Which medications may lead to addiction?

Some patients fear that starting a new medication may lead to drug addiction, also known as substance dependence. This fear is unfounded for most patients, as only a few classes of prescribed medications can lead to addiction. Many patients have received potent narcotic painkillers at one time or another, but only a small percentage ever become addicted.

What is drug tolerance?
Drug tolerance is sometimes mistakenly confused with drug addiction. Although drug tolerance may be a prelude to drug addiction, it is not the same. Tolerance refers to the body’s ability to adjust to the beneficial effects of a medication. Over time, higher doses of a medication may be needed to maintain the therapeutic benefit that originally was achieved using the initial (lower) dose. The inhaled medications terbutaline and albuterol (Bricanyl and Ventolin) help asthma patients to breathe more easily by dilating (widening) the lung airways. After long-term use, a modest tolerance could develop that requires dose increases. One advantage in this case is that some adverse effects associated with these medications (palpitations and tremor) may decrease over time. Another class of asthma medications, inhaled steroids, may also require dose increases over time, indicating the development of drug tolerance.

What is addiction?
Several sources define addiction with similar criteria, though not all of these criteria must be present to qualify as addiction. For example, the American Psychiatric Association requires at least three of the following seven criteria to meet the definition of addiction:

1. Tolerance to the effect of the medication develops.
2. Withdrawal reaction or symptoms when trying to stop the medication.
3. A medication is taken in greater amounts or over a longer period than was originally intended.
4. Unsuccessful efforts or persistent desire to cut down or control the use of the medication.
5. A substantial amount of time is spent to obtain the medication -- for example, visiting multiple physicians.
6. Medication usage adversely affects private and professional lives.
7. Medication use continues while knowing that serious problems will result.
It is not just medications that can cause addiction. For example, in tobacco products, nicotine is a well-recognized addictive substance. Many smokers who have tried to quit are likely to recognize the criteria of addiction listed above.

**Which medications can lead to addiction?**

There are only a few types of medications primarily responsible for addiction. These include four major classes of prescribed medications that affect the brain and the central nervous system:

- **Tranquilizers** – these include the widely prescribed family of medications known as benzodiazepines. Diazepam (Valium) and alprazolam (Xanax) are common members of this family. These medications should not be stopped abruptly because of the possibility of severe withdrawal reactions. They should only be discontinued under the supervision of a physician.

- **Sleeping pills** – zolpidem (Ambien CR), eszopiclone (Lunesta), and zaleplon (Sonata) are among the most frequently prescribed medications in this country. These medications work in a similar manner to the benzodiazepines and should not be stopped suddenly. They should only be discontinued under the supervision of a physician.

- **Stimulating agents** – the most common medications included in this group are diet drugs; sibutramine (Meridia) is an example. Many of the medications used to treat attention deficit hyperactivity disorder (ADHD) are central nervous system stimulants that are, or have effects like amphetamines (“speed”). Methylphenidate (Ritalin) and amphetamines (Adderall) are examples of ADHD medications. Caffeine and nicotine also are stimulating compounds that may lead to addiction.

- **Pain-relieving agents** – these medications commonly contain opiates such as morphine and codeine. Propoxyphene (Darvon) is a pain-reliever with opiate properties that can cause addiction. Opiates are also commonly marketed in combination with acetaminophen (Tylenol). More than 117 million prescriptions for the combination of the opiate hydrocodone with acetaminophen were dispensed in the U.S. in 2007.

**How can I tell which medications have the potential to cause addiction?**

The FDA-approved professional product label, or package insert, contains information about a medication’s potential to be abused or cause addiction. Medications with a high potential for addiction or abuse are regulated under the
Controlled Substances Act. This is indicated near the top of the medication’s professional label with a bold capital “C” follow by Roman numerals II through V. The Roman numerals represent the medication’s potential for problems, with II having the greatest potential and V the least.

The package inserts for most drugs contain a section titled “Drug Abuse and Dependence” that relates information about abuse potential and possible withdrawal reactions.

Package inserts can be found free of charge on the Internet at www.dailymed.nlm.nih.gov/dailymed/about.cfm. See Chapter 3 for more information about package inserts.

Key messages

✓ Most medications do not cause addiction.
✓ Tolerance, the body’s ability to adjust to medication effects, is not the same as addiction.
✓ Only a few classes of medications may cause addiction: tranquilizers, sleeping pills, stimulating compounds, and certain pain-relieving agents.
✓ Information about addiction potential can be found in the FDA-approved professional product label or package insert.