Progestogen only pill: missed pill

The missed pill rules for the progestogen only pill is as follows:

If < 3 hours* late

- continue as normal

If > 3 hours*

- take missed pill as soon as possible
- continue with rest of pack
- extra precautions (e.g. condoms) should be used until pill taking has been re-established for 48 hours

*for Cerazette (desogestrel) a 12 hour period is allowed

Combined oral contraceptive pill: special situations

Concurrent antibiotic use

- for many years doctors in the UK have advised that the concurrent use of antibiotics may interfere with the enterohepatic circulation of oestrogen and thus make the combined oral contraceptive pill ineffective - 'extra- precautions' were advised for the duration of antibiotic treatment and for 7 days afterwards
- no such precautions are taken in the US or the majority of mainland Europe
- in 2011 the Faculty of Sexual & Reproductive Healthcare produced new guidelines abandoning this approach. The latest edition of the BNF has been updated in line with this guidance
- precautions should still be taken with enzyme inducing antibiotics such as rifampicin

Switching combined oral contraceptive pills

- the BNF and Faculty of Sexual & Reproductive Healthcare (FSRH) appear to give contradictory advice. The Clinical Effectiveness Unit of the FSRH have stated in the Combined Oral Contraception guidelines that the pill free interval does not need to be omitted (please see link). The BNF however advises missing the pill free interval if the progesterone changes. Given the uncertainty it is best to follow the BNF

Sterilisation

Male sterilisation - vasectomy

- failure rate: 1 per 2,000*
- simple operation, can be done under LA (some GA), go home after a couple of hours
- doesn't work immediately
- semen analysis needs to be performed twice following a vasectomy before a man can have unprotected sex (usually at 16 and 20 weeks)
- complications: bruising, haematoma, infection, sperm granuloma, chronic testicular pain (affects between 5-30% men)
- the success rate of vasectomy reversal is up to 55%, if done within 10 years, and approximately 25% after more than 10 years

Female sterilisation

- failure rate: 1 per 200*
- usually done by laparoscopy under general anaesthetic
- generally done as a day case
- many different techniques involving clips (e.g. Filshie clips) , blockage, rings (Falope rings) and salpingectomy
- complications: increased risk of ectopic if sterilisation fails, general complications of GA/laparoscopy
- the current success rate of female sterilisation reversal is between 50-60%

*source = Royal College of Obstetricians and Gynaecologists

Intrauterine contraceptive devices

Intrauterine contraceptive devices comprise both conventional copper intrauterine devices (IUDs) and levonorgestrel-releasing intrauterine systems (IUS, Mirena). The IUS is also used in the management of menorrhagia

Effectiveness

- both the IUD and IUS are more than 99% effective

Mode of action

- IUD: primary mode of action is prevention of fertilisation by causing decreased sperm motility and survival (possibly an effect of copper ions)
- IUS: levonorgestrel prevents endometrial proliferation and causes cervical mucous thickening

Counselling

- IUD is effective immediately following insertion
- IUS can be relied upon after 7 days

Potential problems

- IUDs make periods heavier, longer and more painful
- the IUS is associated with initial frequent uterine bleeding and spotting. Later women typically have intermittent light menses with less dysmenorrhoea and some women become amenorrhoeic
- uterine perforation: up to 2 per 1000 insertions
- the proportion of pregnancies that are ectopic is increased but the absolute number of ectopic pregnancies is reduced, compared to a woman not using contraception
- infection: there is a small increased risk of pelvic inflammatory disease in the first 20 days after insertion but after this period the risk returns to that of a standard population
    - expulsion: risk is around 1 in 20, and is most likely to occur in the first 3 months

Contraceptives - time until effective (if not first day period):

- instant: IUD
- 2 days: POP
- 7 days: COC, injection, implant, IUS

Post-partum contraception

After giving birth women require contraception after day 21.

Progestogen only pill (POP)

- the FSRH advise 'postpartum women (breastfeeding and non-breastfeeding) can start the POP at any time postpartum.'
- after day 21 additional contraception should be used for the first 2 days
- a small amount of progestogen enters breast milk but this is not harmful to the infant

Combined oral contraceptive pill (COC)

- absolutely contraindicated - UKMEC 4 - if breast feeding < 6 weeks post-partum
- relatively contraindicated - UKMEC 3 - if breast feeding 6 weeks - 6 months postpartum
- the COC may reduce breast milk production in lactating mothers
- may be started from day 21 - this will provide immediate contraception
- after day 21 additional contraception should be used for the first 7 days

Lactational amenorrhoea method (LAM)

- is 98% effective providing the woman is fully breast-feeding (no supplementary feeds), amenorrhoeic and < 6 months post-partum

Combined oral contraceptive pill: contraindications

The decision of whether to start a women on the combined oral contraceptive pill is now guided by the UK Medical Eligibility Criteria (UKMEC). This scale categorises the potential cautions and contraindications according to a four point scale, as detailed below:

- UKMEC 1: a condition for which there is no restriction for the use of the contraceptive method
- UKMEC 2: advantages generally outweigh the disadvantages
- UKMEC 3: disadvantages generally outweigh the advantages
- UKMEC 4: represents an unacceptable health risk

Examples of UKMEC 3 conditions include

- more than 35 years old and smoking less than 15 cigarettes/day
- BMI > 35 kg/m^2*
- migraine without aura and more than 35 years old
- family history of thromboembolic disease in first degree relatives < 45 years
- controlled hypertension
- immobility e.g. wheel chair use
- breast feeding 6 weeks - 6 months postpartum

Examples of UKMEC 4 conditions include

- more than 35 years old and smoking more than 15 cigarettes/day
- migraine with aura
- history of thromboembolic disease or thrombogenic mutation
- history of stroke or ischaemic heart disease
- breast feeding < 6 weeks post-partum
- uncontrolled hypertension
- breast cancer
- major surgery with prolonged immobilisation

Diabetes mellitus diagnosed > 20 years ago is classified as UKMEC 3 or 4 depending on severity

*The UKMEC 4 rating for a BMI > 40 kg/m^2 was removed in 2009.

Injectable contraceptives

Depo Provera is the main injectable contraceptive used in the UK*. It contains medroxyprogesterone acetate 150mg. It is given via in intramuscular injection every 12 weeks. **It can however be given up to 14 weeks after the last dose without the need for extra precautions****

The main method of action is by inhibiting ovulation. Secondary effects include cervical mucus thickening and endometrial thinning.

Disadvantages include the fact that the injection cannot be reversed once given. There is also a potential delayed return to fertility (maybe up to 12 months)

Adverse effects

- irregular bleeding
- weight gain
- may potentially increased risk of osteoporosis: should only be used in adolescents if no other method of contraception is suitable
- not quickly reversible and fertility may return after a varying time

*Noristerat, the other injectable contraceptive licensed in the UK, is rarely used in clinical practice. It is given every 8 weeks

**the BNF gives different advice, stating a pregnancy test should be done if the interval is greater than 12 weeks and 5 days - this is however not commonly adhered to in the family planning community

Combined oral contraceptive pill: missed pill

The advice from the Faculty of Sexual and Reproductive Healthcare (FSRH) has changed over recent years. The following recommendations are now made for women taken a combined oral contraceptive (COC) pill containing 30-35 micrograms of ethinylestradiol

If 1 pill is missed (at any time in the cycle)

- take a pill as soon as possible and then continue taking pills daily, one each day
- no additional contraceptive protection needed

If 2 or more pills missed

- take a pill as soon as possible and then continue taking pills daily, one each day
- the women should use condoms or abstain from sex until she has taken pills for 7 days in a row
- if pills are missed in week 1 (Days 1-7): emergency contraception should be considered if she had unprotected sex in the pill-free interval or in week 1

- if pills are missed in week 2 (Days 8-14): after seven consecutive days of taking the COC there is no need for emergency contraception*
- if pills are missed in week 3 (Days 15-21): she should finish the pills in her current pack and start a new pack the next day; thus omitting the pill free interval

*theoretically women would be protected if they took the COC in a pattern of 7 days on, 7 days off

Progestogen only pill: advantages/disadvantages

Advantages

- highly effective (failure rate = 1 per 100 woman years)
- doesn't interfere with sex
- contraceptive effects reversible upon stopping
- can be used whilst breast-feeding
- can be used in situations where the combined oral contraceptive pill is contraindicated e.g. in smokers > 35 years of age and women with a history of venous thromboembolic disease

Disadvantages

- irregular periods: some users may not have periods whilst others may have irregular or light periods. This is the most common adverse effect
- doesn't protect against sexually transmitted infections
- increased incidence of functional ovarian cysts
- common side-effects include breast tenderness, weight gain, acne and headaches. These symptoms generally subside after the first few months

Progestogen only pill: types

Second generation

- norethisterone
- levonorgestrel
- ethynodiol diacetate

Third generation

- desogestrel (Cerazette)

Cerazette

- new third generation type of progestogen only pill (POP) containing desogestrel
- inhibits ovulation in the majority of women
- users can take the pill up to 12 hours late rather than 3 hours like other POPs

Implantable contraceptives

Implanon is a non-biodegradable subdermal contraceptive implant which is currently being phased out and replaced by Nexplanon. From a pharmacological perspective Nexplanon is the same as Implanon. The two main differences are:

- the applicator has been redesigned to try and prevent 'deep' insertions (i.e. subcutaneous/intramuscular)
- it is radiopaque and therefore easier to locate if impalpable

Both versions slowly releases the progestogen hormone etonogestrel. They are typically inserted in the proximal non-dominant arm, just overlying the tricep. The main mechanism of action is preventing ovulation. They also work by thickening the cervical mucus.

Key points

- highly effective: failure rate 0.07/100 women/year
- long-acting: lasts 3 years
- doesn't contain oestrogen so can be used if past history of thromboembolism, migraine etc
- can be inserted immediately following a termination of pregnancy

Disadvantages include

- the need for a trained professional to insert and remove device
- additional contraceptive methods are needed for the first 7 days if not inserted on day 1 to 5 of a woman's menstrual cycle

Adverse effects

- irregular/heavy bleeding is the main problem
- 'progestogen effects': headache, nausea, breast pain

Intrauterine contraceptive devices: insertion

Very few contraindications to insertion of an intrauterine contraceptive device exist. Below are some conditions mentioned by the Faculty of Family Planning and Reproductive Health Care. Please see the link for the full list.

UKMEC Category 3 (Risks outweigh benefits)*

- between 48 hours and 4 weeks postpartum (increased risk of perforation)
- initiation of method** in women with ovarian cancer

UKMEC Category 4 (Unacceptable risk)

- pregnancy
- current pelvic infection, puerperal sepsis, immediate post-septic abortion
- unexplained vaginal bleeding which is suspicious
- uterine fibroids or uterine anatomical abnormalities distorting the uterine cavity

NICE produced guidelines in 2005 on screening for sexually transmitted infections (STI) before insertion of an intrauterine contraceptive device

- *Chlamydia trachomatis* in women at risk of STIs
- *Neisseria gonorrhoeae* in women at risk of STIs, in areas where it is prevalent
- any STIs in women who request it

For women at increased risk of STIs prophylactic antibiotics should be given before inserting an intrauterine contraceptive device if testing has not yet been completed

*current venous thromboembolism (on anticoagulants) has recently been downgraded from UKMEC 3 to UKMEC 1

**as opposed to continuation of the method