

Amenorrhea

- Absence of menstruation. **Pathological** amenorrhea is the failure to menstruate for at least 6 months
- It can be divided into:

- **1ry amenorrhea** → lack of menstruation before the age of 16 years or 14 in the absence of secondary characteristic (the average age for menarche is **12-14 years old**)
- **2ry amenorrhea** → cessation of menstrual cycles following established cycles

Etiology

- Hypothalamic amenorrhea
 - **most common**
 - usually due to low BMI or excessive exercise
 - FSH, LH and prolactin are all low
- PCOS
- Hyperprolactinemia
- Premature ovarian failure (POI): raised FSH
- Anatomical problems
 - usually results in 1ry amenorrhea
 - vaginal examination to rule out imperforate hymen is important
 - pelvic US: to determine pelvic anatomy (Mullerian agenesis)
 - anatomical problems can also cause **2ry amenorrhea (Asherman's syndrome)**
- Thyroid problems (both hyper & hypo)
- Pregnancy

Female athlete triad:

1. 2ry amenorrhea
2. Osteoporosis
3. Anorexia nervosa

- **Asherman's S** → adhesions of the endometrium often associated with dilatations and curettage of the intrauterine cavity
- It results in infertility and they often experience menstrual irregularities

Short stature	Turner Syndrome
Hirsutism, acne (androgen excess)	PCOS, Hyperprolactinemia
Menopausal symptoms in women before 40s	Premature ovarian failure
Eating disorder	Anorexia nervosa
Galactorrhea	hyperprolactinemia

Dysmenorrhea

1ry Dysmenorrhea	2ry Dysmenorrhea
no obvious organic cause	Common etiologies: <ul style="list-style-type: none"> - Endometriosis - Adenomyosis - PID
Management: <ul style="list-style-type: none"> • NSAIDs such as Mefenamic acid (1st line) • COCP (2nd line if the only symptom is pain) • Mirena IUS 	Management: <ul style="list-style-type: none"> • Treat the underlying cause

- *Dysmenorrhea > **Mefenamic acid** (NSAIDs)*
- *Menorrhagia > **Tranexamic acid** (antifibrotic → inhibits fibrinolysis)*

Hematometra

- *Accumulation of blood within the uterus, commonly caused by imperforate hymen or transverse vaginal septum*
- 1ry amenorrhea and cyclical pain

Imperforate hymen → bluish bulging membrane visible at the introitus

Transverse vaginal septum → possible abdominal mass

Endometriosis

- Presence of endometrial-like tissue outside the uterine cavity. It's estrogen dependent, and therefore mostly affects women during their reproductive years. If the ectopic endometrial tissue is within the myometrium itself, it's called **adenomyosis**. Up to 10-12% of women have a degree of endometriosis

Features:

- Chronic pelvic pain (cyclic or constant)
- Dysmenorrhea – pain often starts days before bleeding
- Deep dyspareunia (indicates possible involvement of uterosacral ligaments)
- Subfertility

4 DYS- + CYClical pain

- DYSmenorrhea
- DYSpareunia
- DYSuria
- DYSchezia

Investigations:

- **Laparoscopy** is the *gold-standard* investigation
- **TVUS** (to diagnose & to exclude of an ovarian endometrioma)

Management:

- NSAIDs (Mefenamic acid)
- COCP
- Levonorgestrel IUS

Surgery:

- **Laparoscopic excision and ablation** of endometrioid lesions reduce associated pain

- Drug therapy does not seem to have a significant impact on fertility rates. However, **laparoscopic excision and ablation** of endometriotic ovarian cysts may improve fertility
- It's acceptable to use **COCP** to treat pain without laparoscopic diagnosis as long as fertility isn't the issue

PID

- Infection and inflammation of the female pelvic organs including the uterus, fallopian tubes, ovaries and the surrounding peritoneum. Most commonly caused by ascending infection from the **endocervix**

Causative organisms

- **Chlamydia** → *most common* cause
- **Neisseria gonorrhoea**

Risk factors

- Age <25
- Previous STIs
- New sexual partner or multiple partners
- Uterine instrumentation
- IUD
- Post-partum endometritis

Features

- Lower abdominal pain
- Fever
- Deep dyspareunia (painful sexual intercourse)
- Dysuria and menstrual irregularities may occur
- Vaginal or cervical discharge often purulent (NOT offensive)
- Cervical excitation (tenderness)
- Abnormal vaginal bleeding (intermenstrual, postcoital)

Complications

- Infertility
- Chronic pelvic pain
- Ectopic pregnancy
- In males → **Acute epididymitis**

Management

- Outpatient: **IM Ceftriaxone + oral Doxycycline + oral Metronidazole** for 14 days OR **Ofloxacin + Metronidazole**
- Inpatient: **IV Ceftriaxone + IV Doxy + oral Metro** for 14 days OR **IV Ofloxacin + IV Metronidazole** for 14 days

Cervicitis → is purely infection of the cervix not involving other pelvic organs

- It presents with discharge, tender cervix (chandelier sign) and dyspareunia but **NO** menstrual irregularities or lower abdominal pain
- If just Cervicitis – **Chlamydia**:
 - **Doxy 100mg** twice a day for seven days (1st line)
 - **Azithromycin 1g** s a single dose, followed by 500mg once daily for 2 days
 - If pregnant → Erythromycin
- If just Cervicitis – **Neisseria gonorrhoea**:
 - **Ceftriaxone 1g** IM as a single dose
 - **Ciprofloxacin 500mg** orally as a single dose if the organism is susceptible to ciprofloxacin

- Pelvic abscess or tubo-ovarian abscesses are possible complications of PID
- **US** is the diagnostic imaging method of choice for acute pelvic pain in gynecology
- **Fitz-Hugh-Curtis** \$ → a complication of PID, usually presents with an acute onset of RUQ pain (aggravated by breathing or coughing. Pain may refer to right shoulder)
- **Endocervical swab** → PID
- **USG** → **complications of PID**

Chickenpox exposure in pregnancy

- Caused by primary infection with varicella zoster virus. Shingles is reactivation of dormant virus in dorsal root ganglion. In pregnancy there is a risk to both the mother and also the fetus, a syndrome now termed as **fetal varicella syndrome**
- The incubation period is **10-14 days** but can be as long as 21 days

Fetal varicella syndrome (FVS)

- Risk of FVS following maternal varicella is 1% if occurred **before 20 weeks**, very few occur between 20-28 and none after 28 weeks
- Features include: skin scarring, eye defects (microphthalmia), limb hypoplasia, microcephaly and learning disabilities

Other risks to the fetus

- Shingles in infancy: 1-2% risk if maternal exposure in the 2nd or 3rd trimester
- **Severe neonatal varicella**: if mother develops **RASH** between 5 days before or 2 days after birth there is a risk of neonatal varicella, which may be fatal to the newborn child in around 20% of cases

Management of chickenpox exposure

1. Who gets checked for varicella antibodies?

- If the woman's immunity to chickenpox is unknown and if there is no previous history of chickenpox or shingles
- Serum should be tested before administration of **VZIG**, it takes 1-2 days or few hours if the serum is stored from an antenatal booking blood sample

- | |
|--|
| 1. Pregnant exposed to chickenpox → check woman's immunity (previous infection, varicella antibodies) |
| 2. Not immunized → VZIG |
| 3. Chickenpox rash develops (24h) → oral acyclovir |

2. Who gets VZIG?

- If the pregnant woman is not immune to VZV and she has had a significant exposure, she should be offered VZIG as soon as possible
- VZIG is effective when given up to 10 days after contact
- If the immune status is unknown, administration of VZIG can be delayed until serology results are available
- VZIG has NO significance once chickenpox has developed and should therefore NOT be used in pregnant women who have developed a chickenpox rash

3. Who gets oral acyclovir?

- Oral acyclovir should be prescribed for pregnant women with chickenpox if they present within 24 hours of the onset of the rash and if they are ≤ 20 weeks gestation

Chronic hypertension

- Hypertension that is present at the booking visit or before 20 weeks or if the woman is already on antihypertensive medications

Gestational hypertension

- New hypertension presenting after 20 weeks without significant proteinuria
- Once developed → **Refer for a same day assessment in the maternal unit**
- If blood test come back at an acceptable level and she's asymptomatic → she's advised to measure blood pressure four times daily and to come back if the BP >150/100 → *Oral labetalol would be given*

NHS guidelines for IV magnesium sulphate administration

- Women in a critical care setting who have severe hypertension or severe pre-eclampsia who have or previously had an eclamptic fit
- Women with severe preeclampsia who are in a critical care setting if birth is planned within 24h

Pregnancy-induced hypertension

Degree of hypertension	Mild (140/90 - 149/99 mmHg)	Moderate (150/100 - 159/109 mmHg)	Severe (160/110 mmHg or higher)
Admit to hospital	no	no	yes
Treat	no	Oral labetalol as first-line of treatment to keep: <ul style="list-style-type: none"> Diastolic pressure between 80-100 mmHg Systolic blood pressure < 150 mmHg 	Oral labetalol as first-line of treatment to keep: <ul style="list-style-type: none"> Diastolic pressure between 80-100 mmHg Systolic blood pressure < 150 mmHg

Alternatives that are commonly used in pregnancy are **Methyldopa, hydralazine and Nifedipine**

Labetalol	100mg bd up to 600mg qds	Avoid in asthma	Breastfeeding- ok
Methyldopa	250mg bd up to 1 g tds		Breastfeeding- ok
Nifedipine	10mg bd up to 30mg tds		Breastfeeding- ok

Pre-eclampsia

- condition seen after 20 weeks gestation
- pregnancy-induced hypertension
- Proteinuria (>0.3g /24 hours or dipstick ++ / +++)

Risk factors

- Extremes of both ages (over 40 – a teenager)
- First pregnancy
- Multiple pregnancies
- DM type 1 and 2
- Obesity
- Chronic hypertension
- CKD
- Autoimmune disease (SLE, APS)
- Family history
- Pregnancy interval > 10 years

Symptoms (usually occur only with severe disease)

- Headache
- Visual disturbance (flashing lights)
- Epigastric or RUQ pain
- Rapid face edema

Signs

- Hypertension
- Proteinuria (>300 mg in 24 hours)
- Hyperreflexia

Treatment:

1. Lower the blood pressure (moderate hypertension) using **oral labetalol**
2. Delivery of placenta and baby

Eclampsia

- An obstetric emergency defined as **tonic-clonic seizures** in association with a diagnosis of **pre-eclampsia**
- 44% occur postnatally, seizure could happen before hypertension or proteinuria

Prevention and control of seizures

- **Mg sulphate** should be considered when there's risk of eclampsia. It's used to **prevent** seizures as well as **control** it
- To control seizures, a loading dose of **4 g MgSO₄ in 100 ml 0.9% normal saline** is given by infusion pump over 5-10 minutes. This is followed by a further infusion of **1 g/hour maintained for 24 hours after the last seizure**
- Recurrent seizures should be treated with either a further bolus of 2 g of MgSO₄ or increase in the infusion rate to 1.5 g or 2.0 g/hour
- Note that administering IV MgSO₄ requires cardiac monitoring

In case of MgSO₄ toxicity

- Confusion, loss of deep tendon reflex, respiratory depression and hypotension
- Stop MgSO₄
- Use **diazepam** (a single dose because prolonged use is associated with maternal death) to stop the seizures
- Administer **Ca gluconate** (1g over 10 mins) as an antidote

Diagnosis	Characteristics	Treatment
Trichomoniasis (<i>Trichomonas vaginalis</i>)	<ul style="list-style-type: none"> Itching Discharge: frothy <u>yellow</u> - <u>greenish</u> Ph: >4.5 Smelly Vulvar erythema <u>Strawberry</u> cervix Diagnosed by visualizing <u>motile flagellates</u> under microscope 	Metronidazole
Bacterial vaginosis (overgrowth of <i>Gardnerella vaginalis</i>)	<ul style="list-style-type: none"> Itching Discharge: thin and offensive Ph: >4.5 <u>Fishy</u> smelly <u>+ve whiff</u> (potassium hydroxide) test Presence of <u>clue cells</u> 	Metronidazole Clindamycin
Vulvovaginal candidiasis (<i>candida albicans</i>) cAndidA → Acidic	<ul style="list-style-type: none"> Itching Discharge: <u>thick</u>, <u>white</u> and <u>odorless</u> with the consistency of cottage cheese → <u>Yeast and hyphae</u> with KOH 10% Ph: 4-4.5 Broad spectrum AB → kill vaginal normal flora → High risk 	Clotrimazole

Bacterial vaginosis

- The commonest cause of vaginal discharge in the child bearing period, whilst BV is not a sexually-transmitted infection, it's almost exclusive in sexually active women
- Amsel's criteria: **3 out of 4 is diagnostic**

IDK why I smell fish in the garden

 - Homogenous grey-white discharge
 - Characteristic fishy smell with KOH 10% added to the sample of discharge
 - Clue cells
 - pH > 4.5

➤ If TV, BV, Candida are suspected → **High vaginal swap**

➤ If Chlamydia or Gonorrhoea → **Endocervical swap**

Lichen sclerosis

- Chronic inflammatory dermatosis that usually affects the skin of the **anogenital region** in women
- Presents with **genital itching** and **white atrophic plaques**
- Itching worse **at night**
- Dyspareunia and pain in case of erosions

Management

- Topical steroids
- Follow-up is important as long-standing untreated cases can turn malignant in 4%

➤ **Vaginal thrush** presents as a thick, white vaginal discharge (not tender)

➤ **Lichen planus** affects mucous membrane (mouth)

Placental abruption

- The premature separation of a normally seated placenta resulting in maternal hemorrhage or lost through cervix
- Risk increases > 35 years old

Causes

1. Pre-eclampsia
2. Multiparity
3. Trauma
4. Maternal age
5. Cocaine
6. Smoking

Clinical features

- Constant sudden abdominal pain
- Tender and tense uterus (woody hard)
- Bleeding, which may be accompanied by pain
- Fetal distress or fetal death (if CTG shows fetal distress → immediate delivery)
- Maternal signs of hypovolemic shock if bleeding is severe

Management

- **Resuscitation** and **delivery** if presence of fetal distress or maternal compromise

- Two of the most common causes of Antepartum hemorrhage are: **placental abruption** and **placenta previa**
- Other causes include local causes: vulva, vagina or cervix (polyp or carcinoma)
- Pregnant woman usually has an US at 20 weeks to show the location of the placenta
- Single most important diagnostic in APH → **US**
- Single best action in APH → **CTG**

- Severe abruption can lead to hemorrhagic shock with **acute tubular necrosis** from profound hypotension
- **Disseminated intravascular coagulation (DIC)** can result from release of tissue thromboplastin into the circulation from the disrupted placenta
- One should NOT look into at the extent of vaginal loss as an indicator of severity of abruption as maternal hemorrhage may be much greater (If concealed behind the placenta)

Placenta previa

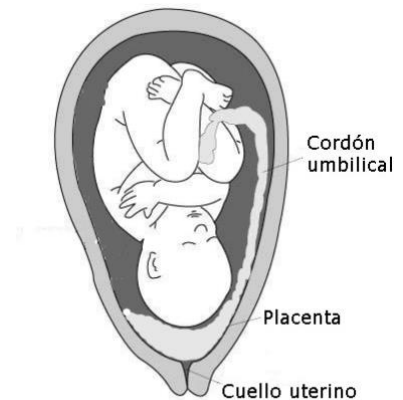
- Placenta lying wholly or partly in the **LUS**
- The key clinical feature is **painless bleeding** after 24 weeks of gestation
- For diagnosis → **TVUS** is preferred over abdominal US
- Digital vaginal examination should not be performed. However, a **speculum** or a **TV probe** can be safely used in placenta previa

Risk factors

- Previous placenta previa
- Multiple pregnancies

Clinical features

- Non-tender uterus
- Lie and presentation may be abnormal
- Fetal heart usually normal

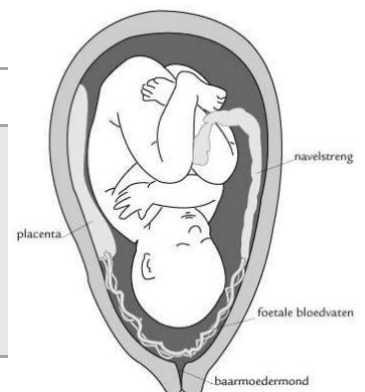


Vasa previa

- Fetal vessels run over or in close proximity to the cervical os
- A triad of painless bleeding, membrane rupture and fetal bradycardia.

Placenta accreta

- Less common than placenta previa and are seen commonly in the presence of a uterine scar which allows the placenta to attach to the myometrium



Endometrial hyperplasia

- A para-malignant condition that can predispose to or be associated with endometrial carcinoma
- Characterized by overgrowth of endometrial cells and is caused by excess unopposed estrogen, endogenous or exogenous, similar to endometrial carcinoma

Presentation

- Abnormal vaginal bleeding (intermenstrual, polymenorrhea or postmenopausal)
- Over 40 years old with irregular menstruations or in those with post-menopausal bleeding

Investigations

- TVUS
- Endometrial sampling

Management of EH without atypia

- Mirena IUD
- Continuous oral progestogen

Endometrial carcinoma

- Classically, **PMB** (could be presented as brown vaginal discharge)

Risk factors:

- DM, Obesity
- Nulliparity, Early menarche, Late menopause
- Unopposed estrogen
- Tamoxifen
- PCOS

- The addition of progestogen to estrogen reduces the risk (e.g. in HRT). Additional risk is eliminated if a progestogen is given continuously

Investigations

- **TVUS** - 1st line of management – a normal endometrial thickness <4mm has a negative predictive value
- **Hysteroscopy with endometrial biopsy** – definitive diagnosis

Tamoxifen (↓Breast cancer ↑Endometrial carcinoma)

- A selective estrogen receptor modulator (SERM) used in the treatment of breast cancer
- Acts as an antagonist in breast tissue and acts as an agonist on the endometrium thus there is an increased risk of endometrial cancer
- There is also an increased risk of thromboembolism
- It prevents bone loss by acting as an estrogen receptor agonist

- There may be rebound loss of bone after tamoxifen is stopped, **bisphosphonates** prevent that

SERMs are synthetic molecules. They have the ability to bind to estrogen receptors throughout the body and act as estrogen agonists or antagonists depending upon the target organ:

- **Tamoxifen** is antagonist on breast, agonist on uterus and bones
- **Raloxifene** is antagonist on breast & uterus, agonist on bones

Ovarian cancer

Risk factors

1. Increasing age
2. Family history, mutations in *BRCA1* or *BRCA2*
3. Many ovulations: early menarche, late menopause, nulliparity

Protective factors

- COCP (OCP=ovarian cancer protection)
- Pregnancy

COCP

- ↑Breast & cervical cancer
- ↓ Ovarian, endometrial & colorectal

Risk for **cervical cancer** can be decreased by condoms by reducing the risk of HPV infection

Gestational trophoblastic disease (GTD)

- A spectrum of diseases caused by overgrowth of the placenta. It ranges from **molar pregnancies** to malignant conditions such as **choriocarcinoma**
- If there is any evidence of **persistence** of GTD, the condition is referred as gestational trophoblastic neoplasia (GTN)

Types

- **Paramalignant – hydatidform mole**
 - Complete hydatidform mole (CHM)
 - Partial hydatidform mole (PHM)
- **Malignant – GTN**
 - Invasive mole
 - Choriocarcinoma
 - Placental site trophoblastic tumor (PSTT)
 - Epithelioid trophoblastic tumor (ETT)

Hyperemesis gravidarum

- Pregnancy complication that is characterized by severe nausea, vomiting, weight loss, and possibly dehydration
- Symptoms begin between **6-8** weeks and peaks at **12** weeks
- Treated by **cyclizine**, promethazine

Features

- **Hyperemesis gravidarum**: due to excessive amounts of **hCG**
- Irregular 1st trimester (1-13 weeks) **vaginal bleeding**
- **Uterus large for dates**
- Vaginal passage of vesicles containing **products of conception**
- **Serum hCG** is excessively high with **complete** moles, but levels may be within the normal range for partial moles

US findings of a complete mole

- **Snowstorm appearance** of mixed echogenicity, representing hydropic villi and intrauterine hemorrhage
- **Large theca lutein cysts** (bilateral cystic masses)

Management of hydatidform mole

- **Surgical evacuation (suction curettage)**
 - Histological examination of products of conception is essential to confirm diagnosis
- **Two-weekly serum and urine samples until hCG concentrations are normal**
 - Women should be advised not to conceive until hCG level has been normal and follow-up is complete as pregnancy will raise serum hCG and we'll not know if it's due to the hydatidform mole or the pregnancy
- **Barrier contraception**
 - Should be used until serum hCG is normal (oral contraception may also be used after molar evacuation, before hCG returns to normal)

Management of GTN

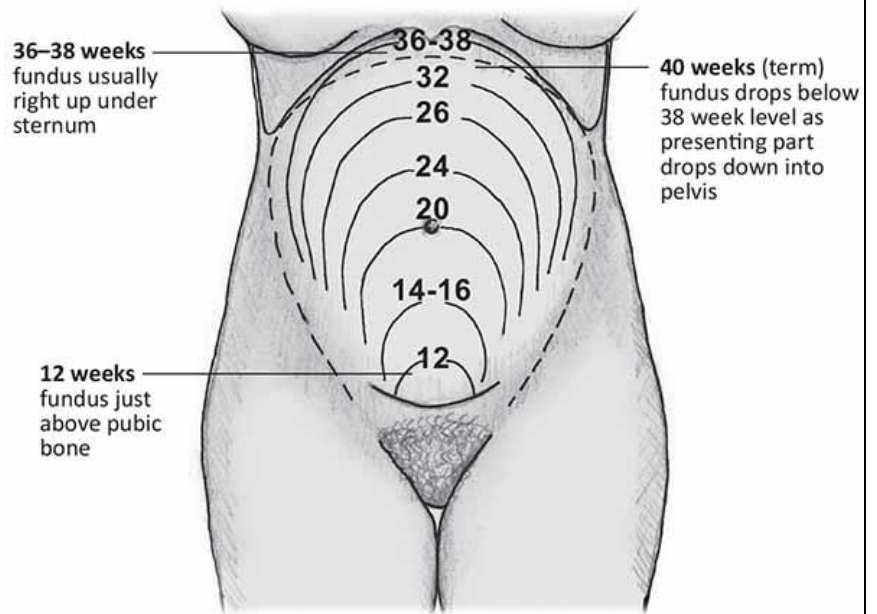
- **Chemotherapy**
 - If chemotherapy is started, women should wait a year from completion of their treatment before trying to conceive

If the uterus is large for dates, then we have three options:

- *Uterine fibroid*
- *Molar pregnancy*
- *Incorrect menstrual period*

Multiple pregnancies like twin pregnancy have similar presentation. However, in multiple pregnancies the uterus is seen to be larger in the 2nd trimester rather than the 1st

- The uterus cannot be felt per abdomen until **12 weeks** gestation
- By **16 weeks**, its fundus lies half way between the SP and the umbilicus
- The fundus is under ribs by **36 weeks**
- **At full term**, the uterus lies a bit lower than at 36 weeks, as the head descends into the pelvis
- From 16 weeks the symphysis fundal height (SFH) increases by 1 cm/week
- As a rule of thumb:
 - **16-26 weeks**: SFH = dates (in weeks)
 - **26-36 weeks**: SFH \pm 2cm = dates
 - **36 weeks – term**: SFH \pm 3cm = dates



Management of menorrhagia (NICE)

1. Mirena IUS
2. Tranexamic acid or Mefenamic acid or COCP
3. Norethisterone (15mg) daily from days 5-26 of the menstrual cycle or injected long-acting progestogens

Important combinations

- Tranexamic acid + Mefenamic acid (NSAID) if the patient has both **menstrual bleeding** and **dysmenorrhea**
- NSAIDs + COCP if **dysmenorrhea** is problematic
- **DO NOT** combine Tranexamic acid with COCP or Mirena
- **For heavy menstruation that needs stopping rapidly** → Oral Norethisterone (5mg 3/daily for 10 days)
- In secondary care, treatment include GnRH agonists

Fibroid

- **Submucosal**
 - beneath the endometrium and bulge into the uterine cavity
- **Intramural**
 - Within the muscular uterine wall
 - Most common type
- **Subserosal**
 - On the external surface of the uterus and project to the outside of the uterus

Clinical picture (1 of 3 patients)

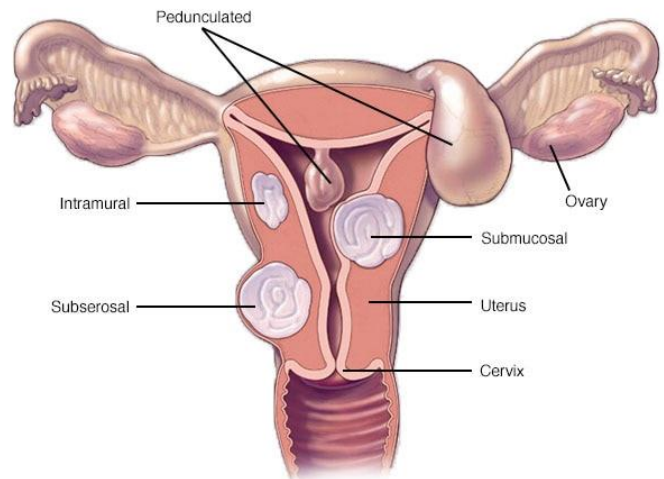
- Menorrhagia, dysmenorrhea
- Abdominal pain, Low back pain
- Increased urinary frequency, constipation

Risk actors

- Increasing age (↓ by reaching menopause)
- **Afro Caribbean**
- Obese

Management

- **If asymptomatic**
 - Follow-up annually to monitor size and growth
- **With menorrhagia**
 - Levonorgestrel-releasing IUS (Mirena) – *provided uterine fibroid is not distorting the uterine cavity*
 - Tranexamic acid, NSAIDs or COCP
- **With severe menorrhagia & fibroid > 3cm**
 - Ulipristal acetate up to 4 courses (each course is up to 3 months, usually used in pre-op treatment)



Surgical management

- **Hysterectomy**
- Myomectomy
- Uterine artery embolization
- Endometrial ablation – only for submucosal fibroids < 3cm

- Both **myomectomy** and **uterine artery embolization** can be performed in patients who would like to preserve fertility
- **Myomectomy** is preferred, however increases the risk of uterine rupture

Other medical management

- **GnRH agonists** → reduce the size of fibroids and are used prior to surgery to reduce perioperative blood loss, surgery must take place as uterine fibroids would return to pretreatment size if GnRH agonist stopped

Ectopic pregnancy

- Implantation of a fertilized ovum outside the uterus

Features

- **Lower abdominal pain** → *this is typically the first symptom*
- **Vaginal bleeding**
- **History of recent amenorrhea** → *typically 6-8 weeks from the start of last period* as the baby is large enough to dilate the tubes
- **Peritoneal bleeding** can cause shoulder tip pain (in ruptured ectopic)

- Any woman at a childbearing period attends with pain **MUST** have a urine pregnancy test performed
- Rupture ectopic pregnancies are life threatening

Predisposing factors

- **PID** → *the most common cause*
- Previous tubal pregnancy
- Previous induced abortion
- Previous ectopic pregnancy
- Copper IUD (rarely happens, but if the patient with IUD conceived it's most likely ectopic)
- Tubal ligation

Examination findings

- Abdominal tenderness
- Cervical excitation (cervical motion tenderness) due to stretching of fallopian tubes
- Adnexal mass may be noticed → *rarely noticed*

- Always observe the blood pressure as a significant drop in a suspected ectopic need to be quickly escalated
- **B-hCG** should be obtained to plan management:
 - **>1500 IU/L + no gestational sac = Ectopic**

Surgical management

- If hemodynamically stable → **Laparoscopy** (**laparoscopic salpingectomy** or salpingectomy)
- If unstable (BP<90/60, tachycardia, tachypnea) → **laparotomy** (open salpingectomy or salpingectomy)

Medical management

- **Methotrexate** would be first line for an ectopic pregnancy if it contains the criteria below:
 - Not in significant pain
 - Hemodynamically stable
 - Adnexal mass smaller than 35mm with no fetal heart visible
 - No intrauterine pregnancy
 - Serum hCG less than 5000 IU/liter (*ideally less than 1500 IU/liter*)
 - Able to return for follow-up

Infertility

Causes

- Male factor 30%
- Unexplained 20%
- Ovulation failure 20%
- Tubal damage 15% (highly suggestive with history of PID)
- Other causes 15%

Key counselling points

- Folic acid
- Aim for BMI 20-25
- Advise regular sexual intercourse every 2 to 3 days
- Smoking/drinking advice

Investigations

- Semen analysis
- **Mid-luteal progesterone** 7 days prior to expected next period

Interpretation of serum progestogen

Level	Interpretation
< 16 nmol/l	Repeat, if consistently low → refer to specialist
16 - 30 nmol/l	Repeat
> 30 nmol/l	Indicates ovulation

FSH and LH should be measured if there is menstrual irregularity: High levels may suggest poor ovarian function

PCOS	POI
<ul style="list-style-type: none"> • ↑LH • LH:FSH > 2 	<ul style="list-style-type: none"> • ↑LH and ↑FSH • FSH > 25 IU/l on two occasions > 4 weeks apart is diagnostic <p>- Anti-Mullerian hormone can be used if there's diagnostic uncertainty</p>

Hysterosalpingography

- Contrast media is being injected into the cervical canal that appears on real-time x-ray (fluoroscopy)
- It evaluates uterus and fallopian tubes to detect any blocking as a part of investigation for infertility
- If the fallopian tubes are patent, the contrast medium will fill the tubes and spill out into the abdominal cavity

Complications

- Allergic reaction to the dye
- Infection (endometritis or salpingitis)
- Perforation of the uterus or fallopian tube → intra-abdominal bleeding → **US** as a 1st investigation, **laparoscopy** (stable patients) or **laparotomy**

PCOS

- It comprises **hyperandrogenism**, **oligomenorrhea/amenorrhea** and **polycystic** ovaries on **US** (≥ 12 follicles)
- The commonest endocrine disorder in women of reproductive age

Symptoms

- Symptoms due to excess androgens → hirsutism, alopecia and acne
- Oligomenorrhea or amenorrhea
- Obesity
- Subfertility

Biochemical abnormalities

- Hyperandrogenism: elevated free androgen index (FAI) >5
- Hyperinsulinemia (due to insulin resistance) → *acanthosis nigricans*
- Increased LH (LH:FSH >2)

General management

- Weight loss

- 20% of women have an US suggestive of polycystic ovaries but unless they fulfill the criteria of PCOS, they should NOT be treated

Management for menstrual irregularities

- Weight loss
- COCP, cyclical progestogen or Mirena IUD

Management of infertility

- Weight loss → *the 1st initial management*
- **Clomiphene Citrate**
- If Clomiphene Citrate fails, consider adding metformin, gonadotropins or consider laparoscopic ovarian drilling

Regarding metformin

- *Still used either combined with clomiphene citrate or alone, particularly in patients who are obese*
- *In order to improve insulin sensitivity and reduce hyperinsulinemia and subsequent hyperglycemia*

Premature ovarian failure/insufficiency (POI)

- The onset of menopausal symptoms and elevated gonadotropin levels before 40 (around 1 of 100 women)

Causes

- Idiopathic → *the most common cause*
- Chemotherapy → *this can be temporary*
- Radiation
- Autoimmune disease
- Bilateral oophorectomy or surgical menopause

- Early menopause is used to describe women who go through their menopause between **40-45 years**
- Treatment includes **long-term HRT beyond menopause**

Presentation

- The most common presentation is **amenorrhea** or **oligomenorrhea** (which may not necessarily be accompanied by hot flashes)
- Infertility
- Other features are similar to those of climacteric symptoms (in peri or post-menopausal): *hot flashes, night sweats, irritability, poor concentration, decreased sex drive, dyspareunia, vaginal dryness, palpitations*

- **Perimenopausal**: begins with the first, clinical, biological and endocrinological features of approaching menopause (51y/o) such as vasomotor symptoms and menstrual irregularities
- **Menopause**: 12 continuous months of amenorrhea
- Diagnosis of menopause after the age of 45 years should be based on symptoms and menstrual patterns, FSH levels tend to fluctuate in the perimenopausal period.

Investigations

- **FSH level**: > 25 IU/l on two occasions > 4 weeks apart are diagnostic

Management

- **HRT until the average age of menopause** (51 years)

Signs of labour

- Regular and painful uterine contractions
- A show (shedding of mucus plug)
- Rupture of the membranes (not always)
- Shortening and dilatation of the cervix

Pregnancy is divided into trimesters:

- **First trimester:** week 1–13 - highest risk of miscarriage
- **Second trimester:** week 14–26
- **Third trimester:** week 27–40

Stages of labour

Stage 1: from the onset of true labor to when the cervix is fully dilated

- It's divided into a latent and an active phase

1. **Latent phase:** begins with onset of regular contractions and ends with the acceleration of cervical dilatation
2. **Active phase:** begins with cervical dilatation acceleration, usually at 3-4 cm of dilatation, ending with complete cervical dilatation (10 cm)

- In a primigravida, stage 1 lasts typical **10-16 hours**

Stage 2: from full dilatation of cervix until the delivery of the fetus

Stage 3: from delivery of fetus to when the placenta and membranes have been completely delivered

Poor progress in the 1st stage

- Inefficient uterine activity (*power* → *commonest cause*)
- Malposition, malpresentation or large baby (passenger)
- Inadequate pelvis (passage)

Management

- **Oxytocin (syntocinon)** will increase the frequency and strength of contractions
- **Amniotomy/AROM** if the membrane is still intact

Investigations for the viability of the fetus

- **TVUS**, heart rate is detected at 6 weeks
- **CTG**, useful after 32 weeks

Risks for shoulder dystocia

Pre-labour risk factors

- Fetal macrosomia > 4.5 kg
- Maternal BMI > 30 kg/m²
- DM
- Previous shoulder dystocia
- Induction of labour

Intrapartum risk factors

- Prolonged labour
- Oxytocin augmentation
- Assisted vaginal delivery

Management of shoulder dystocia (HELPERR)

- **Help**
- **Episiotomy**
- **Legs** (McRoberts)
- **Pressure** at suprapubic area
- **Enter**
- **Remove** the posterior arm
- **Roll** the patients to hands and knees

Endometritis: most common cause of 2nd PPH

- **Investigations**
 - High vaginal swap
 - Bloods including FBC and CRP
 - TVUS
- **Treatment**
 - Co-amoxiclav

Causes of primary PPH (4Ts)

- **Tone**, abnormalities of uterine contraction
- **Tissue**, retained products of conception
- **Trauma** (lacerations, incisions, uterine rupture)
- **Thrombin**, abnormalities in coagulation (DIC), associated with placental abruption

Uterine atony

- The most common cause of excessive PPH

Risk factors

- Rapid or protracted labour (slow cervical dilatation) → *most common*
- Chorioamnionitis
- Overdistended uterus (Macrosomic baby)

Clinical findings

- A soft uterus palpable above the umbilicus

Management

- Uterine massage → effective at stimulating endogenous oxytocin
- IV Oxytocin

Chorioamnionitis

- Acute inflammation of the fetal and chorion membranes typically due to an ascending bacterial infection from vagina into the uterus in the setting of membrane rupture in pregnancy

Features

- Fever
- Abdominal pain, including contractions
- Maternal pyrexia and tachycardia (*tachycardia often precedes pyrexia*)
- Fetal tachycardia (normal FHR: **120-160** bpm)
- Uterine tenderness
- Foul odor of amniotic fluid
- Speculum shows offensive vaginal discharge (usually yellow/brown)
- Small for dates; due to amniotic fluid loss

Risk factors

- Prolonged ROM
- Prolonged labour
- Multiple vaginal examinations
- Meconium-stained amniotic fluid

- | |
|--|
| <ul style="list-style-type: none">• Chorioamnionitis → baby is still inside• Endometritis → baby is out |
|--|

Endometritis (uterine infection)

- Most common cause of post-partum fever, could be a sequela to chorioamnionitis postpartum
- Most common cause of 2^{ry} PPH

Risk factors

- Emergency cesarean section
- PROM
- Prolonged labour
- Multiple pelvic examinations
- Internal fetal monitoring

- | |
|---|
| <ul style="list-style-type: none">• Endometritis is associated with CS while retained product of conception is linked with NSVD• Endometritis → high vaginal swap |
|---|

Signs and symptoms

- Fever (usually in proportion to the extent of infection)
- Foul smelling, profuse and bloody discharge
- Tender bulky uterus on abdominal examination

Management

- Antibiotics (Co-amoxiclav)

Rhesus -ve pregnancy

- If a Rh -ve mother delivers a Rh +ve child, a leak of fetal red blood cells may occur which causes anti-D IgG antibodies to form in the mother
- In future pregnancies, these antibodies can cross the placenta and cause hemolysis in the fetus

Prevention of Rh sensitization

- Test for anti-D antibodies in all Rh -ve mothers at booking
- If Rh -ve and not previously sensitized, anti-D IgG at 28 weeks and 34 weeks gestation is given IM
- Anti-D is for prophylaxis only, once sensitization has occurred it's irreversible and Anti-D administration would be pointless

Anti-rhesus (anti-D) IgG are given IM. It neutralizes any Rhesus D positive antigens which have entered mother's blood. If the antigens have been neutralized, there will be no reason for mother to develop an immunity and produce antibodies. She would remain non-sensitized

Anti D immunoglobulin should be given as soon as possible (but always within 72 hours of giving birth) in the following situations:

- Delivery of a Rh +ve infant, whether live or stillborn
- Any termination of pregnancy or evacuation of retained products of conception (ERCP) after miscarriage
- Miscarriage if gestation > 12 weeks
- Ectopic pregnancy
- Blunt abdominal trauma
- External cephalic version (baby is turned from buttocks first → cephalic first)
- Antepartum hemorrhage, any vaginal bleeding over 12 weeks gestation
- Amniocentesis, chorionic villus sampling, fetal blood sampling

Affected fetus

If unborn:

- Edematous (hydrops fetalis, as liver devoted to RBC production thus albumin levels fall → more fluid intracellularly)
- Fetal heart failure → treatment includes intrauterine blood transfusion

If born:

- Jaundice (due to buildup of excessive bilirubin from RBC breakdown)
- Anemia
- Hepatosplenomegaly

Treatment

- UV phototherapy
- Blood transfusion
- Exchange transfusion

Assessing the severity of fetal anemia

1. Assessing fetal middle cerebral artery on US: allows estimation of fetal hemoglobin
2. **Fetal cord blood sampling**, only indicated if the peak systolic velocity (PSV) of the MCA is abnormal
3. **Kleihauer-Betke test** is used to determine the required dose of anti-D IgG to inhibit the formation of Rh antibodies in a Rh -ve mother to prevent Rh disease in future pregnancies with a Rh +ve fetus. It has no role in women who are already sensitized

Hormonal replacement therapy (HRT)

Types

1. Estrogen-only HRT

- Used in women who had a hysterectomy or an IUS in situ

2. Sequential (cyclical) combined HRT

- Used in peri-menopausal women who are still menstruating or within 12 months of their last period
- Sequential combined HRT is where estrogen is taken every day, and progestogen is taken sequentially (usually for the last 14 days of menstrual cycle) to induce bleed
- Patients often switch to Continuous combined HRT after 12 months

3. Continuous combined HRT

- Used in postmenopausal women (i.e. women who have had their last period > 12 months ago)
- Estrogen and progestogen are taken daily
- For women who still have uterus to prevent endometrial hyperplasia which could lead to endometrial carcinoma if only an estrogen preparation is used

Indications

- Postmenopausal women with vasomotor symptoms (**hot flushes** and **night sweats**) should be treated by **hormonal replacement therapy (HRT)** as a first line management for up to **5 years**. Clonidine can be used
- For women with early menopause, they should be treated with HRT beyond the age of 51 years
- For women under 60 years who at risk of an osteoporotic fracture for whom non-estrogen treatments are unsuitable

Contraception clinchers

• Young women, not sexually active (don't require contraception)

- Menorrhagia only → Tranexamic acid
- Menorrhagia and Dysmenorrhea → Mefenamic acid
- Menorrhagia/Dysmenorrhea/Metrorrhagia (irregular menses) → COCP

• Sexually active women (require contraception)

- **Mirena IUD** is the 1st line when:
 1. Suffering from menorrhagia/dysmenorrhea
 2. Those suffering from fibroids (which do not distort the uterine cavity)
 3. Possible contraindications of COCP: obesity – smoking – history of thromboembolism
- Women with sickle cell disease and menorrhagia → **IM Depo-Provera** (SE → osteoporosis)

Mirena and Depo-Provera are NOT recommended for patients below 20 years

Under 20 years: POP, COCP and implants (Nexplanon)

Nexplanon implant

- Progesterone-only subdermal implant (inserted in the upper arm)
- Reliable and reversible form of contraception
- It must be removed after **3 years**

Depo-Provera

- Progesterone-only IM injection once every **3 months**

Pearl index: (per 100)

- Mirena → 0.2 → lowest failure rates
- COCP / POP → 0.3
- Female sterilization → 0.5
- Male condoms → 2

Emergency contraception

1. Copper IUD

- **MOST EFFECTIVE** form of emergency contraception
- Mechanism → *inhibiting fertilization or implantation*
- Should be inserted in **5 days** of unprotected sexual intercourse (UPSI)

2. POP – Levonorgestrel

- Mechanism → *inhibiting ovulation and implantation*
- Should be used within **72h**

3. Ulipristal Acetate (ellaOne)

- Mechanism → *inhibition or delay of ovulation*
- Should be taken within **5 days** (120h) after intercourse

Post-partum contraception

- **Breast feeding** → COCP after 6 months
 - **Non breastfeeding** → COCP after 6 weeks
 - **In both cases, during the period before they start using COCP**, they can use condoms or POP
 - **IUS/IUCD** → unless fitted **within 48 hours of birth**, delay until 28 days postpartum (as if inserted before may risk uterine perforation)
- *Menstrual periods return after 5-6 weeks after birth if the mother isn't breast feeding. If the mother is breastfeeding, the menstrual cycles usually return once breastfeeding is less often*
- *Women can become pregnant **BEFORE** their periods return because ovulation occurs prior to menstrual bleeds*
- *For women who aren't breast feeding, contraception is started from 3 weeks after birth*
- *Menstrual cycles could return as early as 21 days postpartum in women who aren't breastfeeding*
- *Irregular bleeding whilst on contraception is common, reassure and continue for 3 months before changing the method of contraception*

COCP are unlikely to be chosen for contraception

[Vitamins Make Boys Sleep Better Hours]

1. History of VTE (venous thromboembolism) or family hx → *implants are used instead*
2. **Migraine with aura**
3. **BMI > 30 kg/m²**
4. **Smoker or ex-smoker**
5. History of **Breast cancer** (it's okay to use with hx of breast cancer as long as there's no gene mutations)
6. **Hypertension** (even if adequately controlled)

How to manage lost IUD threads?

1. Exclude pregnancy by performing a **urine pregnancy test**
2. Request a pelvic **US** to look for IUD
 - **TVUS** is preferred
 - If there's fear of perforation (acute abdomen) → TAUS
3. If IUD is not found on US, request an **abdominal x-ray**

- **COCP** might be necessary for the fear of ectopic pregnancy; this could be the best immediate action/most appropriate next step

Oral contraception interaction and hepatic enzyme inducers

- Women starting hepatic enzyme inducers should be advised to use a reliable contraceptive method which is unaffected by the enzyme hepatic inducers → **Depo-Provera** or **Mirena IUD**
- Once stopping hepatic enzyme inducers, women are still advised to continue appropriate contraceptive measures for another **4-8 weeks** as enzyme activity does not return to normal until several weeks of stopping hepatic enzyme inducers

Mnemonic for hepatic enzyme inducers **CRPA GPs**

- **C**arbamazepine
- **R**ifampicin
- **P**henytoin
- **A**lcohol (chronic consumption)
- **G**riseofulvin
- **P**henobarbitone
- **S**ulfonylurea

Uterine rupture

- Spontaneous tearing of the wall of the pregnant uterus with or without expulsion of the fetus that endangers life of both mother and fetus
- Usually occur during labour but has been reported antenatally

Features

- Tenderness over previous uterine scars
- Fetal parts may be easily palpable
- Fetus not palpable on vaginal examination
- Vaginal bleeding may be evident
- Signs of maternal shock
- Fetal distress on CTG

- To differentiate uterine rupture from placental abruption → **no uterine contractions**

Risk factors

- Previous C-section
- Excessive oxytocin stimulation
- Failure to recognize obstructed labour

Diagnosis

- Surgical exploration of the uterus and identifying the tear

Management

- **Urgent laparotomy** to deliver the fetus and repair the uterus

- Late fetal deceleration → fetal distress (due to placental insufficiency)
- Early deceleration → fetal head compression during contraction leading to increased vagal tone
- Variable deceleration → umbilical cord compression

HELLP syndrome

- A variant of severe pre-eclampsia which manifests with:
 - **Hemolysis (H)**
 - **Elevated liver enzymes (EL)**
 - **Low platelets (LP)**
- Liver enzymes usually increase and platelets decrease before hemolysis occurs
- The syndrome is usually self-limiting, but permanent liver or renal damage may occur
- Note that eclampsia may co-exist
- 30% of patients develop HELLP symptoms within 48h postpartum

Signs and symptoms

- Epigastric or RUQ pain and tenderness
- Nausea and vomiting
- Tea-colored urine due to hemolysis (also causes high LDH)
- Increased BP and other features of pre-eclampsia

Acute fatty liver of pregnancy (AFLP)

- Hypoglycemia (H)
- Ammonia (A)
- Acidosis (A)

Management

- **Delivery**
- Supportive and as for eclampsia (**MgSO₄** is indicated)
- Although platelet count is very low, platelet infusions are only required if bleeding or for surgery (<40)

Hyperemesis gravidarum

- Nausea and vomiting are common in early pregnancy, if severe or prolonged → hyperemesis gravidarum
- Symptoms usually begin between 6-8 weeks and peaks at 12 weeks and usually resolve at 20 weeks

Symptoms

- Nausea, Vomiting
- Food and fluid intolerance
- Lethargy

Signs

- Ketonuria
- Weight loss > 5%
- Tachycardia
- Signs of dehydration (decrease skin turgor – prolonged capillary refill – sunken eyes)

Management

1. **IV fluids**
2. **Antiemetics**
 - 1st line: **IM** or **oral cyclizine** or promethazine → if it fails, prochlorperazine IM or orally
 - 2nd line: **IV** Metoclopramide or Ondansetron
3. Steroids (a consultant decision)
4. Thiamine (vitamin B1) → to prevent Wernicke's encephalopathy which is due to *vitamin B1 deficiency*

CA125 should be performed if a woman – especially if aged 50 years old or over – has any of the following symptoms on a regular basis:

- *Bloating*
- *Loss of appetite*
- *Pelvic or abdominal pain*
- *Increased urinary urgency and/or frequency*

Threatened miscarriage	<ul style="list-style-type: none"> • Vaginal bleeding + fetal heart seen • Cervical os is closed
Missed miscarriage (delayed miscarriage)	<ul style="list-style-type: none"> • Dead fetus <u>before 20 weeks</u> without symptoms of expulsion (after 20 weeks → stillbirth) • May or may not have vaginal bleeding • Cervical os is closed
Inevitable miscarriage	<ul style="list-style-type: none"> • Cervical os is open and bleeding
Incomplete miscarriage	<ul style="list-style-type: none"> • Not all products of conception have been expelled
Complete miscarriage	<ul style="list-style-type: none"> • Everything has been expelled

Pelvic congestion syndrome

- Caused by varicose veins in the lower abdomen, diagnosed by excluding other organic causes of dyspareunia

Features

1. Symptoms similar to premenstrual syndrome
2. Aggravated by standing
3. Non-organic dyspareunia

- Orgasm may help to alleviate the symptoms

Anti-phospholipid syndrome

- The most important treatable cause of recurrent miscarriage
- A disorder of the immune system that causes an increased risk of **DVT** and **recurrent miscarriage**
- Women with recurrent miscarriage should be screened for APS (1st trimester → 3 or more, 2nd → one or more)
- Investigated by **Antiphospholipid antibodies**
- Treated with **Aspirin 75mg + Heparin**
- Corticosteroids have no role in treatment

Parental Karyotyping is performed if cytogenetic analysis performed on products of conception shows unbalanced chromosomal abnormalities

Cysts under US

- **PCOS** → Multiple follicles/cysts
- **Ovarian teratoma (Dermoid cyst)** → Ice berg tip sign, flat-fluid level, dermoid mesh, echogenic tubercle projecting into lumen of cyst
- **Ovarian endometrioma (chocolate cyst)** → Ground glass echoes
- **Tubo-ovarian abscess** → Multilocular, echogenic debris in pelvis

Ovarian torsion

- Presents with sudden onset of sharp, unilateral lower abdominal pain
- Often with nausea and vomiting
- Tender mobile mass
- The definitive diagnosis is often made in the theatre during a laparoscopy as ovarian torsion is difficult to diagnose

Cervical screening

- Women aged 25-49 years are invited for a cervical screening **every 3 years**
- Women aged 50-64 are screened **every 5 years**
- Optimum time for a cervical smear is during mid-cycle (days 10-20 of a 28-day cycle) as most endocervical cells can be collected then. It's also more challenging to obtain a smear while menstruating

Management based on results

- **Negative** → appropriate
- **Inflammatory** → repeat cervical swab in 6 months, take swabs for infection if severe inflammation
- **Inadequate** → repeat sample → if results still inadequate, consider **colposcopy**
- **Borderline** → perform **HPV** test → if positive, refer to **colposcopy**
- **Mild dyskaryosis** → perform **HPV** test → if positive, refer to **colposcopy**
- **Moderate / severe dyskaryosis** → refer to **colposcopy** for suspected cancer (two-week-wait)

- | | |
|---|------------------------------|
| - | Endocervix → Columnar |
| - | Ectocervix → Squamous |

Cervical ectropion

- When the columnar of the endocervix is displayed beyond the os. The stratified squamous epithelium that normally lines the vaginal part of the cervix (**ectocervix**) is replaced by columnar epithelium, which has migrated from the **endocervix**
- Cervix enlarges under the influence of estrogen (puberty, pregnancy or women on COCP)
- Very common and is seen as a red ring around the os
- Usually asymptomatic but occasionally present with **post-coital bleeding** or **discharge** (clear, watery and no odor)
- NO cervical screening as there's no link to cervical cancer

Management

- **If asymptomatic** and **NO** bleeding after touch → **Reassure**
- **If symptomatic** → **Cautery with silver nitrate**, diathermy and cryotherapy
- **A cervical smear** should be obtained prior to treatment



Cervical cerclage

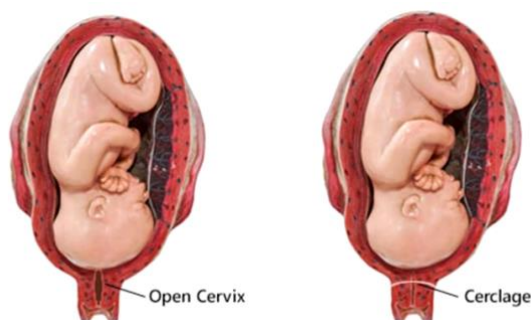
- Cervical weakness is a recognized cause of 2nd trimester miscarriage

Criteria for the procedure

- A history of 2nd trimester miscarriage preceded by spontaneous rupture of membranes or painless cervical dilatation
- A woman whom cervical length < 25mm with a history of large loop excision of the transformation zone (**LLETZ**) procedure of the cervix

Risks of the procedure

- Infections
- Rupture of membranes



Folic acid dosage

- Usual dose is **0.4 mg/day** until 12 weeks of gestation (the time it takes the fetus spine to develop)
- **A dose of 5 mg/day** until 12 weeks of gestation
 - In a diabetic mother to reduce the risk of having a baby with neural tube defect
 - BMI > 30
 - Those taking antiepileptics
 - History of NTD
- **A dose of 5 mg/day** for the entire pregnancy
 - Thalassemia trait
 - Sickle cell anemia

Anemia in pregnancy [falls by 0.5g progressively]

- **1st trimester:** Hb <11 g/dl
- **2nd & 3rd trimester:** Hb <10.5 g/dl
- **Postpartum:** Hb <10 g/dl

Hematological changes in pregnancy

- Plasma volume increases by 50% → **Dilutional anemia**
- Elevated erythropoietin increases the total red cell mass
- MCHC and MCV are unaffected

Management: Oral ferrous sulphate (if Hb <11g/dl) unless not tolerated

Vaccination in pregnancy (flue and sneeze vaccines)

1. For flu: **Influenza vaccine**
2. For whooping cough: **Pertussis vaccine**
 - Best time for it is **20-32** weeks gestation
 - Usually combined with **DPT** diphtheria, polio and tetanus

Routine blood tests performed at booking (ideally by 10 weeks)

- **Hep B & HIV**
- **Syphilis screen**
- **Blood group and Rh status**
- **FBC & Haemoglobinopathies**

Constipation in pregnancy

- **1st line is Lactulose**
- **2nd line is Senna, used for short periods**

Pain management during pregnancy

- As a junior doctor, Paracetamol is the **ONLY** analgesic to be prescribed

Antibiotics in pregnancy

Safe	Unsafe
<ul style="list-style-type: none"> • Cefalexin (Cephalosporin) • Amoxicillin <p><i>Should be avoided if there's penicillin allergy, avoid Co-amoxiclav as well</i></p>	<ul style="list-style-type: none"> • Trimethoprim (T – Teratogenic, Term OK) <ul style="list-style-type: none"> - Can lead to <u>NTD</u> - If it should be used, <u>folic acid 5mg</u> should be given • Nitrofurantoin (N – Neonatal hemolysis, term Not OK) <ul style="list-style-type: none"> - Shouldn't be used near term as it causes neonatal hemolysis • Ciprofloxacin <ul style="list-style-type: none"> - Can cause arthropathy

Notes

- A transdermal approach of COCP has less risk of venous **thromboembolism** than oral route
- Smoking is not a contraindication for **HRT** use but can reduce the efficacy of orally administered estrogen
- A vaginal estrogen cream would be appropriate if the patients ONLY had symptoms of **atrophic vaginitis**:
 1. Vaginal dryness
 2. Atrophic changes within the urogenital tract (frequency, urgency, nocturia, incontinence and recurrent infection)
 3. Dyspareunia, itching and burning
- If there's additional systemic symptoms (hot flushes, night sweats) → **HRT**
- Endocervical swab has NO value in cervical screening
- Permanent cessation of menstruation for 12 consecutive months with no other obvious physiological or pathological cause → **Menopause (51)**
- Cessation of menstruation >12 months along with climacteric symptoms → **Perimenopause**
- **Amniotic fluid embolism** can cause seizure post-delivery. However, it should occur within the first 30min
- 1ry amenorrhea + normal values → **Absent uterus**
- **Turner syndrome** and **absent ovaries** would have bloods with a low estradiol, high FSH and LH
- Patient in A&E with constant PID symptoms without discharge, best investigation → **US**, to exclude abscess
- Any pregnant woman with symptoms and/or signs suggestive of venous thromboembolism → **LMWH**
- An antibiotic that should be avoided in the 1st trimester → **Trimethoprim**