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Introduction

Benzodiazepines are a class of medication known as “anxiolytics” and are listed as a schedule IV controlled substance. They are often prescribed for anxiety, insomnia, seizures, and alcohol withdrawal, but are used for a vast array of off-label uses such as restless leg syndrome, muscle spasms, tinnitus, dementia, mania, and akathisia. Commonly prescribed benzodiazepines include Klonopin (clonazepam), Ativan (lorazepam), Xanax (alprazolam), Valium (diazepam), Onfi (clobazam), Tranxene (clorazepate dipotassium) and Librium (chlordiazepoxide).

Most prescribing guidelines recommend against benzodiazepine use for more than 2-4 weeks consecutively. A large percentage of patients prescribed benzodiazepines long term (more than 2 to 4 weeks) develop physical dependence and experience problems stopping them safely. No matter how much the patient may desire to withdraw, many experience debilitating mental and physical withdrawal effects.

It cannot be predicted at either the time of prescription or nor the time of cessation which patients will be able to successfully withdraw from a benzodiazepine without severe complications. Cessation may become a lengthy, life-altering process for some. It is imperative that doctors and patients are educated about the available methods of tapering. (We
offer a printable pamphlet providing a summary of patient-centered cessation here.) The methods discussed in this document have been developed through clinical experience, research, and throughout years of learning from patients in the benzodiazepine harm community.

**Physical Dependence Versus Addiction**

Prescribed physical dependence is not addiction. Misdiagnosis and treating prescribed physical dependence as addiction frequently leads to patient harm through the imposing of dangerous forced or over-rapid cessation methods. More information can be found at:

- *Why Prescribe Benzo Patients Shouldn’t Go to Detox or Rehab*
- *Benzodiazepine Related Problems; It’s Almost Never Addiction*
- *Words Can Hurt Those on Benzodiazepines.*

There FDA has provided guidance to help distinguish the difference between physical dependence, addiction, and abuse:

Physical dependence is not synonymous with addiction; a patient may be physically dependent on a drug without having an addiction to the drug. Similarly, abuse is not synonymous with addiction. Tolerance, physical dependence, and withdrawal are all expected biological phenomena that are the consequences of
chronic treatment with certain drugs. These phenomena by themselves do not indicate a state of addiction.

Additionally, the DSM-V (Diagnostic and Statistical Manual of Mental Disorders) states:

“Dependence” has been easily confused with the term “addiction” when, in fact, the tolerance and withdrawal that previously defined dependence are actually very normal responses to prescribed medications that affect the central nervous system and do not alone indicate the presence of an addiction.

How Benzodiazepine Use Alters the Body

The underlying physical changes that result in benzodiazepine tolerance and withdrawal remain unknown. One hypothesis is that since benzodiazepines work by enhancing the neurotransmitter GABA (gamma-aminobutyric acid) at the GABA-A receptor, long-term benzodiazepine use may down-regulate GABA receptors, while discontinuation may, with time, upregulate them. GABA receptors are located throughout the body and have many roles. They are an important part of the body's central nervous system and its response to stress.
Problems with Common Prescriber Cessation Methods

“Slow” Tapers That Aren’t

One common method is to reduce the benzodiazepine dose by around \( \frac{1}{4} \) to \( \frac{1}{2} \) of the pill weekly. With this method the taper ends in a few weeks. While some prescribers may view this as a gradual reduction, the majority of experienced researchers, physicians, patients and prescribing guidelines consider a 4-week taper to be much too rapid. A taper lasting four weeks is usually not enough time for the body to adjust. In fact, this rapid tapering method was found in one study to be ineffective for at least 32-42\% of patients who were prescribed benzodiazepines long term, with 90\% experiencing withdrawal symptoms.

There are many instances of patients developing a protracted withdrawal syndrome (PAWS) from rapid tapers of this nature. This withdrawal syndrome can last anywhere from 18-24 months, or, in some cases, for years. Slower, more gradual dose reduction, can reduce the severity of withdrawal as well as the risk of PAWS. Beyond protracted withdrawal risks, patients are also put at risk of seizures, and sometimes even death, from over-rapid tapers.
Patients who are physically dependent may also have become so severely sensitized to benzodiazepines that even minute fluctuations in dosage can cause terrible suffering. Since pills are only scored in halves (and many not scored at all), and even halves may be inaccurately distributed, attempting to split pills in order to evenly distribute the medication into equal parts can exacerbate the severity and fluctuation of symptoms throughout a taper.

**Skipping Doses**

Another commonly prescribed method of tapering decreases one of the daily doses throughout the week, over the course of several weeks, until all doses have been removed. This protocol presents the same problems as with the 1/4 dose reduction per week method. This approach can create a cluster of disabling mental and physical symptoms, which can persist for months or years, in those who experience trouble with cessation. Instead of a careful, slow steady decline of drug serum levels, skipping doses, or leaving longer time gaps in between doses, leads to even greater fluctuations—peaks and valleys in drug serum levels—sending patients in and out of interdose withdrawal, often resulting in unnecessary pain and suffering.
Tapering Styles

The delivery styles for safe cessation can be either dry (tablet) or liquid. There are also two different reduction styles: cut and hold or microtaper. Unfortunately, most benzodiazepines do not come in forms or dosages compatible with easy cessation, so all safe methods of cessation require manipulating the pill. All the methods in this document, aside from Heather Ashton’s Manual and Dr. Groot’s Tapering Strips, are layperson developed. A trusted and knowledgeable pharmacist should be consulted before altering any medication in any way. The most reliable and safest liquid titration methods will involve using manufacturer liquid and compounded liquid over at-home formulations, although the latter has been reported to anecdotally be effective for many as well.

Cut and hold

Cut and hold method involves reducing a set amount (not more than 5-10% of the current dose) and holding until symptoms subside. These drops often take several weeks to settle.

Microtaper

Online support communities developed different systems of “micro-tapering” to help reduce medication evenly throughout the taper to reduce withdrawal symptoms. Micro-tapering utilizes small
daily microgram reductions that add up to a 5-10% overall reduction (from current dose) every month. Daily micro reductions also help to avoid the physical and mental turmoil that larger weekly reductions may create for those who are very sensitive. Keeping track of dose reductions usually requires a daily log or spreadsheet.

**About Dry Tapers**

Dry tapers are popular methods due to convenience and the perceived initial complexity of other methods. Dry tapering involves breaking a pill, either by hand or using a pill cutter, file or razor, often combined with a jeweler’s scale, to make reductions. There are various methods for dry tapering, including micro-tapering (removing smaller microgram amounts more frequently) and larger cut-and-hold tapers (removing larger milligram amounts, a percentage of the current dose all at once followed by a hold).

Please remember that all the methods in this document, aside from Heather Ashton's Manual and Dr. Groot's Tapering Strips, are layperson developed. A trusted and knowledgeable pharmacist should be consulted before altering any medication in any way. The most reliable and safest liquid titration methods will involve using manufacturer
liquid and compounded liquid over at-home formulations, although the latter has been reported to anecdotally be effective for many as well.

The Ashton Manual

The Ashton Manual is a cut and hold dry tapering method. It is probably the most well-known and respected method in the benzodiazepine community. The manual is available for free on our site. It reports a 90% success rate. The Ashton protocol recommends using diazepam to taper, as the benefits of a long half-life are important for tapering. Diazepam’s half-life of up to 200 hours means it can help to prevent secondary issues, like interdose withdrawal (withdrawal symptoms that develop between doses), that can lead to major problems during cessation. Beyond a long half life, diazepam comes in smaller doses than the newer, shorter acting benzodiazepines for tapering. Clonazepam has a medium half-life, and the smallest dose available is 0.125 mg; alprazolam has a short half life, and the smallest dose is .25 mg. While these may seem like “small doses,” when one considers their equivalence to diazepam (0.125mg of clonazepam is approximately equivalent to 2.5 mg of diazepam and .25 mg of alprazolam is approximately equivalent to 5 mg of diazepam), they are not so small. Discontinuing from these dosage levels is not recommended, so they must be reduced by smaller than even halves or quarters of the lowest available manufactured doses available. For a discussion on the many
problems arising from available dosage sizes, see *Why Currently Available Benzodiazepine Doses Prevent Safe Withdrawal*.

As with any recommended guideline, it is important to remember that the patient should be allowed to dictate the rate and pace of their taper depending on their individual response to dose reduction. If symptoms are severe or disabling, the taper may be suspended for a few weeks until symptoms subside. Oftentimes this resolves the problem and the patient may then resume their taper. It is not uncommon for benzodiazepine tapers to take longer than one might expect due to individual responses.

While Ashton recommends diazepam due to its long half-life for tapering, other guidelines recommend staying on the originally prescribed benzodiazepine if withdrawal symptoms are tolerable. As with any new medication introduced, there is a risk of an adverse reaction. Some patients do not respond well to diazepam. Additionally, the Ashton Manual is reportedly too fast for many patients, with some finding the schedule of reductions too large to adjust to at once. A stepwise substitution from a shorter half-life drug to a longer-acting benzodiazepine can take weeks to adjust to before patients can begin or resume their taper. This adds more time to what is already perceived
as a painful, even life-altering project. Since benzodiazepine usage and withdrawal often creates numerous complex symptoms, it can be difficult to know if someone is suffering from an adverse reaction to new medication, or is simply symptomatic due to the neuroadaptations caused by long term exposure to benzodiazepines. So while the Ashton Manual has proven to be successful for many people, patients and prescribers should be prepared to make adjustments, or to explore other tapering options, such as those discussed below.

Heather Ashton speaking about her manual
https://www.youtube.com/watch?v=UsjhqdE7-6A
A summary of the Ashton Manual
https://www.youtube.com/watch?v=CRMH_gVCMrU

**Tapering Strips**

A newcomer to the cessation market are Tapering Strips, developed by Dr. Peter Groot in the Netherlands. These strips offer a dry microtapering method with gradual reductions. Taper rates can be adjusted according to patient need and ordered in advance. The benzodiazepines offered are Ativan (lorazepam), Valium (diazepam), Klonopin (clonazepam) Serax (oxazepam), Restoril (temazepam), and Imovane (zopiclon). As Tapering Strips is a Netherlands based
operation, availability will vary by country. On their site, they state they will ship them outside of the Netherlands with a prescription in accordance with legislation in place for the patient’s country. The expected delivery time is one week. A video explanation of the strips from a benzodiazepine patient who successfully tapered using these strips in the UK can be viewed here.

Dr. Groot speaks on his Tapering Strips:

https://www.youtube.com/watch?v=oKhh2FMw4mI

Claire, who completed her diazepam taper in 2017, speaking on her Tapering Strip experience:

https://www.youtube.com/watch?v=usYn2UBNtkA

**Dry Microtaper with Scale**

Some patients conduct a dry micro taper with a scale, removing a small amount, anywhere from 0.001 to 0.003 grams per day, or every few days. This method can be initially intimidating, but there are a few different approaches to accomplish it. There are videos and resources in support groups like BenzoBuddies available to explain the various methods. Many patients who find the Ashton Manual intolerable, but who are not able, for whatever reason, to utilize a liquid approach, choose this method. Do not alter any medication without first
consulting with a trusted pharmacist to obtain the proper instructions for the medication.

**Liquid Tapering Methods**

The benefits of liquid tapering allow a patient to decrease their doses gradually, at a lower reduction rate and frequency, allows for dosing multiple times a day which can ease interdose withdrawal effects, and allows patients to implement daily microtapers.

These reductions are cumulative (although the size of them in mLs, or the mg/mL ratio of drug to liquid, can be easily adjusted to slow the taper rate down if need be) until the dose is small enough to stop.

Please remember that all the methods in this document, aside from Heather Ashton's Manual and Dr. Groot's Tapering Strips, are layperson developed. A trusted and knowledgeable pharmacist should be consulted before altering any medication in any way. The most reliable and safest liquid titration methods will involve using manufacturer liquid and compounded liquid over at-home formulations, although the latter has been reported to anecdotally be effective for many as well.
**Manufacturer's Oral Solution**

This method is layperson developed. A trusted and knowledgeable pharmacist should be consulted before altering any medication in any way.

The most reliable and safest liquid titration methods will involve using manufacturer liquid and compounded liquid over at-home formulations, although the latter has been reported to anecdotally be effective for many as well. If the medication is available as an oral solution this method is ideal for reducing as it allows a patient to make small reductions or implement a daily micro-taper.

For example, an oral diazepam solution is available by Roxane Laboratories. This solution is well liked by patients as it comes in a manufacturer 5mg/5mL (1mg per mL) solution in the US, allowing for many reduction options. Using a 1mL oral syringe, patients can, for example, measure as little as 0.05 mg to 0.1 mg less of the total dose every day, or every 3 or more days. (How much is reduced depends on the individual response of the patient, their dose, and desired rate of reduction). Do not alter any medication without first consulting with a trusted pharmacist to obtain the proper instructions for the medication.
For an even more diluted solution and smaller dose reductions, this diazepam solution can be safely combined with water. For those who cannot tolerate oral diazepam solution, or cannot tolerate diazepam at all, a prescription for a liquid compound of the patient’s original benzodiazepine can alternatively be used.

**Compounding Pharmacies**

Suspending vehicles such as “OraPlus” can be combined with manufacturer liquid, crushed pills or the stock powder form of most benzodiazepines. Most compounding pharmacists will have access to a database that allows them to choose the appropriate suspending agent for each specific benzodiazepine. Liquid compounds may make it easier for the patient to control the rate of taper and require less work on their part compared to other tapering methods. We recommend choosing a pharmacist associated with the International Academy of Compounding Pharmacists or the Professional Association of Compounding Pharmacists.

For those who cannot tolerate the manufacturer’s oral benzodiazepines, or they are not available in their country, a prescription for a liquid compound can alternatively be used. Physicians
are familiar with using compounding pharmacies when prescribing for children.

Liquid compounds make it easier for the patient to control the rate of taper and require less work on their part compared to other tapering methods. We recommend choosing a pharmacist associated with the International Academy of Compounding Pharmacists or the Professional Association of Compounding Pharmacists.

**Home Liquid Compounding**

Instead of using a compounding pharmacy, patients may also make a liquid at home. Patients should be aware that, unlike commercially manufactured oral solutions and liquid compounds prepared using stability-tested formulations, homemade liquids have not been tested for potency or stability. Homemade liquids can only be made with medications that are not extended release and do not have a protective coating.

One approach to making a homemade liquid is to use a solvent like propylene glycol. Another is to use a commercially manufactured suspending vehicle such as OraPlus or OraBlend.

One method for home liquid compounding with a solvent utilizes a ratio. For example, 1 mg of medication: 2 mL solvent: 8 mL water.
Different benzodiazepines have different solubilities in different solvents, so the correct ratio depends on the specific benzodiazepine and solvent used. Do not alter any medication without first consulting with a trusted pharmacist to obtain the correct ratio for the benzodiazepine and solvent, including proper usage and storage of the homemade liquid (ie: shake before use, protect from light, store in the refrigerator at cold temperature, discard after X days).

The following video explains how one member of the layperson withdrawal community uses a 1 mg of medication : 2 mL solvent : 8 mL water ratio to prepare a homemade liquid:

[https://www.youtube.com/channel/UC1UiTq3LwZDOjuR4ZG7Zoiw/videos](https://www.youtube.com/channel/UC1UiTq3LwZDOjuR4ZG7Zoiw/videos)

**Water Titration Method**

There is the method known in the online support community as “water titration” or the “discard method.” It differs from the Liquid Compounding Method in that a patient discards a set amount of liquid and ingests the remainder, while with the liquid compounding method a patient takes exactly the dose they need.
Water titration may be used by some patients who may not tolerate compounded liquids due to multiple factors, such as intolerance to the suspending vehicle.

A pill is either crushed or allowed to disintegrate in a pre-measured mL amount of milk or water. Using an oral syringe, a measured amount (in mLs) of liquid is removed from this suspension and discarded, the remainder ingested. Traditionally, 1 mL = 1 day, so a 300 mL taper would take 300 days to complete, plus any holds.

The disadvantages to this method is that the majority of medications are not water soluble (meaning they are not fully dissolved in water) so the mixture makes a suspension that must be shaken to distribute the medication fully in the liquid. If a patient needs to dose multiple times a day, pouring the solution into multiple doses is likely to be uneven. Do not alter any medication without first consulting with a trusted pharmacist to obtain the proper instructions for the medication.

The following video explains one water titration method:
https://www.youtube.com/watch?v=whpciMUXHfY

**Tapering Strategies**
**Recommended Taper Rate**

As mentioned before, it is often difficult to taper medications that are not designed for gradual reduction. The general guideline is to not exceed a 5-10% reduction of the current dose every 2-4 weeks. According to *Schweizer et al*, reductions implemented by many physicians of 25% per week have a 32-42% failure rate.
Conversion Rates for Benzodiazepines

**Ashton Manual**

<table>
<thead>
<tr>
<th>Benzodiazepine / Z-Drug</th>
<th>Half-life</th>
<th>Approximate Equivalent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alprazolam (Xanax)</td>
<td>6-12</td>
<td>0.5 mg</td>
</tr>
<tr>
<td>Chlordiazepoxide (Librium)</td>
<td>5-30</td>
<td>25 mg</td>
</tr>
<tr>
<td>Clobazam (Onfi)</td>
<td>12-60</td>
<td>20 mg</td>
</tr>
<tr>
<td>Clonazepam (Klonopin)</td>
<td>18-50</td>
<td>0.5 mg</td>
</tr>
<tr>
<td>Clorazepate Dipotassium (Tranxene)</td>
<td>36-200</td>
<td>15 mg</td>
</tr>
<tr>
<td>Diazepam (Valium)</td>
<td>20-100</td>
<td>10 mg</td>
</tr>
<tr>
<td>Lorazepam (Ativan)</td>
<td>10-20</td>
<td>1 mg</td>
</tr>
<tr>
<td>Temazepam (Restoril)</td>
<td>8-22</td>
<td>20 mg</td>
</tr>
<tr>
<td>Zaleplon (Sonata)</td>
<td>2</td>
<td>20 mg</td>
</tr>
<tr>
<td>Zolpidem (Ambien)</td>
<td>2</td>
<td>20 mg</td>
</tr>
<tr>
<td>Eszopiclone (Lunesta)</td>
<td>6</td>
<td>3 mg</td>
</tr>
</tbody>
</table>

**Benzodiazepine Equivalence Table**

A tricky aspect of switching to a longer acting benzodiazepine is conversion. Ashton created a guide of estimated conversions. This guide can vary significantly from other charts as well as individual physician opinions. It is best to let the patient decide their optimal conversion dose (if they try a more conservative chart and feel underdosed or in withdrawal, they should be allowed to increase the dose until comfortable). Unlike opiates, benzodiazepine equivalents are
not studied or mandated by the FDA, and individual responses may differ.

**Medications to Alleviate Withdrawal Symptoms**

Currently, there are no FDA-approved medications for alleviating the symptoms of benzodiazepine withdrawal. Add-on medications such as Neurontin (gabapentin), Lyrica (pregabalin), Catapres (clonidine), BuSpar (buspirone), and antidepressants may be suggested but are not required to taper. There is little to no evidence base for their effectiveness as withdrawal aids, and some may also require their own taper or create their own adverse effects. The British National Formulary guidance on benzodiazepines states, “The addition of beta-blockers, antidepressants and antipsychotics should be avoided where possible.”

Benzodiazepine Information Coalition’s experience from the reports of the many thousands of people in online benzodiazepine support groups have found that many patients withdrawing from benzodiazepines develop multiple sensitivities to other medications which seem to aggravate symptoms of withdrawal, with many of these medications requiring their own lengthy taper afterwards. With a
sufficiently slow, patient-led taper, additional medications are usually ineffective and sometimes counter-productive.

**Dosing Multiple Times per Day**

Many patients find it particularly helpful to take their dose several times per day, depending on the half life of their particular benzodiazepine. For example, patients taking diazepam may benefit from evenly dividing their dose 2 or 3 times per day; those on clonazepam may benefit from dosing 3-4 times per day; whereas those taking lorazepam may need to dose 4-5 times per day. Some patients on alprazolam may require 5-6 doses per day just to maintain steady serum levels. Where possible, all doses should remain as even as possible in mgs as well. Patients who dose evenly and at regular intervals are more likely to successfully complete a benzodiazepine taper because they do not experience severe “drops” throughout the day between doses that may make discontinuation intolerable. These symptoms are commonly referred to as “interdose withdrawal.”

**Conclusion**

The most important thing in cessation is patient safety. There is no perfect method guaranteed to avoid a painful withdrawal, which is why preventing physical dependence to begin with is crucial, but many of the methods mentioned can lead patients to a tolerable taper, and all
of them maximize the patient’s chance for successful cessation and complete healing. In some rare cases a rapid withdrawal might be considered a lesser evil—for example, if the patient becomes paradoxical, but this occurs extremely infrequently. Many patients have an understandable desire to withdraw from medication they no longer wish to take as quickly as possible, but with benzodiazepines, once signs of physical dependence are present, this is often the most risky and dangerous approach. Whether working closely with a prescriber, or withdrawing with limited assistance, each patient should taper at the rate that is most comfortable for them. No compliant patient should ever be made to taper or be forced off of benzodiazepines against their will, and the methods listed here should make it clear that, should a patient choose to withdraw, there are many ways to accomplish this without relying on rapid tapers, oversized reductions, or cold turkeying.