



Contraceptive Update



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The history of contraception



- 1903-1904 NSW Royal Commission on the Decline of the Birth-Rate in NSW showed range of methods were used:
 - Withdrawal, douches, sponges and pessaries and condoms
- Diaphragm introduced in the 1920s
- Oral contraceptive pills introduced in 1961
- “modern” IUDs from mid-1960s
 - LNG IUS (Mirena) 2001
- Medroxyprogesterone acetate (Depo/Ralovera) 1994
- Contraceptive Implant (Implanon) introduced in 2001
- LNG EC (Postinor) 2002
- Ethinyl oestradiol/desorgestrol vaginal ring (Nuvaring) 2006

*Australian Bureau of Statistics- Australian Social Trends 1998



2001: Australian women 18-49 y



Contraceptive Method	% of women
COC	26.8
Barrier method	23.4
Sterilisation (male/female)	20
Withdrawal/intermittent abstinence	9.9
Injection	1.9
IUD	1.2
Infertility	10.4
Other or none	32.8

Trends in contraception



- Review of the Pill
 - packaging changes
 - medical contraindications
 - drug interactions
- Alternative delivery systems
 - ring
 - patch
 - intrauterine device
- Set and forget methods
 - reversible
 - long acting
 - progestogen only
 - often cause irregular bleeding
- Non-surgical sterilisation

Contraceptive failure



- In 1995-1996, 91,900 abortions were performed in Australia



- Annual abortion rate 22.2/1,000 women aged 15-44



- 19.8% of women aged 45–50 years has had at least one induced abortion*



*Henshaw SK et al, Int Fam Plann Perspect 1999



Contraceptive failure



- Method failure
- Practitioner failure



- The Pill
 - Choice of Pill
 - Advice re starting
 - Advice re using (missed pills)



- User failure
 - Compliance





Combined oral contraceptive pill





ADVANTAGES



Contraceptive:	Non-Contraceptive:
Reversible	Menstrual regulation PMS reduction
Affordable	Improves acne
	Reduced Risk: <ul style="list-style-type: none">-endometrial and ovarian cancer- functional ovarian cysts- benign breast disease- PID





Packaging

- 4 types of packaging
- Work out which are placebos and which aren't
- Designed to start with an active pill Day 1 to 5 of cycle
- Long duration of action (can take Pill up to 24hrs late)

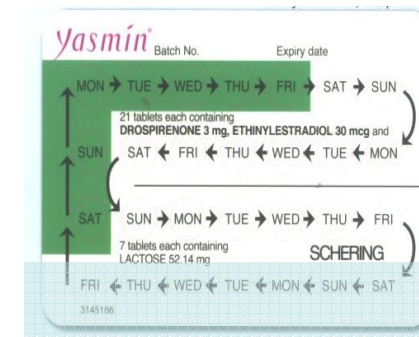
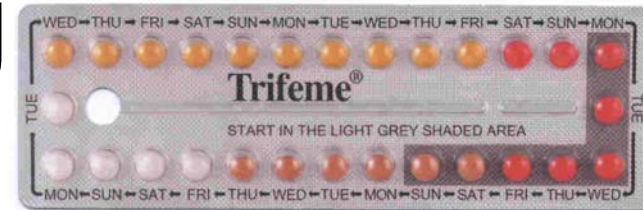




Table 2.1⁶⁴ Combined oral contraceptive (COC) users and risk of venous thromboembolism[#]

	<i>Relative risk</i>	<i>Absolute risk per 100,000 woman years</i>
Not using COC		5 in 100 000
COC containing levonorgestrel or norethisterone	3-fold increase	15 in 100 000
COC containing gestodene or desogestrel	5-fold increase	25 in 100 000
Pregnancy	12-fold increase	60 in 100 000

Contraception: an Australian clinical practice handbook (first edition)
Sexual Health and Family Planning Australia (2006), Table 2.1 page 25



WHOMECS



WHO Category 1

A condition for which there is no restriction for the use of the contraceptive method

WHO Category 2

A condition where the advantages of using the method generally outweigh the theoretical or proven risks

WHO Category 3

A condition where the theoretical or proven risks usually outweigh the advantages of using the method

WHO Category 4

A condition which represents an unacceptable health risk if the contraceptive method is used



Faculty of Family Planning and Reproductive Health Care Clinical Effectiveness Unit Guidance

First Prescription of Combined Oral Contraception

Updated Jan 2007

www.ffprhc.org.uk

Journal of Family Planning and Reproductive Health Care 2003 :29(4)

WHOMECS



<i>WHO Category 4</i>	Medical Condition
Absolute contraindication Conditions which represent unacceptable health risks	<ul style="list-style-type: none"> • Breast-feeding and less than 6 weeks postpartum • Ischaemic heart disease or stroke • Smoking 15 or more cigarettes daily in a woman aged 35 years or more • Raised blood pressure (systolic ≥ 160 or diastolic ≥ 100 mmHg) • Hypertension with vascular disease • Migraine with aura • Diabetes mellitus with vascular complications (including hypertension, nephropathy, retinopathy or neuropathy) or of >20 years duration^a • Past or present evidence of deep vein thrombosis or pulmonary embolism (DVT/PE) • Major surgery with prolonged immobilisation. • Known thrombogenic mutations (e.g., Factor V Leiden, prothrombin mutation, protein S, protein C and antithrombin deficiency) • Complicated valvular heart disease^b • Current breast cancer • Active viral hepatitis • Benign or malignant liver tumour • Severe (decompensated) cirrhosis

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WHOMECS



WHO Category 3	Medical condition
<p>Strong relative contraindication</p> <p>Conditions where the risks usually outweigh the advantages</p>	<ul style="list-style-type: none"> • Smoking up to 15 cigarettes daily in a woman aged 35 years or more (See Note) • Raised blood pressure (systolic 140-159 or diastolic 90-99 mmHg) (See Note) • History of hypertension (where blood pressure cannot be evaluated) or adequately controlled hypertension, where blood pressure can be evaluated (See Note) • Known hyperlipidaemia (See Note) • Migraine without aura in a woman aged 35 years or more (if migraine develops during use of COCs, it becomes a category 4 contraindication) (See Note) • Diabetes mellitus with vascular complications (including hypertension, nephropathy, retinopathy or neuropathy) or of >20 years duration^a • History of breast cancer with no evidence of disease for the last 5 years • Breast-feeding from 6 weeks to less than 6 months postpartum • Less than 21 days postpartum • Mild compensated cirrhosis • History of cholestasis related to past COC use • Symptomatic gallbladder disease • Drug treatment affecting liver enzymes: rifampicin and certain anticonvulsants (phenytoin, carbamazepine, barbiturates, primidone, topiramate, oxcarbazepine).

WHOMECS



WHO Category 2	Medical condition
Generally safe to use	
<p>Conditions where the advantages generally outweigh the risks</p>	<ul style="list-style-type: none"> • Smoking in a woman aged less than 35 years (See Note) • Migraine without aura in a woman aged less than 35 years (if migraine develops during COC use, it becomes Category 3) (See Note) • Diabetes mellitus without vascular complications (See Note) • Age ≥ 40 years • Family history of DVT/PE (in first-degree relatives) • Breast-feeding and 6 months or more postpartum • Superficial thrombophlebitis • History of high blood pressure during pregnancy (where current blood pressure is measurable and normal) • Uncomplicated vascular heart disease • Unexplained vaginal bleeding, suspicious of a serious condition, before evaluation • Cervical intraepithelial neoplasia (CIN) or cervical cancer (awaiting treatment) • Undiagnosed breast mass • Symptomless gallbladder disease • Sickle cell disease • Obesity BMI ≥ 30 • Treatment with griseofulvin • Antiretroviral therapy

Drug Interactions with COC



- Ethinyloestradiol is metabolised by CYP3A4
 - susceptible to interactions with other drugs that inhibit enzyme
 - may lead to contraceptive failure and breakthrough bleeding



- Alternatives
 - barrier methods, with high oestrogen COC
 - IUDs (hormonal or copper)
 - POC (including depot preparations)





Drug interactions: examples



– Antiepileptics

- Carbamazepine, Phenytoin, Phenobarbitone, Primidone, Topiramate



– Antibiotics

- Rifampicin, Rifabutin

– Anti HIV Medications

- Protease inhibitors and non-nucleoside reverse transcriptase inhibitors



– Anti Fungal Drugs

- Griseofulvin

– St Johns Wort

– Newer highly specialized drugs:

- aprepitant (chemotherapy-associated nausea and vomiting)
- bosentan (pulmonary hypertension)
- modafinil (narcolepsy)





Emergency Contraception



Hormonal contraception

LNG 0.75 mg 2 stat within 5 days of UPSI

Schedule 3 drug - OTC in pharmacies



Most effective in first 24 hours

COST – up to \$45 in some pharmacies

HCC – script for LNG 30 mcg Microlut 50 tabs stat



Increased access does not increase use as regular contraception



Ref: Glasier A., Baird D. "The effects of self-administered contraception" **New England Journal of Medicine** 1998 339:1-4



Trends in Contraception



Patterns of use

- Increasing acceptance of amenorrhoea

Research and practice show women don't want to have periods if not pregnant

Tricycling/continuous pill



- New products

Yaz/ Valette COC with Dienogest (PMS, acne/seborrhoea)

24/4 (reduced interval)

Increased hormones (63/7) 'Seasonale'



- New delivery systems

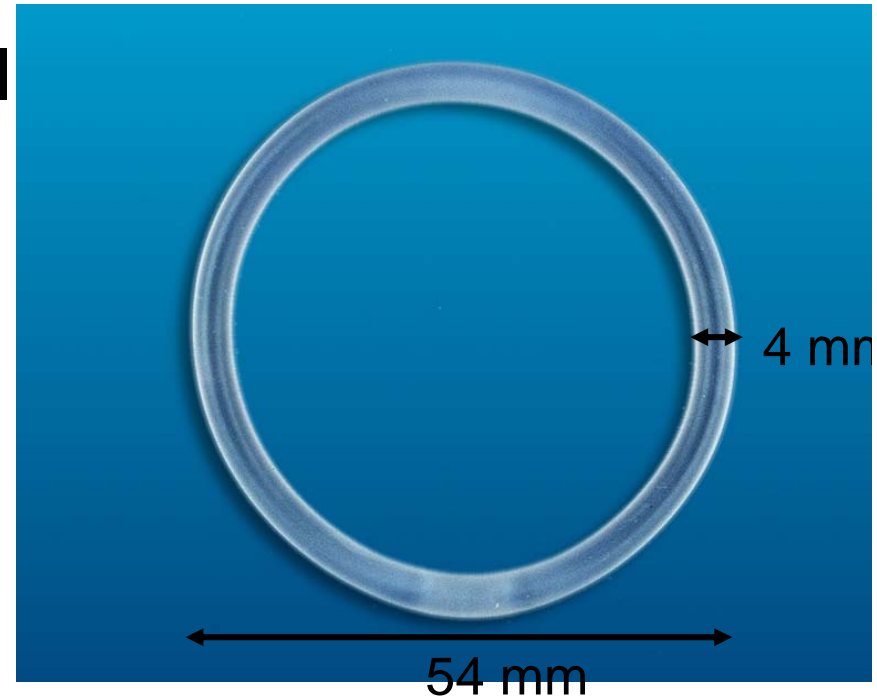




Contraceptive Vaginal Ring



- Daily release:
 - 120 μg etonogestrel
 - 15 μg ethinylestradiol
- 1 ring per cycle
- Efficiency ~ Pill
- Regimen:
 - 3 weeks of ring-use
 - 1 ring-free week



Transdermal patch



3 patch system

- Apply 1 patch a week for 3 weeks
- Apply each patch same day of the week
- 1 week is patch-free, withdrawal bleed

Efficacy:

- Patch similar to COC

Compliance:

- Patch: 88% vs
COC: 78%



Intra-uterine devices



- Excellent set and forget method



- Relatively under-used in Australia



- Copper and progesterone devices



- Level 1 indemnity with MIGA

- Infection concern

Intra-uterine devices



- Infection and IUDs

- Increased infection in 20 days after insertion
- Associated with insertion
- Risk returns to background risk of population after insertion
- No risk in Chinese populations without STIs*



* WHO. Mechanism of action, safety and efficacy of intrauterine devices. WHO Technical Report Series 1987 753: 1 - 91



Multi-load

- 5 years
- Simple insertion
- Blue strings



Cu T 380A

- 8, 10, 13 years
- White strings



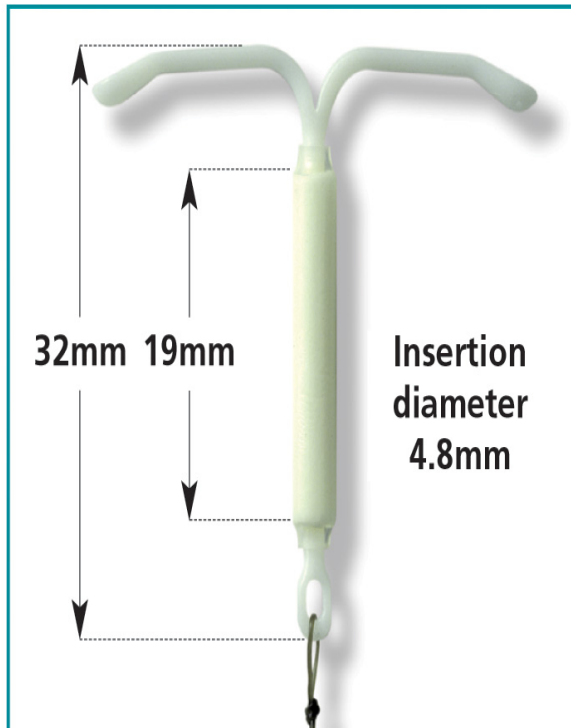
Both available in Australia

Heavier more painful periods but no hormones

Inserted Day 1 -14



Levonorgestrel IUD



- Releases 20 mcg LNG/ 24 hrs
- Primary action cervical mucus thickening/ variable anovulation
- Works for 5 years
- Decreases bleeding and pain
- Causes irregular bleeding
- Minimal systemic absorption of progesterone
- Plasma oestradiol normal

Contraceptive implant



Implanon

- Polymer rod releasing etonogestrol 30mcg/24 hours
- Mechanism of Action – suppression of ovulation, alteration of cervical mucus, uterus lining
- 3 years duration
- 0.07 pregnancies per 100 women years
- Inserted into inner upper arm superficially, Day 1-5
- On the PBS
- Side Effects: irregular bleeding ++
- Rapid return of fertility on removal





Bleeding on POC



All POC alters bleeding patterns

- Cycle is not established
- Mostly volume is decreased
- Early bleeding the heaviest
- Non hormonal interventions
- Hormonal intervention



Bleeding on POC



Non Hormonal Interventions

- Pre-insertion counselling
- NSAids
- Tranexamic acid
- ? Doxycycline 100mg bd/ Mifepristone



Hormonal interventions

- Increase progestogen
- Add oestrogen
- Add antiprogestogen



No permanent effect on bleeding patterns



Weisberg et al 2006 'Pilot study to assess the effect of 3 short-term treatments on bleeding compared to placebo in women using Implanon' Human Reproduction 21:1 295 - 302



Non-surgical Sterilisation



- **ESSURE**

- Hysteroscopic insertion in conscious women
- Microcoil in the base of the Fallopian tube
- Provokes intense local reaction
- Takes 3 months to close over
- Costly device
- Doesn't need an operation/anaesthetic
- Available in public hospitals
- Irreversible contraception



Summary



- Most common contraceptive choice is the Pill

- medical contraindications

- drug interactions

- Liver enzyme inducers and contraception
- Mood stabilisers (valproate/carbamazepine)



- Variable delivery systems

- Set and forget methods increasingly common



- Don't forget contraception

