



Refills

Your dose of drug information in between sessions

Is 300 mg per day the target dose of bupropion (Wellbutrin®) for major depressive disorder?

Conclusion: The best available evidence indicates that, on average, bupropion does not have a larger antidepressant effect at 300 mg per day versus lower doses (100 – 150 mg per day) but does increase the risk of adverse events.

The BC Provincial Academic Detailing (PAD) service delivered the topic [Antidepressants for Major Depressive Disorder](#) from 2020 to 2023 which included the opportunity to look at dose-response evidence for antidepressants.¹

A common question we received is: Should we target a dose of 300 mg per day with bupropion (Wellbutrin®)?

In Canada, bupropion is approved for major depressive disorder at a maximum daily dose of 300 mg per day. It is available in two formulations:^{2,3}

- sustained-release (Wellbutrin SR®, generics): 100, 150 mg tablets
- extended-release (Wellbutrin XL®, generics): 150, 300 mg tablets

Publicly accessible prescribing information from Health Canada and the U.S. Food & Drug Administration often provides information on dose-response:

- [Health Canada Drug Product Database](#)
- [U.S. Food & Drug Administration Approved Drugs](#)

Health Canada and the U.S. Food & Drug Administration reviewed three Wellbutrin SR efficacy trials with doses ranging from 50 – 400 mg per day and concluded that the “clinical response did not improve with increasing dose, indicating a flat dose-response relationship in the range of doses studied”.^{2,4} However, several adverse events were identified to increase with bupropion dose: agitation, insomnia, tremor, tinnitus, seizure risk, toxicity in overdose.^{2,4} The subsequent approval of the XL formulation did not include new clinical efficacy trials or a dose-response assessment and was contingent only on showing bioequivalence to the SR formulation at equivalent doses.^{3,5}

A [2019 dose-response meta-analysis](#) of SSRIs, venlafaxine, and mirtazapine concluded that the lower end of the licensed dose range optimizes efficacy and tolerability in the acute treatment of major depressive disorder.⁶ A similar dose-response analysis of bupropion, including all published and unpublished trials, would improve our understanding of the relationship between increasing the dose, efficacy and tolerability.

¹BC Provincial Academic Detailing Service 2020 Antidepressants for Major Depressive Disorder; ²Health Canada Drug Product Database (Wellbutrin SR); ³Health Canada Drug Product Database (Wellbutrin XL); ⁴US FDA Approved Drugs (Wellbutrin SR); ⁵US FDA Approved Drugs (Wellbutrin XL);

⁶Furukawa Lancet Psychiatry 2019;6:601-609 (PMID:31178367)