CPD May 2023: Minoxidil

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Day 1: A vasodilator derived from diallylmelamine in 1960s was found to have a BP lowering effect & [#minoxidil](https://twitter.com/hashtag/minoxidil?src=hashtag_click) was licensed 1970s. Long-term use revealed side-effect of hypertrichosis & trials for alopecia & male pattern baldness ensued. Licensed for male hair loss in 1988 as a topical formulation, then 1992 for female hair loss.

Day 2: [#minoxidil](https://twitter.com/hashtag/minoxidil?src=hashtag_click) topical 5% solution is licensed for (wo)men aged 18-65 years. It is applied x 1-2/day when the reason for hair loss is known (OTC/private prescription); 5% foam can be prescribed on NHS. Full effect can take 6 months+. Low dose oral [#minoxidil](https://twitter.com/hashtag/minoxidil?src=hashtag_click) (0.625-2.5mg) is used by specialists off-label e.g for alopecia, including for children over 12 years (topical use not recommended in children). Oral 1mg approx equivalent to 5% solution

Day 3: Oral version is a prodrug & genetics determine breakdown response (weak in 50% as less active drug released (low SULT1A1)). Avoid if severe hepatic impairment. Topical absorption is minimal from intact skin (1-2% of applied dose). All routes metabolised in liver & renal excretion.T½ 4-5 hrs

Day 4: [#minoxidil](https://twitter.com/hashtag/minoxidil?src=hashtag_click) MOA: How stimulation of hair growth occurs is not fully understood & may differ between systemic/topical formulations. [#minoxidil](https://twitter.com/hashtag/minoxidil?src=hashtag_click) increases vascular supply & promotes survival & growth cycle of follicles, as well as increasing the size of the hair follicles.

Day 5: [#minoxidil](https://twitter.com/hashtag/minoxidil?src=hashtag_click) ADRs (topical) include local irritation (discontinue), initial increased hair shedding (usually temporary), unwanted hair growth, headache & dyspnoea. Rarely hypotension/cardiovascular ADRs. Topical [#minoxidil](https://twitter.com/hashtag/minoxidil?src=hashtag_click) contraindicated with hypertension (treated or not) & cardiovascular disease caution. Unknown effects in pregnancy. Cannot be used on a shaved or inflamed/damaged scalp (NOT exhaustive). NOTE product is flammable

Day 6: [#minoxidil](https://twitter.com/hashtag/minoxidil?src=hashtag_click) drug-drug interactions. Absorption could be increased if used with other topical products. Synergistic effects with other anti-hypertensives (NOT exhaustive)

Day 7: [#minoxidil](https://twitter.com/hashtag/minoxidil?src=hashtag_click) does not cure hair loss & the effects only last while using the medication

CPD: In addition to the tweets, read the BNF treatment summary on scalp and hair conditions, the monograph on minoxidil and the SPCs for oral and topical minoxidil.

<https://bnf.nice.org.uk/treatment-summaries/scalp-and-hair-conditions/>

<https://bnf.nice.org.uk/drugs/minoxidil/>

<https://www.medicines.org.uk/emc/product/13823/smpc>

<https://www.medicines.org.uk/emc/product/5781/smpc#gref>

<https://www.medicines.org.uk/emc/product/5082/smpc#gref>

1. Minoxidil was originally licensed for, and can still be used as, an anti-hypertensive

TRUE or FALSE

1. Minoxidil is suitable for all types of alopecia

TRUE or FALSE

1. Minoxidil can be used in all age groups

TRUE or FALSE

1. When used for hair loss, the oral formulation is usually used

TRUE or FALSE

1. Which of the following best describes the mechanism of action for minoxidil?
2. Minoxidil increases the size of the hair follicles and prolongs the lifespan of the hair
3. Minoxidil decreases the size of the hair follicles but improves the anchorage to the skin
4. Minoxidil enlarges the hair shaft so existing hair appears thicker
5. Minoxidil stimulates the growth of more hair follicles
6. Side effects from topical application are unlikely, due to minimal systemic absorption

TRUE or FALSE

1. Which of the following is FALSE?
2. You cannot use topical minoxidil on a shaved head
3. Local skin reactions can occur with topical use
4. Other topical treatments can increase the absorption of minoxidil making ADEs more likely
5. You can use as much of the product as needed to stimulate hair growth
6. Increased hair shedding can occur in the first few weeks of treatment

TRUE or FALSE

1. Minoxidil foam may be better tolerated than the solution as it does not contain propylene glycol.

TRUE or FALSE

1. Minoxidil can cure some types of hair loss

TRUE or FALSE