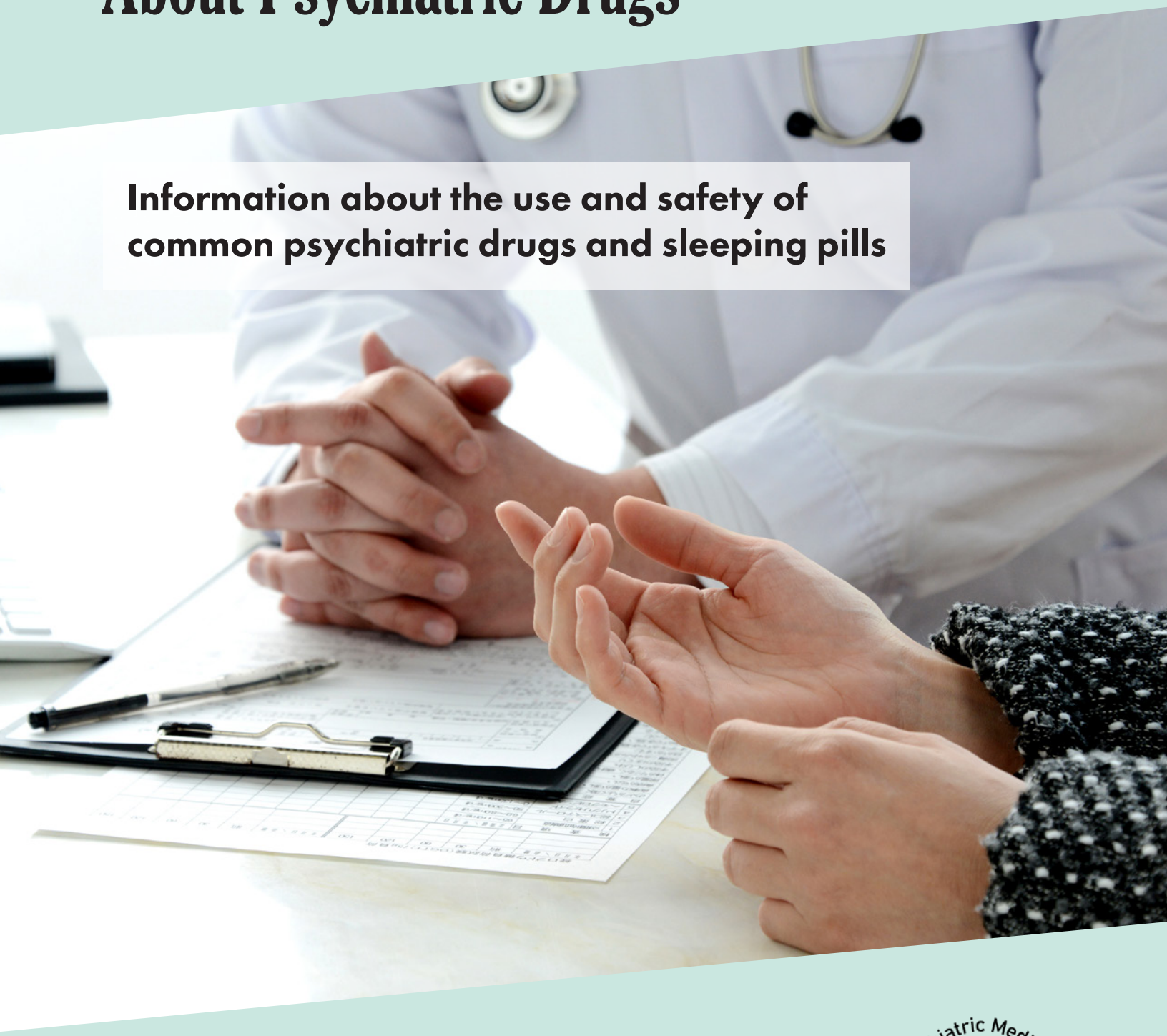
What People Need To Know About Psychiatric Drugs

Information about the use and safety of common psychiatric drugs and sleeping pills



BY JANET C. CURRIE, MSW, PHD

Psychiatric Medication Awareness Group

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Readers should be advised that the information provided in this booklet is not to be considered as medical advice but is for informational purposes only. Those with questions or concerns about any prescription drug should discuss them with a physician.

This booklet provides information about the psychiatric drugs and sleeping pills most frequently prescribed to Canadians, the main reasons why they are prescribed and their most common adverse effects. It also includes information about how to find out more about prescription drugs, the dangers of the prescribing cascade, how to discuss psychiatric drugs with your doctor, safe withdrawal and tapering, and other topics.

We believe that all Canadians have the right to have independent, objective and accurate information about prescription drugs so that they can make the best decisions about their health.

The guide was originally developed by the Psychiatric Medication Awareness Group (www.psychmedaware.org) and was co-authored by E. Daisy Anderson, MSc and Janet Currie MSW, PhD (2009). This second edition was completed by Janet C. Currie, rev. 2022 ©.

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The views expressed are those of Dr. Janet Currie and not those of UBC.

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WARNING

PSYCHIATRIC DRUGS AND SLEEPING PILLS SHOULD NEVER BE STOPPED SUDDENLY OR WITHDRAWN RAPIDLY. THIS COULD LEAD TO SERIOUS OR DANGEROUS ADVERSE REACTIONS.

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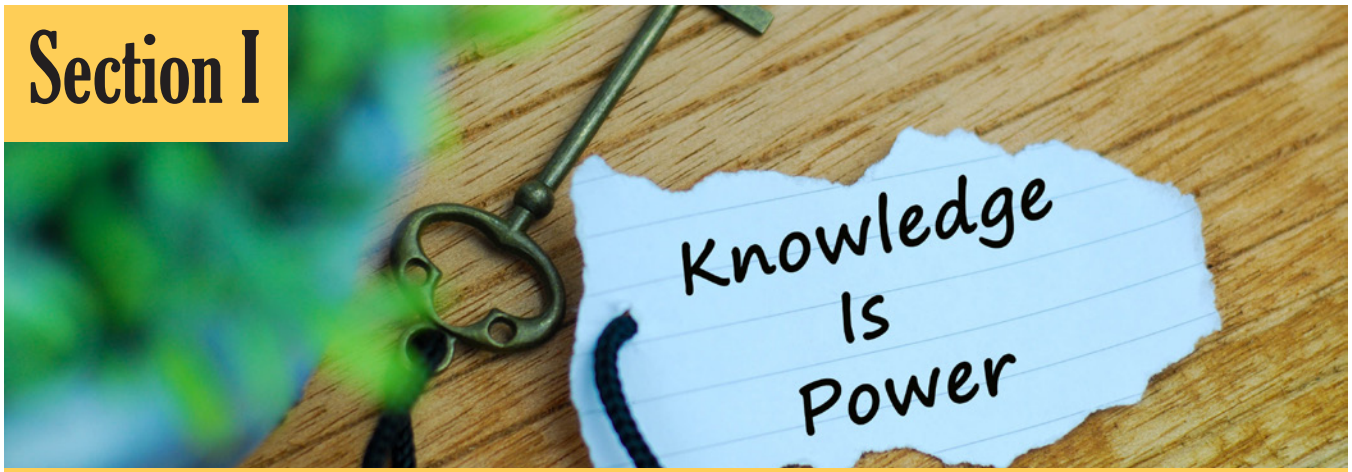


Why learn about psychiatric drugs?

Your doctor or someone else in your life may have suggested that you would benefit by taking a psychiatric drug. What do you need to know?

Psychiatric drugs have powerful effects on the brain and the body but we don't know exactly how they work or all of their long-term effects.

Psychiatric drugs target chemicals in the brain called neurotransmitters. These are the body's 'chemical messengers.' They carry messages between nerve cells (neurons) to many other cells in the body. Psychiatric drugs mainly target the serotonin, GABA, dopamine or noradrenaline neurotransmitters. However, there are estimated to be 100 neurotransmitters and we don't understand how they all work or interact with each other. Because neurotransmitters act on many parts of the body, taking a psychiatric drug can affect many different functions besides mood, including sexual functioning, muscles, movement, thinking, digestion, sleep, hormones and vision.

Pharmaceutical companies have promoted the theory that many mental health problems are caused by a chemical imbalance or a lack of certain chemicals in the brain which psychiatric drugs can correct. However, research has not shown these simplistic theories to be true. The brain is very complex and we haven't found a relationship between chemicals in the brain and mental health problems.

There is no laboratory test that can be used to diagnose a mental health condition. Mental health problems are usually diagnosed by interpreting a person's behaviour or symptoms. People are also often told that mental health problems such as psychoses, bipolar disease, depression or anxiety are genetic in origin and passed through families although the evidence to support these theories is limited. We do know that life experiences, including experiences of abuse and neglect, family violence, poverty, loss, and trauma can contribute to distress and mental health symptoms.

Canadians are very high users of psychiatric drugs and our use is growing.

Canadians have the fourth highest use of anti-depressants in the world. There has been a growing use of psychiatric drugs among Canadian children and teens (ADHD drugs for boys and antidepressants for girls). Many Canadians use sleeping pills and benzodiazepines on a regular basis. Some older Canadians are prescribed powerful antipsychotics even though they have never been diagnosed with psychoses or schizophrenia.

Psychiatric drugs do not cure mental health conditions.

Psychiatric drugs do not cure mental health

conditions but are primarily prescribed as a way of controlling symptoms. Even when someone with mental health problem decides to take a psychiatric drug, they will still need to address the issues that have contributed to their distress through counselling, therapy, support, dealing with trauma or trying to improve their life circumstances.

It is often difficult for Canadians to find comprehensive, non-biased information about prescription and over-the-counter drugs.

In Canada, there is no legal requirement that governments provide complete information to Canadians about prescription or over-the-counter drugs. The package insert that comes with a drugstore prescription lists only a few of the side effects of a drug. This means that, if you are thinking of using a psychiatric drug, comprehensive and unbiased information can often be hard to find.

Most of the information we learn about prescription drugs still comes from directly or indirectly from the companies that manufacture the drugs. These companies spend millions of dollars each year promoting prescription drugs to the public and healthcare providers. Advertising is done through disease awareness campaigns, television, magazines, the internet and medical journals and through promoting drugs directly to doctors. Drug companies also fund patient groups to help shape public perceptions about prescription drugs and the need for treatment.

FASTFACTS

Drug company promotion works! Canada has the tenth highest market for drug company sales in the world and we pay among the highest prices for drugs.

All drugs can have adverse effects.

An adverse drug reaction (ADR), also called a side effect, is an unpleasant or harmful reaction from taking a prescription or over-the-counter drug. Any drug prescribed for a mental health problem has potential ADRs – many are mild but some are serious and can be life-threatening. Drugs sold over-the-counter (OTC) for mental health symptoms can also have ADRs.

ADRs can occur as soon as a person takes a drug, days, weeks or months later or when someone tries to change or reduce their dose. In most cases, it is impossible to predict whether, how many and what type of ADRS a person might experience. We know very little about the effects of psychiatric drugs when they are prescribed long-term to children and youth.

Prescription psychiatric drugs can be beneficial in alleviating mental health symptoms for some. But research also tells us that many prescriptions are inappropriate, unnecessary and sometimes dangerous. "**Annually, thousands of individuals die and tens of thousands are hospitalized in association with suspected adverse drug reactions (ADRs) in Canada.**" *Maity and Longo, Adverse drug reactions in Canada (2009-2018) Healthcare Quarterly Vol.23 No. 1 2020.*

FASTFACTS

According to *Worst Pills, Best Pills*, drug-induced illness is one of the five leading causes of preventable disease and death in the United States

Even if an ADR from a drug is not life-threatening, ADRS like increased depression, insomnia, sexual problems, confusion, memory problems, weight gain, muscle pain, constipation and confusion can affect someone's quality of life. People who take multiple drugs are much more at risk for ADRs. Two-thirds of older Canadians take at least five prescription drugs.

FASTFACTS

Many adverse reactions are discovered after a drug is put on the market and used by many people. This means that new ADRS are often being identified. It took many years for drug companies to acknowledge that SSRI antidepressants could cause tolerance and dependency making it very difficult for some people to stop using them.

Section 2

Basic information about prescription drugs

Who can prescribe a prescription drug?

Prescription drugs need to be prescribed by a doctor, pharmacist or another healthcare provider who has the authority to prescribe. Before a drug can be prescribed and sold in Canada it has to be tested and approved by Health Canada. Only two clinical trials showing that a drug has a positive effect when compared to a placebo (sugar pill) are required for any drug to be approved. Health Canada sometimes fast tracks the approval process to approve some drugs more rapidly. Drugs that are more quickly approved are more likely to develop safety problems later.

Can drugs sold over-the-counter or herbal supplements also have adverse effects?

Over-the-counter (OTC) drugs are drugs that can be bought without a prescription at a store or drug store. OTC drugs include herbal remedies and supplements which some people use for sleep or mental health symptoms. OTC drugs can also cause adverse reactions and can interact negatively with other drugs.

What does it mean when a drug is prescribed "off-label"?

Off-label prescribing is when a drug is tested and approved for a specific health condition by Health Canada but is then prescribed by a doctor for other health conditions for which it has **not** been approved. Off-label prescribing is legal and occurs frequently. However, when a drug is prescribed off-label there is often limited evidence on its effectiveness or safety for this other use. For example, many antipsychotics are usually only tested and approved to treat psychoses or schizophrenia but have been prescribed off-label to seniors in care for sedation, insomnia and sometimes for behaviour management, all unapproved uses.

Always ask your doctor if the drug they are planning to prescribe is for an off-label use. If it is, ask why it is being prescribed and what evidence there is for its effectiveness and safety.

FASTFACTS

Research indicates that the vast majority of drugs that are prescribed off-label in Canada lack strong evidence that they are effective for these uses.

How do I find out more about a drug that is being recommended to me?

The first thing to find out is the name of the drug that is being recommended or prescribed to you. One drug can have many different names: a **brand name** which is the name given by the company that makes the drug and a **generic or chemical name** that describes its active chemical agreements.

Many drugs have several brand names so the best way to identify the drug you are taking is by its **generic or chemical name**. For example,

clonazepam is the chemical/generic name of a benzodiazepine (tranquillizer) which is sold in BC under the brand names of Rivotril, Clonazepam and Clonapam. Sometimes the generic name of a drug is proceeded by an abbreviation of the drug company that produced it. For example, the drug might begin with Apo which stands for the company Apotex (Product name: Apo-Clonazepam). When a drug has the name of the company in front of it that means it is now the generic version of the drug and is no long under a drug company patent which gives a company the exclusive right to sell it. A generic drug has the same active ingredients as a brand name drug but is usually cheaper.

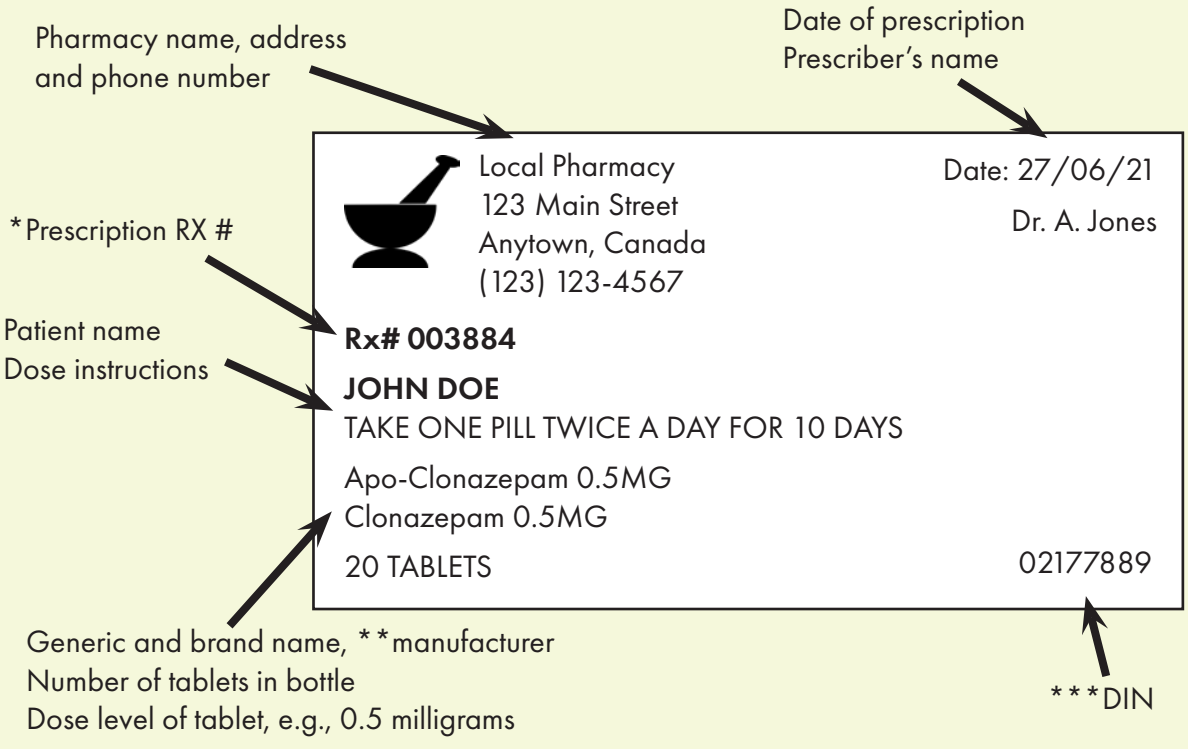
You can usually find out the generic and brand names of a drug by going to the website of a large retail pharmacy like Shopper's Drug Mart and linking to pharmacy or medication information.

To access you can use the chemical/generic name OR the brand name. Healthlink BC also provides information about the chemical and brand names of specific drugs and an overview of adverse effects. Sometimes these sites also provide information on the type or size of doses that are available but some drugstores no longer provide this information (for example, is the drug available in liquid, injectable, capsule (with beads) or pill form or in extended release)? These questions can also be discussed with a pharmacist or doctor or found by searching online.

Typical information included on the drugstore's prescription bottles is listed in the diagram below.

Drugstores include package inserts in prescriptions or you will find them with a drug purchased over-the-counter. This information is limited and only incudes a small number of the drug's possible ADRs.

What does the information on a prescription bottle mean?



*The prescription (RX) number is the drugstore reference number for your prescription if you call to ask about it or want to renew your prescription.
**The manufacturer is the company that has made the drug. Just abbreviations are given, for example, like Teva or Apo which are abbreviations the names of companies that make generic drugs.
***The DIN is the Drug Information Number that Health Canada gives all drugs when they are approved.

Section 3

What to ask your doctor about prescription drugs

You have the right to ask questions about any drug that is recommended to you by a healthcare provider. The following is a list of sample questions to consider asking:

- ✓ How many patients with my condition do you treat on a regular basis?
- ✓ What is the name of the of the drug being recommended (chemical and trade name)?
- ✓ What kind of drug is it (e.g. an antidepressant, antipsychotic, tranquillizer)?
- ✓ Do I need to take a drug at all for this condition? What other options, including non-drug options, could I try?
- ✓ Is this drug being prescribed off-label? If it is, why is it being recommended? What evidence is there that it works and is safe?
- ✓ Is this drug being prescribed to treat a side effect of a drug I am already taking?
- ✓ What do you expect the drug will do for me?
- ✓ How soon will this drug begin to work? What would be the signs that it is working?
- ✓ What is the starting dose? Is it likely that the dose will be increased? To what level? What is the recommended dose level for a person of my age and size?
- ✓ How long will the drug be prescribed? Is this the usual length of time? How long is it safe to take this drug?
- ✓ What are the most common and serious side effects of the drug? After starting the drug, when could I start having side effects?
- ✓ Are there any Health Canada warnings about this drug?
- ✓ Do you have a complete list of all the prescription and OTC medications I am taking now? Would a drug you are recommending have interactions with any of these medications?

- ✓ Are there similar drugs that treat this condition that have fewer side effects?
- ✓ Are there any foods or substances I should avoid while taking this drug – for example, alcohol, cannabis, herbals, supplements or foods?
- ✓ Are there any over-the-counter drugs that I should avoid when taking this medication? (Bring your doctor up to date on drugs like painkillers, allergy medications, sleep aids or others that you might take).
- ✓ Are there any routine tests that I should have while I am taking this drug? (Some psychiatric drugs require regular monitoring and testing).
- ✓ Is there a possibility that I might become dependent on this drug? How long could this take and what would be the signs of being dependent?
- ✓ What withdrawal effects could occur if I reduce or stop this drug?
- ✓ Do you have experience helping people taper or withdraw from this drug? Would you provide support to me if, at some time, I wanted to try withdrawing from this drug?
- ✓ What is the cost of this drug? Is there a generic version of this drug?
- ✓ What would happen if I do nothing or have no treatment?

*It is a good idea to keep your own record of any prescription or over-the-counter drug you are taking. If you use a regular pharmacy, you can ask the pharmacist to print out a list of your medications. For a more complete list you can sign up to the Health Information Gateway online through your BC Services Card.

Talking to your doctor about prescription drugs...some tips

1. Schedule a longer appointment to ask these questions. You need to arrange this with office staff in advance. There is usually a limit to how many of these longer appointments you can have each year.
2. Type out the questions you want to ask and give them to your doctor at the beginning of your meeting.
3. Take a family member or friend to the appointment with you to take notes. You probably won't remember everything that was said.

Remember that knowledgeable patients play a vital role in the doctor/patient relationship. Try to be as informed as possible before the meeting. It is important to explain your concerns and perspectives to your doctor so you can develop a plan of care together.

Section 4

Reasons why you might be prescribed a psychiatric drug

Psychiatric drugs and sleeping pills are among the most widely prescribed medications in Canada. They are prescribed for many reasons including for unapproved uses. In some cases, you may not be aware that a drug you have been prescribed is a psychiatric drug.

You might be prescribed a psychiatric drug because, on a visit to your doctor, you have discussed upsetting personal issues or symptoms related to the personal challenges of living. These could include losing a loved one, being worried about family members, being ill, not having enough money, exhaustion or insomnia, being in an abusive relationship, undergoing a divorce, losing your job, facing the challenges of adolescence or aging, being isolated as a new immigrant, experiencing trauma due to an accident or abuse or due to serving or living in a war zone.

Research shows that symptoms of depression and anxiety are two of the top reasons why Canadians visit their doctors. The majority of these visits are made by women. Many people talking to their doctors about anxiety or depression are prescribed a psychiatric drug.

Problems in life can be very distressing but they do not mean you have a serious or permanent mental illness. Research shows that many mental health symptoms are situational and time-limited. People can help themselves by using non-drug methods such as counselling, therapy and support, resting, being occupied, exercise, having someone to share problems with, belonging to a faith-based community or through practical problem solving to improve life situations.

Section 5

Common adverse effects of psychiatric drugs

This following section discusses adverse drug effects that can commonly occur with most psychiatric drugs and sleeping pills. Section 6 provides information about specific types of drugs like antidepressants, tranquillizers, antipsychotics and drugs for bipolar disorder.

Psychiatric drugs and sleeping pills can lead to tolerance and dependence after being used regularly for more than a few weeks.

Most psychiatric drugs and sleeping pills can lead to tolerance and dependence over time. The time it takes for tolerance to develop varies for each person but it can occur with regular use in just a few weeks or months. Tolerance and dependence can occur even when the dose being prescribed is low or the drug is only taken regularly for a few consecutive days a week for a few months or more.

FASTFACTS

Taking a medication at a low dose can have the same serious adverse effects, including tolerance and dependence, as taking a drug at a normal dose.

Tolerance is a biological phenomenon that occurs with prescribed psychiatric drugs, alcohol, most street drugs and some other medications. This means that taking the same dose has progressively less effect so that taking a higher dose is needed to have the same effect. Tolerance can lead to dependence as well as the emergence of distressing withdrawal symptoms if one tries to stop taking the drug suddenly. These symptoms can occur while a person is still taking the drug (between-dose withdrawals) or when a person changes or reduces their dose. Tolerance and dependence are **not** the fault of the individual.

Common signs that someone has become dependent on a psychiatric drug include agitation, insomnia, stomach problems, panic and depression. Withdrawal symptoms can imitate the reasons why a person was originally prescribed the drug. For example, benzodiazepines are often prescribed for anxiety. When a person becomes dependent on benzodiazepines one of their most common symptoms is increased anxiety and panic attacks.

Sometimes patients and their physicians interpret these drug-caused withdrawal symptoms as being caused by a worsening or new mental health problem. This may lead to doctors prescribing a higher dose of the existing drug or adding new drugs, both of which can increase adverse effects. This is called the **prescribing cascade** (see Section 8).

Difficulties stopping a psychiatric drug even when this is the best choice

Many people find it challenging to stop taking a psychiatric drug because of withdrawal symptoms which can be distressing and uncomfortable. Withdrawal symptoms can affect every part of the body as well as thinking and emotions. Withdrawal effects can be reduced by tapering slowly off a drug.

It is important NOT to stop taking any psychiatric drug or sleeping pill suddenly but become fully informed about safe drug withdrawal and develop a slow tapering plan with a physician who is knowledgeable about tapering (See Section 9).

An increase in suicidal thoughts and suicide, especially in younger adults

Many psychiatric drugs have the potential to increase suicidal thinking and behaviour. This appears to be more of a risk for youth and young adults and occurs more frequently when a drug is started or the dose is increased or reduced. Every patient and their family should be aware of this potential and monitor for these symptoms.

Increased risk of falls, accidents and car crashes, especially among older Canadians

Psychiatric drugs can cause loss of balance, sedation and confusion which can lead to a higher risk of falls, especially among older Canadians. Falls are a leading cause of injuries such as hip fractures which can result in disability, chronic pain, reduced quality of life and even death. The direct cost of falls to the Canadian healthcare system is at least $2 billion a year. Psychiatric drugs can also impair cognitive and psychomotor functions and lead to an increased risk of having an automobile accident.

Increased risk of harmful anticholinergic effects

Many psychiatric drugs, including antidepressants and antipsychotics, have anticholinergic effects. An anticholinergic effect is when a drug blocks the action of the neurotransmitter acetylcholine which is responsible for many body functions. A drug with anticholinergic effects can cause many ADRS such as dry mouth, constipation, difficulty urinating, confusion, blurred vision, short term memory problems, impaired attention and sexual dysfunction. It is recommended that people taking a drug with known anticholinergic effects talk with their doctors about reducing the number of these drugs as well as the length of time they are used.

FASTFACTS

Some recent studies have suggested that there may be an association between the taking of too many drugs with anticholinergic effects and the risks of dementia. Although research has not clearly established this link, it makes sense to reduce the use of anticholinergic drugs as much as possible.

Increased risk of heat stress

Many psychiatric drugs including some antipsychotics, antidepressants and mood stabilizers decrease the ability to sweat. This increases the risk of heat stress and symptoms such as dizziness, feeling light-headed, fainting or heat stroke.

Section 6

Information about specific psychiatric drugs

Table of contents

This section provides information about seven specific classes of psychiatric drugs - antidepressants, tranquillizers, sleeping pills, antipsychotics, monoamine oxidase inhibitors, drugs for bipolar disease and for attention deficit hyperactivity disorder (ADHD). It discusses why these drugs are prescribed, what they do in the body and their most common and/or serious adverse effects.

The drugs discussed in this section those being prescribed in British Columbia in 2020-21. In other provinces, other psychiatric drugs can be prescribed or the same drugs may be sold under different names. Each year, new psychiatric drugs are approved and sold in Canada but the vast majority are very similar to the drugs that are already available. Drugs can also be taken off the market.

ANTIDEPRESSANTS

Five classes of drugs are commonly prescribed for depression. These include:

- Tricyclic Antidepressants (TCAs)
- Monoamine Oxidase Inhibitors (MAOIs)
- Selective Serotonin Reuptake Inhhbitors (SSRIs)
- Serotonin, Noradrenalin Reuptake Inhibitors (SNRIs)
- Other drugs used as antidepressants including beta-blockers and herbal remedies

Antidepressants are prescribed to treat depression, stress, worry and grief. They can also be prescribed for many other health conditions including pain, anxiety, obsessive-compulsive disorder, smoking cessation, behavioural control, sedation, sleep problems, menstrual problems and menopause. Many of these uses are off-label, that is, the drugs have not been tested or approved for these conditions.

Depression can also be caused by some prescription drugs. Section 7 describes some of the commonly used drugs that can cause symptoms of depression.

Anyone who becomes depressed should first consider whether they might be taking a drug that is causing symptoms of depression

Using too much alcohol can also lead to depression. Some medical conditions, such as thyroid disorders, Parkinson's Disease and Alzheimer's are associated with depression in some people. In most cases depression is situational or reactive. In these cases, depression is a reaction to a distressing life situation such as the loss of a loved one, unemployment, poverty, serious illness, divorce, stress, worry, or early losses or trauma. Reactive depression usually resolves in time if a person is able to change their life circumstances or receives counselling or support. There is evidence that regular exercise improves mood and lessens anxiety and many people find it helpful!

Antidepressants primarily target the neurotransmitter serotonin. However, there is no evidence that they work by correcting "chemical imbalances in the brain" or by adding serotonin to a brain that lacks it. These are simplistic messages that were widely promoted by drug companies. The brain is very complex and we still do not completely understand how brain chemicals affect mood.

Adverse effects that can occur with many antidepressants can include the following:

- Sleep problems
- Risk of accidents including falls, fractures and car crashes
- Increased anxiety, panic and nervousness
- Painful agitation (akathisia) – feeling fidgety, irritable and needing to move
- Weight gain
- Sexual problems
- Feeling detached or numb, having a flat mood
- Digestive problems (e.g. nausea, constipation)
- Sedation
- Cognitive or memory problems
- Lowering of blood pressure
- Movement disorders
- Effects on heart rate and rhythm

Antidepressants can cause tolerance and dependence if taken for a few months. Withdrawal symptoms can be both psychological and physical and can vary in intensity from mild to severe. People can have withdrawal symptoms when they change or reduce their dose levels.

Antidepressants should not be stopped suddenly but tapered slowly. Going off them abruptly can lead to serious and sometimes life-threatening reactions.

Tricyclic Antidepressants (TCAs)

Commonly Prescribed TCAs

GENERIC/CHEMICAL NAME	BRAND NAME
amitriptyline	Elavil
clomipramine	Anafranil; Apo-clomipramine
desipramine	Norpramin; Apo-desipramine
doxepin	Sinequan; Teva-doxepin; Silenor
imipramine	Tofranil
nortriptyline	Aventyl
trimipramine	Surmontil; Trimipramine
maprotiline	Teva-Maprotiline

Tricyclic antidepressants were introduced in the 1950s. They were the most popular anti-depressants before SSRIs were introduced in the 1990s. They have many adverse effects are primarily approved to treat severe depression although are prescribed for off-label uses. They should not be used as a sleeping pill. . TCAs affect the levels of the neurotransmitters serotonin and norepinephrine.

Adverse effects of TCAs include increased sedation, lowering of blood pressure, heart rhythm problems, confusion, constipation, weight gain, sexual problems and visual hallucinations. Amitriptyline can cause Parkinson's Disease type symptoms. **TCAs should be avoided because of their strong anticholinergic effects.** Anticholinergic effects include confusion, delirium, short-term memory loss, impaired attention and physical effects such as dry mouth, urinary retention, blurred vision

and decreased sweating. *Older people are more affected by anticholinergic effects.* TCAs must not be stopped abruptly but need to be tapered slowly.

Monoamine Oxidase Inhibitors (MAOIs)

Commonly Prescribed MAOIs

GENERIC/CHEMICAL NAME	BRAND NAME
moclobemide	Manerix; Moclobemide
phenelzine	Nardil
tranylcypromine	Tranylcypromine; Parnate

Monoamine Oxidase Inhibitors (MAOIs) were first used in the 1950s. They act by blocking the effects of monoamine oxidase enzymes which increase the concentration of neurotransmitters like dopamine, norepinephrine and serotonin in the body and brain. ADRs can also interact with certain foods such as aged cheeses, fermented soy products like tofu, soy sauce and cured meat. Interactions with these foods can lead to very high blood pressure and an increase risk of stroke so patients must avoid eating them in most cases.

MAOIs must not be stopped abruptly but must be tapered slowly. Their effects continue in the body after withdrawal and it may take weeks for the body to start regenerating its own enzymes.

Adverse effects of MAOIs can include a sudden drop in blood pressure (from sitting to standing), dizziness, insomnia, sexual dysfunction, gastric problems, racing heartbeat, headache, confusion and weight gain. They can contribute to high levels of serotonin (serotonin syndrome), which is characterized by symptoms like anxiety, sweating, agitation, high fever, confusion and restlessness. They can increase suicidal thoughts and behaviour in young adults, children and teens.

MAOIs can interact with herbal remedies such as St. John's Wort, cold and allergy medications and some other antidepressants and should not be taken with these products.

Selective Serotonin Reuptake Inhibitors (SSRIs) and related drugs

Commonly Prescribed SSRIs

GENERIC/CHEMICAL NAME	BRAND NAME
escitalopram	Cipralex; Lexapro; Apo-escitalopram
fluoxetine	Prozac
fluvoxamine	Luvox
paroxetine	Paxil
sertraline	Zoloft
vilazodone	Viibryd
vortioxetine	Trintellix
citalopram	Celexa
trazodone (serotonin reuptake inhibitor antagonist)	Trazodone; Oleptro; Trazorel

SSRIs are the most commonly prescribed antidepressants in Canada. Prozac was one of the earliest SSRIs and was approved in the US in 1987. SSRIs target the neurotransmitter serotonin and other chemicals. Adverse effects of SSRIs include low energy and fatigue, insomnia, suicidal thoughts and behaviour, digestive problems such as nausea, anxiety, dizziness, restlessness, rash, confusion, manic type reactions, mood swings, flat mood, memory problems, tremors, sexual dysfunction, weight gain, and sweating, including night sweats. They are also associated with a higher incidence of falls and accidents.

Drugs that have negative effects when taken with SSRIs include some blood pressure medications, narcotics, sleeping pills and anti-anxiety medications. They should not be taken with MAOIs. To find out more about drug-drug interactions see **Section 10.**

SSRIs can lead to mild, moderate or severe withdrawal symptoms when people either change or reduce their dose. These symptoms can start within a few days. Withdrawal symptoms can include crying spells and depression, suicidal thoughts, anxiety, irritability, dizziness, confusion, flu-like symptoms, headaches and sensory abnormalities. SSRIs should always be tapered off slowly.

FASTFACTS

Six of the most widely used SSRIs antidepressants were studied in clinical trials that only lasted six weeks. Yet SSRIs are commonly prescribed for months or years.

Selective Serotonin and Noradrenalin Reuptake Inhibitors (SNRIs)

Commonly Prescribed SNRIs

GENERIC/CHEMICAL NAME	BRAND NAME
duloxetine	Cymbalta; Duloxetine
venlafaxine	Effexor, Effexor XR
desvenlafaxine	Pristiq

SNRIs are similar to SSRIs but act on two neurotransmitters: noradrenaline and serotonin. They should not be stopped abruptly but tapered off slowly.

Some Other Important Adverse Effects of SSRIs and SNRIs

Akathisia

Both Health Canada and the US Food and Drug Administration have issued warnings on the potential of both SSRI and SNRI antidepressants to cause significant emotional and behavioural changes such as akathisia. Akathisia is a form of drug-induced agitation that can cause restlessness and inability to sit still along with inner agitation including symptoms of fear, rage, tension and paranoia. Akathisia can lead to self-harm and harm to others.

Sexual dysfunction

The European Medicines Agency has issued special warnings and cautions for SSRIs and SNRIs because they may cause symptoms of sexual dysfunction sometimes continuing after the drug has been discontinued. Symptoms include changes in the desire for sex, arousal and orgasm problems and problems with sexual comfort and satisfaction. Tricyclic antidepressants and MAOIs are also associated with sexual dysfunction. How often sexual dysfunction caused by SSRIs and SNRIs occurs and how long it can last has not yet been clearly established.

Serotonin syndrome

Serotonin syndrome is an uncommon but potentially serious set of side effects that result from people taking several medications that produce a high level of serotonin in the body. Many psychiatric drugs, including SNRIs, SSRIs, MAOIs, lithium and some herbal remedies (St John's Wort) can lead to increased serotonin levels in the brain.

Some illicit drugs also affect serotonin levels in the brain. These include MDMA (Ecstasy), amphetamines, cocaine, LSD and possibly psilocybin (magic mushrooms). These drugs are sometimes used in microdoses for depression.

Serotonin syndrome symptoms include confusion, agitation, muscle twitching, shivering diarrhea, high temperature, seizures and irregular heartbeats.

Potential Effects of SSRIs on Newborns

Congenital malformations - First trimester exposure to paroxetine (Paxil) can increase the risk of major congenital malformations among newborns.

Persistent pulmonary hypertension - In the second half of pregnancy, the use of SSRIs can be associated with a newborn having a condition called persistent pulmonary hypertension which can cause breathing difficulties at birth.

Neonatal withdrawal syndrome - Babies exposed to SSRIs during the third trimester of pregnancy can experience some level of neonatal withdrawal syndrome. This also occurs with opioids, anti-anxiety pills and amphetamines. Symptoms include trembling, jitteriness and irritability, tight muscle tone, poor feeding, sleep problems and constant crying or high-pitched crying.

Other Antidepressants (Including Herbal Remedies)

GENERIC/CHEMICAL NAME	BRAND NAME
bupropion	Wellbutrin; Zyban
tryptophan	Tryptan ((alternative medicine)
hypericum	St. John's Wort (herbal)
mirtazapine	Remeron

Bupropion is prescribed for depression and to help people stop smoking. It is chemically similar to amphetamines. It boosts the neurotransmitter dopamine. Withdrawal from bupropion mimics withdrawal from nicotine and can be characterized by irritability and hostility. Weight loss and suicidal thoughts and behaviours are other potential adverse effects. Bupropion needs to be tapered if discontinued.

Mirtazapine boosts both serotonin and noradrenalin. Its adverse effects are similar to those of SSRIs although drowsiness is a more common effect. Other adverse effects include suicidal thoughts and behaviours, dizziness, increased weight gain and insomnia. This drug should not be taken with tryptophan when MAOIs have been taken in the last fourteen days.

Tryptophan is an amino acid which is considered to be an alternative medicine. When used, the body changes it into serotonin. It has not been proven to be effective at treating insomnia, ADHD, anxiety or depression. Overdoses of tryptophan can lead to a variety of symptoms including agitation, confusion diarrhea, restlessness or poor coordination.

St. John's Wort is the common name for the flowering plant *Hypericum perforatum*. There are many claims that St. John's Wort is an effective treatment for depression, however, the quality of research for these claims is poor. St. John's Wort has an extensive list of potential adverse reactions including fatigue, dizziness, gastric symptoms, headache and dry mouth. St. John's Wort can interact with other psychiatric drugs like anti-depressants, anti-anxiety drugs, cough and cold medicines and drugs to treat high cholesterol. St John's Wort can make birth control pills less effective.

St John's Wort
Image by sophie martin from Pixabay

DRUGS USED TO TREAT ANXIETY (BENZODIAZEPINES) AND SLEEPING PILLS

Benzodiazepines (also used as sleeping pills)

GENERIC/CHEMICAL NAME	BRAND NAME
alprazolam	Xanax; Alprazolam
bromazepam	Lectopam; Bromazepam
buspirone	BuSpar; Buspirone
chlordiazepoxide	Librax; Librium; Chlorax
clobazam	Apo-Clobazam; Frisium
clonazepam	Rivotril; Clonazepam; Clonapam
clorazepate	Tranxene; Clorazepate
diazepam	Valium; Diazemuls; Diastat
flunitrazepam	Rohypnol (date rape drug)
flurazepam	Dalmane; Flurazepam
lorazepam	Ativan
midazolam	Versed (pre-operative)
nitrazepam	Mogadon; Nitrazedon
oxazepam	Serax; Oxpam; Novoxapam
temazepam	Restoril; Temazepam
triazolam	Triazolam (Halcion)

Benzodiazepines are prescribed for anxiety, insomnia, to relax muscles, to control seizures, and are given prior to surgery. They are also used in alcohol detoxification and for acute psychoses.

They are also prescribed for many off-label reasons like grief, depression, menstrual problems, chronic pain and illness, family problems and for work stress/burnout. There is no evidence that benzodiazepines are effective for many of these purposes. Longer term use of benzodiazepines can aggravate or cause depression.

For their approved uses benzos can be useful and sometimes life-saving. However, they are intended **for short term use only** (no more than a few days or weeks) because of their high potential for tolerance and dependence. Dependency can occur even with regular use a few times a week. They should not be used for the long-term treatment of anxiety or seizures.

The risks of benzodiazepines have been known for over sixty years. In 1982, the Canadian scientist Ruth Cooperstock published a report for Health Canada on the dangers of benzodiazepine use and its risk for causing dependence. Her stark warnings on benzodiazepines remain true today.

There are many different benzodiazepines (see list on the left). All of them affect the body in the same way but they differ somewhat in terms of their potency, how long they act in the body and how quickly they are eliminated.

Benzodiazepines act on the neurotransmitter gamma aminobutyric acid (GABA). GABA reduces the output of other excitatory neurotransmitters including serotonin, norepinephrine, acetylcholine and dopamine so has a calming effect. However, these same neurotransmitters are necessary for alertness, muscle tone, emotional responses, hormones, heart rate and blood pressure control and many other functions that are impaired by benzodiazepines.

Adverse effects of benzodiazepines include:

- Over-sedation
- Increased risk of car crashes, falls (leading to hip fractures) and accidents (due to over-sedation)
- Poor concentration, confusion and memory impairment
- Poor coordination, loss of balance, muscle weakness
- Stimulant effects –increased anxiety, nightmares, irritability, hyperactivity or aggressiveness
- Depression
- Emotional anesthesia/blunting
- Neonatal complications - 'neonatal withdrawal' and floppy infant syndrome (poor muscle tone)
- Tolerance – benzodiazepines cause tolerance after regular use. This means the original dose becomes less effective over time and needs to be increased to achieve the same effect. When benzodiazepines are used as sleeping pills, their effects start diminishing after several weeks.

- Dependence - Benzodiazepines and can cause psychological and physical dependence after a few weeks or months of regular or repeated use. Withdrawal symptoms can begin to occur when a person is still taking the drug. People often mistake these symptoms for a worsening of their anxiety.

Benzodiazepines that have been taken for over a few weeks should never be stopped suddenly but should be tapered slowly over a period of weeks or months (see Section 9).

FASTFACTS

Benzodiazepines can mimic some of the cognitive symptoms of dementia. A person taking benzodiazepines can be misdiagnosed as having permanent mental deterioration, especially if they are older or living in a care facility

People who withdraw from benzodiazepines can experience a range of physiological and psychological effects. These include insomnia, intrusive memories, increased anxiety and panic attacks, sensory hypersensitivity, feelings of depersonalization, hallucinations, depression and aggression, muscle tension and stiffness, tremors, tics, blurred vision, palpitations, problems with balance and digestive problems. Seizures and convulsions can occur if someone taking a high benzo dose is withdrawn rapidly

Benzodiazepines can intensify the adverse effects of other psychiatric drugs such as sleeping pills, some TCAs, opiates and alcohol.

FAST FACTS

Benzos are frequently implicated in opioid overdoses and deaths.

Sleeping Pills and Herbal Remedies

Commonly Prescribed Sleeping Pills

GENERIC/ CHEMICAL NAME	BRAND NAME
zolpidem	Zolpidem; Sublinox, Ambien (sold in US)
zopiclone	Imovane
eszopiclone	Lunesta
chloral hydrate	Chloral hydrate; chloral hydrate ODAN (syrup form)
valerian root	Herbal remedies (over-the-counter)

Zolpidem and Zopiclone are commonly prescribed drugs for insomnia in Canada. They are chemically very similar to benzodiazepines and have the same adverse effects such as dizziness, muscle aches, digestive problems, drowsiness, cognitive problems and drugged feelings.

Sleeping pills should only be used for a few days or weeks. They lead to both tolerance and dependence and contribute to falls and car crashes. Stopping sleeping pills can result in rebound insomnia. Slow tapering is required.

Chloral hydrate is an old drug which is still prescribed for insomnia. It was first used as a synthetic sedative/hypnotic in 1869. It is not approved for medicinal use in the US or the European Community because of its adverse effects including sedation, gastric problems, respiratory depression and delirium. It should not be used by anyone with serious liver and kidney disease. It is a strong sedative and is sometimes found in homeopathic products.

Valerian root comes from a flowering plant and has been suggested as a treatment for insomnia and depression. There is no clear evidence of its effectiveness. It has not been approved by Health Canada as a medicinal product. It should not be used with tryptophan, Kava or St. John's Wort. Common adverse effects include headaches and an upset stomach.

ANTIPSYCHOTICS

Antipsychotics are powerful psychiatric drugs with the potential for serious and permanent adverse effects. The first antipsychotics, developed in the 1950s, are known as typical antipsychotics. Later antipsychotics, developed in the 1970s, are called atypical antipsychotics. Antipsychotics are also known as neuroleptics.

Commonly Prescribed Atypical Antipsychotics

GENERIC/ CHEMICAL NAME	BRAND NAME
aripiprazole	Abilify; Aripiprazole
asenapine	Saphris
brexpriprazole	Rexulti
clozapine	Clozaril
lurasidone	Latuda
olanzapine	Zyprexa
paliperidone	Invega; Invega Sustenna; Invega Trinza
quetiapine	Seroquel; Quetiapine
risperidone	Risperdol; ACT-Risperidone
ziprasidone	Zeldox; Auro-Ziprasidone

Commonly Prescribed Typical Antipsychotics

GENERIC/ CHEMICAL NAME	BRAND NAME
chlorpromazine	Thorazine; Largactil
flupenthixol	Flupenthixol; Fluanxol
fluphenazine	Fluphenazine
haloperidol	Haldol
levomepromazine/ methotrimeprazine	Nozinan
loxapine	Apo-loxapine; Xylac; Loxapac
pimozide	Orap; Pimozide
perphenazine	Perphenazine
prochlorperazine	Prochlorperazine; Nu-Prochlar
trifluoperazine	Stelazine

Antipsychotics are mainly approved to treat schizophrenia and psychoses, often related to schizophrenia. They are sometimes prescribed with other drugs for other conditions such as bipolar disease.

There has been an enormous growth in the prescribing of antipsychotics in Canada in the past fifteen years. They are frequently overprescribed or misprescribed for sleep problems, mood disorders, anxiety and to handle behavioural problems.

FASTFACTS

The Canadian Institutes for Health Research has estimated that 1 in 5 seniors in care facilities have been prescribed antipsychotics when they do not have a diagnosis of psychosis.

There has been overprescribing of antipsychotics to seniors, especially those living in care facilities. Many of these prescriptions are for off-label purposes (there is a very low rate of schizophrenia and psychoses among seniors). Seniors who are prescribed antipsychotics have an increased risk of death.

In the past decade, antipsychotics have been prescribed more frequently to children and adolescents in Canada. According to some Canadian research, many prescriptions for children appear to be primarily for unapproved uses such as for disruptive behaviour, depression and anxiety. Children who have been diagnosed with attention deficit hyperactivity disorder are sometimes prescribed antipsychotics. We don't have a clear understanding of the long-term effects of antipsychotics on the growing brain. Antipsychotics are also often prescribed to adults with autism spectrum disorder (ASD).

Antipsychotics have profound effects on the body and brain. The typical antipsychotics primarily target dopamine while the atypical antipsychotics target dopamine and serotonin.

Adverse reactions of antipsychotics include the following:

- **Extrapyramidal Reactions** – are serious antipsychotic-induced involuntary movement disorders. These include:

- abnormal muscle tightening and spasms, which can be disabling and painful. These are called *dystonic reactions or dystonia*;
- rapid back and forth jerking of the eyeballs called *nystagmus*;
- fidgeting, constant need to move legs, being compelled to walk miles, rocking or other purposeless motions. This is called akathisia and has been described as a motor churning in the body. It can persist after stopping the drug;
- abnormal movements such as trembling of the lips, jaw clenching, moving the tongue, and tics which can progress to uncontrollable jerking of the arms, legs or throat spasms. This is called tardive dyskinesia (TD). TD takes time to develop and can be permanent, even when a person stops taking the drug. TD is more common and severe among women, the elderly and those taking antipsychotics longer-term;
- Parkinson's-like symptoms, such as shaking, rigidity, slowness, poor balance and difficulty walking; weakness and muscle fatigue (akinesia) – listlessness, depression, lack of facial expression, trouble swallowing;

- Hormonal changes that may lead to changes in menstruation, swelling of breast tissue in men and boys and production of milk (in men and women);
- Dizziness/poor balance leading to increased risks of falls/hip fractures;
- Changes in blood sugar levels and a higher risk of diabetes;
- Sedation, insomnia, nightmares, daytime fatigue;
- Excess weight gain that can be hard to lose;
- Neuroleptic Malignant Syndrome – a rare serious condition, associated with high doses of antipsychotics. Symptoms include fever, muscle stiffness and delirium;
- Heart rhythm problems;
- Loss of mental ability which can be interpreted as dementia;
- Loss of cognitive ability, confusion, memory problems;
- Gastric problems;
- Anxiety, agitation, fear, paranoia;
- Increased risk of anticholinergic effects. These can include confusion, delirium, memory problems and physical effects such as dry mouth, constipation, blurred vision, difficulty urinating, vision problems, decreased sweating, and sexual problems.

Antipsychotics have significant interactions with a variety of drugs including benzodiazepines. alcohol, antidepressants, antihistamines, some blood pressure medicines, sleeping pills, and narcotics.

Antipsychotic use can lead to tolerance and dependence. They must be slowly tapered using small dose reductions (see Links and Resources).

DOMPERIDONE ALERT

Some antipsychotic drugs like domperidone are not prescribed for mental health conditions but to mothers with low breastmilk supply. This is an unapproved (off-label) use.

Some of these mothers have experienced antipsychotic withdrawal symptoms such as anxiety, insomnia, fatigue, cognitive effects and agitation if they stop domperidone abruptly and do not taper it slowly. The recommended daily dose of domperidone for any condition is 30 mg/day.

People who have been prescribed antipsychotics should be regularly monitored for serious adverse effects. Monitoring includes regular assessments by a physician, laboratory tests to check for metabolic and hormonal disorders and assessments for potential movement disorders using tests like the Abnormal Involuntary Movement Scale (A.I.M.S).

DRUGS PRESCRIBED FOR BIPOLAR DISORDER

Commonly Prescribed Drugs for Bipolar Disorder

GENERIC/ CHEMICAL NAME	BRAND NAME
carbamazepine	Tegretol; Carbamazepine, Mazepine
divalproex	Epival ECT; Apo-Divalproex
gabapentin	Neurontin; Gabapentin
lacosamide	Vimpat; Lacosamide
lamotrigine	Lamictal; Lamotrigine
lithium carbonate	Lithane; Carbolith; Lithmax
topiramate	Topamax; Topiramate
valproic acid	Depakene

Bipolar disorder, formerly called manic depression, is a health condition characterized by mood wings that can include mania, hypomania and depression. Prior to the 1990s, bipolar disorder referred primarily to a person having a pre-existing (not drug-induced) condition that was characterized by more severe mania, often requiring hospitalization (called Bipolar I).

More recently a milder form of bipolar disease, called hypomania or Bipolar II has been diagnosed. There are concerns that people with normal mood swings may be diagnosed with Bipolar II which could lead to unnecessary drug treatment.

There are are no laboratory tests that can diagnose bipolar disorder. Diagnosis is based on the experiences described by the patient and the interpretation of these symptoms by clinicians.

Research indicates that mania can sometimes be induced by treatment with antidepressants such as SSRIs and the SNRI, venlafaxine. When someone starts to experience uncharacteristic mood swings, their medications should be reviewed to see if a drug could be the cause.

Lithium, a naturally occurring salt, was the mainstay for the treatment of Bipolar I until the 1990s. Because lithium is not a patented drug it did not generate major profits for pharmaceutical companies. Some drug safety experts have raised concerns that the newer diagnosis of hypomania or Bipolar II is linked to the promotion and selling of many expensive anti-seizure drugs that still have patent protection and are more costly. Bipolar disorder is also treated with antipsychotics or a combination of drugs.

Anti-seizure drugs appear to interfere with overactive pain signals in the body through the altering of electrical activity in the neurons and the chemical transmissions between neurons by affecting neurotransmitters such as GABA. However, these exact mechanisms are unclear. Drugs for bipolar affect many systems and organs in the body, particularly the central nervous system so can have widespread physical effects. Adverse effects of lithium and anti-seizure drugs can include:

- Liver and kidney problems
- Gastric problems including nausea and vomiting
- Blurred vision
- Headaches
- Drowsiness, clumsiness and lack of coordination
- Tremors
- Skin rash
- Fatigue
- Suicidal thoughts, depression
- Weight gain
- Potential for birth defects and developmental delays in children
- Pancreatitis (inflammation of the pancreas).
- Irritable and aggressive behaviour

Gabapentin was widely promoted for the treatment of bipolar disorder. The pharmaceutical company that produced it was fined millions of dollars for illegally promoting it for this purpose even though this use had not been approved.

DRUGS PRESCRIBED FOR ADHD

Common Prescribed Drugs for ADHD

GENERIC/ CHEMICAL NAME	BRAND NAME
amphetamine mixtures	Adderall XR;
atomexetine HCL	Atomoxetine; Strattera
dextroamphetamine	Dexedrine; Apo-Dextroamphetamine

GENERIC/ CHEMICAL NAME	BRAND NAME
lisdexamfetamine	Vyvanse
methylphenidate	Methyphenidate; Biphentin; Concerta; Ritalin
modafinil (narcolepsy)	Modafinil; Alertec

ADHD is a behavioural problem characterized by poor attention span, impulsivity and hyperactivity which can affect both adults and children. The cause of ADHD is unknown and there are no specific diagnostic indicators or tests to identify it.

Many children and youth diagnosed with ADHD have symptoms that are affected by environmental factors like problems in the home or school environment. Boys are diagnosed with ADHD two to three times more than girls. Some research suggests that children who are diagnosed with ADHD tend to be the youngest children in their class.

The main drugs used to treat ADHD are stimulants that affect the central nervous system and that increase the levels of the neurotransmitters dopamine and norepinephrine. Stimulants have the potential to be abused and to be habit-forming. Amphetamine and methylphenidate drugs act in a similar way in the body.

Children and youth are more vulnerable to the negative effects of long-term drug therapies. There is a lack of research on the impact of stimulants on children in terms of their quality of life, longer-term school performance and future health.

Adverse effects of ADHD drugs include the following:

- Anxiety
- Insomnia
- Stomach problems/nausea
- Lack of appetite
- Weight loss
- Headaches
- Abdominal pain
- Nervousness, aggression, hostility
- Lower growth rate
- Tics (methylphenidate)
- Psychosis in some patients
- Increased heart rate/concerns about cardiovascular effects
- Tolerance and dependence – must be tapered slowly

Notes: Modafinil is a stimulant drug approved for adult sleeping disorders such as narcolepsy. It has not been approved for use in children. It is associated with serious fetal malformations, and rashes as well as psychiatric symptoms. It may affect the effectiveness of birth control pills.

HEART AND BLOOD VESSEL DRUGS USED IN PSYCHIATRY

Commonly Prescribed Heart and Blood Vessel Drugs Used in Psychiatry

GENERIC/ CHEMICAL NAME	BRAND NAME
atenolol	Tenormin; Tenorectic
bisoprolol	Bisoprolol
metoprolol	Lopresor; Metoprolol
propranolol	Propranolol; Inderal
nadolol	Apo-Nadol; Nadolol

Beta-adrenergic blocking agents or beta-blockers are heart and blood pressure drugs that are mainly prescribed to treat high blood pressure, coronary artery disease and heart failure.

They are also sometimes prescribed off-label to treat a variety of psychiatric symptoms such as anxiety, aggression, depression, akathisia and movement disorders caused by psychiatric drugs. Beta-blockers block the effects of epinephrine and are sometimes used to treat anxiety, social phobia, performance anxiety and other conditions (e.g., akathisia). Adverse effects from beta-blockers can include the following:

- Dizziness and faintness
- Shortness of breath and trouble breathing
- Depression
- Fatigue
- Nightmares and vivid dreams
- Cold hands and feet
- Sexual problems

Beta-blockers should not be stopped abruptly but should be tapered off slowly in small increments.

Section 7

Other drugs that can cause mental health symptoms

Some drugs that are prescribed to treat other health problems such as allergies, high blood pressure and pain can sometimes cause mental health symptoms.

Whenever a person develops a new or a worsening mental health symptom like depression, anxiety, or confused thinking, a physician should ALWAYS first review all the prescription and over-the-counter drugs a person is taking to see if they could be the cause. If this is the case, the drug should be reduced in dose or slowly discontinued.

TThe following table provides examples of some commonly used prescription and over-the-counter drugs and the mental health symptoms they can cause in some people. This is not a complete list. To see if a specific drug you are taking could cause mental health symptoms check Section 10 for links to more resources.

FASTFACTS

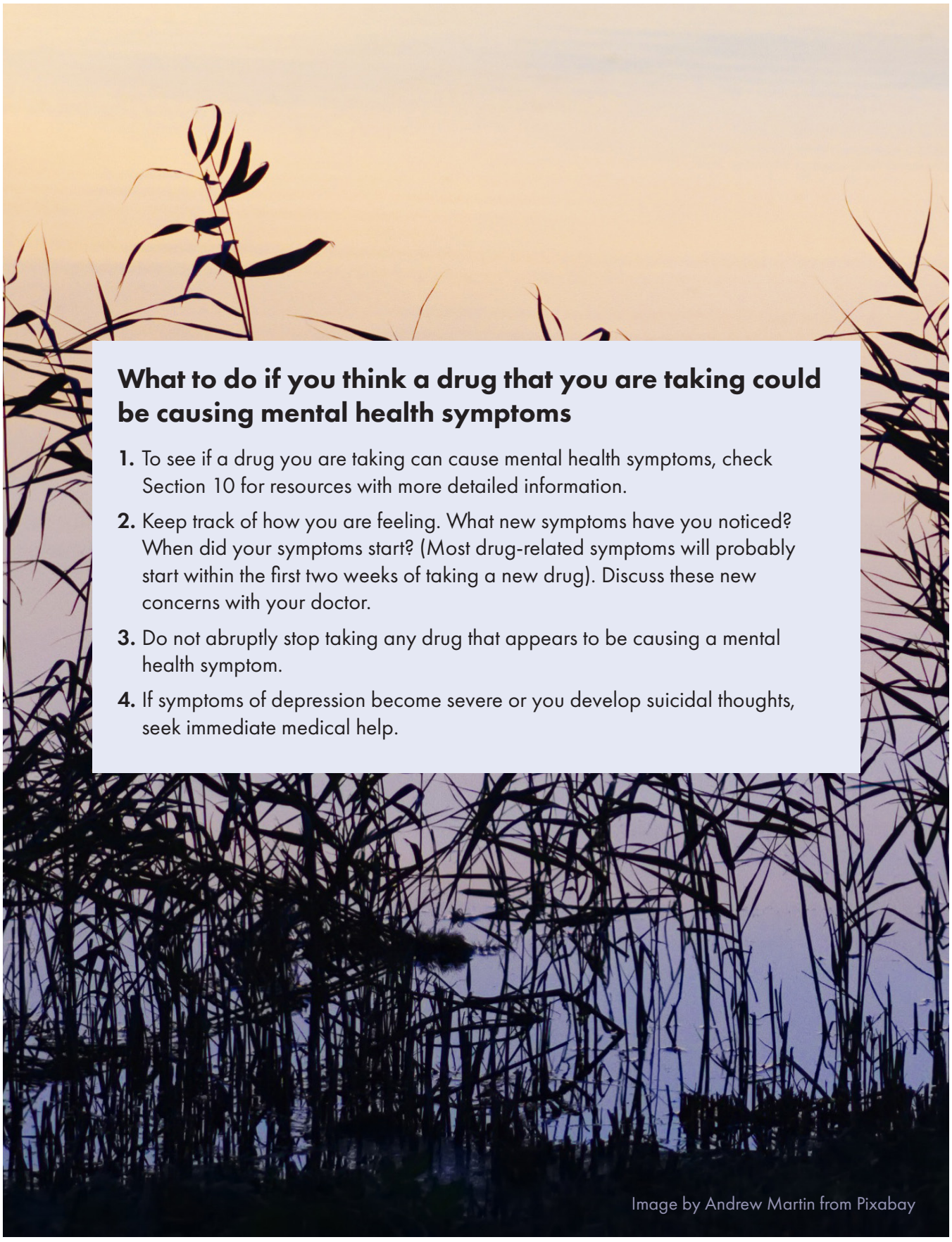
A US study conducted in 2018 found that 37.2% of adults were taking medications that had depression as a potential adverse effect.

(Qato et al. Prevalence of Prescription Medications with Depression as a Potential Adverse Effect Among Adults in the United States. JAMA.2018;319 (22):2289-2298)

Table 3: Examples of drugs that can cause mental health symptoms

Types of mental health symptoms	Type of drug and drug class	Some specific examples of these drugs
Drugs that can cause cognitive/thinking problems/mental impairment	Anticholinergic drugs: a large class of drugs that affect thinking, and can cause hallucinations. They include drugs for allergies, nausea, antidepressants, antipsychotics, bladder control, sleeping pills, muscle relaxants and painkillers	diphenhydramine (Benadryl); dimenhydrinate (Gravol); paroxetine (Paxil); quetiapine (Seroquel); oxybutynin (Ditropan); trazodone; Sominex; methocarbamol (Robaxin); opioids; Tylenol PM and other drugs with PM.
	Cholesterol drugs (statins)	atorvastatin (Lipitor); simvastatin (Zocor)
	Narcotic Painkillers	fentanyl, hydrocodone (Vicodin); hydromorphone (Dilaudid; morphine, oxycodone)
	Drugs to treat Parkinson's Disease	levodopa-carbidopa (Sinemet); apomorphine; pramipexol; ropinirole
	Drugs that treat high blood pressure	beta-blockers such as atenolol, metoprolol, propranolol
Drugs that can cause symptoms of depression	Drugs for high blood pressure	beta-blockers such as atenolol, metoprolol, propranolol, calcium channel blockers; Ace Inhibitors; thiazide diuretic combinations; clonidine
	Drugs for eye conditions	timolol
	Corticosteroids (for reducing inflammation)	hydrocortisone; cortisone; dexamethasone; prednisone
	Drugs for Parkinson's Disease	levodopa-carbidopa (Sinemet)
	Drugs that include hormones: for birth control and menopause	ethinyl estradiol; estradiol; finasteride; birth control-Alesse, Yasmin; menopause-Premarin
	Drugs for gastric upset, heartburn and gastroesophageal disease	H2 blockers –cimetidine (Tagamet); rantidine (acid reducer, Zantac 75); proton pump inhibitors (PPIs) – omeprazole (Losec, Prilosec)
	Cholesterol drugs (statins)	atorvastatin (Lipitor); rosuvastatin (Crestor)
	Anticholinergics (See above)	multiple drugs for allergies, sleep, painkillers
	Painkillers	ibuprofen (Advil, Motrin); tramadol; hydrocodone;
	Antibiotics/anti-infective agents	ciprofloxacin (Cipro); metronidazole (Flagyl);
	Smoking cessation drugs	varenicline (Champix)
	Acne medications	isotretinoin (Accutane)

Types of mental health symptoms	Type of drug and drug class	Some specific examples of these drugs
Drugs that can cause symptoms of anxiety and nervousness	Thyroid replacement drugs	levothyroxine (Synthroid)
	Corticosteroids	cortisone; prednisone; dexamethasone
	Asthma medications	albuterol; other bronchiodilators
	Parkinson's medications	Levodopa /carbidopa (Sinemet)
Drugs that can have psychiatric effects e.g., psychosis symptoms, hallucinations, paranoia	Allergy medications	diphenhydramine (Benadryl); hydroxyzine
	Antibiotics	ciprofloxacin (Cipro)and other fluoroquinolone antibiotics; metronidazole (Flagyl)
	Painkillers	High doses of aspirin; NSAIDs such as celecoxib (Celebrex); tramadol
	Thyroid medications	levothyroxine (Synthroid)
	Erectile dysfunction drugs	sildenafil (Viagra)
	Cough cold, allergy, asthma, decongestants	diphenhydramine (Benadryl and Sominex); albuterol (Ventolin); pseudoephedrine (Sudafed)
	Corticosteroids	hydrocortisone; cortisone; dexamethasone; prednisone
	Parkinson's drugs	levodopa/carbidopa (Sinemet)
	Blood pressure medications	Clonidine; betablockers such propranolol (Inderal)
	Eye drugs	timolol (Timoptic)
	Gastrointestinal drugs	cimetidine (Tagamet)
Drugs that can cause symptoms of confusion or delirium	Drugs for infections	Trimethoprin (Bactrim); ciprofloxacin (Cipro)
	Cold, cough, allergy and asthma	diphenhydramine (Benadryl); Sominex
	Heartburn drugs	cimetidine (Tagamet); rantidine (Zantac 75)
	Antidepressants	fluoxetine (Prozac); bupropion (Wellbutrin)
	Anti-anxiety drugs (benzodiazepines)	diazepam (Valium); alprazolam (Xanax).
	Cortisone drugs	cortisone; prednisone; dexamethasone
Drugs that can cause sleep problems	Anti-seizure and some types of pain medications	gabapentin (Neurontin);
	Cold medications	dextromethorphan (Sudafed, Dimetapp, Robitussin, Benylin and others)
	Thyroid replacement drugs	levothyroxine (Synthroid)
	Antidepressants	venlafaxine (Effexor); paroxetine (Paxil);
	Antipsychotics	risperidone (Risperdal)
	Mood stabilizing/anti-seizure drugs	Topiramate (Topamax)



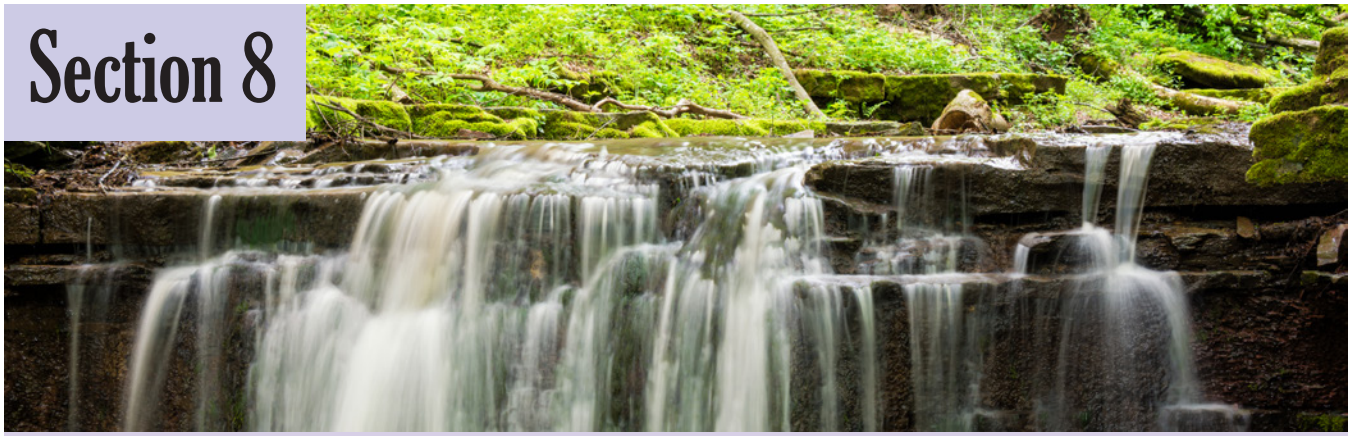
What to do if you think a drug that you are taking could be causing mental health symptoms

1. To see if a drug you are taking can cause mental health symptoms, check Section 10 for resources with more detailed information.
2. Keep track of how you are feeling. What new symptoms have you noticed? When did your symptoms start? (Most drug-related symptoms will probably start within the first two weeks of taking a new drug). Discuss these new concerns with your doctor.
3. Do not abruptly stop taking any drug that appears to be causing a mental health symptom.
4. If symptoms of depression become severe or you develop suicidal thoughts, seek immediate medical help.

Image by Andrew Martin from Pixabay

** Sources: Worst Pills, Best Pills, BC Healthlink, drugs.com and londondrugs.com*

Section 8



Beware of the prescribing cascade

People taking multiple drugs can become the victims of a prescribing cascade. A prescribing cascade occurs when a person experiences a new symptom that is caused by a drug s/he is already taking. The problem is that physicians may not identify these new symptoms as coming from an existing drug. Instead, they may believe that their patient has a new or worsening health or mental health condition. This may lead them to increase the dose of an existing drug OR prescribe new drugs to address the new symptoms instead of stopping or reducing the drug causing the problem. Higher doses of existing drugs and new drugs can increase the number and severity of ADRs. This can then lead to even MORE drugs being prescribed. This pattern is called a prescribing cascade.

Prescribing cascades are common among people who take multiple drugs, who are older and who are prescribed drugs by different physicians and specialists. Prescribing cascades can go on for years and account for most of the ADRs an individual might experience.

To avoid being caught up in a prescribing cascade, it is important to minimize the number of drugs being taken and take the lowest dose of a drug for the shortest period of time.

Example of a prescribing cascade

The patient is prescribed **Ativan**, a benzodiazepine for anxiety, and becomes depressed (depression is an adverse effect of taking a benzodiazepine longer term). The doctor then prescribes an **antidepressant** (for the depression) which can cause a patient to develop stomach problems which may then be treated by a **proton pump inhibitor** which ALSO has adverse effects. This prescribing cascade might never have happened if Ativan had been prescribed for a very short time, as is recommended, and the doctor had recognized that it could cause depression.

Non-prescription drugs can also contribute to prescribing cascades because they also have adverse effects.

Any new mental health symptom experienced by a person should first be checked to see if a drug already being taken could be causing these symptoms.

Remember that many mental health problems like anxiety, depression, mood changes and hyperactivity can be a response to a situation or the environment that can improve with time or practical problem-solving. Effective non-drug approaches for depression, anxiety and stress include counselling, psychotherapy, cognitive- behavioural therapy, peer support, wellness interventions such as yoga and exercise.

Poor sleeping can make life problems seem worse. Insomnia can be treated successfully by a specific type of cognitive-behavioural therapy designed for insomnia. Try to not to panic when sleep is not ideal but get the rest you can.

These approaches take time to work but don't have adverse effects and often provide long-term relief.

Section 9

Information about safe tapering & withdrawal

Some people taking a psychiatric drug want to consider stopping it because they feel the drug is not helping them or is making them feel unwell. A physician may also have concerns about the drug's adverse effects. Some women want to stop taking psychiatric drugs when they are pregnant or breastfeeding.

Many psychiatric drugs were never intended to be prescribed long-term. In many cases, depression and anxiety are situational and time-limited and respond well to non-drug approaches.

Patients have the right to ask their healthcare providers if a psychiatric drug they are taking could be reduced or stopped and, if so, a how this could be done safely (psychotropic drugs should never be stopped suddenly). It is important to work with a healthcare provider who has tapering experience to develop a detailed written withdrawal plan. Most tapers take weeks or months, depending on the dose being taken.

Ten rules for having a safe withdrawal from a prescription psychiatric drug

1. Never stop any psychiatric drug abruptly. Serious adverse reactions, some of which could be life- threatening, can occur.
2. Become informed about the normal psychological and physical reactions you might experience during a taper (see Section 10: Further Links and Resources).
3. Develop a written plan for the taper with your physician or pharmacist that describes the reductions that should be made every two weeks or monthly and the doses that are taken every day during this reduction period. Making a reduction every two weeks is a good place to start. The dose(s) should be taken at the same time every day (for example, in the morning or at bedtime). Specific reductions should occur at

the same times during the reduction period, for example, every second Monday at 5 pm. The objective is to keep a steady level of the drug in your bloodstream as you taper in order to reduce withdrawal effects. Do not rush the taper – this will increase the chances of more intense symptoms.

4. A ten percent dose reduction during a reduction period (e.g., every two weeks) is a common starting point for many tapers but this depends on the size of the dose being tapered, the drug involved and the symptoms you have. If your withdrawal symptoms are severe, modify the tapering plan to take smaller reductions at each reduction period. Avoid large or rapid reductions, for example ½ of the total dose in one reduction period. If you are taking a benzodiazepine or sleeping pill, consider using a valium substitution which can help even out withdrawal effects (Section 10 for information on the Ashton protocol).
5. Avoid the use of cannabis, alcohol or other recreational drugs during a taper – they can make withdrawal symptoms worse or slow down the process.
6. Monitor your symptoms during a taper but try not to become obsessed with them. Keep a regular routine as much possible, eat small and frequent meals and get some moderate exercise. Remember that symptoms come and go during a taper – you may feel well for a few days or hours and then may feel worse at times....slowly these periods of feeling worse will lesson.
7. In most cases, taper only one drug at a time, even if you are on several psychiatric drugs that you hope to discontinue. In cases where you are taking several benzodiazepines, they can sometimes be combined in a one taper plan.
8. If you experience difficulties during a taper try not to go back up on the dose but stay longer at the dose you are on and consider making smaller dose reductions in the next part of the taper. Most people find they need to have smaller dose reductions in the last part of their tapers.
9. Let your family and close friends know that you are tapering and that during this taper you may be experiencing a variety of uncomfortable symptoms. Stay in touch with your doctor during your taper so that s/he can monitor how you are doing. **Let someone know if you are experiencing suicidal thoughts. If you feel you might engage in self-harm, contact emergency health services immediately.**
10. Most people will still experience some withdrawal symptoms after their taper is finished. It takes time for the brain and body to adjust to being without a drug. Be patient! Symptoms will lessen over time.

How to cut pills to reduce a drug for a taper

It is important to get the correct dose of a pill or capsule for each reduction period.

Inexact doses can make withdrawal symptoms worse.

Four common methods of reducing drug doses for a taper are described below. These are:

1. Pill splitting or cutting
2. Dissolving the pill in water
3. Tapering extended release (ER) capsules with small beads
4. Switching to a liquid form of the drug

Some drugs are not 'taper friendly' and cannot easily be divided into small doses. This includes drugs that are given by injection. In this case, ask your doctor if it is possible to switch to a comparable dose in a pill or tablet form. It also might be possible for your doctor to administer different dose levels through a pre-prepared syringe.

1. Pill splitting or cutting

- In many cases, pills come in several dosage forms and sizes, making it easier to split or organize them for a taper. To check the dosages available ask your pharmacist or check out Shopper's Drug Mart pharmacy information. Enter in the name of the drug making sure you are either using the common name (e.g. diazepam or the brand name (Valium). Diazepam comes in three dose levels : 2,5 and 10 mg (milligrams) as well as in liquid form.

- In many cases you will need to combine different dose levels or split pills to get the correct dose levels for each step in the taper. Ask your physician to prescribe the size of dose easiest for pill splitting. An inexpensive pill-splitter which can be bought online or at a drugstore is a helpful tool. Example: If your daily dose of valium during a benzodiazepine taper is 2.5 mg a day and you have been prescribed 5 mg pills then you will need to split the 5 mg pill in half to get 2.5 milligrams for your daily doses. Prepare the drug doses you will need to take each day one week in advance and organize them in a pill box which you can buy at a drugstore. Compounding pharmacies can sometimes prepare pills for a taper.

2. Dissolving the pill in water

- Some drugs can be crushed in the bottom of a beaker with water or juice added to reach a specific level, for example 200 or 250 ml. Then you must determine the % of reduction you need to take from this liquid to arrive at the proper amount to drink. Example: if you are reducing 10% off of a 10 mg Zyprexa pill, dissolve the whole pill in 250 ml of water or juice, stir and then take out 25 ml which is a 10% reduction. Then drink the amount in the beaker that remains after you take out the 10% reduction. If the next reduction involves taking out another 10% reduction, take out 50 ml and then drink the liquid that remains in the beaker.
- If you are using this method, make sure that the pill is fully dissolved before drinking the liquid. Drink all the liquid at one time.
- Keep track of the size of your reductions on a written tapering schedule.

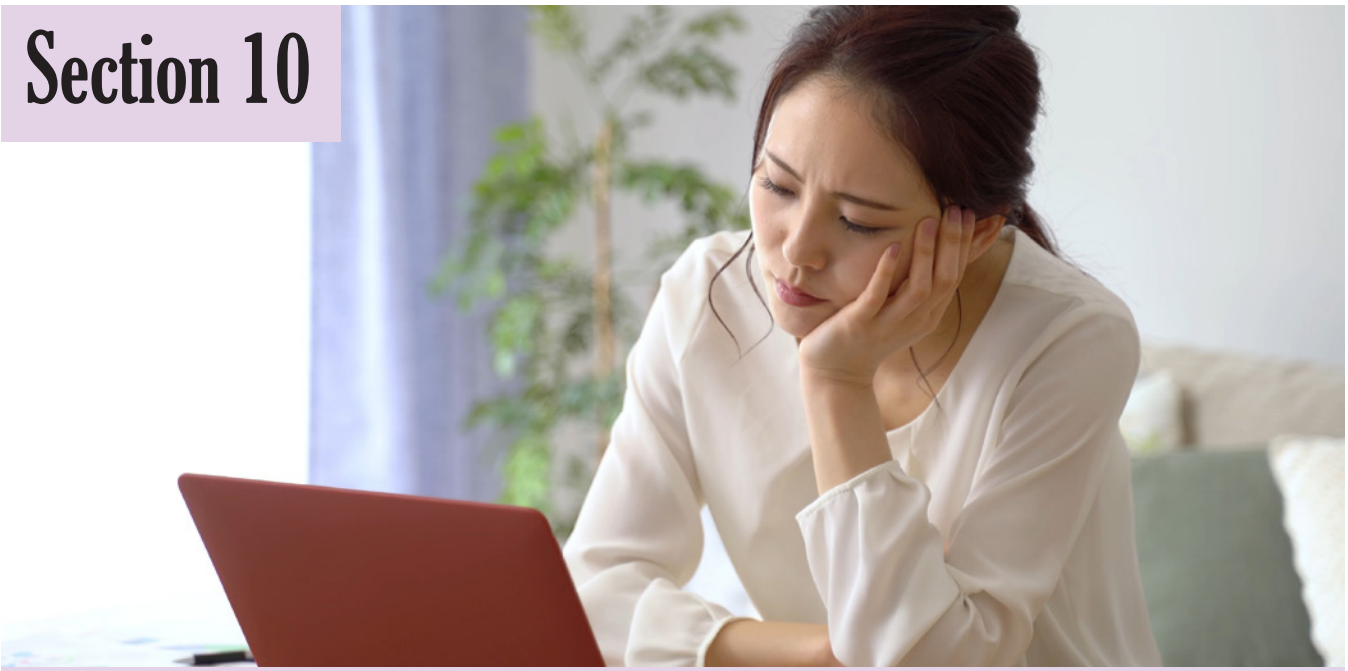
3. Tapering extended-release (ER) capsules with small beads

- Many drugs are in ER or extended release (capsule) form. Capsules contain many tiny beads covered in a plastic-type coating. There are two methods for reducing these pills in order to taper. You can count the beads or crush them in liquid.
- To count the beads, open one capsule carefully, dump the beads onto a dark-coloured piece of paper (so you can track them) that is placed on a plate or pan so you won't lose any.
- Use a knife edge move the beads into clusters of ten. Record the total number of beads in an entire capsule on your tapering plan.
- To get the dose level for one reduction open a full capsule then take out the number of beads that should be withdrawn for your dose reduction. For example, if there are 100 beads in a capsule and the first taper calls for a 10% withdrawal of the dose every day for two weeks, you will need to take out 10 beads for each day and then replace the 90 beads back in the capsule. Swallow the capsule that has 90 beads and discard or save the rest the rest in an empty capsule.
- Instead of counting the beads you can use a jeweler's scale to measure the total weight of the beads and then remove the % of the reduction required. Jeweler's scales can be bought on amazon for about $30.00 and are useful for measuring pill weights but are less accurate with very small amounts. Prepare your capsules for 1-2 weeks of your taper and store in a plastic pill box.
- You can try also crushing the beads and dissolving them in (warm water) after they have been crushed. Follow the same formula described above (dissolving the pill in water). Mix the crushed beads in a specific amount of water in a measurement beaker, then remove the percentage of reduction and drink what remains. **Caution: Beads often have a protective coating and must be strenuously crushed using something like a mortar and pestle otherwise they won't dissolve properly.**

4. Switching to a liquid form of the drug

- Some psychiatric drugs, including some SSRIs and diazepam (a long acting benzodiazepine) are available in liquid form. Liquid can be measured more accurately when doses become smaller at the end of a taper. Ask your physician to prescribe a liquid form of the drug if it is available. Make sure to verify with your doctor or pharmacist how liquid measures relate to your dose levels. For example, one tsp of liquid Paxil is equivalent to 10 mg of the drug. Use a dropper to measure out smaller amounts.

Section 10



Further links and resources

Websites

- **Worst Pills, Best Pills: Public Citizens' Health Group:** www.worstpills.org. An independent detailed website which provides specific information about hundreds of prescription drugs. Excellent reference book available.
- **Therapeutics Letter:** (Therapeutics Initiative) www.ti.ubc.ca. Publishes evidence-based newsletters on a variety of drug safety topics including antipsychotics, antidepressants, benzodiazepines and ADHD drugs.
- **Mad in America:** www.madinamerica.com. Detailed and useful website with research and commentary critiquing the dominant paradigm of care for those diagnosed with mental health conditions. Information on different approaches to addressing mental health concerns.
- **Psychiatric Medication Awareness Group:** www.psychmedaware.org. Canadian site with information, research news, tips for recovery for psychiatric drugs. Focus on benzodiazepines.
- **Claire Weekes:** an Australian GP, developed four simple steps for dealing with anxiety and agoraphobia using pioneering cognitive approaches. She believed that anxiety was driven by sensitization, anxiety and fear. Although the language is somewhat dated all of her books are practical for those with anxiety or withdrawing from benzodiazepines. Titles include ***Peace from Nervous Suffering*** and ***Hope and Help for your Nerves*** (available from Amazon).
- **benzo.org.uk:** The first and most comprehensive site on benzodiazepines, sleeping pills and other psychiatric drugs. Includes the Ashton manual, survivor stories and withdrawal symptoms.
- **rxisk.org:** Independent website that provides information about drug side effects and tapering. Personal online medical assessments for a fee.
- **Benzodiazepine Information Coalition** www.benzoinfo.com. A US nonprofit organization of patients and medical professionals that raises awareness of injuries arising from benzodiazepine use. Tapering information.
- **www.benzobuddies.org:** Provides current information and peer support for withdrawal from benzodiazepines.

- **American Geriatrics Society** 2019 Updated Beers Criteria for Potentially Inappropriate Medication Used by Older Adults: cpb-us-w2.wpmucdn.com/sites.udel.edu/dist/c/3448/files/2019/10/Panel-2019-Journal_of_the_American_Geriatrics_Society-6.pdf.
- **Canadian Deprescribing Network:** www.deprescribingnetwork.ca: A national organization that focuses on deprescribing unsafe drugs among older Canadians. Many resources on safe and effective prescribing including the risks of anticholinergic drugs, tranquillizers and sleeping pills.
- **Drugs.com:** good basic information on drug-drug interventions and adverse effects divided into different categories of frequency and seriousness. Coordinated by pharmacists but accepts drug company advertising.

FASTFACTS

Research indicates that Health Canada tends to under-report drug safety advisories and warnings when compared to other regulators such as the U.S. Food and Drug Administration.

- **BC Healthlink:** www.healthlinkbc.ca/medications. BC government site provides detailed information about prescription medications used in BC.
- **Drug Monographs:** Detailed information about specific drug products prepared by the drug company and necessary to gain approval from Health Canada. To find a product monograph, Google: Health Canada – Drug Product Database and complete the search form. Drug Monographs may not include updated information on safety and do not discuss the off-label uses of a drug.
- **Health Canada Drug Safety Reviews:** these are summaries of safety reviews that are carried out on drugs where a safety risk is a concern. To obtain, Google: Health Canada Drug Safety Reviews.
- **Health Canada's advisories, warnings and recalls:** Google: MedEffect Canada Advisories and Recalls.

The U.S. Food and Drug Industry has a range of drug warnings and advisories including the most serious black box warnings. Enter the name of the drug to get the medication guide. Access is here: www.accessdata.fda.gov/scripts/cder/daf/index.cfm?event=medguide.page.

General Books About Psychiatric Drugs

- *Anatomy of an Epidemic.* Robert Whitaker (2010). Evidence-based analysis questioning the safety and effectiveness of psychiatric drug treatment.
- *The Antidepressant Fact Book: What your doctor won't tell you about Prozac, Zoloft, Paxil, Celexa, and Luvox.* Peter Breggin (2001).
- *The Accidental Addict: Sleeping Pills and Tranquillizers that Make you Sick.* Porritt and Russell (1994).
- *The Marketization of Depression* – Janet Currie (Women and Health Protection): whp-apsf.ca/pdf/SSRIs.pdf (2005). Analysis of how depression was redefined and marketed to promote drugs.
- *Selling Sickness: How the World's Biggest Pharmaceutical Companies are Turning of Us All into Patients* – Ray Moynihan and Alan Cassels (2005).
- *The Truth About the Drug Companies: How They Deceive Us and What to Do About It.* Marcia Angell (2005).

Information About Withdrawal

- *The Antidepressant Solution: A Step-by-Step Guide to Safety Overcoming Antidepressant Withdrawal, Dependence and Dependence.* Dr. Joseph Glenmullen (2005). Provides detailed and practical information about antidepressant withdrawal.
- *Benzodiazepines: How They Work and How to Withdraw.* Dr. Heather Ashton (2000) Free download at: www.benzo.org.uk/manual/index.htm. Detailed information on tapering plans for different benzos with information about withdrawal symptoms and how to cope.

- For tips on reducing pills with beads. See: www.survivingantidepressants.org/topic/272-tips-for-tapering-off-effexor-and-effexor-xr-venlafaxine/.
- For information on whether your drug is 'taper-friendly," that is whether it can be divided into different doses, see The Inner Compass. It also addresses drugs that are only prescribed in an injectable form. withdrawal.theinnercompass.org/taper/determine-how-taper-friendly-your-drug.

Sources of information for this booklet

Major sources of information recommended above were the primary sources for the information in this document. A major source of information on other drugs that cause mental health symptoms (Section 7) was the information in *Worst Pills, Best Pills.* Other sources included research from the medical literature on prevalence of prescription drug use and ADRs, reports from the Canadian Institute for Health Information, the Merck Manual and the European Medicines Agency.

Reporting an Adverse Drug Reaction to Health Canada

Health Canada relies on information from the public and healthcare providers to tell them about the ADRS people are experiencing. Without this information it cannot fully identify drug safety problems.

If you are taking any prescription drug and experience any type of ADR or have a patient who does please make a confidential report about it and send it to Health Canada. You do not need to be certain that a specific drug WAS the cause of an adverse reaction but simply be concerned that it might be.

Email link for more information: CanadaVigilance_BC@hc-sc.gc.ca.

Toll free number – 1-866-2345. Website link: www.canada.ca/en/health-canada/services/drugs-health-products/medeffect-canada/adverse-reaction-reporting/drug.html.

About the Author

Dr. Janet Currie has worked to educate the public about prescription drug safety for over two decades. She co-founded the first Canadian citizens' group to address the overprescribing and risks of tranquilizers and sleeping pills, which led to development of a website for consumers. She was a two-term appointee to Health Canada's Expert Advisory on the Vigilance of Drug Products, was the chair of the Canadian Women's Health Network for many years and was co-chair/chair of the Public Awareness Committee of the Canadian Deprescribing Network, which focuses on safe prescribing for older Canadians, work she continues. She has testified at the Canadian Senate on drug safety multiple times and on adverse drug reactions to Parliament. She is a co-founder of Independent Voices for Safe and Effective Drugs (IVSED).

Her recently completed doctorate examined the safety and effectiveness of off-label prescribing.

Janet believes that citizens have the right to understandable, accessible and non-biased information about prescription and over-the-drugs so that they can make informed decisions about their health.

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