CPD July 2023 Methylphenidate

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Day 1: The mild CNS stimulant [#methylphenidate](https://twitter.com/hashtag/methylphenidate?src=hashtag_click) was synthesised in the1940s & marketed as Ritalin by the 1950s, after recognition it improved concentration. Trialled for many conditions e.g chronic fatigue & chronic pain; it is now associated with its main licensed use for ADHD symptom management

Day 2: [#methylphenidate](https://twitter.com/hashtag/methylphenidate?src=hashtag_click) is the 1st line drug treatment for ADHD 6-18yrs. Oral dose range 10-60 mg/day depending on age & response. If immediate release, divide doses 1-3/day. Long-acting preparations contain a mixture of immediate & modified release drug & may not be equivalent to each other (care if switching). Adults with ADHD may need indefinitely, although long-term use is not fully evaluated. Use is unlicensed in adults, except some brands if being continued post-initiation in childhood. [#methylphenidate](https://twitter.com/hashtag/methylphenidate?src=hashtag_click) is a schedule 2 CD in UK & US. Careful titration & withdrawal needed

Day 3. Kinetics: good GI absorption (no effect from food), with effects in 4+ hrs (3-9 hrs if m.r). Metabolism via de-esterification to ritalinic acid (inactive). 80% excreted as ritalinic acid; no known effect of renal impairment. T½ 2-7 hrs. If [#methylphenidate](https://twitter.com/hashtag/methylphenidate?src=hashtag_click) is used with alcohol the metabolite ethylphenidate is produced which may contribute to toxicity & psychiatric symptoms eg agitation, psychosis & tachycardia, HTN, hyperthermia (not exhaustive)

Day 4: [#methylphenidate](https://twitter.com/hashtag/methylphenidate?src=hashtag_click) increases dopamine availability as it is believed to inhibit the dopamine transporter (less reuptake). Oral #methylphenidate produces a mild effect, linked to stimulating brain regions controlling attention & behaviour. This leads to improved concentration & reduced impulsivity. At high doses and/or taken i.v or intra-nasally, [#methylphenidate](https://twitter.com/hashtag/methylphenidate?src=hashtag_click) causes dopaminergic stimulation & euphoria. Risk of addiction, as well as psychoses & adverse drug effects

Day 5: Contraindicated in cardiovascular disorders, hyperthyroidism, some psychiatric conditions. Common ADEs include insomnia, aggression, altered mood, GI disorders, headache, reduced appetite. Uncommon/rare: constipation, psychotic disorder, blood disorders (NOT exhaustive). Pre-use screening & ongoing monitoring for physical, cardiovascular & mental health status; checks also needed if dose change

Day 6: DDIs: Alcohol, TCAs, warfarin & some anti-convulsants can increase concentration of [#methylphenidate](https://twitter.com/hashtag/methylphenidate?src=hashtag_click). Severe cardiovascular issues possible with isocarboxazid, isoflurane, linezolid, phenelzine, selegiline. Increased risk of dyskinesias with risperidone (NOT exhaustive)

Day 7: High increases have been seen in ADHD prescribing & [#methylphenidate](https://twitter.com/hashtag/methylphenidate?src=hashtag_click) use in UK recorded as increased by approximately 80% since 2015 (NHS England). This is across all age groups

CPD

1. Methylphenidate is a strong central nervous system stimulant

TRUE or FALSE

1. Methylphenidate has been licensed for decades for ADHD symptom management

TRUE or FALSE

1. Methylphenidate is a controlled drug

TRUE or FALSE

1. Which of the following is TRUE?
2. Methylphenidate cannot be taken with food
3. Methylphenidate is not licensed for children under 6 years
4. Methylphenidate has poor oral absorption
5. Methylphenidate is always taken as modified release tablet
6. It is safe to mix Methylphenidate with alcohol

TRUE or FALSE

1. Which of the following is TRUE?
2. Methylphenidate blocks the actions of dopamine
3. Methylphenidate inhibits the release of dopamine
4. Methylphenidate has a euphoric effect at therapeutic doses
5. Methylphenidate increases dopamine availability

D is correct

1. Methylphenidate is thought to improve concentration by activating an inhibitory part of the brain which helps control impulsiveness

TRUE or FALSE

1. Methylphenidate is contraindicated if there is cardiovascular disease

TRUE or FALSE

1. There are multiple severe drug-drug interactions for Methylphenidate

TRUE or FALSE

1. There is abuse potential with Methylphenidate, especially if used in high doses or intra-nasally

TRUE or FALSE