



**TITLE: Bupropion for Depressive Illness: Abuse Potential and Clinical Practice Guidelines**

**DATE:** 19 October 2010

**RESEARCH QUESTIONS:**

1. What is the evidence regarding the abuse potential of bupropion in the general population?
2. What is the evidence regarding the abuse potential of bupropion within correctional facilities?
3. What are the clinical practice guidelines concerning the use of bupropion in the treatment of major depressive illness?

**METHODS:**

A limited peer reviewed literature search was conducted using the following bibliographic databases: Ovid MEDLINE, Ovid PsycINFO, PubMed and the Cochrane Library (2010, Issue 10). No methodological filters were applied to limit retrieval by study type. Where possible, retrieval was limited to the human population. The search was limited to English language documents published between January 1, 2005, and October 12, 2010. Grey literature was obtained through health technology agency websites and a focused Internet search. Internet links were provided, where available.

The summary of findings was prepared from the abstracts of the relevant information. Please note that data contained in abstracts may not always be an accurate reflection of the data contained within the full article.

**RESULTS:**

HTIS reports are organized so that the higher quality evidence is presented first. Therefore, health technology assessment reports, systematic reviews, and meta-analyses are presented first. These are followed by non-randomized studies and evidence-based guidelines.

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The literature search identified three case reports regarding the abuse or misuse of bupropion and seven relevant evidenced-based guidelines regarding the treatment of depression in adults. There were no studies identified that specifically addressed the abuse of bupropion in a correctional facility. There were no relevant health technology assessments, systematic reviews, or meta-analyses identified. Additional articles of potential interest may also be found in the appendix.

#### OVERALL SUMMARY OF FINDINGS:

There were three case reports involving nasal insufflation of bupropion.<sup>1,2,3</sup> Kim and Steinhart (2010)<sup>1</sup> reported a case involving a 38 year-old male presenting to an emergency department following a seizure. He had a history of approximately one seizure per month over the last several months. The patient admitted to crushing 15 bupropion 100 mg SR tablets and insufflating them, but denied recent alcohol or other recreational drug use. The patient admitted to cocaine use approximately four months earlier; he indicated he had learned about bupropion insufflation during a recent incarceration and that it provided him with a chemical euphoria similar to cocaine.

Langguth et al. (2009)<sup>2</sup> reported a case of bupropion abuse involving a 23 year-old woman with a history of cocaine use, depression, and panic attacks. The patient was prescribed bupropion SR 150 mg twice daily for depression with initial good effect over several months. However, upon investigation of worsening of symptoms, the patient admitted to an increasing consumption of cocaine. Further when cocaine was unavailable, the patient reported crushing up to eight bupropion SR 150 mg tablets and insufflating them, from which she reported effects similar to cocaine, but weaker. The only effect perceived by the patient as an adverse event from this practice was nasal pain.

Hill et al. (2007)<sup>3</sup> reported a case of bupropion abuse involving a 50 year-old who presented at an emergency department following a seizure. The patient's medication history included olanzapine 10 mg daily and bupropion SR 150 mg twice daily; the indication for the bupropion was unclear. The patient admitted to occasional nasal insufflation of bupropion, occasionally resulting in seizures, over the past three years. On the present occasion, he denied alcohol or other illicit drug use. He reported receiving a "cocaine high" from the nasal insufflation of bupropion.

There were seven evidenced-based guidelines concerning the treatment of depression in adults.<sup>4-10</sup> The guidelines were developed by the following organizations: the American Psychiatric Association (APA),<sup>4</sup> the National Institute for Health and Clinical Excellence,<sup>5,6</sup> the Institute for Clinical Systems Improvement,<sup>7</sup> the Canadian Network for Mood and Anxiety Treatments (CANMAT),<sup>8</sup> the American College of Physicians,<sup>9</sup> and the British Association for Psychopharmacology (BAP) guidelines.<sup>10</sup> Nearly all guidelines recommend individualization of therapy based on patient characteristics and side-effect profiles. Second-generation antidepressants (including bupropion) were identified as first-line options by the APA,<sup>4</sup> the BAP,<sup>10</sup> and CANMAT.<sup>8</sup> The APA also noted that bupropion may also be an option to simultaneously treat depression and assist with smoking cessation.

**REFERENCES SUMMARIZED:**

**Health technology assessments**

No literature identified.

**Systematic reviews and meta-analyses**

No literature identified.

**Non-randomized studies (case reports)**

1. Kim D, Steinhart B. Seizures induced by recreational abuse of bupropion tablets via nasal insufflation. *CJEM*. 2010 Mar;12(2):158-61. [PubMed: PM20219165](#)
2. Langguth B, Hajak G, Landgrebe M, Unglaub W. Abuse potential of bupropion nasal insufflation: A case report. *J Clin Psychopharmacol*. 2009;29(6):618-9. [PubMed: PM19910738](#)
3. Hill S, Sikand H, Lee J. A case report of seizure induced by bupropion nasal insufflation. *Prim Care Companion J Clin Psychiatry* [Internet]. 2007 [cited 2010 Oct 12];9(1):67-9. [PubMed: PM17599174](#) Available from: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1894833/pdf/i1523-5998-9-1-67.pdf>

**Guidelines and recommendations**

4. Gelenberg AJ, Freeman MP, Markowitz JC, Rosenbaum JF, Thase ME, Trivedi MH, et al. Practice guideline for the treatment of patients with major depressive disorder [Internet]. 3rd ed. Arlington (VA): American Psychiatric Association; 2010 Oct [cited 2010 Oct 12]. Available from: <http://www.psych.org/guidelines/mdd2010>
5. National Collaborating Centre for Mental Health. Depression: the NICE guideline on the treatment and management of depression in adults, updated edition [Internet]. London (UK): National Institute for Health & Clinical Excellence; 2010 [cited 2010 Oct 12]. Available from: <http://www.nice.org.uk/nicemedia/live/12329/45896/45896.pdf>
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7. Institute for Clinical Systems Improvement. Health care guideline: major depression in adults in primary care [Internet]. 13th ed. Bloomington (MN): Institute for Clinical Systems Improvement; 2010. [cited 2010 Oct 12]. Available from: [http://www.icsi.org/depression\\_5/depression\\_major\\_in\\_adults\\_in\\_primary\\_care\\_3.html](http://www.icsi.org/depression_5/depression_major_in_adults_in_primary_care_3.html)

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9. Qaseem A, Snow V, Denberg TD, Forcica MA, Owens DK, Clinical Efficacy Assessment Subcommittee of American College of Physicians. Using second-generation antidepressants to treat depressive disorders: a clinical practice guideline from the American College of Physicians. *Ann Intern Med* [Internet]. 2008 Nov 18 [cited 2010 Oct 12];149(10):725-33. Available from: <http://www.annals.org/content/149/10/725.full.pdf+html> Summary available from: <http://www.guideline.gov/content.aspx?id=13413&search=bupropion+and+depression>
10. Anderson IM, Ferrier IN, Baldwin RC, Cowen PJ, Howard L, Lewis G, et al. Evidence-based guidelines for treating depressive disorders with antidepressants: A revision of the 2000 British Association for Psychopharmacology guidelines. *J Psychopharmacol* [Internet]. 2008 Jun [cited 2010 Oct 12];22(4):343-96. Available from: <http://www.bap.org.uk/pdfs/antidepressants.pdf>  
*Note: see 2.3 Choice of antidepressant drug*

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**APPENDIX – FURTHER INFORMATION:**

**CADTH Rapid Reviews**

11. Health Technology Inquiry Service. Bupropion for adults with attention deficit hyperactivity disorder: a review of the clinical effectiveness and harms of misuse [Internet]. Ottawa (ON): Canadian Agency for Drugs and Technologies in Health; 2009. [cited 2010 Oct 12]. Available from:  
[http://www.cadth.ca/media/pdf/I0189\\_bupropion\\_adhd\\_htis-2.pdf](http://www.cadth.ca/media/pdf/I0189_bupropion_adhd_htis-2.pdf)
12. Health Technology Inquiry Service. Use of Bupropion in patients with depression and the associated risk of seizures: safety [Internet]. Ottawa (ON): Canadian Agency for Drugs and Technologies in Health; 2010 Apr 1 [cited 2010 Oct 12]. Available from:  
[http://www.cadth.ca/media/pdf/L0171\\_bupropion\\_risk\\_seizure\\_htis-L2.pdf](http://www.cadth.ca/media/pdf/L0171_bupropion_risk_seizure_htis-L2.pdf)

**Review articles**

13. Oyemade A. Seroquel misuse/abuse. Psychiatry [Internet]. 2010 [cited 2010 Oct 12];7(2):15-6. [PubMed: PM20376270](#) Available from:  
[http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2848471/pdf/PE\\_7\\_2\\_15.pdf](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2848471/pdf/PE_7_2_15.pdf)
14. Kollins SH. A qualitative review of issues arising in the use of psycho-stimulant medications in patients with ADHD and co-morbid substance use disorders. Curr Med Res Opin. 2008 May;24(5):1345-57. [PubMed: PM18384709](#)

**Additional references**

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