

CONTRACEPTIONS

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Contraception

nothing
Important

- Used as voluntary control of fertility
- family planning
- birth control

Choice of contraception:

- efficacy, safety, non
contraceptive benefits , cost and
personal consideration

Ideal contraception

nothing
important

- ▣ Highly effective
- ▣ No side effects or risks
- ▣ Cheap
- ▣ Independent of intercourse and requires no regular action on the part of the user
- ▣ Non-contraceptive benefits
- ▣ Acceptable to all cultures and religions
- ▣ Easily distributed and administered by non-healthcare personnel

Ideal contraception

- ▣ 100% effective
- ▣ Completely reversible
- ▣ Absolutely free of side effect

nothing
Important

Failure rates

- Efficacy is variable.
- Depends on two factors:

How it works

How easy its to use

Failure rate is variable, user failure

COC the effectiveness is high due to inhibition of ovulation (forget pills) [effectiveness decreases with missed pills]

IUS and implanon: very effective, require the user to remember anything

• Intra-uterine device (system)

Efficacy

- Long term evaluation of a group of sexually active women using a particular method for specified period to observe how frequently pregnancy occur
- A pregnancy rate per 100 women per year

- Pearl formula

- $$\frac{\text{Number of pregnancies}}{\text{total number of months contributed by all couples}} \times 1,200$$

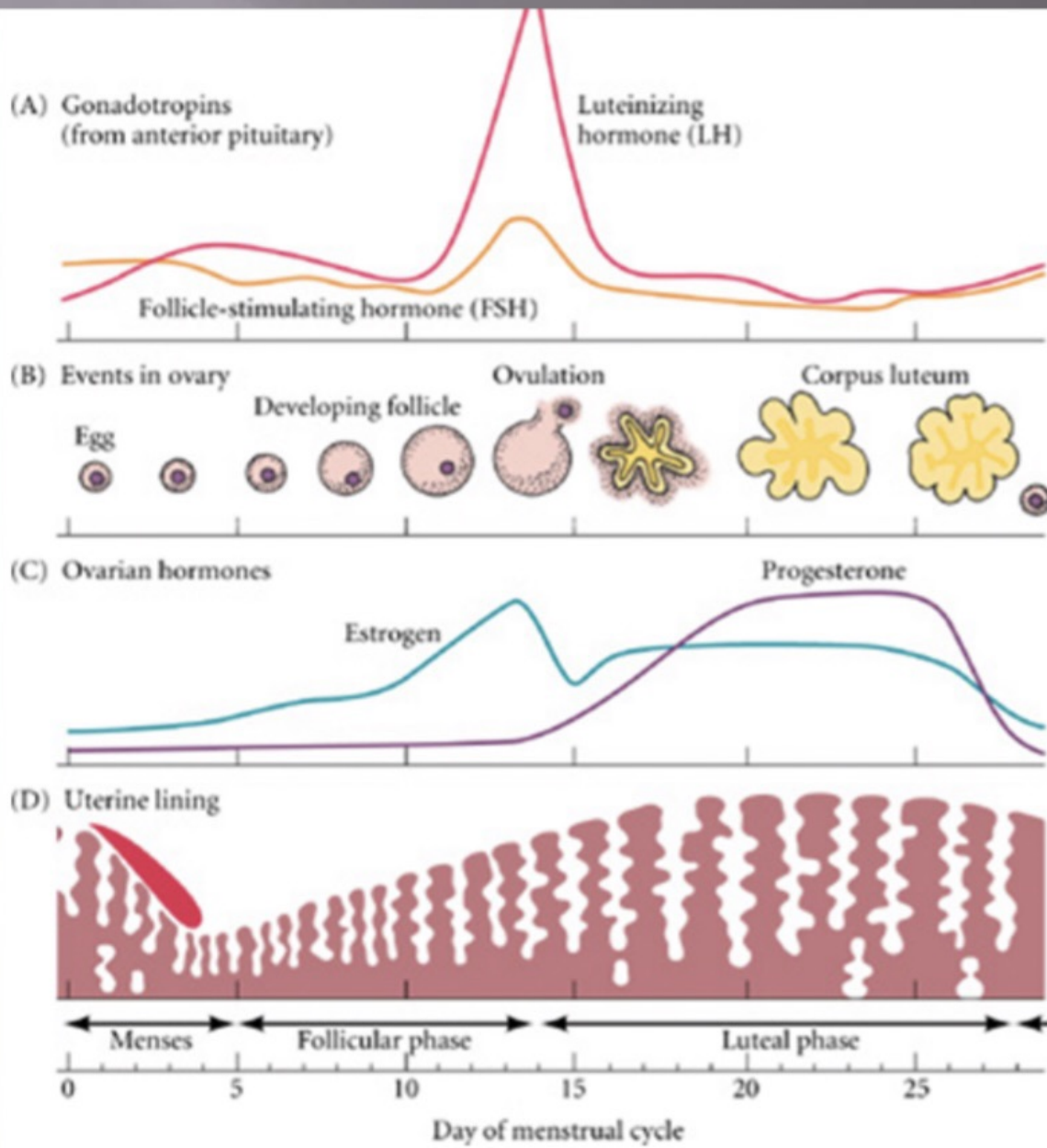
The Pearl formula is a way to measure the efficacy of contraceptives and other birth control methods. It estimates the effectiveness by calculating the number of pregnancies that occur while using a specific method over a given period of time. Here's a breakdown of the formula:

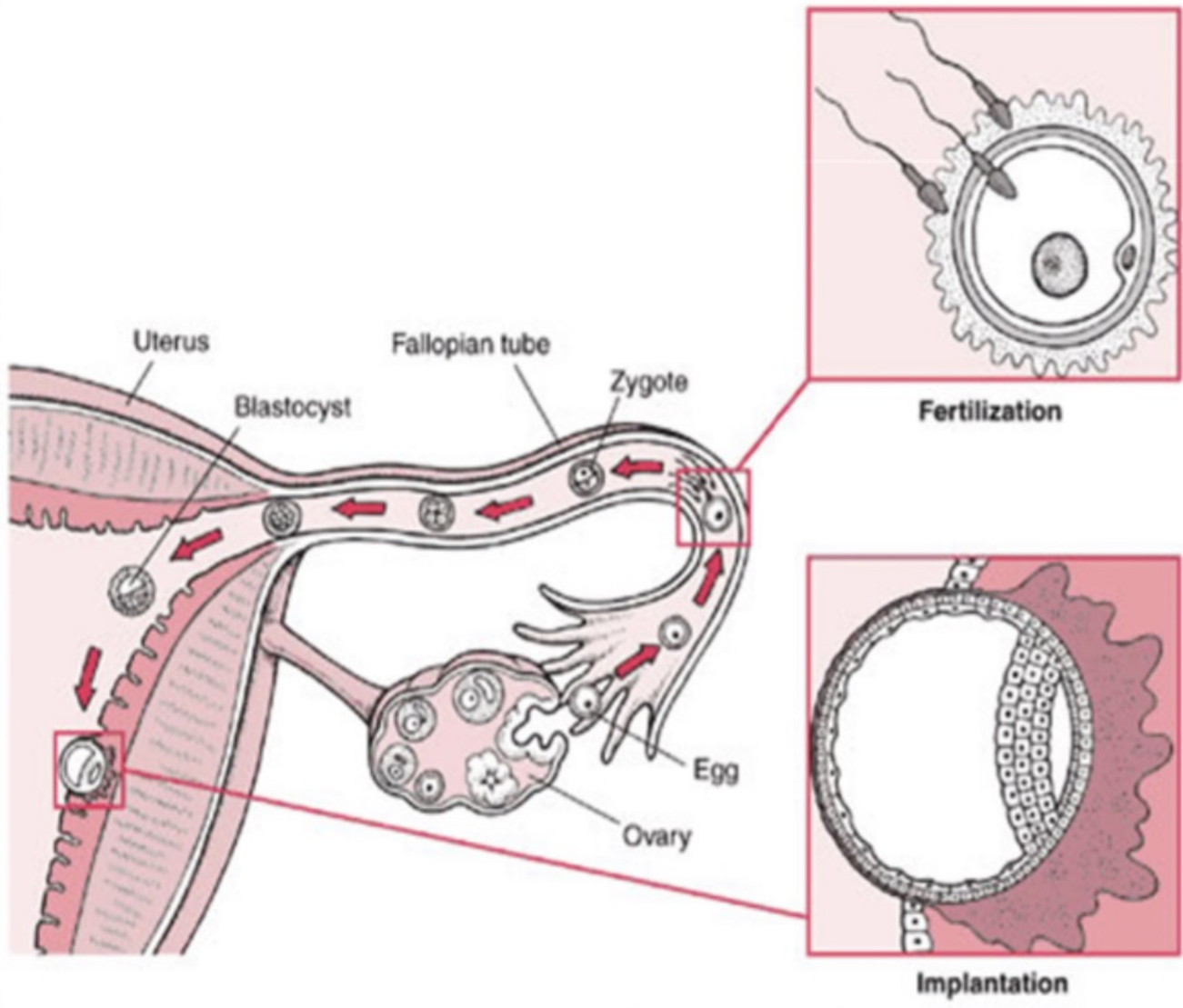
1. **Number of pregnancies:** This is the total number of pregnancies that occurred while using the contraceptive method being studied.
2. **Total number of months contributed by all couples:** This is the sum of all the months that the contraceptive method was used by all individuals or couples in the study.
3. **Multiply by 1,200:** This is a standard multiplier used in the Pearl formula to convert the data into a measure of pregnancies per 100 woman-years of exposure.

Effectiveness of contraceptive methods

Method of Contraception	FR per 100 woman years
COC	0.1-1
POP	1-3
Depo-Provera	0.1-2
Implanon	0.1
Copper IUCD	1-2
Mirena	0.5
Male Condom	2-5
Diaphragm	1-15
Natural family planning	2-3
Vasectomy	0.02
Female sterilization	0.13







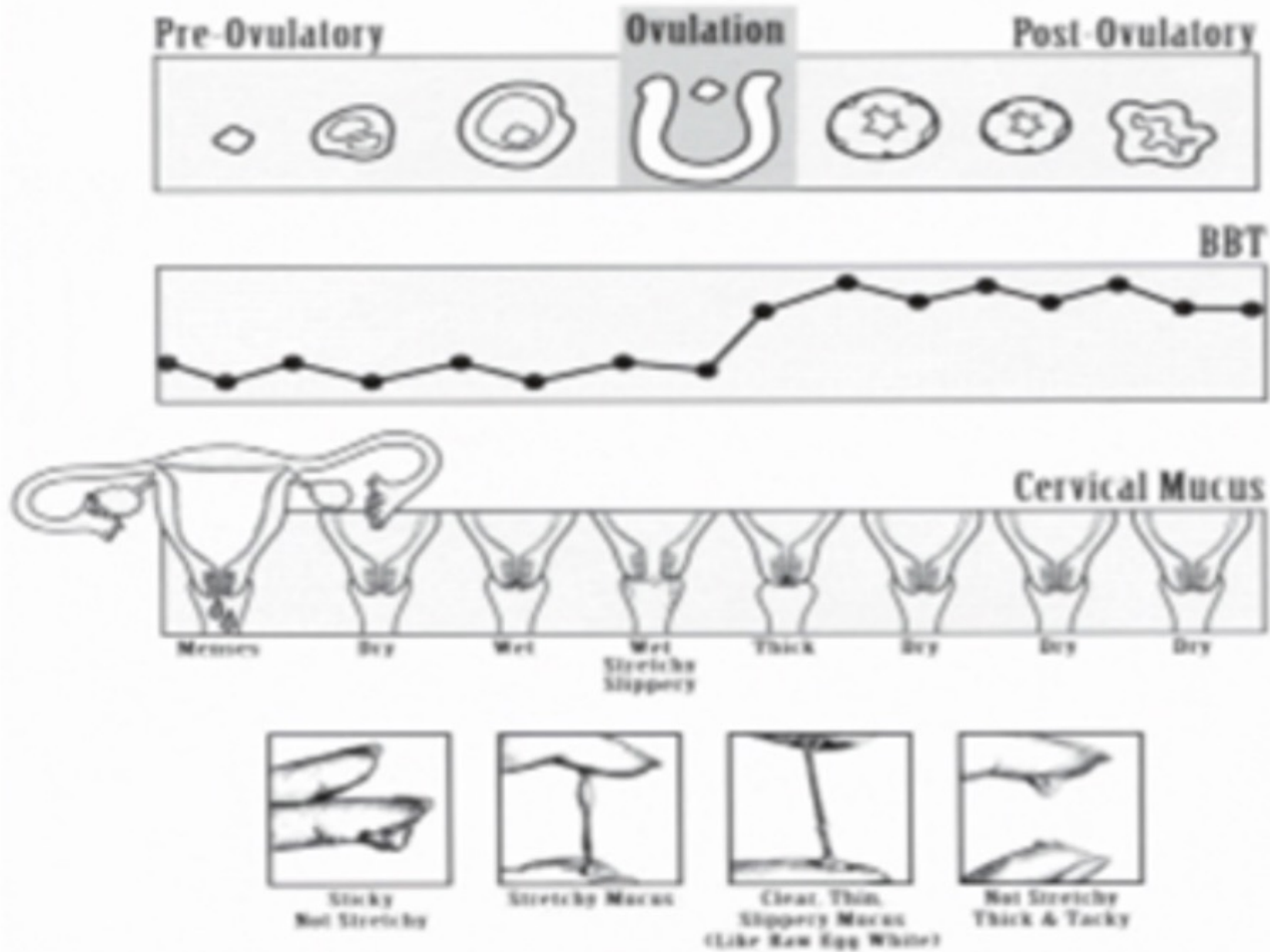


Figure 2

explain for menstrual cycle (BNB) ↓

not Important

Contraception consultation

1. Contraindication
2. Non-Contraceptive health benefits
3. Mode of action
4. Effectiveness
5. Side effects and risk
6. Benefits
7. How to use the the method
8. Emergencies

not important

Contraception

- Coitus interruptus
- Natural methods
 - LAM
- Barrier methods
- Intrauterine contraceptive device
- Combined contraception
- Progestogen -only contraception
- Emergency contraception
- Sterilization



Coitus interruptus

The penis is removed from the vagina before ejaculation

Failure rate is high 4-9%

▣ Advantages:

- immediate availability
- No devices
- No cost
- No chemical involvement
- Reduced risk of transmission of sexually transmitted disease

▣ Disadvantages:

- ▣ high failure rate

↑ prolactin → suppress GnRH → ↓ LH/FSH

2 Lactational amenorrhoea

- Breast feeding delays the resumption of fertility (elevated prolactin and reduction in Gonadotropin releasing hormone)

This will lead to reduction in LH release and inhibit follicular development

- Length of delay is related to the frequency and duration of breast feeding
- Fully breast feeding and remains amenorrhoeic in the first 6 months (less than 2%)
- Not a practical method
- Can be used in areas where modern methods of contraception may be expensive

LAM

▣ Advantages:

Involution of the uterus

Menses are suppressed

Postpartum weight loss

▣ Disadvantages:

Return to fertility is uncertain

Frequent breast feeding may be inconvenient

Postpartum Contraception

postpartum
- estrogen → X
- progesterone → ✓

- Lactational amenorrhea may occur but unreliable
- Barrier methods can be used
- Estrogen avoided for at least 1 month postpartum
 - Increased risk of thromboembolism
 - Decrease breast milk production
- Common options: IUD or progestin implant
 - Copper IUD may cause bleeding; avoided if ongoing bleeding or anemia
 - LNG IUD may be used but some risk of expulsion
 - Progestin implant often used (more reliable than pills)



3

Natural method

Periodic abstinence

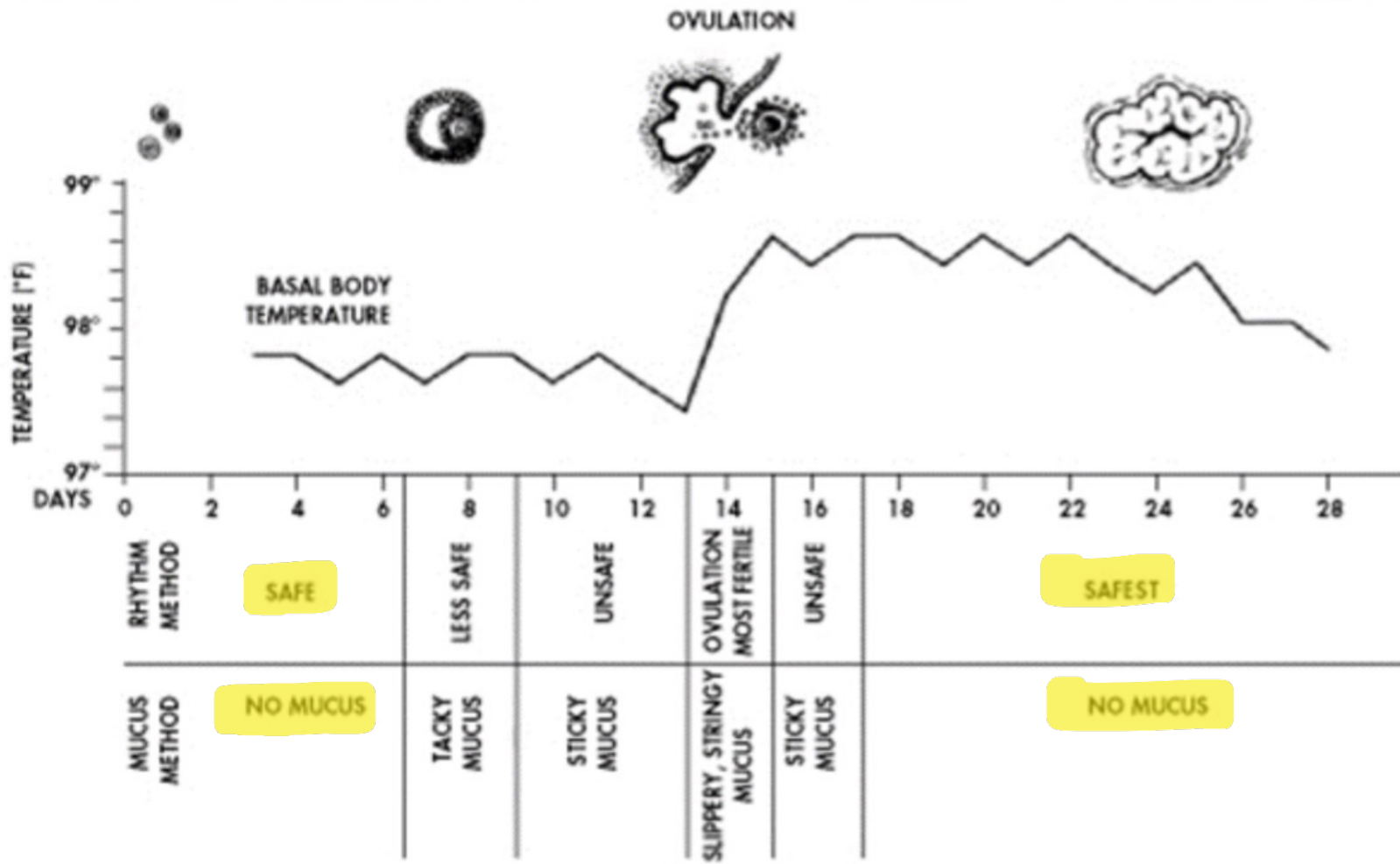
Conception can occur in certain days of the cycle

Abstinence from intercourse during the fertile period

Success dependant on the accurate prediction of the ovulation

Only type of contraception acceptable to some couples for cultural and religious reasons

FR. 25%



❖ Advantages:

- No adverse effects from hormones
- Immediate return to infertility after cessation of use

❖ Disadvantages:

-Only suitable for women with regular period

-Complete abstinence is necessary

-Discipline *تأديب يقصد بها امرات هب كبح الزوج*

-High FR

-The method does not provide protection against STDs

explain down ↓

4 Barrier methods

Physically interrupting the progress of sperm in the female reproductive tract

▣ Male:

Condoms

▣ Females:

- Female condoms

- Diaphragm

- Cervical caps

- Spermicidal agents

A-) Condoms

- Consists of a thin sheath placed over the glans and the shaft of the penis
- One of the most popular mechanical barriers
- Accessible, **inexpensive**
- 3-23 per HWY

Advantages:

- Readily available

-Protects against the STD (HIV) and carcinoma and premalignant disease of the cervix.



B-7

Female condom

Prevent pregnancy by acting as a barrier to the passage of semen into the vagina

Lines the vagina

One size, single use and expensive

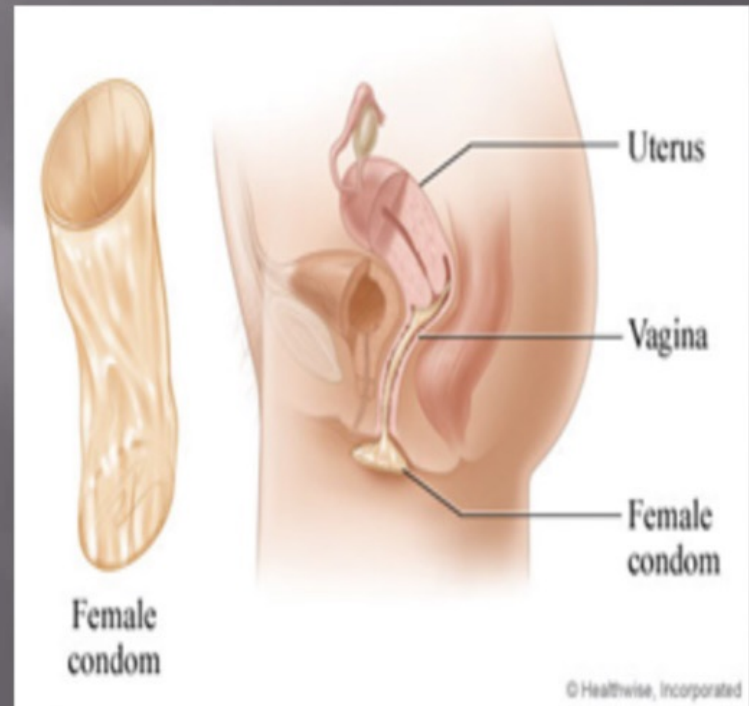
Disadvantages

-The lubricant does not contain spermicide

-Difficult to place in the vagina

-Urinary tract infection

5-21 per HWY



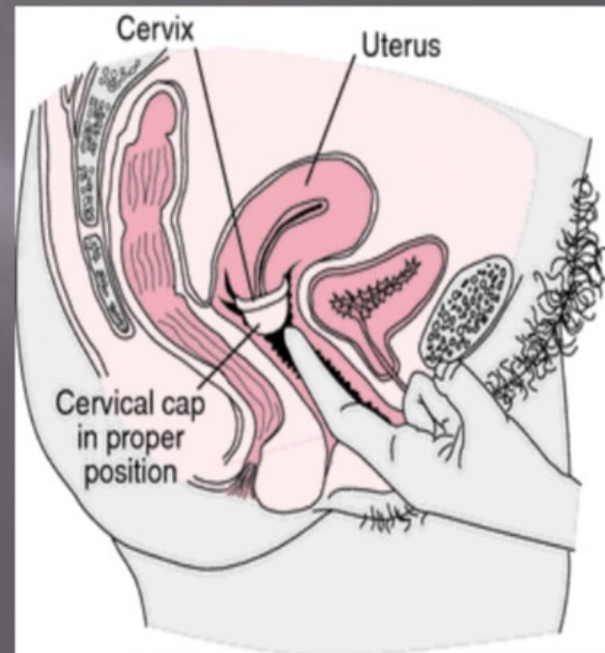
c) Caps (8h / 48h)

Cap: silicone rubber

Cup shaped latex device
that fits over the base of
the cervix

-it is inserted as long as 8
hours before the coitus
and can be left in place
for 48 hours

Mechanism: it acts as both
a mechanical barrier
and chemical barrier



Caps

FR 9-40 %



Advantages:

Easier to fit and Less likely to slip

Reduced risk of UTI (less pressure to the surrounding vaginal wall)

not like Female Condom /
or Diaphragm

Disadvantages:

-cervical erosions

-Requires training



Diaphragm

A shallow latex cup with a spring
mechanix, in its rim to hold it
Fitted by trained personnel
Does not confer the same degree
of protection against STDs



Barrier method:
The diaphragm fits
over the cervical
opening, preventing
sperm from entering
the uterus

ADAM

Prior to intercourse to occlude the
vagina prior to intercourse

Spermicide should be used
for maximum protection

Should be left for 6 hours after
intercourse

Latex allergy, recurrent vaginal
and UTI

Diaphragm

FR 4-20 per HWY

- ▣ Advantages: could be applied by the woman

- ▣ Disadvantages:

 - UTI

 - Vaginal erosions

 - High failure rate

 - Requires training

 - Bad odor

E-) Spermicides

- ▣ Vaginal spermicides consist of a base combined of Nonoxynol 9
- ▣ Must be inserted into the vagina prior to each coital act

Mechanism:

Prevent sperm from entering the cervical os by attaching the sperm's flagella and body, reducing their mobility and function

FR 6-26%

Spermicides

- ▣ For use with female diaphragm and caps, not male condom

- ▣ Advantages:

Requires no training

No systemic effect

- ▣ Disadvantages:

- Provides minimal protection against STI

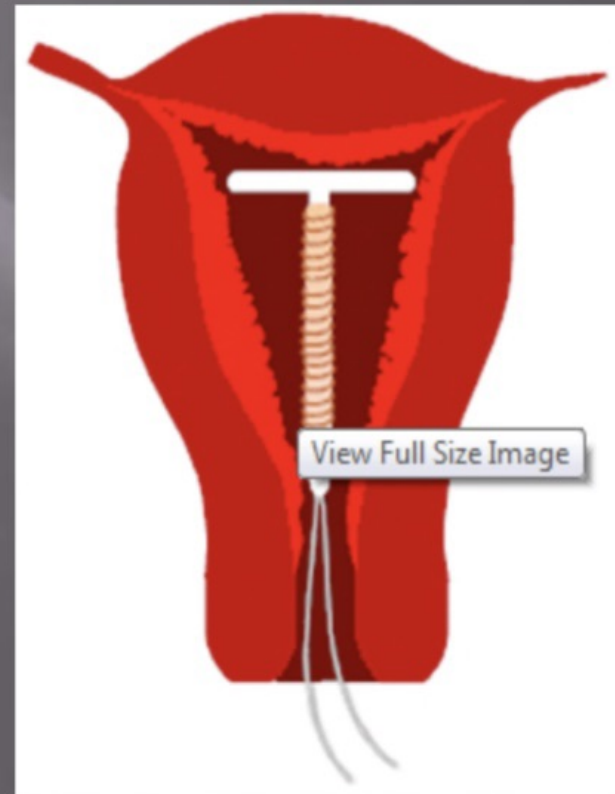
- Frequent use of N-9 might increase the risk of HIV transmission

- Vaginal irritation

- Allergic reaction

5 Intrauterine contraception

Most commonly used
reversible method of
Contraception



Intrauterine device

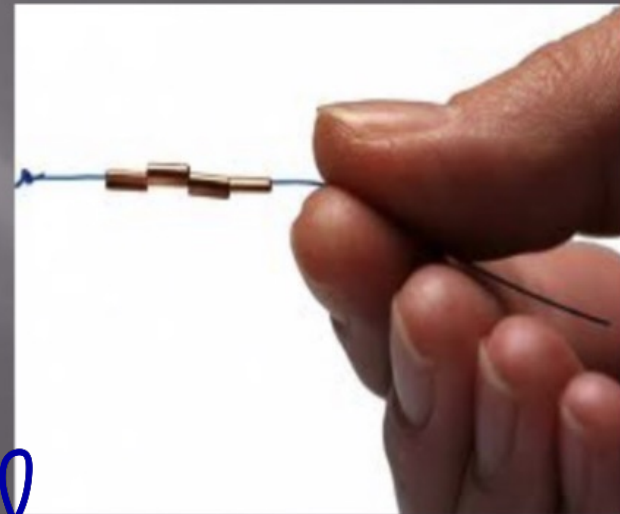
1. inert

2. Copper: framed or
frameless (gynefix)

Surface area of copper 300-
380 mm²

Prevent fertilization and
implantation

→ Copper by cause inflammation
in endometrium



IUD

A-) Mirena (levonorgestrel) → release progesterone

3. Hormone releasing (Mirena) plastic frame with 52 mg levonorgestrel reservoir 20 microgram per 24 hours over 5 years

1) Atrophy of the endometrium → implantation

2) Thickening of cervical mucus

Intrauterine Devices

- Long-acting *reversible* contraception
- Low failure rate similar to permanent sterilization
- Two major types
 - Copper IUD
 - Levonorgestrel (LNG) IUD

Copper IUD

- Copper → inflammatory response in endometrium
- Impairs sperm migration/viability and implantation
- Heavier and more painful **menstrual bleeding**
- Especially first 6 months
- Commonly leads to patient request for removal
- Marketed as hormone free IUD
- Last up to 10 years

* all of these due
Inflammatory response
in endometrium



Levonorgestrel IUD

- Polyethylene frame with LNG (progestin)
- Thickens cervical mucus as barrier and impairs implantation
- Last up to 7 or 8 years
- Causes amenorrhea and **improves abnormal uterine bleeding**
- Good option in women with heavy menses
- Safest and most effective form of contraception

as progesterone
stabilize the
endometrium
so no bleeding
or menstruation

<https://chatgpt.com/share/3f6b3cb1-84ad-49df-6e35-6981b77aab08>



- Mechanism of action

- Marked inflammatory rx

- Toxic for sperm, ovum and interfere with sperm transport

- Endometrial suppression and cervical mucus effect

- FR less than 1% for copper
0.6 % for Mirena

IUCD

▣ Advantages:

- No adverse systemic effect
- Ectopic pregnancies are reduced, however, the ratio of extrauterine to intrauterine pregnancy is increased if conception does occur
- Menstrual blood loss and dysmenorrhea are decreased with Mirena

↳ due: ① as progesterone stabilize the endometrium so no bleeding or menstruation

② and menstruation to happen it need withdrawal of progesterone

IUCD

□ Disadvantages:

- Risk of uterine perforation
- Increase dysmenorrhea and menorrhagia with copper
- Increased menstrual blood loss occurs in first few cycles
- IUCS might be expelled unnoticed
- No protection against STDS

Intrauterine Devices

Complications

- Irregular bleeding or cramping
 - Usually resolves over first few months
 - Does not indicate decreased efficacy
- Altered menstrual periods
 - Copper IUD: heavier periods with stronger cramping ↗
 - LNG IUD: amenorrhea or irregular periods

خاصة بالنسبة
للنوع النحاسي
تسبب زيادة الطمث
والألم

Intrauterine Devices

Complications

- Rare complication: **uterine perforation**
 - Often asymptomatic and found when IUD string not felt
 - Rarely leads to pelvic pain with excessive cervical bleeding
- If failure occurs: ↑ risk of **ectopic pregnancy**

Contraindication of IUCD

- History of malignant trophoblastic disease
- Endometrial cancer (due to hormone released)
- Pelvic TB
- Current STI or pelvic inflammatory disease
- Unexplained vaginal bleeding should be investigated
- Distorted cavity : may make insertion difficult
- Copper allergy
- Endometrial and cervical cancer
- History of ectopic pregnancy
- Suspected pregnancy (↑ Miscarage)

Intrauterine Devices

Contraindications

- Anatomic uterine abnormalities
 - Bicornuate uterus
 - Leiomyoma (fibroids)
 - Sometimes IUD can be placed with US guidance
- Unexplained uterine bleeding
- Pregnancy or pelvic infection
- Endometrial or cervical cancer
- LNG IUD:
 - History of PR+ breast cancer
 - Active liver disease

Insertion of IUCD

- Any time, limited to the first 7 days of the cycle
- Postpartum: 4 weeks
- Miscarriage: immediately, second trimester miscarriage the risk of expulsion is higher
- Removal: during menstruation

[* Added → In first 7 day of cycle]
[* removal → during menstruation]

complications

Lost thread

-Drawn up in the cervical canal

-Expelled

Spontaneous expulsion is common in first year,
during menstruation, risk is 1 in 20

يوضع في
قناة عنق الرحم
بلا كمنال الرحم

-Migrated outside the uterus (unrecognized
perforation)

Ultrasound

X ray

6

Hormonal contraceptive methods

-Combined contraception

-Progestrone

Combined contraception

Combined oral pills

Patch

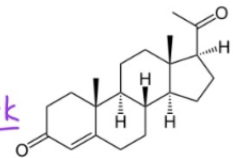
Injectable

Vaginal ring

Hormonal Contraceptives

• Progestins

- Thickens cervical mucous *This How levono IUD work*
- Thins endometrium to prevent implantation
- High dose blocks LH surge → absence of ovulation



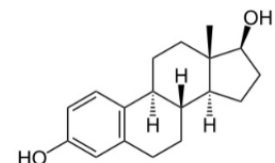
Progesterone

• Estrogens

- Suppress FSH release
- Limits follicular maturation
- Increases effects of progestins
- Main benefit: stabilizes endometrium
- **Less breakthrough bleeding**

Less Breakthrough Bleeding:

- By stabilizing the endometrium, estrogens help reduce the incidence of breakthrough bleeding.
- Breakthrough bleeding is unscheduled bleeding that can occur between menstrual periods, often seen with hormonal contraceptive use.



Estradiol

Combined hormonal contraception(CC)

- ▣ Oestrogen : ethynil estradiol

- ▣ progesteron:

Second generation(nortestosterone and
levonorgestrel)

Third generation(desogestrel and gestodene)

Fourth generation -

antiandrogenic(drospirenone,dienogest

- ▣ FR 0.3%

Combined contraception

▣ Advantages

-Treatment of menstrual irregularities

-Treatment of menorrhagia

-PID

-Ovarian cyst

-Ectopic pregnancy is prevented

-Protection against ovarian cancer

عزارة
السطح

Combination Oral Contraceptives

Non-contraceptive benefits

- Decreased risk of ovarian and endometrial cancer
- Menses more predictable and lighter
- Improves acne



Wikipedia: Public Domain

Combined contraception

□ Disadvantages:

-Nausea

-Breast tenderness

-Breakthrough vaginal bleeding

-Amenorrhea (due progesterone)

-No protection STDs

-Hypertension

-Hepatocellular adenoma

-Atherogenesis and stroke

-Cervical cancer (protection against ovarian cancer)
Risk of cervical cancer

Combination Oral Contraceptives

Adverse Effects

- Most common: nausea and headache
- **Breakthrough bleeding**
 - More frequent if low estrogen component
 - Does not indicate decreased efficacy
 - Usually resolves spontaneously
- **Hypertension (usually mild)**
- **Thrombosis**
 - Estrogen increases clotting factors
 - Usually venous thrombosis: DVT/PE
 - Rarely arterial thrombosis: stroke/MI

{ mainly ?
venous }

(mainly if has
↓estrogen content)

Risks of CC

Cardiovascular effects (due estrogen \uparrow LDL \downarrow HDL)

▶ 3-4 fold increase of VTE in CC users (venous Disease)

Unaffected by age, smoking, or duration fo use

* Higher in obese women and history of PIH pregnancy induced HTN

▶ Third generation associated with two fold increase in risk of VTE

Risk is greatest during the first year of use

To unmasking of inherited thrombophilias

→ Ischemic stroke

CC risks

Arterial disease less common, more serious

Related to age and smoking

Increase for second not third generation

venous only
with 3 generation

Dose dependent: lower dose of estrogen has no increase in risk

* Ischemic stroke : two fold increase in risk

* Haemorrhagic stroke: the risk is unchanged

CC risks

Malignant disease

- Breast cancer: small increase in risk
- 10 years after stopping the pills

mainly if
pR(+), ESC(+)

Ovarian and endometrial cancer: > 50% reduction
in ovarian

endometrial cancer: protection related to duration
20% after one year, 50% after 4 years and
sustained for 15 years after stop

The use of combined hormonal contraceptives (CHCs), which include combined oral contraceptives (COCs), patches, and rings, has been associated with both reduced and increased risks of certain types of cancer.

1. **Endometrial Cancer:** Research shows that using CHCs can decrease the risk of endometrial cancer. This protective effect appears to persist for several years even after discontinuing CHCs. The longer someone uses CHCs, the more pronounced the protective effect against endometrial cancer.
2. **Ovarian Cancer:** Similar to endometrial cancer, CHCs also lower the risk of ovarian cancer. This reduced risk can continue for several years after stopping the contraceptives. The protective effect is thought to be related to the suppression of ovulation, which decreases the number of times the ovaries are exposed to potentially carcinogenic conditions.

risks

Cancer of cervix: increased risk (greater sexual activity)

Recent meta analysis: patients with persistent infection with HPV more than 5 years had increased relative risk of 2.8

More than 10 years, 4.

Trophoblast disease : no data

so: * endometrial cancer : protective
* ovarian cancer : protective
x cervical cancer : ↑Risk

Absolute contraindication of CC

- 1 Breastfeeding < 6 weeks
- 2 Smoking, age > 35 y/o & > 15 cigarettes per day
- 3 Multiple risk factors for cardiovascular disease
↳ IHD, Stroke, thrombosis
- 4 Hypertension: 160/100
- 5 Hypertension with vascular disease
- 6 Current or history of deep vein thrombosis
- 7 Major surgery with prolonged hospitalization
- 8 Migrain with aura

Combination Oral Contraceptives

Estrogen contraindications

- Smokers > 35 years of age {Risk of DVT}
- History of DVT, PE, stroke or MI
- Breast cancer
- Hepatocellular adenoma
- Cirrhosis
- Migraine with aura
- Hypertension
 - CDC: systolic ≥ 140 mmHg or diastolic ≥ 90 mmHg
 - WHO: systolic ≥ 160 mmHg or diastolic ≥ 100 mmHg



COC

Mechanism of action

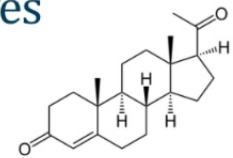
Inhibition of ovulation

Inhibit FSH, suppress the follicular development

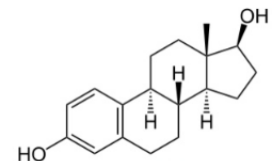
Inhibit LH, prevention of ovulation

Combination Oral Contraceptives

- Combination of **progestin and estrogen**
- Better suppression of follicular growth
 - Progesterone suppresses LH
 - Estrogen suppresses FSH
- Estrogen increases effect of progesterone
- **Less breakthrough bleeding**
 - Estrogen stabilizes endometrium
- Many have 24/4 formulation
 - 24 days of hormone pills
 - 4 days of placebo pills



Progesterone



Estradiol

Patient management

- ▣ Detailed medical and family history
- ▣ Blood pressure
- ▣ Weighing, Breast and pelvic examination
- ▣ Give it for three months then review in 6-12 monthly review
- ▣ Clear advice about what to do if they miss any pills
- ▣ Drug history
- Start in the 1st day of the cycle

Drug interaction

Effectiveness is reduced by anticonvulsants, antifungals, antiretrovirals and antibiotics

- Enzyme inducing agents.
- Induce liver cytochrome P450---→reduce the efficacy ($\downarrow t_{1/2}$)
- Higher dose of oestrogen, change the medication

CC increase the clearance of medications

- Lamotrigine →reduce serum level
- Dose should be adjusted

Combined contraception

{ Form of "cc" }

- ▣ Oral
- ▣ Transdermal (contraceptive patch)
- ▣ Systemically (combined injectables)
- ▣ Vaginal routes (contraceptive vaginal ring)

Oral coc

Two steroids hormones

Estrogen EE 20-50 microgram

Low dose pills (15-35 microgram) , safer

50 microgram strongly linked to increase risk of thrombosis

Estradiol valerate

synthetic progesterone

Second generation(nortestosterone and levonorgestrel)

Third generation(desogestrel and gestodene)

Fourth generation –

antiandrogenic(drospirenone,dienogest)

COC

Remember
① venous → by 3
② arterial → by 213

- different profile

- Pills with levonorgestrel is associated with the lowest VTE risk but ↑ risk of arterial

- Dianette contains antiandrogen, useful for acne treatment

2nd generation

COC

21 days followed by 7 day break

Newer brands (24/4, 84/7, 365)

↘ break

no menstruation

[24 → real drug
4 day → placebo]

Missing pills

- 25% of the pill user will have an ultrasound evidence of follicles of 10 mm during 1st day of cycle
- Start of the pills should be in the first day of the cycle

Start in first day of cycle
(US → 10mm follicle)

Chat GBT

Missing One Pill

1. **Take the Missed Pill:** As soon as you remember, take the missed pill. If it's within 24 hours of your usual time, it should be effective. If it's been longer, just take it as soon as you can.
2. **Continue with Your Pack:** Continue taking the remaining pills in the pack at your usual time.
3. **Contraceptive Protection:** You should remain protected if you missed only one pill and took it as soon as you remembered. No additional contraception is usually needed.

Missing Two or More Pills

In the First Week of Your Pack:

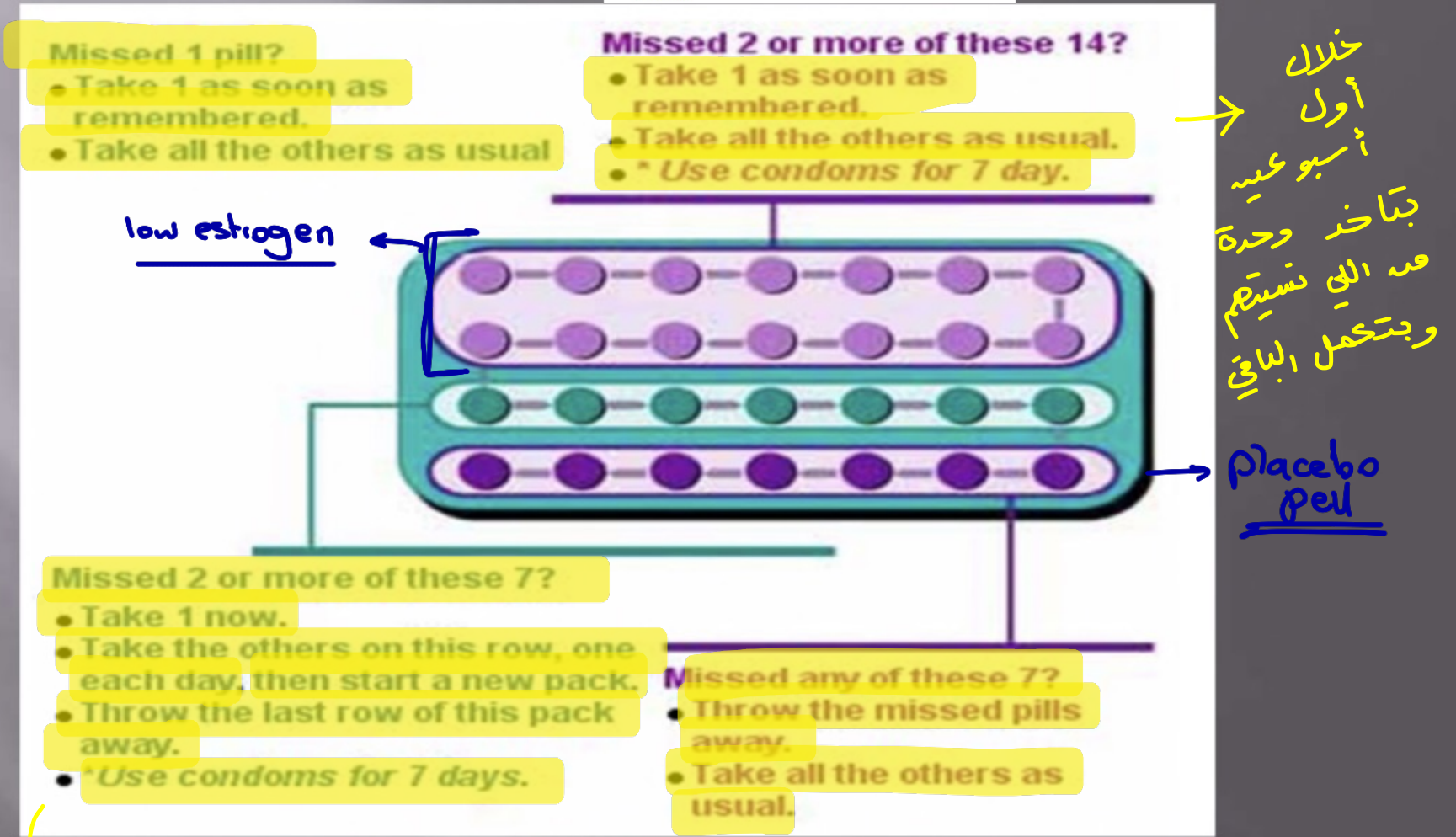
1. **Take the Most Recent Missed Pill:** Take it as soon as you remember. Discard any earlier missed pills.
2. **Continue with Your Pack:** Continue taking the remaining pills in the pack at your usual time.
3. **Additional Contraception:** Use extra contraception (like condoms) for the next 7 days to ensure protection.

In the Second Week of Your Pack:

1. **Take the Most Recent Missed Pill:** Take it as soon as you remember. Discard any earlier missed pills.
2. **Continue with Your Pack:** Continue taking the remaining pills as usual.
3. **Contraceptive Protection:** You should remain protected if you missed two pills in the second week, as long as you took the most recent missed pill correctly and have taken all the following pills correctly.

In the Third Week of Your Pack:

1. **Take the Most Recent Missed Pill:** Take it as soon as you remember. Discard any earlier missed pills.
2. **Skip the Placebo Week:** Start a new pack immediately without a break (skip the placebo week) to ensure you remain protected.
3. **Additional Contraception:** If you miss pills in the third week and do not start a new pack immediately, use additional contraception for the next 7 days.



خلال أول أسبوعين
تأخذ وحدة
من التي نسيتم
وتكمل الباقي

should not take a break
new pack
عاليوم اى عطول جديد

Transdermal patch

- ▣ Release estrogen and progesterone directly into the skin
- ▣ Failure rate 1 in 100
- ▣ Advantages:

Greater compliance

-Decreased side effects, nausea and vomiting by avoiding the first pass effect

- ▣ Disadvantages:

Skin irritation

Similar to OCP

Contraindication :

Similar to OCP



Transdermal patch

- ▣ Each patch last for 7 days, three patches / month
- ▣ Efficacy might be reduced by overweight

Vaginal ring

NOVARING

- Hormones are absorbed directly by the reproductive organs

- Mechanism of action:

- Suppression of gonadotrophins for 3 weeks

↓ FSH/LH

- Advantages:

- Highly effective , complete suppression of ovulation

- Easily inserted and removed

- Rapid return to fertility



Vaginal ring

▣ Disadvantages:

-Headache

-Vaginal irritation

-Slip during intercourse

▣ Containdications

Same as OCP

▣ 3 weeks - 7 days ring-free interval

→ so

1] OCP

2] Transdermal patch

3] vaginal Ring

(All has same
contraindication)

PROGESTERONE ONLY CONTRACEPTION

Only progesterone

Progesterone only

- ▣ Known as **minipills**
- ▣ **Candidates include women who are breast feeding and women with contraindications to estrogen use**
 - **Estrogen** avoided for at least 1 month postpartum
 - Increased risk of thromboembolism
 - Decrease breast milk production
- ▣ **Mechanism**
 - **Suppression of ovulation** by ↓LH
 - **Increase cervical mucus viscosity**
 - **Reduction in the number and size of endometrial glands**
 - **Reduction in the cilia motility in the fallopian tube, slow the rate of ovum transport**

• Many non-contraceptive uses

- Endometriosis
- Adenomyosis
- AUB
- Fibroids
- Endometrial hyperplasia

Remember progesterone thins endometrium

1. Berenson et al. *Am J Obstet Gynecol.* 2009;200(3):329

progesterone only

protects against:

↳ endometrial Ca

↳ fibroids

↳ endometriosis

▣ advantages

- No effect on VTE

- Minimal impact on lipid profile

- Can be used in most cardiovascular disease except current severe arterial wall disease

- Lactating woman

- Protects against endometrial cancer

- Decrease menstrual loss

- Symptomatic relief of dysmenorrhea

- Protect against endometriosis,, uterine myomas

Progesterone only

disadvantages

- Menstrual disturbances(continuous bleeding, spotting)
- Amenorrhoea(Injectable)
- Functional ovarian cysts
- Ectopic pregnancy → due to relaxation of fallopian tubes
- Acne,headach,breast tenderess and loss of libido

POP and malignancy

□ Malignant disease

Protects against endometrial cancer

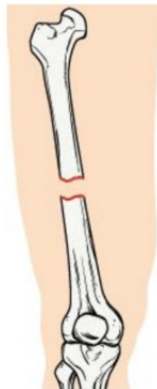
No data about ovarian cancer, cervical cancer

Increase risk of breast cancer, 1.17%, injectable

*note injectable ↑ Risk of: ① breast cancer
② Amnionerhea

Progestin Only Contraceptives

- All associated with **irregular bleeding**
- Often used in women with estrogen contraindications
- Cannot be used in women with breast cancer
- Depo-Provera associated with ↓ **bone mineral density**
 - Suppression of estrogen production
 - Improves with cessation of contraception
 - Encourage calcium, vitamin D and exercise
 - Routine monitoring of BMD not recommended
- Mood changes (depression) may occur
- Very rare with progesterone IUD



Types of progesterone contraception

- ▣ POP
- ▣ Injectable
- ▣ Implants
- ▣ IUS (Mirena)

• Mini pill (norethindrone)

• Thickens cervical mucous for 20 hours

• Must be taken same time every day

Progestogen only pills

* Oral (older age, breast feeding, CVS)

① Old generation: thicken the cervical mucus, not inhibit ovulation

② new: third generation: desogestrel (Ceralette): inhibit ovulation by ↓LH

Same time, no break

Old generation: delay not more than 3 hours

New generation: 12 hours

↙ main mechanism is cervical thickening

The efficacy is largely dependent on compliance

The overall failure rate is 0.3-4 per HWY

↓
الامتثال

injectables

- **Injection**

- Depo Provera (medroxyprogesterone)
- Given every 3 months
- Irregular bleeding
- May cause weight gain¹
- 3 years: + 11 lbs
- COCs: + 3 lb

Depo provera

Depomedroxyprogesterone
acetate

IM

150 mg , 12 weeks

Mechanism of action:

Suppression of LH and

FSH

Efficacy

0.3%



Depo provera

Advantages:

-Reduced risk of ovarian and endometrial cancer

-Safe in breast feeding

-Dysmenorrhea is decreased

-No serious side effects of estrogen

Disadvantages:

-Amenorrhea in 50%

-Delay in fertility in 50%

-Weight gain

-Depression

-Menstrual irregularities might continue as long as 1 year

-Associated with small reduction of BMD, recovered after discontinuation

↳ Bone Mass Density

Subdermal implants

-Norplant: six rod system, not available

-Implanon

Single rod of 68 mg of etonogestrel

-Triceps of the non dominant arm

-3 years

IMPLANON



NORPLANT



Implants

▣ Advantages:

- On exogenous estrogen
- Prompt return to fertility
- No effect on breast feeding

▣ Disadvantages:

- Minor surgery
- Difficult removal
- Headaches
- Mood changes
- Acne
- Galactorrhea ↑ Milk

IUS (talked about)

- ▣ Mirena
- ▣ 52 mg levonorgesrel releasing 20 microgram/day for 5 years
- ▣ Used for management of heavy menstrual bleeding
- ▣ 70-95% reduction in menstrual bleeding



Emergency contraception

- ▣ Back -up method
- ▣ Reproductive aged women who had unprotected sexual intercourse After unprotected intercourse and before implantation
- ▣ After failure of barrier method, missed pills

Emergency contraception

- ▣ Any drug or device used after intercourse to prevent pregnancy

- ▣ Three options

1. Pill containing a progesterone receptor modulator (ulipristal acetate) 30 mg, single dose within 5 days of intercourse

2. Progesterone: levonorgestrel 1.5 mg (LNG-EC), taken as a single dose w 72 hrs of intercourse

3. IUD: 5 days after the estimated day of ovulation

Mechanism of action EC

▣ LNG-EC (levonorgestrel)

* Inhibit and delay ovulation if taken several days before ovulation by ↓LH

Immediately before ovulation not ineffective

UPA-EC

effective

* Interfere with implantation : endometrial effect

Efficacy of EC

▣ One RCT comparing LNG and UPA showed **lower pregnancy rate in UPA**

LNG prevent 69%

UPA prevent 85 %

Emergency contraception

Copper IUCD

The most effective method

Within 5 days of unprotected intercourse

Spemicidal and blastocidal action of copper

Sterilization

- Elective **permanent, irreversible** method of contraception
- although both female and male sterilization procedures can be reversed surgically, the surgery is technically more difficult than the original procedure

Usually chosen by older couples ,completed family

- Male or female

- Can be reversed, subsequent pregnancy rate 5%
- 10-15 % regret the decision(age less than 30 years, no children, within a year of delivery)
- During counselling we should discuss the long - acting reversible methods

Female sterilization

Female sterilization: blocking both fallopian tubes

- Occlusion with rings, clips, bands
- segmental destruction with electrocoagulation
- Suture ligation with partial salpingectomy
- Essure system

Female Permanent Contraception

Sterilization or Tubal Ligation

- Variety of surgical techniques
- Goal is disruption of fallopian tubes
- Often done postpartum
- Also performed outside pregnancy ("interval")
- Very low failure rate
- Reversible in some cases based on technique
- Long-term risks: ectopic pregnancy



Filshie clips



- Filshie clips :
commonest

- Right angle to the tube
- 1-2 cm from cornua
- Whole width
- Multiple clips is not necessary

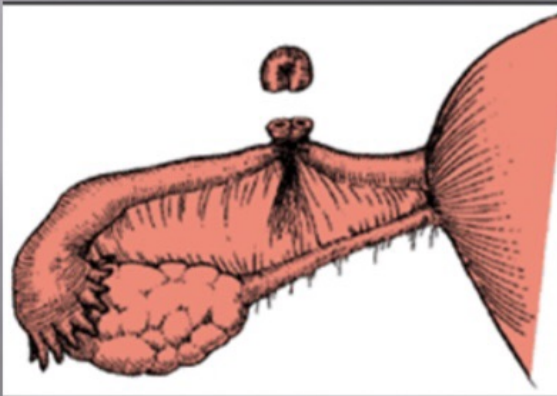
Pomeroy technique

loop of tube tied and □

Excised

laparotomy

Done mostly during C-section



complications

- ▣ Anesthesia problems
- ▣ Damage to intraabdominal organs
- ▣ Need for laparotomy: obese, adhesions

Essure system

not available in Jordan

- A new technique
- Does not require surgical incisions and can be performed under local anaesthesia
- Hysteroscopy
- A microinsert is placed directly into the fallopian tubes

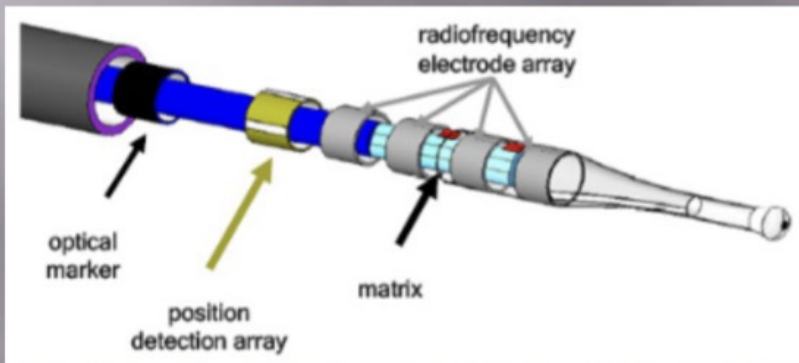
Disadvantage:

- * After the 3 months period, patient must undergo a hysterosalpingogram

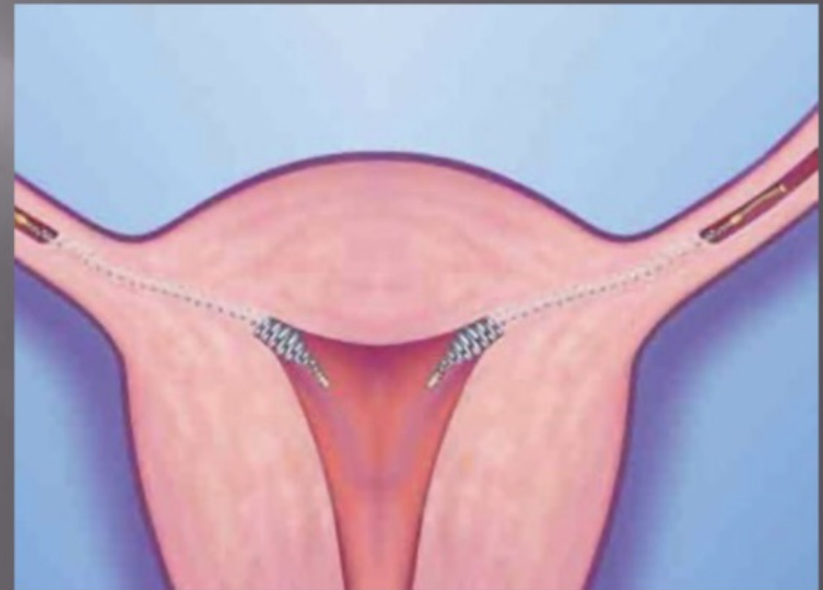
perforation
infection
device
migration

Candidates : high BMI, medical illness, previous abdominal and pelvic surgery)

ADIANA



ESSURE



efficacy

▣ FR. 0.8-3.7 %

advantages

- ❑ Does not involve hormones
- ❑ Permanent form of contraception
- ❑ No effect on libido or menstruation
- ❑ Same day procedure

Disadvantages

- General or regional anaesthesia
- Patient might regret her decision
- Essure method requires backup method for 3 months

↓
3 أشهر للنساء من الـ (Essure)

توقيت

Timing

- Consent should be obtained one week prior to procedure
- Any time during cycle
- Pregnancy test day of the operation
- Continue the same contraception till surgery
- IUCD till next cycle

Male sterilization

Vasectomy

Incision of the scrotal sac ,
transection of the vas ,

Division or removal of a
piece of each vas

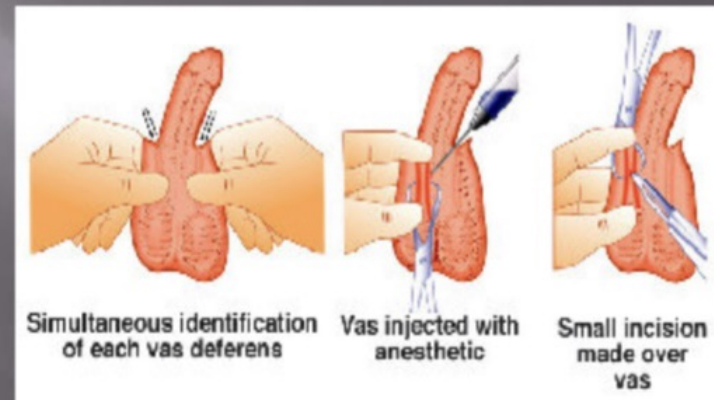
-Cheaper

-Out patient basis

- Local anesthesia

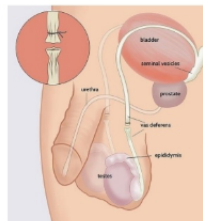
Mechanism:

Vasectomy prevents the
passage of sperm into the
seminal fluid by blocking
the vas



Vasectomy

- Ligation of bilateral **vas deferens**
- Usually outpatient under local anesthesia
- Semen analysis three months postoperatively to confirm sterility
 - If sperm at 3 months → follow-up test 1 to 2 months later
 - Failure if sperm at follow-up after > 20 ejaculations and > 3 months
- Use alternate method of contraception until semen analysis
- Usually permanent
- Rare cases of recanalization (~ 0.2% of patients)
- Reversal possible in some cases



Male sterilization

Advantages

- ▣ No Hormones
- ▣ Is permanent
- ▣ Outpatient procedure
- ▣ Quick
- ▣ Carries minimal risks with regard to the procedure: the ability to check for efficacy

(SFA) *↪ seminal fluid analysis*

FR 0.1 %

Male sterilization

Disadvantages

- ▣ Hematoma formation
- ▣ Sperm granulomas
- ▣ After the procedure, remnant sperm in the ejaculatory ducts

Contraception should be continued until there are two consecutive semen analysis of azoospermia. ▣



- * First test 8 weeks after the procedure, and the second after 2-4 weeks (20 ejaculations)

Disadvantages

- ▣ Patient may regret the decision
- ▣ Does not protect against STDs
- ▣ Short term discomfort occurs

Vasectomy(complications)

Scrotal bruising (everyone)

Haematoma (1-2 %)

Wound infection (up to 5%)

Antisperm antibodies (leakage of sperm)

Chronic testicular pain(unknown cause)

Granuloma formation(painful)

? Atherosclerosis , testicular cancer

FR (1 in 2000), natural reversal 1 in 4000

Counseling

- ▣ Age
- ▣ Family size
- ▣ Problems of current contraception
- ▣ ? Partner
- ▣ Stability of the relationship
- ▣ FR
- ▣ The procedure
- ▣ Risks and side effect
- ▣ Reversibility

Reversal of sterilization

- ▣ Laparotomy, microsurgery, 70% success
- ▣ 5% ectopic pregnancy risk due to presence of scar
- ▣ Vasectomy

90% success rate

Pregnancy rate 60 % ASA

anti-sperm antibody

Thank you