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Mothers

Paediatric Adolescent Gynaecology

Presentations in Primary care

How to assess, investigate

When to refer

Outline

- Common gynaecological problems of prepubertal girls
- Precocious puberty
- Teenage menstrual dysfunction
- Primary amenorrhea

Labial Adhesions

- Absence of oestrogen – variant of normal – but can cause problems.
- Irritation, bleeding, urinary dribbling, retention
- If symptomatic - Topical Oestrogen cream/barrier cream nightly with gentle traction
- If topical treatment fails or retention – EUA and manual separation

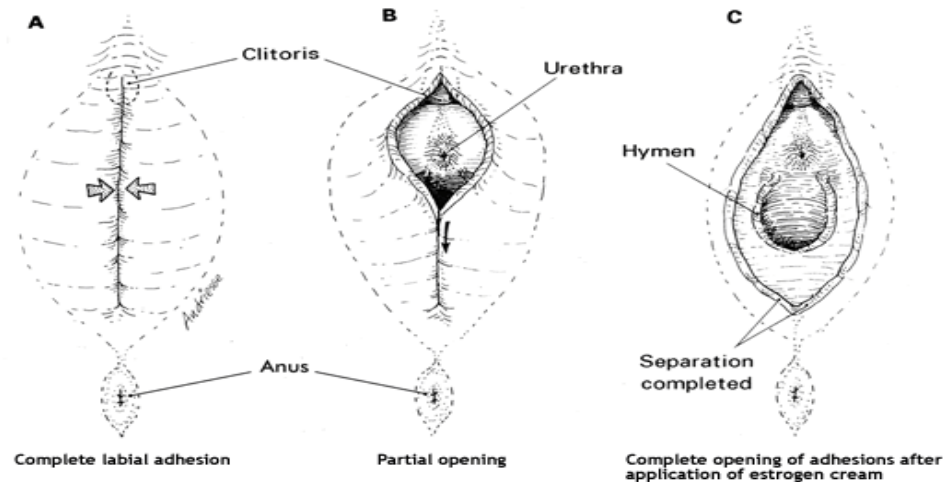


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Vulvovaginitis

- Most common gynaecological complaint in pre-pubescent girls.
- Inflammation may involve the vulva, the vagina or both.

Symptoms	Signs
Vaginal discharge – 62-92%	Redness of introitus 87%
Redness (82%)	Excoriation
Soreness 74%	Vaginal discharge
Pruritis 45-58%	
Dysuria 19%	
Bleeding 5-10%	

Prepubertal Vulvovaginitis - Contributing Factors

Anatomic

- Lack of labial fat pads/pubis hair
- Thin Vulvar skin
- Proximity of vagina to anus
- Less protected vaginal orifice by small labia minora

Sub-optimal Hygiene

- Poor handwashing/ frequent URTI/tendency to explore body
- Inadequate cleaning of vulva after bowel motion

Lack of Oestrogenisation

- Thin hymen/atrophic vaginal epithelium ph – 6.5- 7.5

Local Irritants

- Harsh soaps/bubble baths
- Nylon underwear/tights/bathing suits/overweight/hot weather
- Urine reflux into vagina

Examination

- General physical exam (Tanner staging)
- 'Frog-leg position'
- Inspection of external genitalia/labial traction (labia majora, minora, clitoris, urethra and hymen + perianal area)
- Introital Swabs (Not vaginal) – m,c,s



Illustrations by Marcia Hartscock



Differential Diagnosis

- UTI (dysuria)
- Skin conditions (eczema, psoriasis, Lichen sclerosis, scabies, allergy)
- Pinworms (common – nocturnal perineal pruritus)
- Vaginal foreign body (uncommon – usually toilet paper, foul smelling bloody discharge)
- Sexual abuse (excoriations, bruising, trauma, behavioral changes, persistent symptoms, sexually transmitted pathogens)
- Precocious puberty (thickened hymen, secondary sexual characteristics)
- Other – polyps, tumors, psychosomatic complaints, prolapsed urethra, ectopic ureter

LS

- Chronic skin disorder
- Etiology unknown
- 10-15% arise in child hood
- Vulva – white, atrophic, parchment like skin involving perianal area with labia
- Tx – topical steroids if symptomatic
- May resolve with puberty



Microbiology

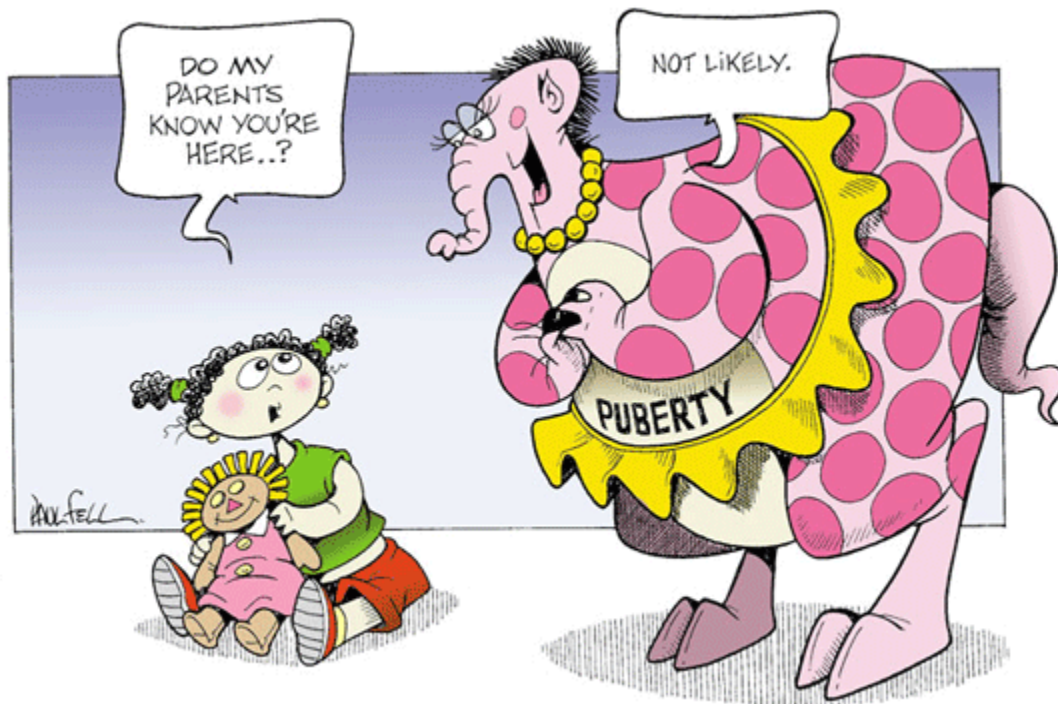
- In Pre-pubertal girls with clinical features of vulvovaginitis, antibiotics should be used only if a pure or predominant growth of a pathogen is identified.
- Common pathogens in persistent or moderate-severe – haemophilus, group A strep and gardenerella
- Pin worms
- Candida rare in girls >2 – puberty



Management

- Explanation and reassurance
- Good perineal hygiene
- Cotton underwear
- Avoid bubble baths, harsh soaps, shampooing hair in bath, tight clothing
- Vinegar baths
- If specific pathogen – course of appropriate oral antibiotics will help, pinworms – mebendazole.
- If persistent, recurrent or bloody/offensive – consider FB – refer to gynae for poss EUA
- If skin disease elsewhere consider eczema, psoriasis
- Remember sexual abuse (uncommon presentation)

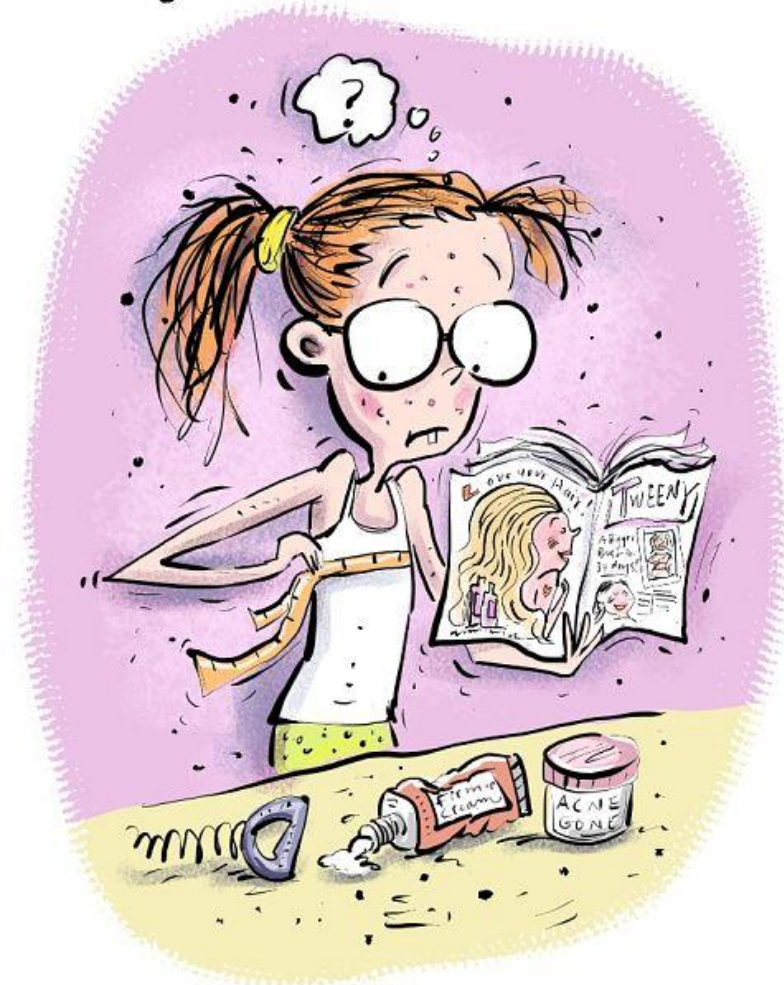
Puberty!



: The Transition that occurs between childhood and the attainment of the ability to reproduce...

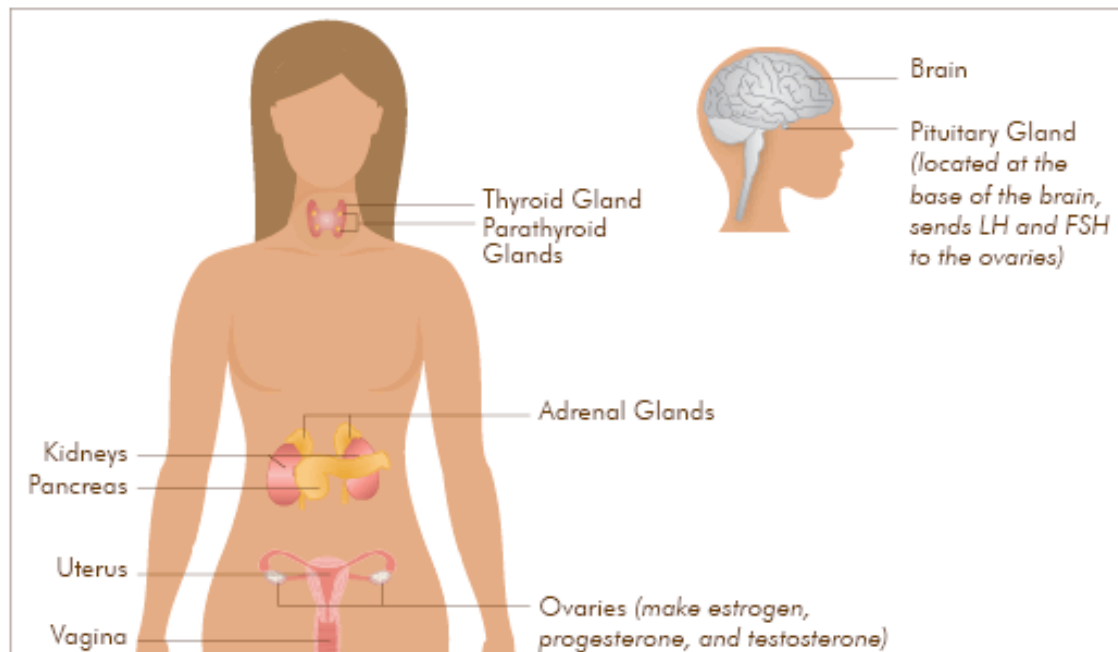


Puberty!



The HPO axis...and rest of the hormone factory wakes up!

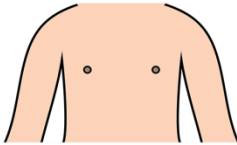
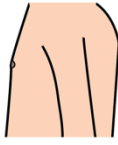
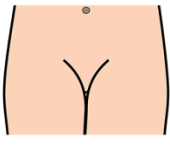
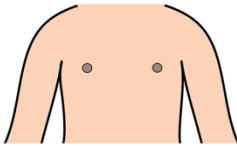
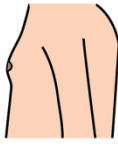
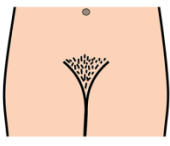
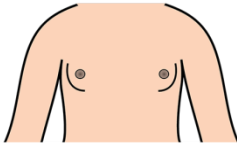
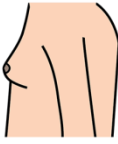

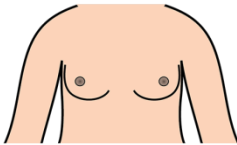


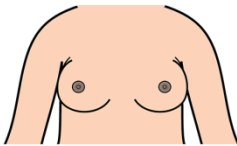
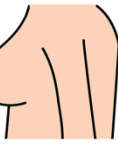

- Suppressed throughout childhood and reactivated at time of puberty
- Hormones – LH, FSH, thyroid hormones and GH.



Changes..

- Age of onset of secondary sexual characteristics and menarche is highly variable
- Increase in vertical growth first
- Average development of breast buds (thelarche) at 10.9y/o (95% will range from 8.5 – 13.3 years)
- Adrenache pubic hair and then axillary hair usually
- Increase in sebaceous and sweat glands
- Usually menarche expected within 2 years of onset of breast development (tanner stage 2).

Tanner Staging

I			
II			
III			
IV			
V			



Most useful when concerns that development is happening too early or too late....

Precocious Puberty

How young is too young?

What is the Cause?

Management?



Precocious Puberty

- Breast/pubertic hair >8 y/o
- Central – early maturation of HPO axis (CNS, hypothyroidism)
- Peripheral – adrenal, ovarian, exogenous oestrogen, pituitary tumours, mcune albright
- Incomplete – thelarche/adrenarche (normal growth, usually normal oestrogen, testosterone, DHEAS, 17-hydroxyprog –
Idiopathic – usually reassure but f/u required

Initial Evaluation

- Exam – ht, wt, velocity, visual fields, skin – café-au-lait spots
- Tanner staging
- Bone age – if early secondary sexual characteristics
- LH – if high central, if low/normal but features suggestive of central – need GnRH stimulation test - >5 indicates central cause
- If LH normal prepubertal range – peripheral or incomplete

Further Evaluation

- CNS imaging if central cause confirmed
- Testosterone, oestrogen, TFTs,
- If peripheral – testosterone, oestrogen, DHEAS, FSH, cortisol (afternoon) 17-hydroxyprogesterone, abdominal and pelvic U/S

Treatment

- Peripheral – Refer and cause treated
- Central – Refer – paediatric endocrinologist + gynaecology – treatment is GnRH agonist
- Depends on age of diagnosis, rate of progression and growth velocity. Dx young will have most benefit.

Periods – what's normal?

- Menstrual cycle interval – typically 21-45 days
- Mean cycle interval – 32.2 days in first year
- Menstrual flow length – 7 days or less
- Menstrual product use – 3-6 tampons/pad per day

Common Menstrual issues in adolescents

- Irregular periods/secondary amenorrhea
- Menorrhagia
- Dysmenorrhea
- How to use hormones to help

Irregular Periods

- Although normal to have some irregularity and increased cycle length it is statistically uncommon for adolescents to be amenorrhoeic for >3 months
- > 6 months (secondary amenorrhea)

Adolescents with chaotically irregular cycles >3 months should be evaluated; not reassured that it is normal to have irregular periods in the first gynaecological years.

Causes of menstrual cycle irregularity

Chronic Disease	Stress related hypothalamic
Endocrine Causes:	Medications
- PCOS	Exercise induced amenorrhea
- Cushing's Disease	Eating disorders
- Thyroid Dysfunction	Tumours:
- Premature ovarian failure	- Ovarian
- Late onset CAH	- Adrenal
Pregnancy	- prolactinoma

PCOS

- Investigate for PCOS if prolonged amenorrhea or persistent irregular cycles +/- any evidence of hyperandrogenism
- Diagnosis in adolescents relies on oligomenorrhea + evidence of hyperandrogenism – 99% specific for PCOS in young women and meets ACOG, AES and ES guidelines for dx of PCOS
- Exclusion of Cushing's, CAH, adrenal, ovarian tumours.

Investigations

- Total testosterone
- Free testosterone (50% more sensitive)
- SHBG (low)
- If testosterone normal – rule out PCOS in adolescents - but don't dismiss completely.
- If high androgens – order U/S to exclude ovarian tumour.
- Polycystic ovaries on U/S not helpful in the adolescent as 50% of normal adolescent girls will have PCO
- Exclude other causes -17-hydroxyprogesterone, DHEAS, cortisol, prolactin, TSH, IGF-1
- IF PCOS confirmed – OGTT, lipid profile

Management

- Patients should be counselled about long term sequale, reproductive, psychological and type 2 diabetes risk
- Education about healthy diet and exercise
- OCP
- Metformin

Menorrhagia

- Needing to change a pad >every 2 hours
- Assessment;
 - Menstrual history
 - FBE
 - Coagulation profile (PT, PTT, fibrinogen, vWB screen)
- Management –
 - Iron
 - First line – NSAIDS (naprogesic, ponstan, brufen) – decrease flow 30%
 - Cyklokapron – 1g every 6hr – can decrease flow by 50%
 - Progesterone –provera 10mg for 21/7
 - OCP – can decrease flow by 50% - good for anovulation
 - Depot provera – 75% amenorrhea by 12/12

Dysmenorrhea

- 60-90% of girls have primary amenorrhea – excess production of endometrial prostaglandin
- 15% seek medical advice
- Management:
 - NSAIDs
 - OCP
 - Adolescents who have persistent pain after 3-6 months of hormonal therapy and/or NSAIDs should be referred for diagnostic laparoscopy.
 - 70% are found to have endometriosis

OCP (for menstrual issues)

Very safe with lots of benefits –

- Predictable/lighter menses
- Decreased rates of dysmenorrhea
- Decreased ovarian cysts
- Protective for endometriosis
- Improvement in acne/hyperandrogenism
- Reduced rate of endometrial, ovarian and colorectal CA

Risks

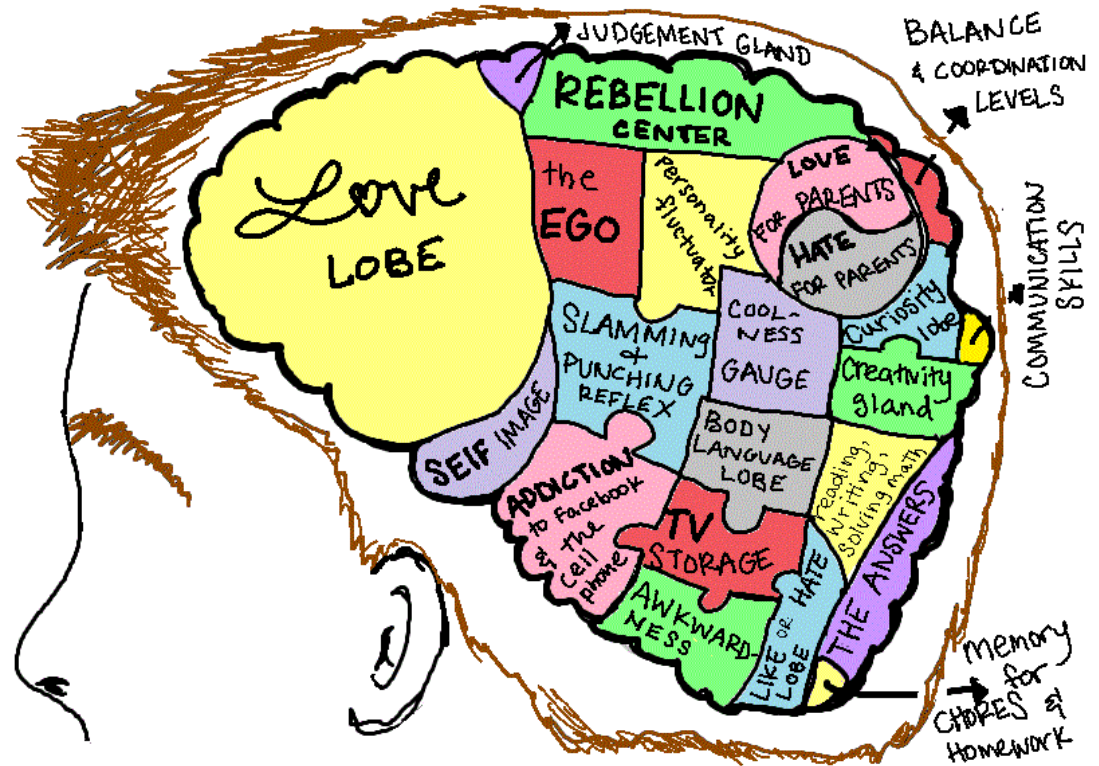
- VTE – rates in non OCP users – 3-5/10,000
- OCP – 9-10/10000 – third and fourth generation pills poss slightly higher but relative risk remains low and evidence is conflicting
- Mortality 1/370,000 – women under 24
- Perspective – pregnancy VTE 30/10000, and post-partum 300/10000
- Thrombophilia screening not recommended but would do if family history of VTE, or thrombophilia
- Slightly higher life time risk of breast CA – but may be related to older age of first pregnancy

What pill should I use?

- For heavy, painful, irregular periods – start with microgynon 20
- If breakthrough bleeding after 3 months – levlen ED or brevinor (norimin). (30 and 35mcg ee)
- If PCOS, any issues with acne/hair - pills like diane 35 (cyproterone acetate), yaz, yasmin (drospirinone) marketed heavily as well as to young woman for supposed favorable effect on weight loss
- But limited evidence that they actually have a clinical effect on hyperandrogenism over other OCP.
- Reasonable to stay away from levonorgestrel containing pills (most androgenic)
- Start on 1st day of period (easier to remember for teens).

Other considerations for adolescents...

THE AVERAGE TEENAGE BRAIN



+ Busy lives, lots of sport, exams, etc – ways that make it easy to take hormonal contraception for menstrual control are important to consider as well as ways of minimizing effect of periods on teenage lives....

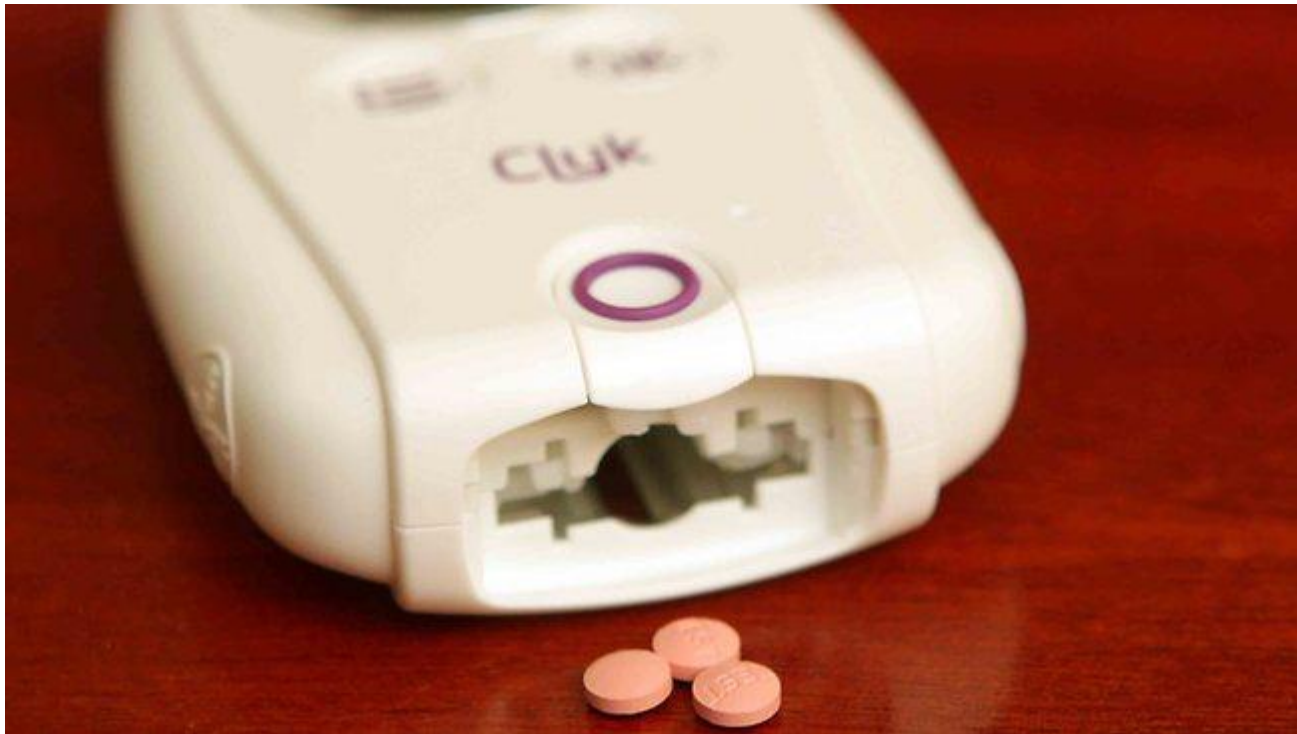
Nuvaring

- 15mcg EE, etonogestrel 150mcg – only needs to be changed once every 3 weeks
- Text message reminders
- Can be run together to skip periods



YAZFlex

- Yaz (usually 21 active pills and 4 inactive pills – to shorten duration of period) – packaged in 3/12 cycles to produce 4 periods a year
- Packaged in electronic device that is set on a timer and beeps when you forget to take a pill



Implanon

- 62mg etenorgesterol s/c implant
- Great for contraception



OR



**Percentages of Patients With 0, 1-7, 8-21, or >21 Days
of Spotting or Bleeding Over a 90-Day Interval While Using the
Non-radiopaque Etonogestrel Implant (IMPLANON®)**

Total Days of Spotting or Bleeding	Percentage of Women		
	Treatment Days 81-180 (N=745)	Treatment Days 271-360 (N=657)	Treatment Days 631-720 (N=547)
0 Days	19	24	17
1-7 Days	15	13	12
8-21 Days	30	30	37
>21 Days	35	33	35

Implanon

- Never use for bleeding issues – as more likely to have an unfavourable bleeding profile.
- 1/5 amenorrhea by 12/12 – but prolonged frequent bleeding is common
- Can use OCP in addition
- Or course of ponstan/TEA/supplementary oestrogen

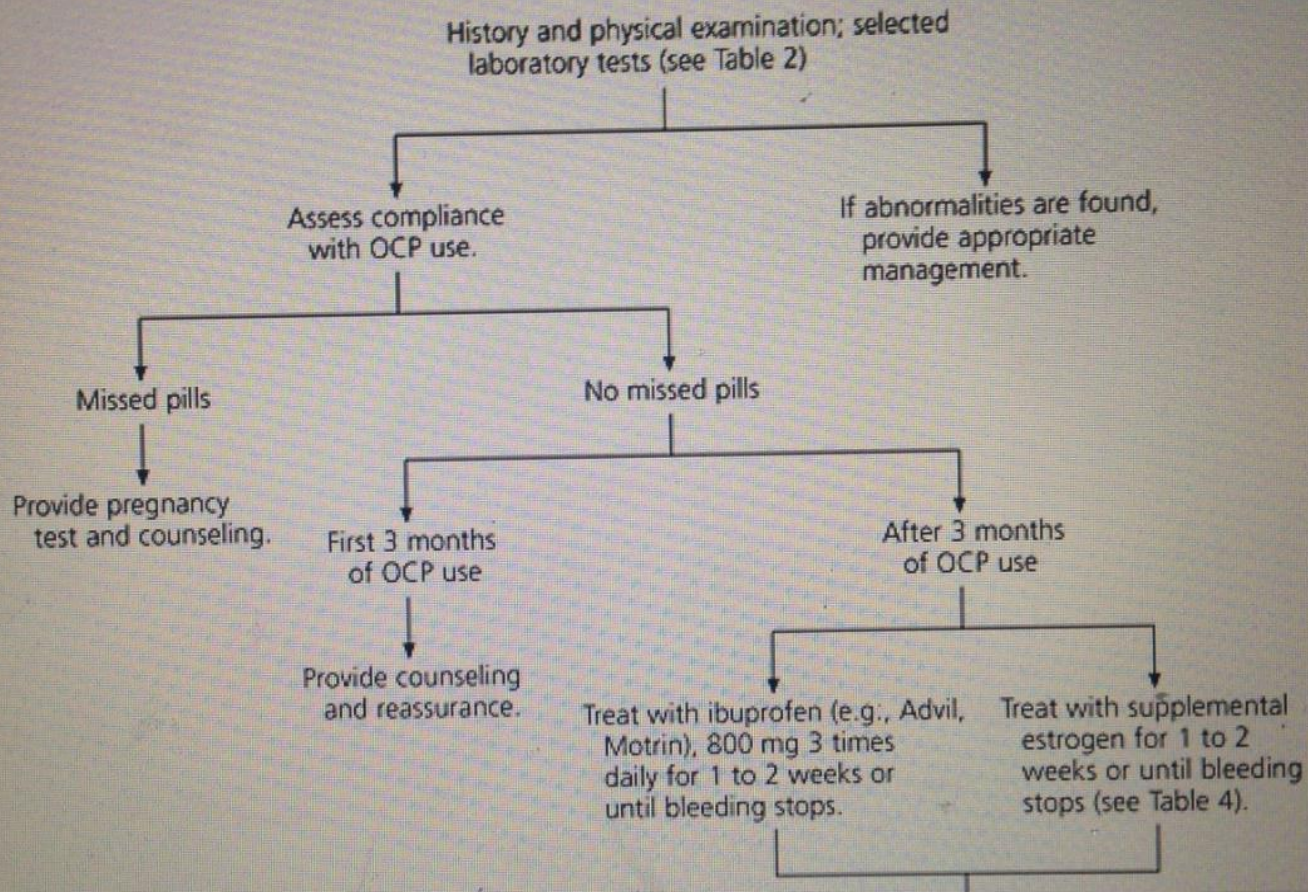
Mirena

- Although not first line
- If issues with the OCP/wanting to achieve amenorrhea or laparoscopy for dysmenorrhea with endo – reasonable to use for control of bleeding/pain
- Or for girls where combined pill is contra-indicated – hepatobiliary disease/thrombophilia/migraine etc
- Will need GA if not sexually active
- Role for depo provera

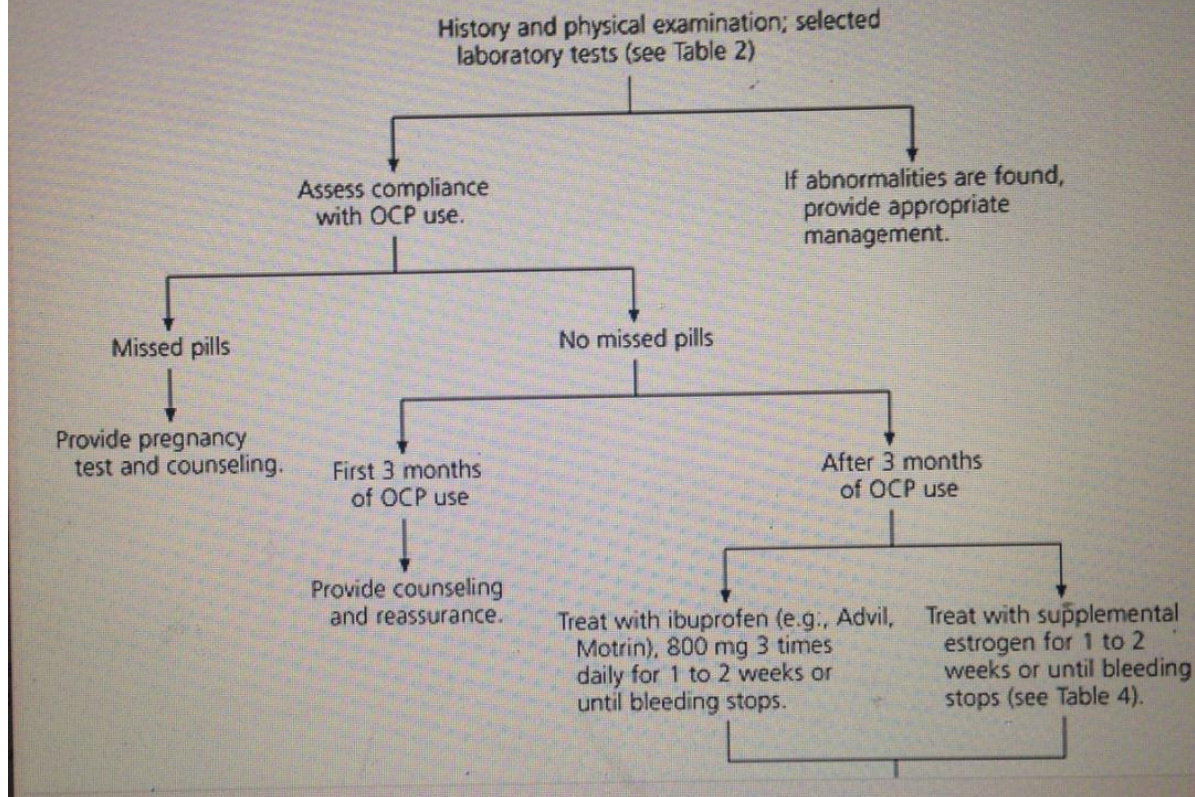
BTB

- Due to progestin related decidualisation (and balance with oestrogen)
- < BTB with high oestrogen pills
- Missed pills/not taking pills at similar time most common reason
- Higher incidence in smokers/asymptomatic chlamydial cervicitis
- Counselling important when starting hormones

Abnormal Uterine Bleeding with Combination OCPs



Abnormal Uterine Bleeding with Combination OCPs



The same management for progesterone only.
If this doesn't help, try changing pills.

Primary Amenorrhea

- Absence of menarche and secondary sexual characteristics by 15y/o or absence of menarche by 16y/o in a patient with normal secondary sexual characteristics
- Initial Evaluation – family history, History of cyclical pain, Ht, Wt, Tanner staging, vulval exam
- Determining cause – breast development, presence of uterus, FSH, testosterone

	MRKH	AIS	Gonadal dysgenesis (Swyers/turners)	Kallmans
Breasts	yes	yes	No	no
Uterus	Yes/no	no	yes	yes
FSH	normal	normal	high	low
Testosterone	Normal	high	Low/normal	low

+ Karyotype to confirm diagnosis

AIS – 46XY, MRKH, Kallmans – 46XX, Swyers – 46XY, turners 45X0

Other tests – TFTs, prolactin, DHEAS, 17-hydroxyprog if any signs of hyperandrogenism

- Girls with MRKH, AIS usually have absent/blind ending vaginas
- If normal secondary sexual characteristics, uterus, and cyclical pain – obstructive – vaginal/cervical atresia, vaginal septum

Lucy

- 16 1 amenorrhea
- Tall, , sparse /pubic axillary hair
- Breasts Tanner 4
- Pelvic U/S – no uterus
- FSH – normal
- Testosterone – High
- Karyotype? Diagnosis? Management?

AIS

- 46XY
- Insensitivity to androgens at target tissues
- Often blind ending vaginal dimple
- Risk of malignancy b/c intra-abdominal/inguinal gonads – about 5% and low before 25-30y/o – removing them in mid 20s reasonable
- Oestrogen replacement
- Vaginal dilation
- Counselling

Alice

- 12 y/o No periods
- Breasts Tanner 3, normal axillary/pubic hair
- Normal appearing vulva
- Uterus present – haematometra and haematocolpos
- What Ix to order next?
- MRI – Differentials – vaginal atresia, transverse vaginal septum, imperforate hymen

MRKH

- MRI – vaginal atresia + duplex ureters bilaterally
- Management – vaginoplasty and drainage of haematometra
- Suppression of menses – until wants to become sexually active
- *MRKH also no uterus or vagina – in that case – treatment usually just vaginal dilation when appropriate
- Counselling

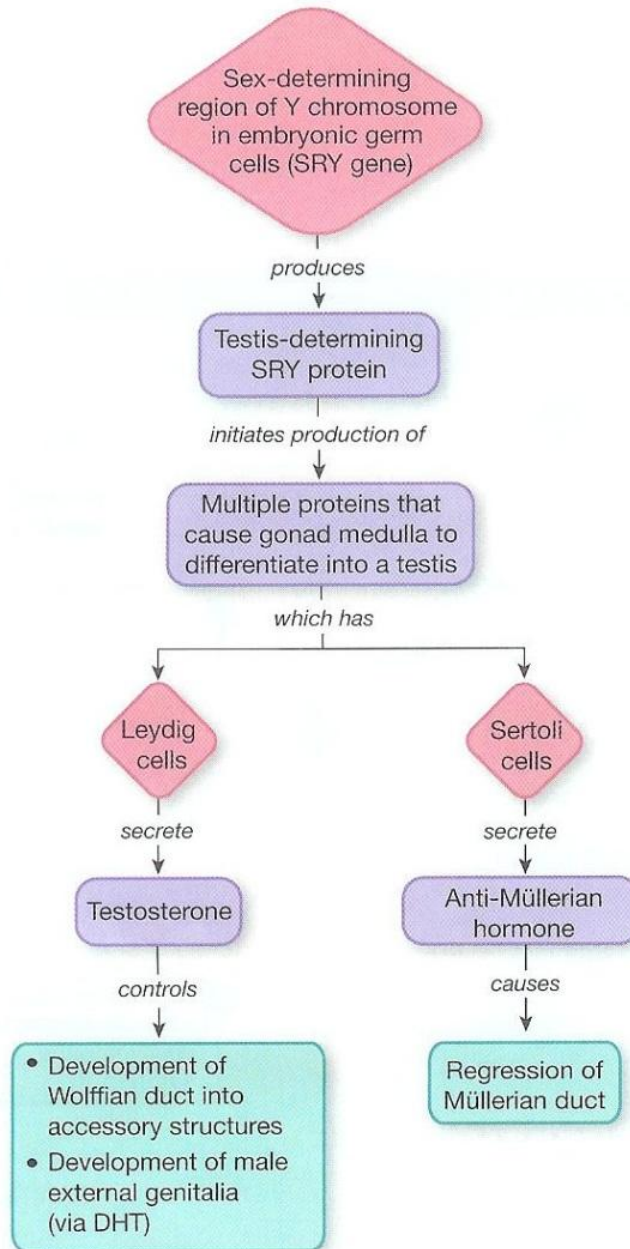


Used 3-4 x a week for 30 mins - **>90%** of vaginal atresia will achieve a functional vagina over 6 months to a year
Dependent on motivation of young woman
Must be taught – risk of urethral dilation

Lauren

- 17 y/o primary amenorrhea
- Tall, thin, breasts Tanner stage 1
- Sparse pubic, axillary hair
- U/S No uterus
- FSH increased
- Testosterone normal
- Diagnosis? What further tests?

- Karyotype –
- MRI – tiny pr
- Swyers Syndi



oak gonads
dysgenesis

Swyer's syndrome

- Risk of malignancy (gonadoblastoma ,dysgerminoma) with gonadal dysgenesis – 20-30%
- Laparoscopic gonadectomy
- Normal vagina and cervix
- Oestrogen/progesterone replacement
- Counselling

THANKYOU!

