



# Benzodiazepines

- **Benzodiazepine common names:** barbs, benzos, downers, GHB, Georgia Home Boy, Grievous Bodily Harm, Liquid X, Nerve pills, phennies, R2, Reds, Roofies, Rophies, Tranks, Yellows<sup>2</sup>
- **Most Commonly Abused** (Valium, Xanax, Halcion, Ativan, Klonopin)<sup>2</sup>



<p><b>Characteristics (Depressant)</b></p>	<p><b>Benzodiazepines</b></p> <ul style="list-style-type: none"> <li>• Positive allosteric modulators of the GABAA-chloride receptor complex. Binding to the “benzodiazepine” GABAA receptor complex increases the frequency of opening of the chloride channels, facilitating inhibition of neuronal firing at the level of the limbic system, the brain stem reticular formation, and the cortex<sup>2</sup></li> <li>• Onset of action is dependent on the kind of benzodiazepine. For diazepam, it is 15 minutes or less with an elimination half-life of 20-80 hours. For lorazepam, onset of action is 15-30 minutes with a half-life of 10-20 hours. For clonazepam, the onset of action is 15-30 minutes with a half- life of 18-50 hours.<sup>2</sup></li> <li>• Benzodiazepines may be detectable in the urine for approximately 2-4 days<sup>5</sup></li> </ul>												
<p><b>Presentation during intoxication</b></p>	<p><b>Common signs and symptoms of intoxication can include:</b><sup>2</sup></p> <table border="0"> <tr> <td>Sedation</td> <td>Decreased motor coordination</td> </tr> <tr> <td>Decreased concentration</td> <td>Confusion and disorientation</td> </tr> </table> <p><b>Overdose</b></p> <ul style="list-style-type: none"> <li>• Symptoms include hypotension, respiratory depression and comma<sup>2</sup></li> <li>• Slurred speech, confusion, severe drowsiness, weakness and staggering, slow heartbeat, breathing problems and unconsciousness</li> </ul>	Sedation	Decreased motor coordination	Decreased concentration	Confusion and disorientation								
Sedation	Decreased motor coordination												
Decreased concentration	Confusion and disorientation												
<p><b>Monitoring and support during intoxication</b></p>	<p><b>Goal</b><sup>6</sup></p> <ul style="list-style-type: none"> <li>• Prevent severe respiratory depression</li> </ul> <p><b>Monitor</b><sup>2,6</sup>:</p> <ul style="list-style-type: none"> <li>• Assess level of disorientation and if possible time of last ingestion and amount consumed</li> <li>• Monitor for falls risk</li> <li>• Monitor vitals every 15 minutes initially and less frequently as acute symptoms subside</li> </ul> <p><b>Supportive Interventions</b><sup>6</sup>:</p> <ul style="list-style-type: none"> <li>• Ensure a quiet private space</li> <li>• Frequently orient client to reality and surroundings</li> <li>• Promote fluid and food intake as tolerated</li> </ul> <p><b>If Overdose</b><sup>2</sup>:</p> <ul style="list-style-type: none"> <li>• Flumazenil injection (a benzodiazepine antagonist) reverses the hypnotic-sedative effects of benzodiazepines.</li> </ul>												
<p><b>Withdrawal presentation</b><sup>2</sup></p> <p><i>Withdrawal occurs 1-2 days with a short acting agent (such as oxazepam, alprazolam and lorazepam) and continues 2-4 weeks or longer.</i></p> <p><i>Withdrawal occurs 2-7 days after the last dose (of a long-acting agent) and continues for 2-8 weeks or longer.</i><sup>3</sup></p>	<p><b>Symptoms may include:</b></p> <table border="0"> <tr> <td>Insomnia</td> <td>Headaches</td> <td>Muscle Aches</td> <td>Agitation</td> </tr> <tr> <td>Anxiety</td> <td>Twitches</td> <td>Tremors</td> <td>Diaphoresis</td> </tr> <tr> <td>GI distress</td> <td>Perceptual Changes</td> <td>Dysphoria</td> <td>Tachycardia</td> </tr> </table> <p>* Severe withdrawal symptoms may include paranoia and delirium</p> <p>* Severe reactions such as grand mal or petit mal seizures , depersonalization, psychotic states, and coma may occur (especially with alprazolam)</p>	Insomnia	Headaches	Muscle Aches	Agitation	Anxiety	Twitches	Tremors	Diaphoresis	GI distress	Perceptual Changes	Dysphoria	Tachycardia
Insomnia	Headaches	Muscle Aches	Agitation										
Anxiety	Twitches	Tremors	Diaphoresis										
GI distress	Perceptual Changes	Dysphoria	Tachycardia										



<p><b>Monitoring and support during withdrawal</b></p>	<p><b>Goal<sup>6</sup></b></p> <ul style="list-style-type: none"> <li>• Preserve respiratory and cardiovascular function and reduce withdrawal symptoms</li> </ul> <p><b>Monitor<sup>2,6</sup></b></p> <ul style="list-style-type: none"> <li>• Monitor regularly for withdrawal symptoms</li> <li>• Monitor mental status</li> <li>• Monitor risk for falls</li> <li>• Monitor hydration/nutrition and sleeping patterns</li> </ul> <p><b>Supportive Interventions<sup>6</sup></b></p> <ul style="list-style-type: none"> <li>• Provide reassurance and explanation of symptoms if necessary</li> <li>• Provide a calm and quiet environment</li> <li>• Withdrawals have also been managed by administering benzodiazepines regularly in gradually decreasing amounts (tapering)<sup>3</sup></li> </ul>						
<p><b>Potential Complications</b></p>	<p><b>May include:</b></p> <ul style="list-style-type: none"> <li>• Benzodiazepines can cause extensions of the generalized sedative effect (e.g., fatigue, drowsiness)</li> <li>• Impaired mental speed, central cognitive processing ability, memory and performance.</li> <li>• Anterograde amnesia (more likely with higher doses).</li> <li>• Chronic use can cause impaired visuospatial and visuomotor abilities.</li> <li>• Confusion and disorientation</li> <li>• Excessive doses can result in respiratory depression and apnea.<sup>2</sup></li> </ul>						
<p><b>Notable Drug interactions</b></p>	<table border="0"> <tr> <td data-bbox="396 936 933 1402"> <p><b>With Antidepressants<sup>2</sup></b></p> <ul style="list-style-type: none"> <li>• Cyclic antidepressants (such as desipramine and imipramine) and benzodiazepines can contribute to increased plasma levels of the antidepressant. Hypothermia has also been reported.</li> <li>• With SSRIs (fluoxetine, fluvoxamine and sertraline), there is decreased metabolism and increased plasma level of benzodiazepines.</li> </ul> </td> <td data-bbox="933 936 1529 1333"> <p><b>With Alcohol<sup>2</sup></b></p> <ul style="list-style-type: none"> <li>• Potentiation of CNS effects</li> <li>• Alprazolam reported to increase aggression in moderate alcohol drinkers</li> <li>• Brain concentrations of various benzodiazepines altered by ethanol (triazolam, estazolam concentrations decreased, diazepam concentration increased)</li> </ul> </td> </tr> <tr> <td data-bbox="396 1402 933 1795"> <p><b>With Antipsychotics<sup>2</sup></b></p> <ul style="list-style-type: none"> <li>• With clozapine, there can be marked sedation, increased salivation, hypotension, delirium, and respiratory depression.</li> <li>• With olanzapine, there may be a synergistic increase in somnolence. IM olanzapine and benzodiazepines can potentiate hypotension, bradycardia, and respiratory or CNS depression.</li> </ul> </td> <td data-bbox="933 1333 1529 1621"> <p><b>With Cocaine/ Crack<sup>4</sup></b></p> <ul style="list-style-type: none"> <li>• have effects that can worsen symptoms of anxiety and interfere with sleep</li> </ul> <p><b>With Cannabis<sup>4</sup></b></p> <ul style="list-style-type: none"> <li>• have effects that can worsen symptoms of anxiety and interfere with sleep</li> </ul> </td> </tr> <tr> <td data-bbox="396 1795 933 1971"> <p><b>With Lithium<sup>2</sup></b></p> <ul style="list-style-type: none"> <li>• Increased incidence of sexual dysfunction (up to 49%) has been reported with the use of clonazepam</li> </ul> </td> <td data-bbox="933 1621 1529 1971"> <p><b>With Opioids</b></p> <ul style="list-style-type: none"> <li>• can result in overdose and possible death</li> <li>• Symptoms of overdose include slurred speech, confusion, severe drowsiness, weakness and staggering, slow heartbeat, breathing problems and unconsciousness.</li> </ul> </td> </tr> </table>	<p><b>With Antidepressants<sup>2</sup></b></p> <ul style="list-style-type: none"> <li>• Cyclic antidepressants (such as desipramine and imipramine) and benzodiazepines can contribute to increased plasma levels of the antidepressant. Hypothermia has also been reported.</li> <li>• With SSRIs (fluoxetine, fluvoxamine and sertraline), there is decreased metabolism and increased plasma level of benzodiazepines.</li> </ul>	<p><b>With Alcohol<sup>2</sup></b></p> <ul style="list-style-type: none"> <li>• Potentiation of CNS effects</li> <li>• Alprazolam reported to increase aggression in moderate alcohol drinkers</li> <li>• Brain concentrations of various benzodiazepines altered by ethanol (triazolam, estazolam concentrations decreased, diazepam concentration increased)</li> </ul>	<p><b>With Antipsychotics<sup>2</sup></b></p> <ul style="list-style-type: none"> <li>• With clozapine, there can be marked sedation, increased salivation, hypotension, delirium, and respiratory depression.</li> <li>• With olanzapine, there may be a synergistic increase in somnolence. IM olanzapine and benzodiazepines can potentiate hypotension, bradycardia, and respiratory or CNS depression.</li> </ul>	<p><b>With Cocaine/ Crack<sup>4</sup></b></p> <ul style="list-style-type: none"> <li>• have effects that can worsen symptoms of anxiety and interfere with sleep</li> </ul> <p><b>With Cannabis<sup>4</sup></b></p> <ul style="list-style-type: none"> <li>• have effects that can worsen symptoms of anxiety and interfere with sleep</li> </ul>	<p><b>With Lithium<sup>2</sup></b></p> <ul style="list-style-type: none"> <li>• Increased incidence of sexual dysfunction (up to 49%) has been reported with the use of clonazepam</li> </ul>	<p><b>With Opioids</b></p> <ul style="list-style-type: none"> <li>• can result in overdose and possible death</li> <li>• Symptoms of overdose include slurred speech, confusion, severe drowsiness, weakness and staggering, slow heartbeat, breathing problems and unconsciousness.</li> </ul>
<p><b>With Antidepressants<sup>2</sup></b></p> <ul style="list-style-type: none"> <li>• Cyclic antidepressants (such as desipramine and imipramine) and benzodiazepines can contribute to increased plasma levels of the antidepressant. Hypothermia has also been reported.</li> <li>• With SSRIs (fluoxetine, fluvoxamine and sertraline), there is decreased metabolism and increased plasma level of benzodiazepines.</li> </ul>	<p><b>With Alcohol<sup>2</sup></b></p> <ul style="list-style-type: none"> <li>• Potentiation of CNS effects</li> <li>• Alprazolam reported to increase aggression in moderate alcohol drinkers</li> <li>• Brain concentrations of various benzodiazepines altered by ethanol (triazolam, estazolam concentrations decreased, diazepam concentration increased)</li> </ul>						
<p><b>With Antipsychotics<sup>2</sup></b></p> <ul style="list-style-type: none"> <li>• With clozapine, there can be marked sedation, increased salivation, hypotension, delirium, and respiratory depression.</li> <li>• With olanzapine, there may be a synergistic increase in somnolence. IM olanzapine and benzodiazepines can potentiate hypotension, bradycardia, and respiratory or CNS depression.</li> </ul>	<p><b>With Cocaine/ Crack<sup>4</sup></b></p> <ul style="list-style-type: none"> <li>• have effects that can worsen symptoms of anxiety and interfere with sleep</li> </ul> <p><b>With Cannabis<sup>4</sup></b></p> <ul style="list-style-type: none"> <li>• have effects that can worsen symptoms of anxiety and interfere with sleep</li> </ul>						
<p><b>With Lithium<sup>2</sup></b></p> <ul style="list-style-type: none"> <li>• Increased incidence of sexual dysfunction (up to 49%) has been reported with the use of clonazepam</li> </ul>	<p><b>With Opioids</b></p> <ul style="list-style-type: none"> <li>• can result in overdose and possible death</li> <li>• Symptoms of overdose include slurred speech, confusion, severe drowsiness, weakness and staggering, slow heartbeat, breathing problems and unconsciousness.</li> </ul>						



## Psychiatric effects

- Benzodiazepines can contribute to depression, particularly with high doses and in people with a pre-existing mood disorder.
- Benzodiazepines sometimes have a disinhibiting effect, (especially among people with psychosis or certain personality disorders).<sup>1</sup>



## References

1. Kahan, M. (2014). Physical Effects of Alcohol and Other Drugs. In M.Herie & W. Skinner (Ed.), *Fundamentals of Addiction: A Practical Guide for Counsellors* (4th ed., pp. xiii-xviii). Canada: Centre for Addiction and Mental Health.
2. Bezchlibnyk-Butler, K., Jeffries, J., Procyshyn, R., Virani, A. (2014). *Clinical Handbook of Psychotropic Drugs* (20<sup>th</sup> ed). Toronto: Hogrefe Publishing
3. World Health Organization (2009). Clinical Guidelines for Withdrawal management and Treatment of Drug Dependence in Closed Setting. Retrieved from [http://www.wpro.who.int/publications/docs/ClinicalGuidelines\\_forweb.pdf](http://www.wpro.who.int/publications/docs/ClinicalGuidelines_forweb.pdf)
4. Centre for Addictions and Mental Health. (2012). *Understanding Psychiatric Medications*. Retrieved on March 30, 2015 from: [http://knowledgex.camh.net/amhspecialists/resources\\_families/benzodiazepines\\_upm/Pages/driving.aspx](http://knowledgex.camh.net/amhspecialists/resources_families/benzodiazepines_upm/Pages/driving.aspx)
5. Substance Abuse and Mental Health Services Administration (2012). *Clinical Drug Testing in Primary Care. Technical Assistance Publication (TIP)32*. Retrieved from <https://store.samhsa.gov/shin/content/SMA12-4668/SMA12-4668.pdf>.
6. Townsend, M.C. (2015). *Psychiatric Nursing: Assessment, Care Plans, and Medications*. Oklahoma: F.A. Davis Company.