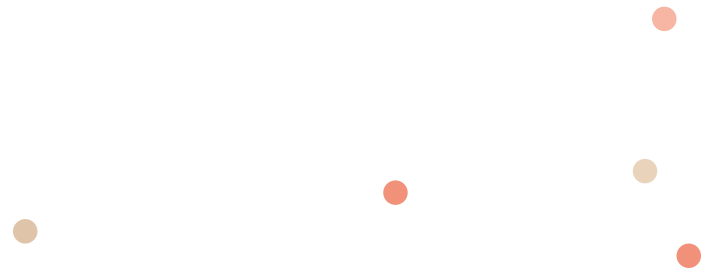


Medical Treatments of Male and Female Pattern Hair Loss



Disclaimer

I have received honorarium for GP education, financial support/hospitality to attend professional conferences and professional fees for production of education materials from:

- Leo Pharma
- Johnson & Johnson
- Galderma
- Astellas
- Almirall

I will be speaking about licensed and unlicensed experimental treatments

A decorative graphic consisting of five small, semi-transparent dots in shades of orange and red, arranged in a loose, scattered pattern in the bottom right corner of the slide.

Androgenetic

- Increase in miniaturisation
- Variation >20%
- Decrease in hairs per follicular unit
- Disassociation with AP muscle?
- Is there a point of no return?



A) Traditional Scalp Hair Representation

B) Follicular Unit (FU)



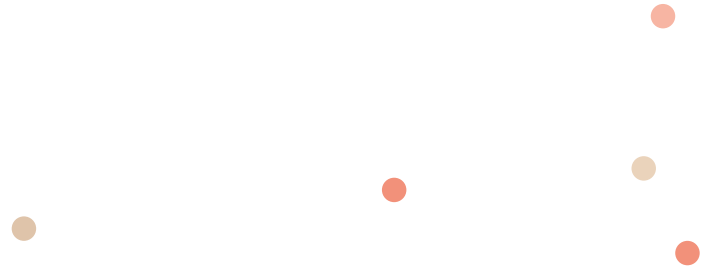
Pathophysiology

5 Alpha Reducase

Testosterone > Dihydrotestosterone

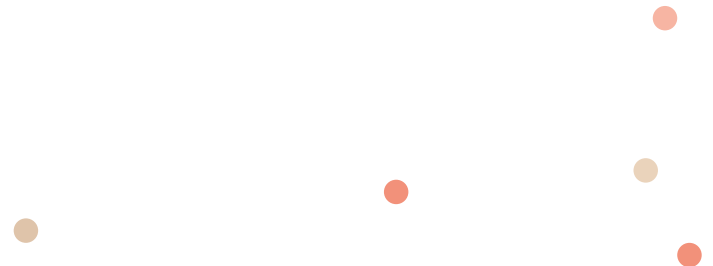
- Testosterone not excessive
- Increased sensitivity?
- Increased density of Androgen receptor within dermal papilla in balding scalp areas
- Leads to miniaturisation of hair follicle and decrease in anagen phase of hair cycle

Pathophysiology

- Stem cells preserved in balding scalp
 - Progenitor cells from stem cells are diminished
 - Prostaglandin D2 Synthase increased in balding scalp > Inc PGD2
 - PGD2 acts via GPR44 receptor to inhibit hair growth
 - *But what about women?*
- 

Management Options

- Promoting anagen growth phase
- Altering male hormones
- *Activation of stem cells?*



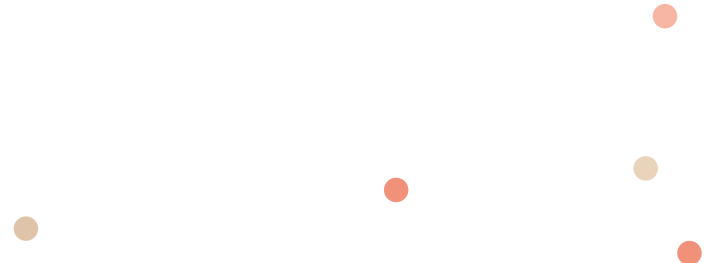
Promoting Anagen Growth Phase

- Minoxidil
 - K⁺ channel opener
 - Developed as antihypertensive in 1970s
 - Found to promote hair growth and developed into lotion and now foam
 - Works in all ages and majority of patients
 - 2% licensed for women, 5% for men
 - Temporary increase in hair shedding



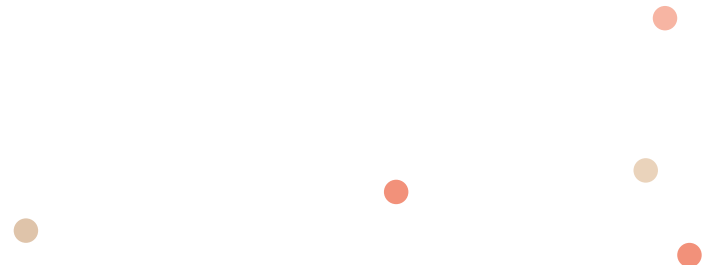
Promoting Anagen Growth Phase

- Minoxidil
 - Alcoholic and dissolved with propylene glycol
 - Can be irritating leading to dry scalp
 - Mostly irritant problem but can be allergic
 - Foam does not contain propylene glycol
 - Additional ingredients often added but no evidence of benefit £££



Promoting Anagen Growth Phase

- Prostaglandin E2 & F2 Analogues
 - Bimatoprost and Latanoprost promote hair growth
 - *Do they offer anything over and above Minoxidil?*



Altering Male Hormones

- Finasteride 1mg*
 - 5 Alpha Reductase Inhibitor
 - Licensed for Male Pattern Hair loss
 - Inhibits conversion of testosterone to highly active DHT
 - Loss of libido 5%
 - Impotence <1%
 - *What else?*

* Can give ½ 5mg tablets alternate days

Altering Male Hormones

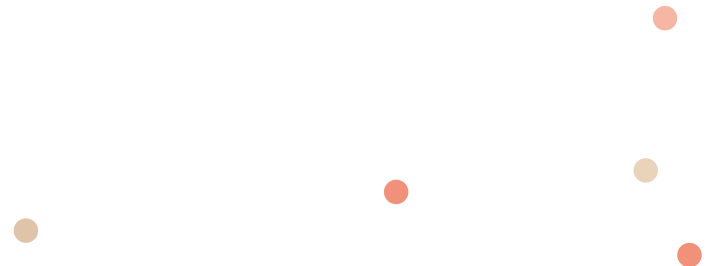
- Dutasteride
 - Not licensed
 - Works on both types of 5AR receptors
 - *Is there any additional benefit?*
 - *Do they justify increased side effects?*

 - May be worth a trial in men who are poorly responsive to finasteride



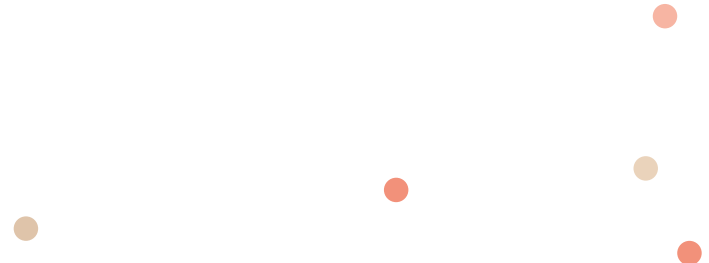
Altering Male Hormones

- *Is targeting Male hormones in women relevant?*
- May be relevant to pre-menopausal
- Probably not relevant in the 60+
- 40-60 years grey area!
- Combined pills and HRT may have a role



Altering Male Hormones

- Oestrogens thought to be beneficial
- Some progestogens are antagonists of androgen receptor
 - Cyproterone Acetate
 - Drospirinone
 - Desogestrel
 - Avoid POP, Implant, Depot



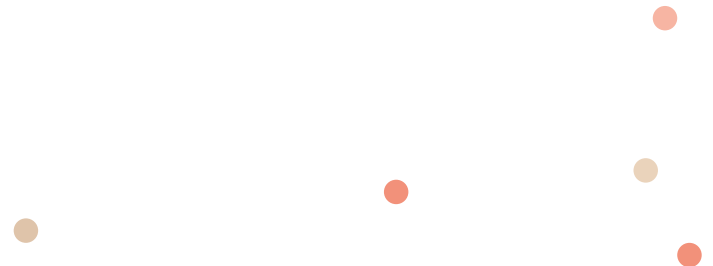
Altering Male Hormones

- Cyproterone Acetate
 - anti-androgen and inhibits gonadotrophin secretion
 - Decreases androgen production, increases clearance of testosterone and binds to AR receptor
 - 2mg combined with ethinyl oestradiol
 - 50mg-100mg for 10 days of cycle
 - Little evidence for hair regrowth

Altering Male Hormones

Potential side effects of Cyproterone Acetate

- Weight gain
- Loss of libido
- Breast tenderness
- Headaches & nausea



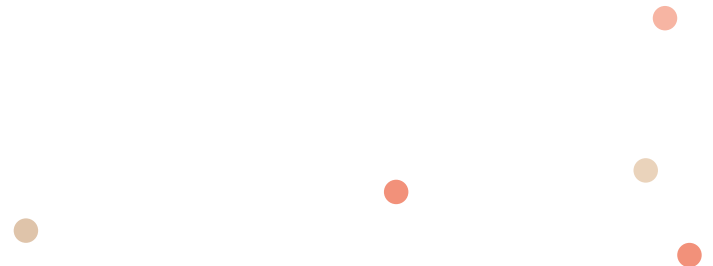
Altering Male Hormones

- Spirinolactone
 - K⁺ sparing diuretic
 - Anti-androgenic
 - Androgen receptor antagonist (*partial agonist*)
 - Inhibits 17 alpha hydroxylase > decreased synthesis of testosterone and DHT
 - Inhibits 5AR
 - Activates progesterone receptor leading to negative feedback on sex steroid production
 - Enhances conversion of testosterone to Oestradiol
 - Can be titrated from 25mg od up to 200mg

Altering Male Hormones

Spirinolactone

- Irregular menses
- Breast tenderness
- Mood Swings
- Hyperkalaemia



Altering Male Hormones

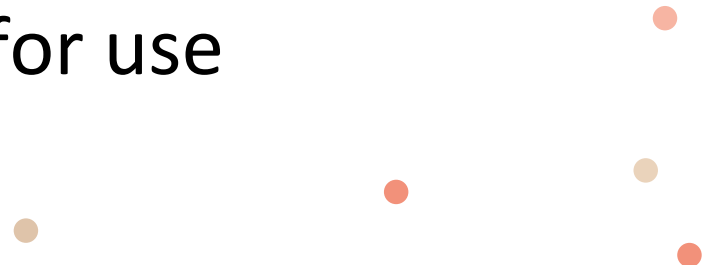
Finasteride 1mg

- Can be used experimentally in women


Dutasteride 500mcg

- Can be used experimentally in women

- No RCTs & little evidence for use



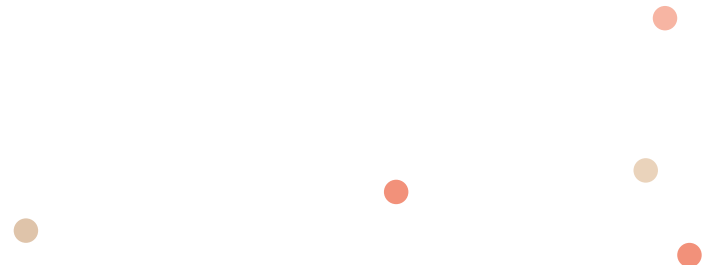
Reactivating Stem Cells?

- The Holy Grail!
 - Will blocking PGD2 action allow stem cells to produce normal progenitor cells
 - There are drugs that block GPR44 receptor that were dropped from asthma & rhinitis research
 - Is there a point of no return?
 - Do stem cells remain in totally bald men?
- 

Summary

Men

- Minoxidil 2-5% (Lotion or foam)
- Finasteride 1mg
- Dutasteride and oral minoxidil can be used experimentally if unresponsive



Summary

Pre-menopausal women

- Minoxidil 2% twice daily or 5% Foam once daily
- Combined oral contraceptive “hair friendly” pill
- Spirinolactone 100-200mg daily
- Experimental use of 5AR under specialist supervision



Summary

Post-menopausal women

- Minoxidil 2% twice daily or 5% Foam once daily
- If on HRT switch to hair friendly preparation such as Angelique

