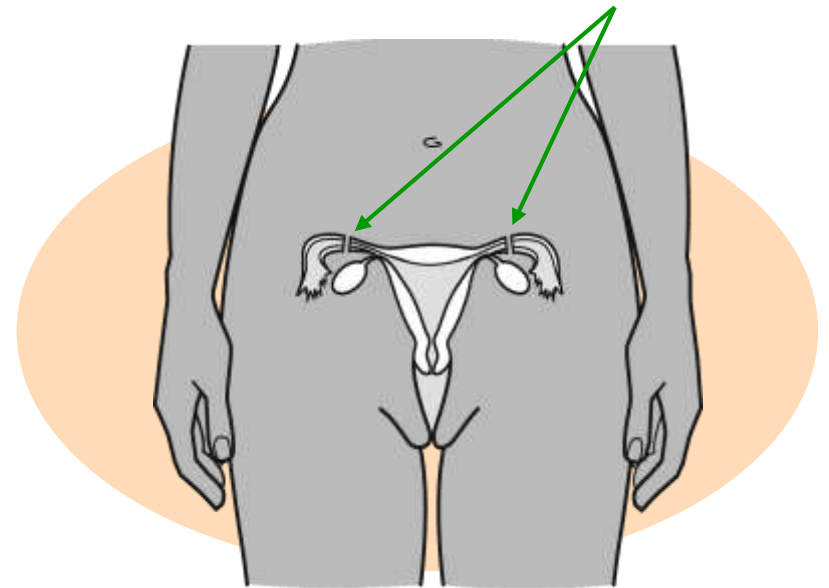
ECPs :

- ❑ Do not cause abortion
- ❑ Do not cause birth defects if pregnancy occurs
- ❑ Are not dangerous to a woman's health
- ❑ Do not promote sexual risk taking
- ❑ Do not make women infertile

Female Sterilization

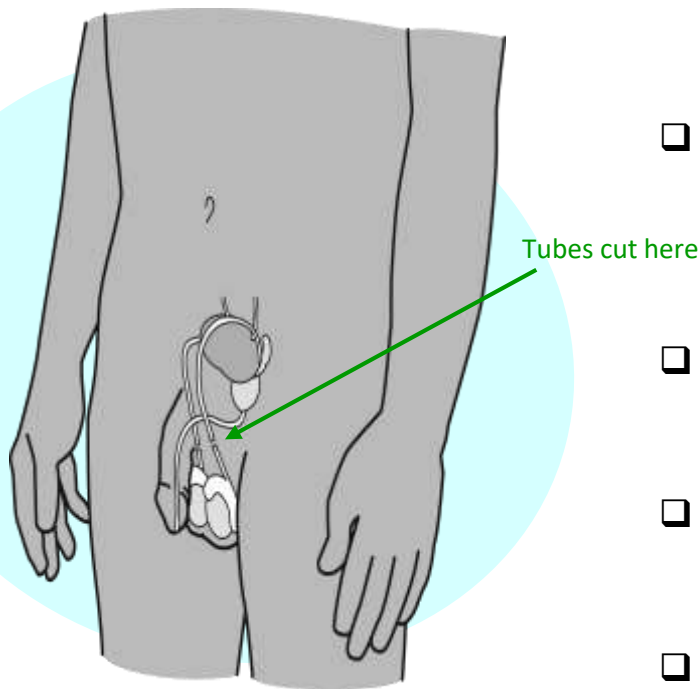
Tubal Ligation

- ❑ Permanent method, done through mini-laparotomy (small incision) or laparoscopy
- ❑ One of the most effective methods with less than 5 failures per 1000 women
- ❑ May be used by any woman
- ❑ Counselling needed to ensure no post procedural regrets



Male Sterilization

Vasectomy



- ❑ Simple permanent surgical method in men
- ❑ With a 3 month delay in taking effect due to storage of sperm
- ❑ Tubes that carry sperm to the penis (vas deferens) are cut and ligated (by sutures or cautery)
- ❑ May be done using non-scalpel technique
- ❑ Less than 2 per 1000 pregnancies over first year
- ❑ Does not affect male performance nor provides increase risk for cancer

Other methods

□ Ring

- Requires keeping a flexible ring which releases progestins and estrogen which are absorbed by the body
- Kept for 3 weeks, and woman menstruates in 4th week
- Prevents ovulation
- Progesterone only vaginal rings may be used by breast feeding women

□ Patch

- Requires wearing a small adhesive patch with estrogen and progestins weekly, for 3 weeks
- Works by preventing ovulation

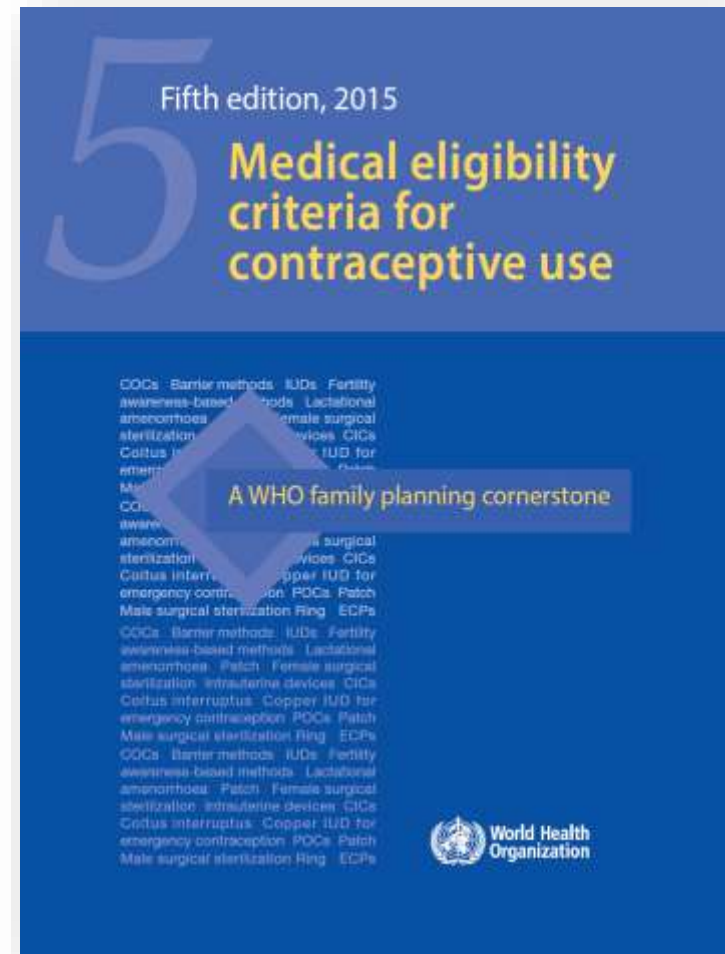


Acknowledgments and References

- ❑ Main Reference:
 - Family Planning – A Global Handbook for Providers (<https://www.fphandbook.org/>)
- ❑ Acknowledgements
 - Family Health International
 - Knowledge for Health
 - Institute of Reproductive Health

MEC 5th Edition Recommendations

- Details of the recommendations on the methods are available in the full MEC 5th edition document.
- http://www.who.int/reproductivehealth/publications/family_planning/MEC-5/en/



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