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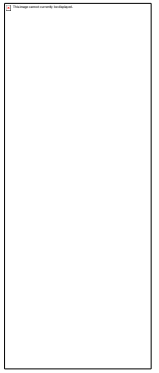

A member of the Russell Group

Contraception through the life stages

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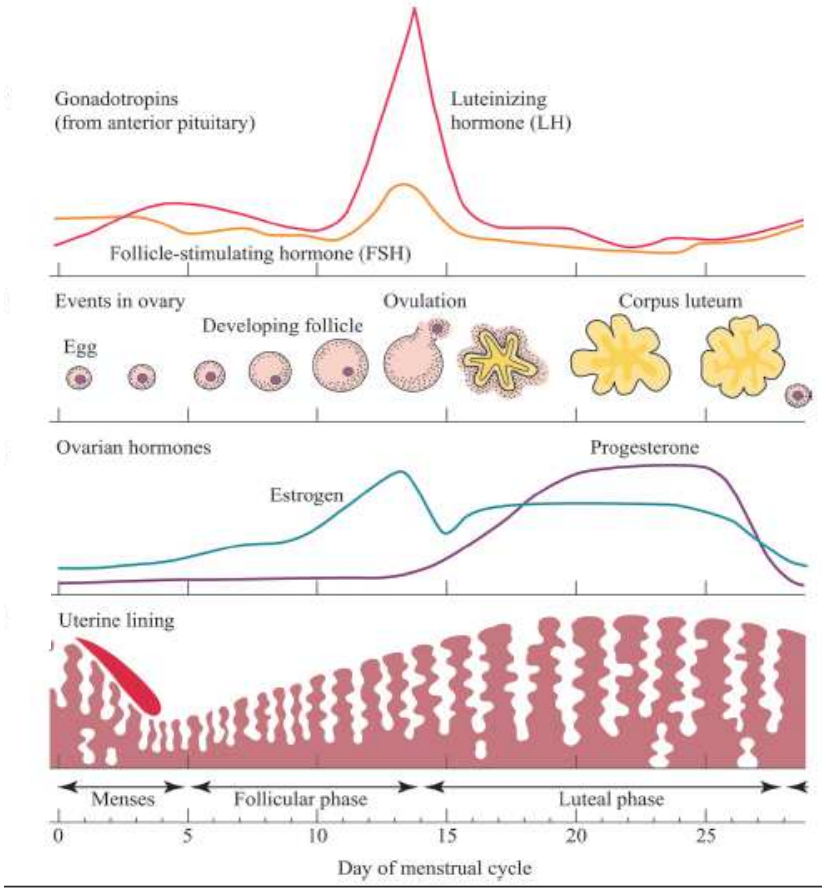
Declaration of interests

I have received honoraria from:
Bayer, MSD, Pfizer, Astellas, GSK, Almirall, HRA Pharma and Hologic
I have been sponsored to attend conferences by Bayer, MSD and GSK
I have undertaken clinical trials sponsored by Bayer and HRA-Pharma

Learning Objectives

- Contraceptive menu including emergency contraception and quick starting
  - LARCs, MARCs, SARCs and NARCs!
- Contraception through the life stages
- Contraception with co-existing morbidities

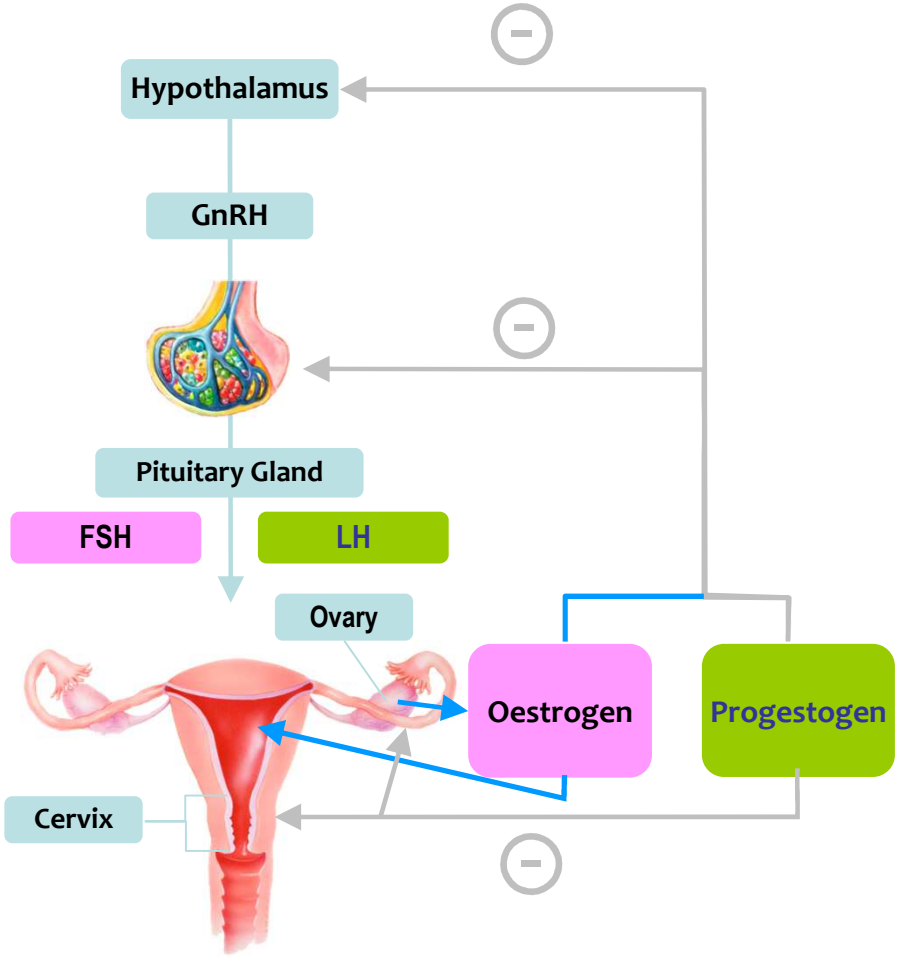
Menstrual Cycle Regulation



1. Hypothalamus releases GnRH, stimulating the pituitary
2. FSH secreted from pituitary stimulates follicles
3. Follicles produce oestrogen- negative feedback turning off FSH release
4. Critical level of E2 stimulates -LH peak- positive feedback - ovulation
5. Corpus Luteum secretes E2 and P4 life span 12-14 days

GnRH = gonadotropin releasing hormone

Mechanisms of Action of COC Components



Mechanism	Action
Progestogen	
↓ LH	↓ ovulation
Thickens cervical mucus	↓ sperm penetration of cervix
Oestrogen	
↑ progesterone receptors (PR)	↓ BTB
↓ FSH	↓ development of dominant follicle

Contraceptive Menu

Hormonal

Combined hormonal
- COC (SARCs)
- Patch
- Ring (MARCs)

Progestogen only
- POP
- Injectable
- Implant
- IUS (LARCs)

EHC

Non-hormonal

Natural Family Planning

Withdrawal

Barriers
- Condoms
- Diaphragm(NARCs)!

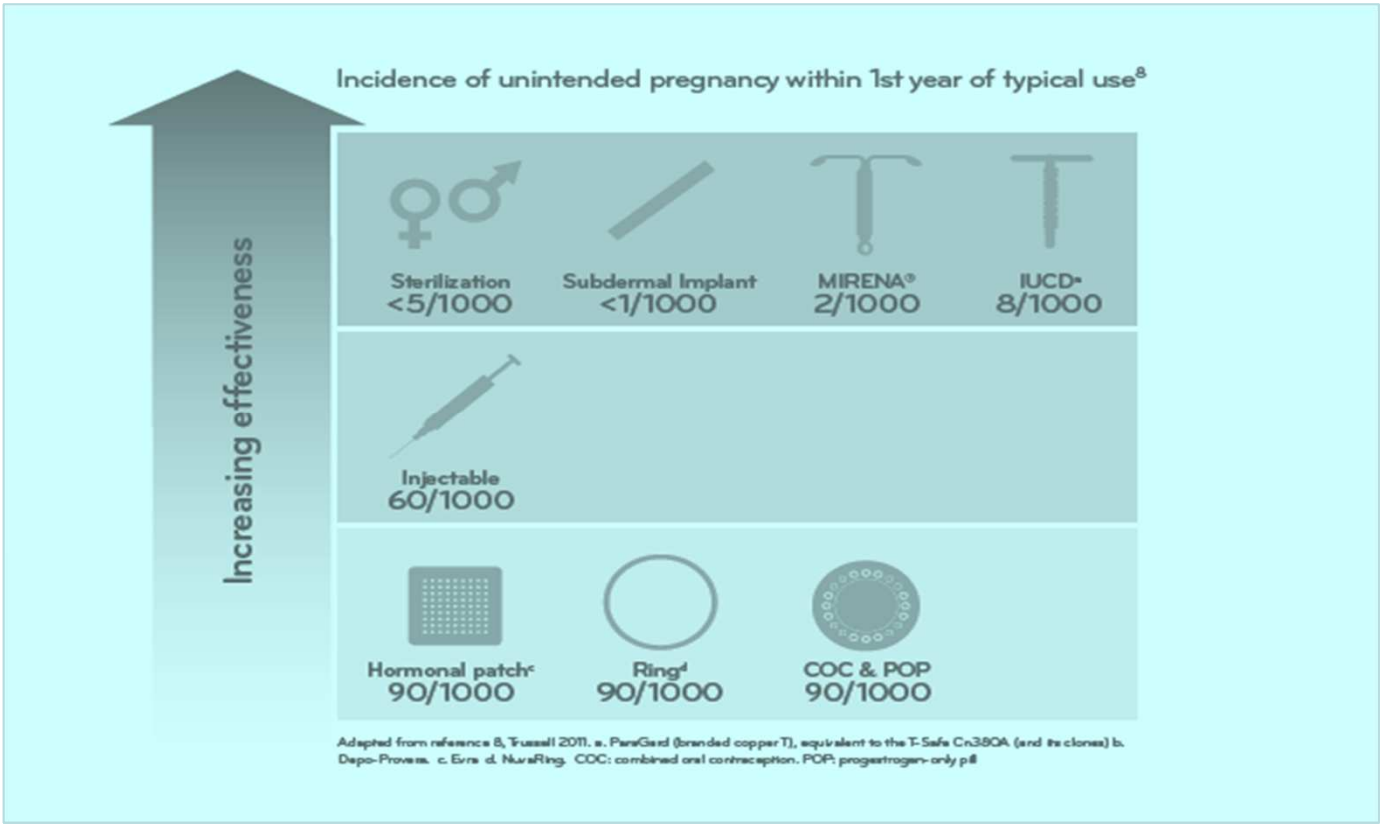
Copper IUDs

Sterilisation

UK teenage pregnancy rates are the highest in Europe

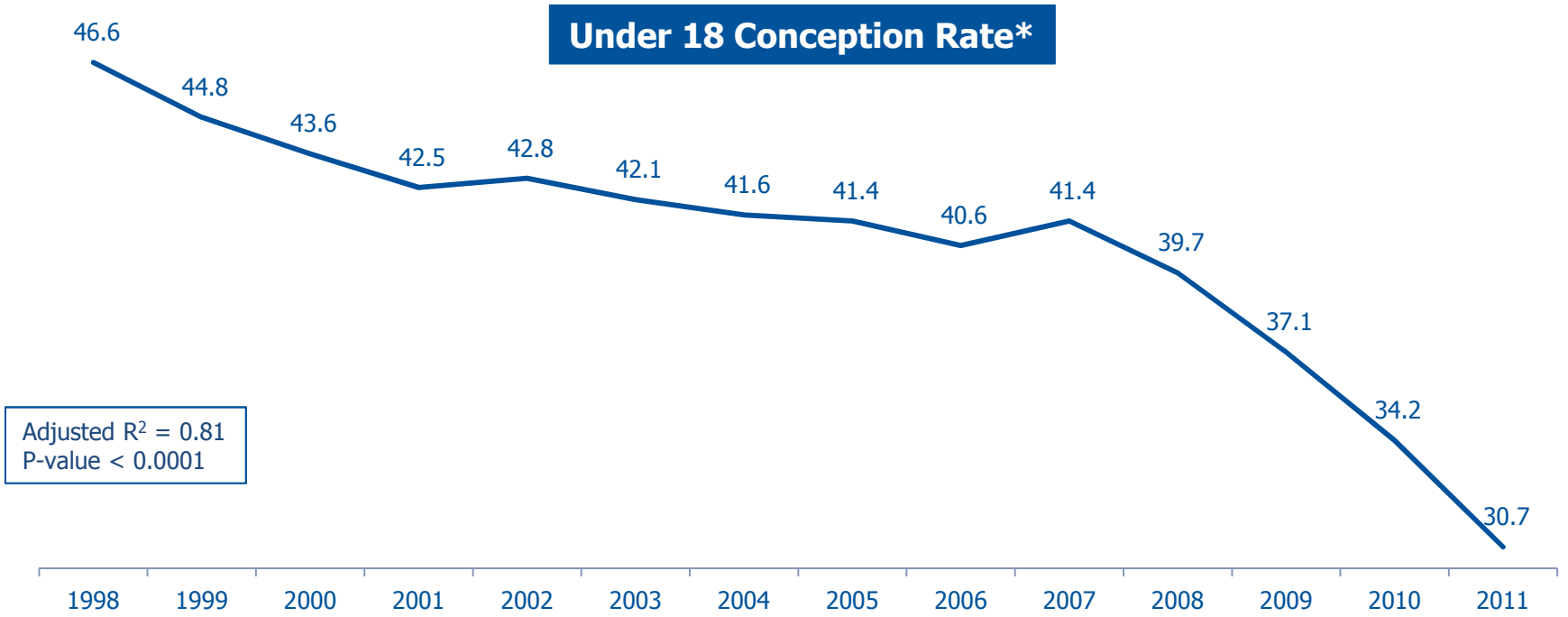
Country	Teenage birth rate (per 1,000 women aged 15-19)	Country	Teenage birth rate (per 1,000 women aged 15-19)
Korea	2.9	Germany	13.1
Japan	4.6	Austria	14.0
Switzerland	5.5	Czech Republic	16.4
The Netherlands	6.2	Australia	18.4
Sweden	6.5	Ireland	18.7
Italy	6.6	Poland	18.7
Spain	7.9	Canada	20.2
Denmark	8.1	Portugal	21.2
Finland	9.2	Iceland	24.7
France	9.3	Hungary	26.5
Luxembourg	9.7	Slovak Republic	26.9
Belgium	9.9	New Zealand	29.8
Greece	11.8	**United Kingdom**	**30.8**
Norway	12.4	USA	52.1

LARCs offer the highest levels of efficacy



Incidence of unintended pregnancy within 1st year of typical use[1]

Change in teenage pregnancy over time

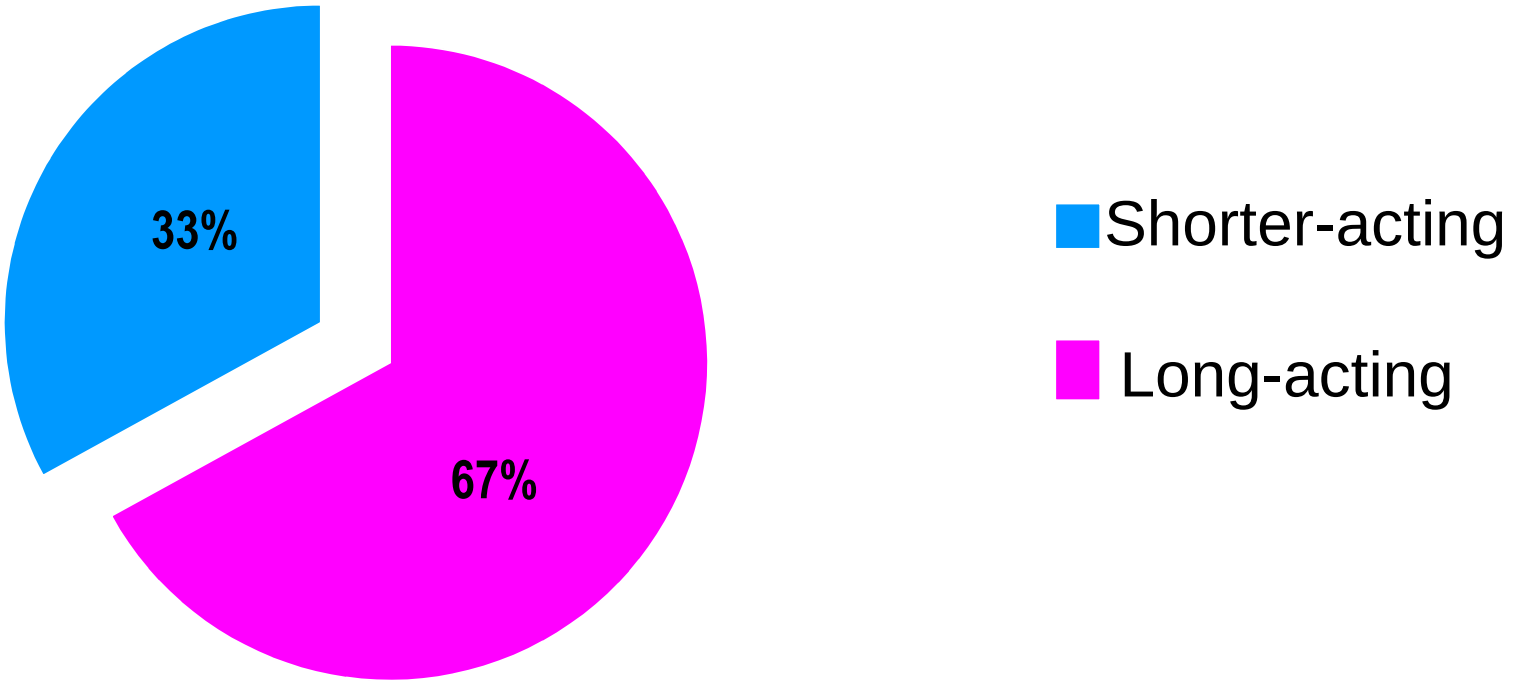


A **steady and statistically significant decrease in teenage pregnancy** has been observed in England since 1998
A steeper decrease has been observed since 2007

* per 1,000 Women aged 15-17

Providing contraceptive choice demonstrates that the majority of women will choose LARCs

Contraceptive method choices after counselling (N=2,500)[1]

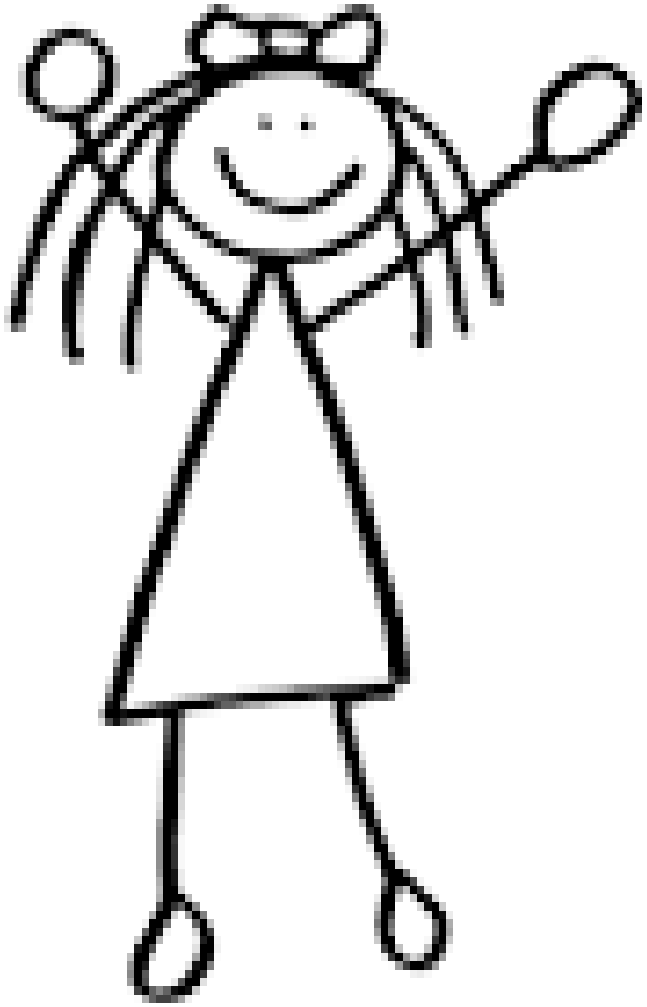


LARC=long-acting reversible contraceptive.

1.Secura GM et al. *Am J Obstet Gynecol.* 2010;203:115.e1–115.e7
2.Mestad et al. Contraception 2011;84:495-8.

69% of 14-17 year-olds chose a LARC with 63% of these choosing an implant[2]

The Adolescent



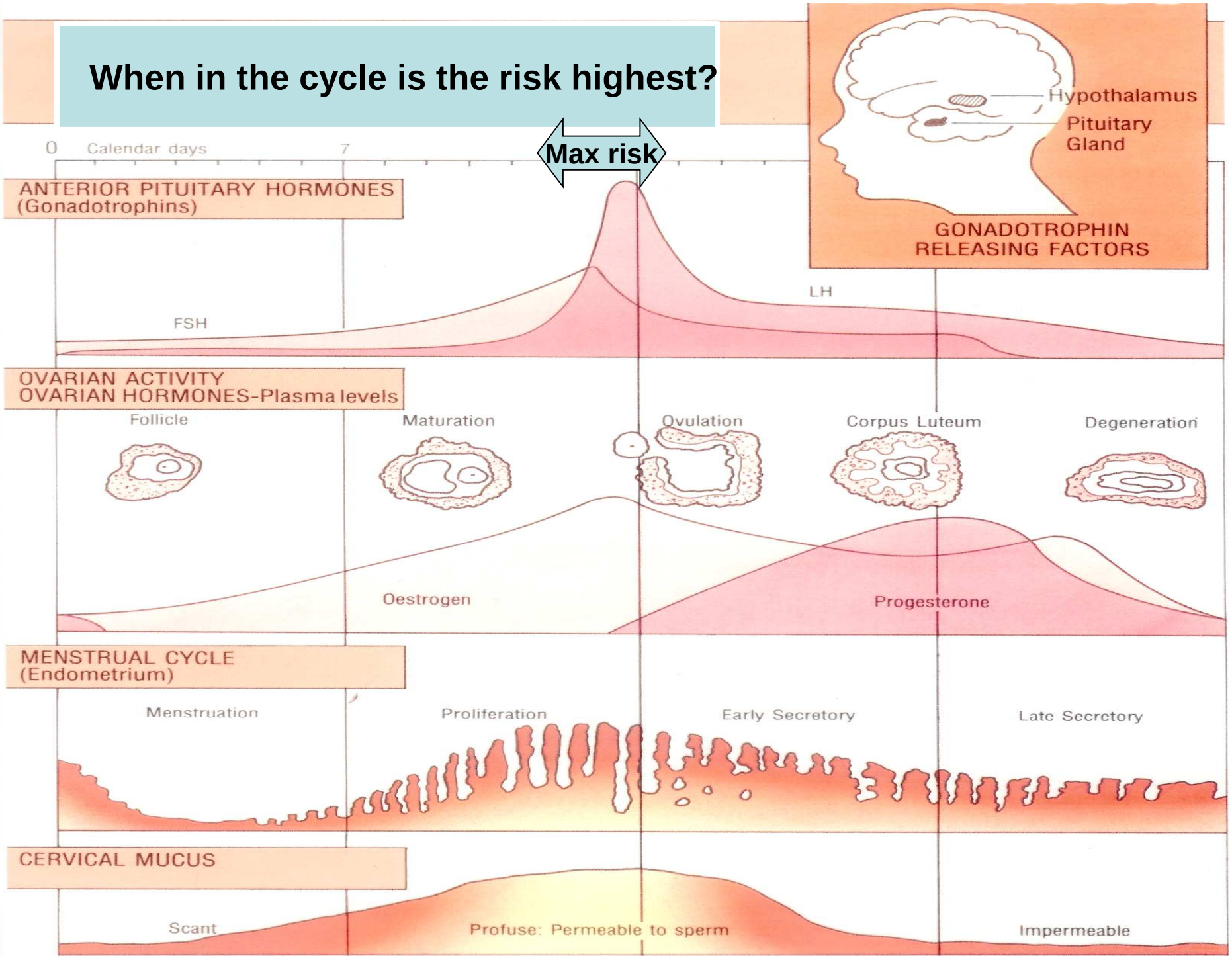
A fifteen year old school girl attends your emergency surgery on Monday afternoon with her female friend of the same age. Her friend asks if you can provide the “morning after pill”?

Her friend has the “rod” and she asks whether your patient can have one fitted today whilst she is here??

Management of a request for Emergency Contraception What do you need to know?

Timing of UPSI ?
LMP or withdrawal bleed ?
Consider possibility of an implanted pregnancy
Drug interactions?
Medical eligibility?
Explain **all** method options
Discuss on-going contraception – quick starting/bridging
Discuss STIs
Arrange any necessary referral/follow-up

When in the cycle is the risk highest?



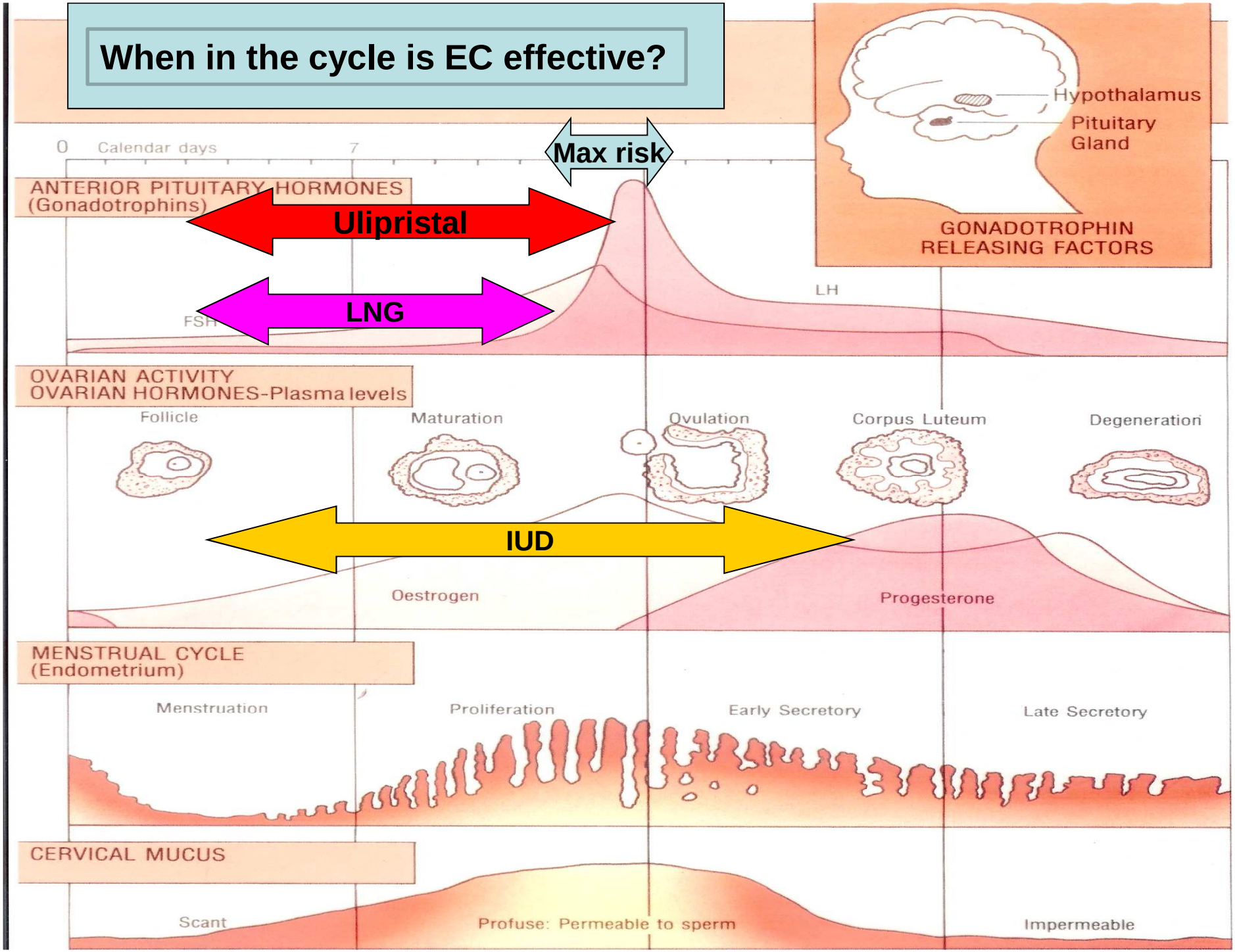
Available options

Copper IUD

Ulipristal Acetate (UPA)

Levonorgestrel (LNG)

When in the cycle is EC effective?



Can a progestogen only implant be inserted at the same time as emergency contraception is provided?

A – yes

B - no

Nexplanon® Helpful Acronym!

New applicator

Easy to insert with appropriate training

Xcludes pregnancy by ovulation inhibition/mucus

Pattern of bleeding

Low normal oestrogen

Abnormal bleeding – management strategies

Not happy – can be removed

Other side effects

Not many contraindications

Is an injectable method an option?

A – YES

B - NO

How do we manage irregular bleeding with a progestogen only method?

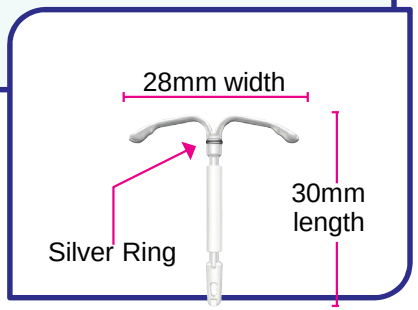
- Implant

- Injectable

Changing delivery route
Jaydess® and Mirena®: key comparisons

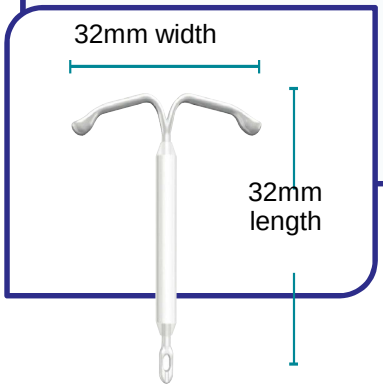
jaydess®
13.5 MG INTRAUTERINE DELIVERY SYSTEM
LEVONORGESTREL

- Up to 3 years contraceptive cover[1]
- Smallest IUS
- Lowest daily hormone dose
- Insertion tube diameter 3.8mm



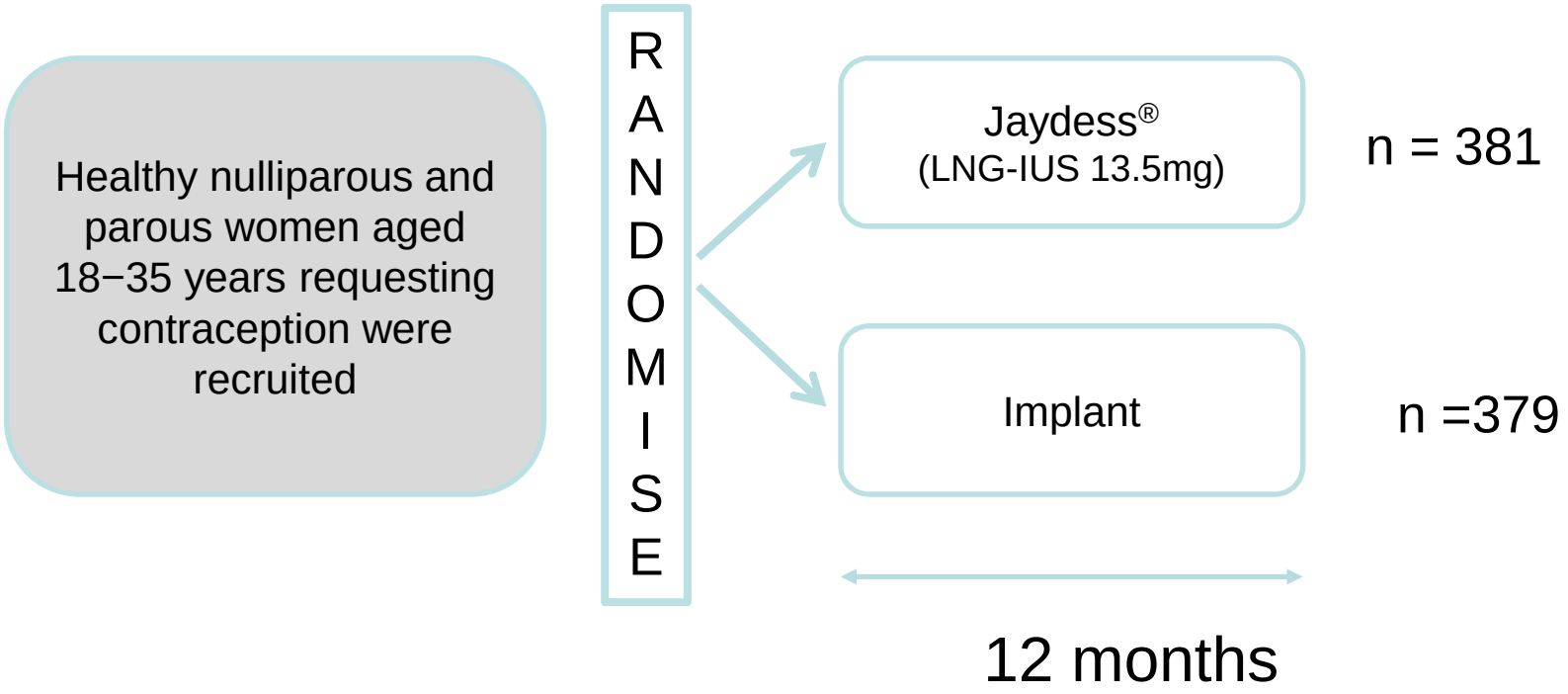
Mirena®
levonorgestrel

- Up to 5 years contraceptive cover[2]
- Up to 5 years treatment for Heavy Menstrual Bleeding (HMB)
- Mirena® is indicated for protection from endometrial hyperplasia during oestrogen replacement therapy for up to 4 years[2]
- Insertion tube diameter 4.4mm

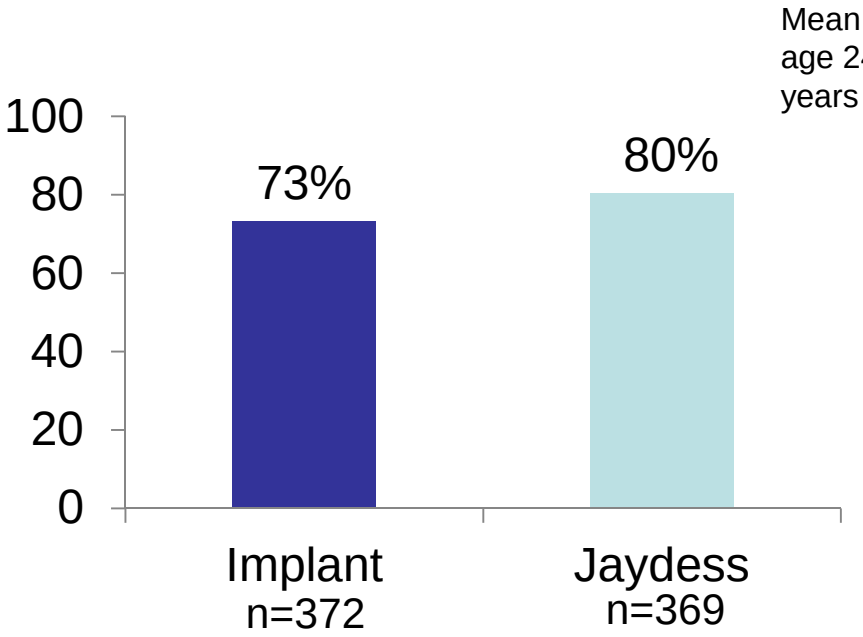


Jaydess compared with Implant

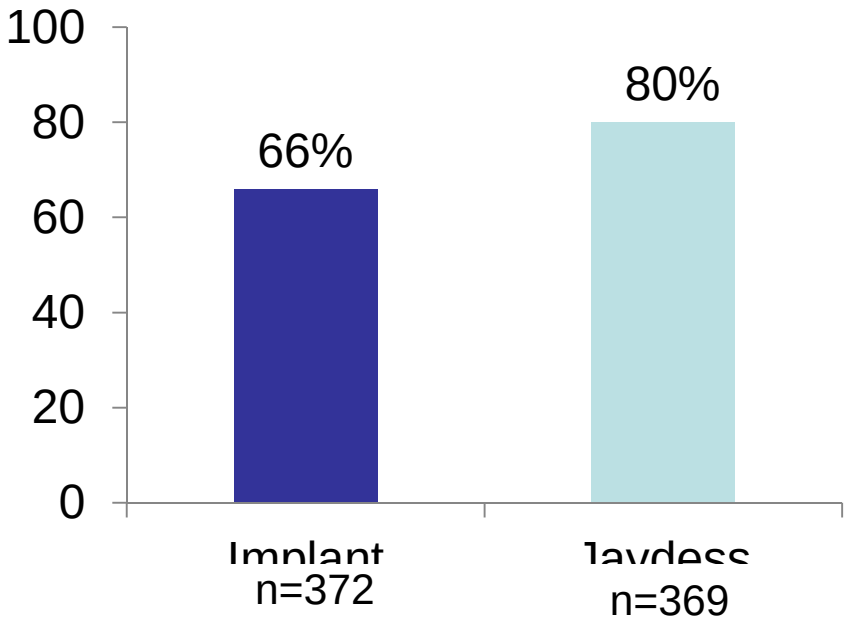
Randomised, open-label, multi-centre study



Overall Continuation for Jaydess® significantly higher vs. Implant[1]



% Continuation at 12 months



% Overall satisfaction rate at 12 months

1. Bayer HealthCare Data on File, Profiling 2

The twenty something

Management of unscheduled bleeding in association with use of combined hormonal contraception

Family history of cervical cancer

Breakthrough Bleeding Can Lead to Discontinuation of Oral Contraceptives

- Unscheduled spotting and bleeding common (30% to 50% of women) within first few months
- For many patients, issue resolves
- However, pill-associated spotting/bleeding remains one of the most common reasons for missed pills or discontinuation

Nuvaring® - helpful acronym!

Non-daily

User control/unseen

Very easy insertion and removal

As effective as the COC

Regular withdrawal bleeds

Insignificant hormone levels

No more side effects than other CHC options

Gain weight? - no

NuvaRing®

Daily release:

15 µg ethinylestradiol

120µgetonogestrel

- Once a month method
  1 ring for 3 weeks
  1 ring-free week

Lowest dose and exposure to ethinyl oestradiol compared to COC

Advantages of vaginal delivery

Non-oral delivery

- Avoids hepatic first pass metabolism
- Avoids GI interference with absorption
- Controlled hormone release
- Constant serum hormone concentration
- Potential to reduce hormone dosage

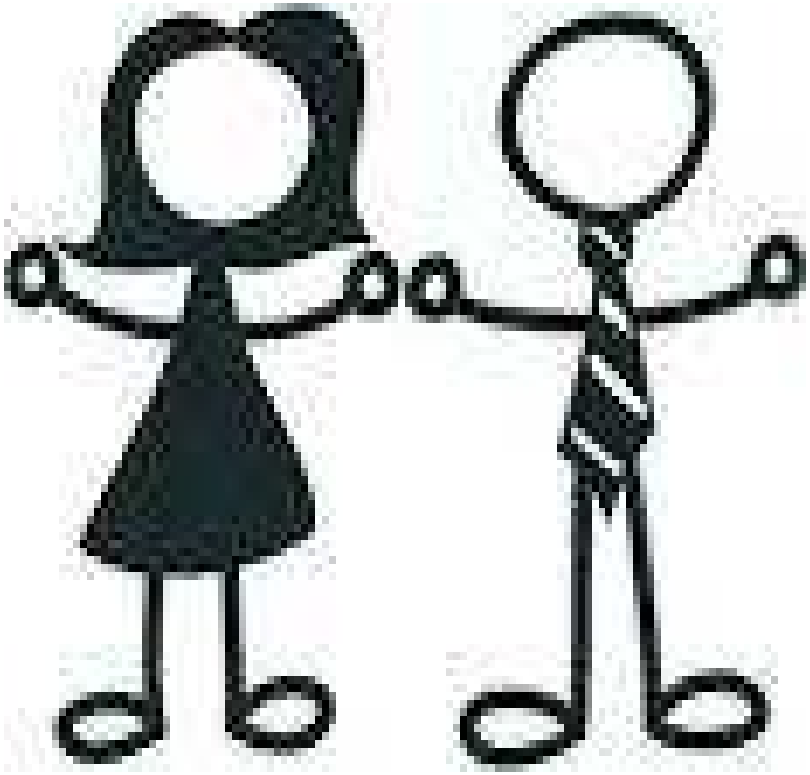
Non-daily delivery

- Provides 4 weeks of contraceptive cover
- Less to do, less to remember
- SMS reminder system available
- Advantages of a LARC without dependence on HCP

The thirty something

- A 34 year old mother of two presents for a further supply of her combined oral contraceptive pill. She does not smoke and has no medical contraindication to combined hormonal contraception, based on a risk assessment using the UKMEC, 2009.

- She requests advice regarding running pill packs together to avoid a withdrawal bleed for a forthcoming family holiday



Reducing frequency of withdrawal bleeding

- Tricycling – off license, but standard practice
- First described by Nancy Loudon, BMJ 1975
- Commercially available preparations eg Seasonale, Lybrel
- Yaz Flex

- Only option for a further reduction in bleeding episodes in the UK at the moment is to take the pill in a tailored fashion

Combined Oral Contraception

Regimens

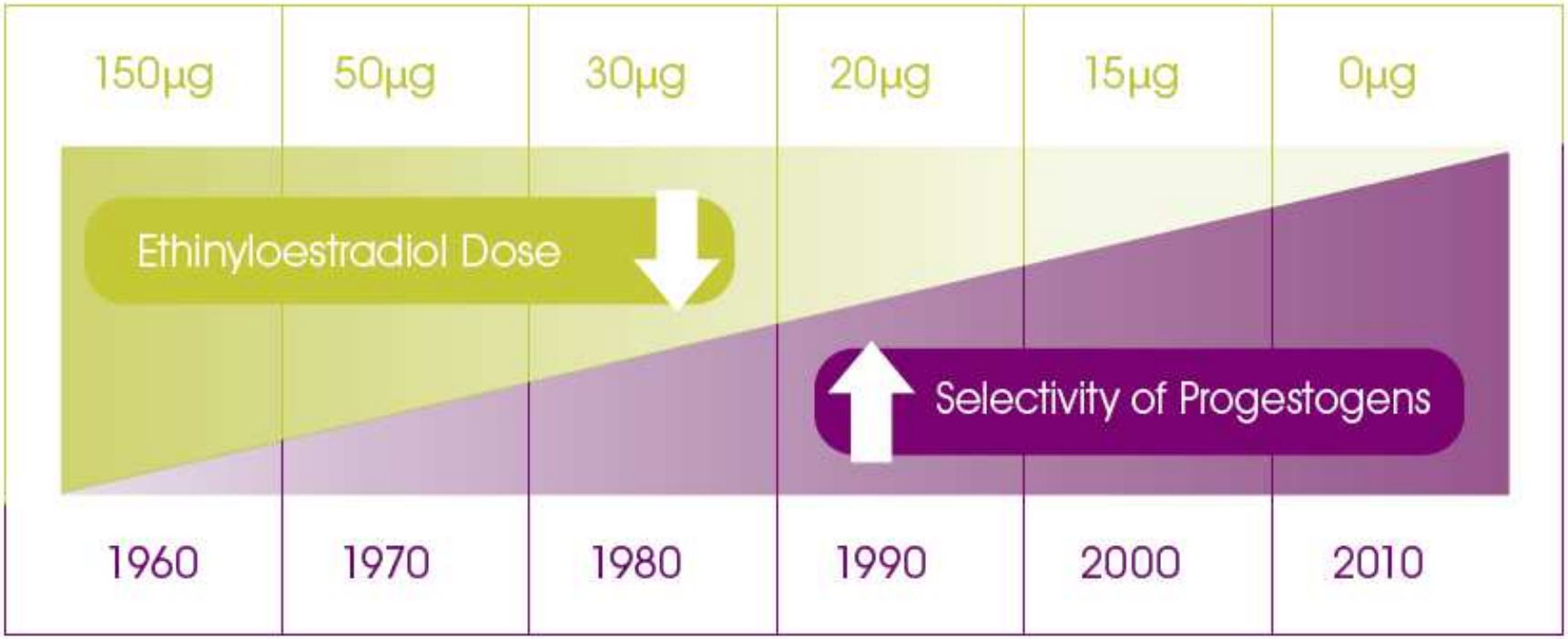
- Monophasic
  - 21/7
  - 24/4
- Multiphasic
  - Biphasic
  - Triphasic
  - Quadriphasic

Hormonal content

- Oestrogen
  - Ethinyl oestradiol
  - Oestradiol valerate
  - Oestradiol
- Progestogens
  - Testosterone ($1^{st}/2^{nd}/3^{rd}$ generation)
  - Progesterone (NOMAC)
    - Cyproterone acetate
  - Spironolactone
    Drospirenone

History of Combined Oral Contraceptives[1]

Multiple COCs containing ethinyloestradiol (EE) with various different progestogens



COC = combined oral contraceptive; EE = ethinyloestradiol.

1. Burkman R et al. *Contraception.* 2011;84:19–34.

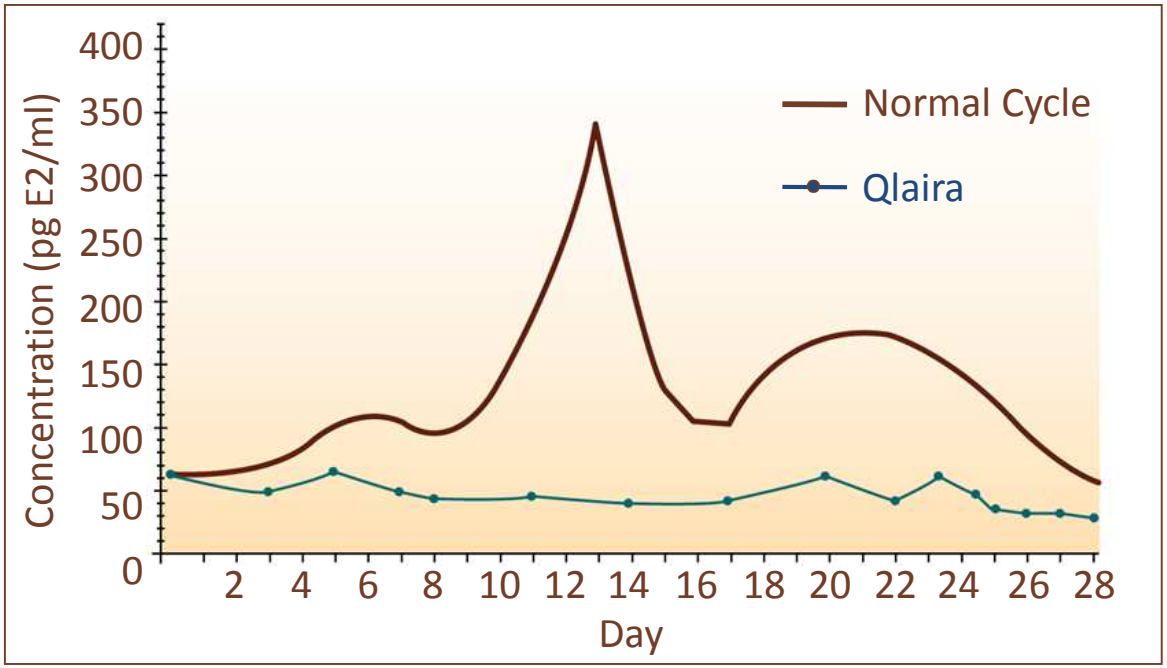
Biologic activities of natural progesterone and synthetic progestins used in combined oral contraception

	Proges-togenic	Antigona-dotropic	Antiestro-genic	Estro-genic	Andro-genic	Antian-drogenic	Gluco-corticoid	Antimine-ralocor-ticoid
Progesterone	+	+	+	-	-	(+)	-	+
Levonorgestrel	++	+	+	-	+	-	(+)	-
Desogestrel	+	+	+	-	+	-	+	-
Norgestimate	++	+	+	-	+	-	-	-
Gestodene	++	+	+	-	+	-	-	(+)
Drospirenone	+	+	+	-	-	+	-	++
Dienogest	+++	+	(+)	-	-	+	-	-
Norethisterone	+++	+	+	+	+	-	-	-
Cyproterone acetate	+	+	+	-	-	+++	+++	-

+ Effective. (+) Weakly effective. - Not effective.

Modified from Schindler AE, et al. Maturitas. 2003 Dec 10;46 Suppl 1:S7-S16. Sitruk-Ware R. Hum Reprod Update. 2006 Mar-Apr;12(2):169-78. Nath A, Sitruk-Ware R. Climacteric. 2009;12 Suppl 1:96-101. Archer DF, Lasa IL. J Womens Health (Larchmt). 2011 Jun;20(6):879-91.

Mean daily serum E2 levels over 1 cycle with Qlaira[1] and in the normal cycle



- E2 trough levels stable throughout cycle
  - Despite different E2V dosages and hormone-free interval
  - Suggests production of endogenous oestrogen at end of cycle

1. Lu M *et al. Poster presented at ACOG 55th Annual Meeting*, San Diego, USA, May 2007.

ZOELY® (nomegestrol acetate/oestradiol)[1]

Indication

24/4 monophasic dosing regimen (24 active tablets followed by 4 placebo tablets)

Composition

Oral contraception

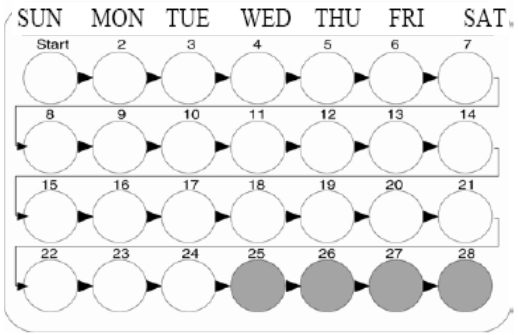
Form

Nomegestrol acetate (NOMAC) and oestradiol (E2)

Dosing

Available as 2.5-mg/1.5-mg film-coated tablets

One tablet daily for 28 days



The forty something

Needs contraception – new relationship

Heavy menstrual bleeding

How long should contraception be continued?

Until:

A – age 45

B – age 50

C – age 55

D – Until gonadotrophin levels confirm menopausal status

Treatment of HMB: NICE Recommendations[1]

- 1st Line: Levonorgestrel-releasing intrauterine system (LNS- IUS) provided long-term (at least 12 months) use is anticipated
- 2nd Line: Tranexamic acid or non steroidal anti-inflammatory drugs (NSAIDs) or combined oral contraceptives (COCs)
- 3rd Line: Norethisterone (15mg) daily from days 5 to 26 of the menstrual cycle, or injected long-acting progestogens

1. Adapted from: Heavy Menstrual Bleeding; NICE Clinical Guideline #44, January 2007

Helpful acronym!

Management of HMB is life changing

Investigation of potential underlying causes

Rx – following NICE Guideline 44

Examination

No to surgery if possible

Advice regarding lifestyle (diet, exercise & smoking)

Progestogen only Injectable Contraception

Most widely used hormonal injection is 150mg/ml depot medroxyprogesterone acetate (DMPA)

Slowly releases the progestogen medroxyprogesterone acetate

Administration every 12 weeks (OK up to 14/52)

Frequently results in amenorrhoea and can safely be used until fifty plus – new FSRH guideline

?? fractures – no significant association[1]

Reversible alteration in BMD

[1]*Lanza et al DMPA and bone fracture, Obstetrics and Gynaecology, March 2013*

Progestogen only Injectable Contraception

What’s new

Sayana Press

104 mg/0.65ml MPA designed for SC administration

Lets consider contraception for a woman who has recently had a VTE and is taking Warfarin

- In women on anticoagulant therapy there is a risk of bleeding complications during insertion of a progestogen-only implant, injectable or intrauterine method
- The risk is small and should not restrict use of these methods
- An experienced clinician should perform the procedure
- A pressure bandage should be applied following insertion of an implant

Cardiomyopathy?

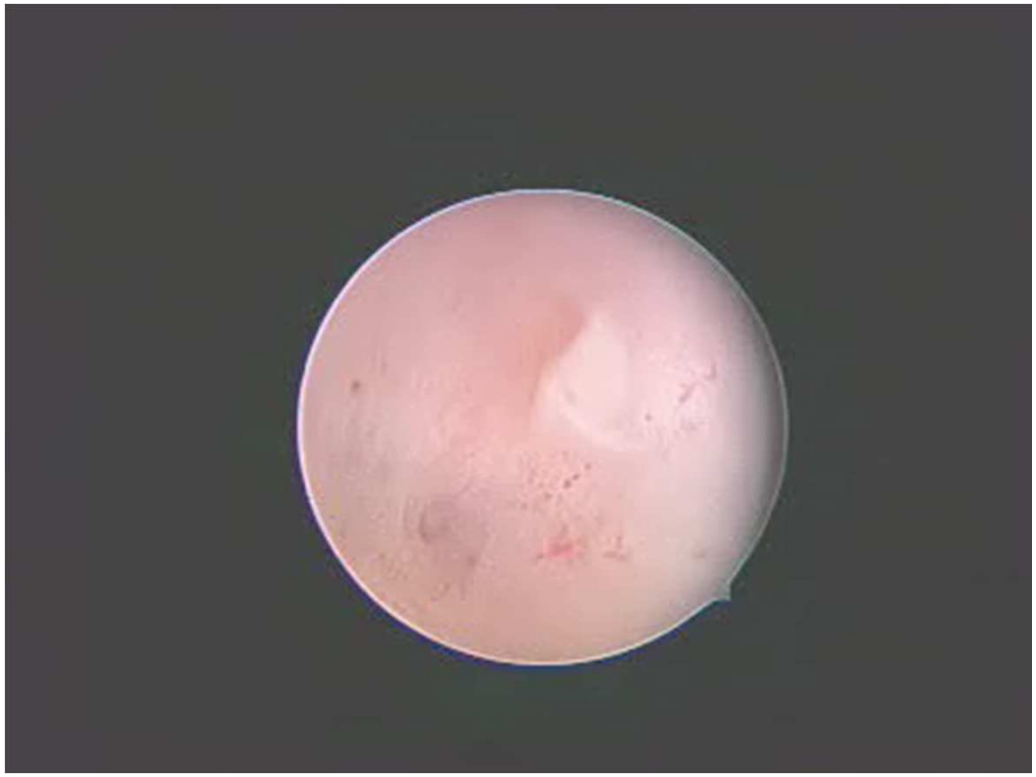
Post partum – progestogen only contraception is recommended

An older woman whose family is complete

- Looking for a permanent method as a pregnancy would put her life at risk
- Not well enough for a general anaesthetic
- ?

Essure

video



Take home messages

- Women should have the ability to choose when and how often to conceive
- There are a wide range of contraceptive choices with added non-contraceptive benefits
- Clinicians should access readily available resources such as the FSRH website and the UKMEC to provide support to women regarding contraceptive choice and to help provide the right method for the right woman at the right time