Drug name: **methylphenidate**  
Brand names: Ritalin, Concerta, Metadate, Methylin, Focalin

**General Information:** Methylphenidate is a central nervous system stimulant used to treat Attention Deficit Disorder (ADD) and Attention Deficit-Hyperactivity Disorder (ADHA) in children and adults. Its mechanism of action is not clearly understood, but it is thought to block the reuptake of the neurotransmitters norepinephrine and dopamine so that there are increased levels of these chemicals in the synapses (spaces) between brain cells. Sometimes it is used to augment the effects of antidepressant medications when response has been incomplete. Methylphenidate is a control drug subject to special DEA prescribing rules because it can cause dependence in some users (see below).

**Guidelines for Use:** Methylphenidate is available in several forms, including both immediate-release and long-acting. Generic versions are available. The short-acting forms may be taken 2-3 times daily while the long-acting forms are usually given once daily, in the morning. The usual starting dose is 5-10 mg, 1-3 times daily but may be higher, particularly if a long-acting form is used. The dosage may be adjusted over time to best control your symptoms. It may be taken with or without food, but is generally better taken with food. Effects are evident within one hour and taper off over 3-4 hours for the short-acting forms, 6-12 hours for the longer-acting types. The last dose of the day should be taken by 4-5 p.m., as stimulants can interfere with sleep. Benefits are usually seen in the first week of treatment, if the person is responsive to stimulants. People commonly take stimulant medications for ADD or ADHD only during the work/school week and not on weekends; ask your clinician if this is acceptable use for you. Not everyone responds well to any one stimulant medication and sometimes several different medications are tried in various doses before the right treatment is determined.

Do not crush, break, or chew tablets, particularly the long-acting type, as this may destroy the properties that make the pill long-acting. If you forget to take a dose, but remember within a couple of hours, go ahead and take it; otherwise, wait until your next dose. Do not take double doses. Store the drug in a dry, tightly-closed, light-resistant container out of the reach of children and those who might be tempted to steal or abuse it.

**Side Effects of Methylphenidate:**

**Common side effects** (notify your clinician if severe):

- decreased appetite
- weight loss
- difficulty sleeping
- abdominal pain, nausea
- headache

**Less common side effects** (notify your clinician if severe):

- drowsiness
- tics or unusual movements
- blurred vision
- rash or hives: STOP THE DRUG AND CALL YOUR CLINICIAN
- dizziness
- lack of coordination
- joint pain
- mood changes
- rapid heart rate
Any stimulant, including methylphenidate, may cause activation into a state of mania or mild mania (“hypomania”) in vulnerable individuals, usually but not always those who have bipolar disorder. Such a state is characterized by increased energy and hyperactivity, decreased need for sleep, marked euphoria or irritability, impulsiveness and an increase in pleasure-seeking. STOP THE STIMULANT AND CALL YOUR CLINICIAN AS SOON AS POSSIBLE IF YOU DEVELOP THESE SYMPTOMS.

Overdoses of stimulants can be quite dangerous due to overstimulation of the central nervous system. This may result in agitation, tremors, confusion, hallucinations, sweating, flushing, increased blood pressure and heart rate, vomiting, seizures, and coma. IMMEDIATE EMERGENCY MEDICAL CARE SHOULD BE SOUGHT IN ALL CASES OF SUSPECTED OVERDOSE WITH STIMULANTS.

**Precautions:** Do not take this drug if you have ever had an allergic reaction to methylphenidate. Inform your clinician if you have any known drug allergies; if you are taking any other drug (prescription or non-prescription), vitamin, supplement or herb; if you have ever had a seizure or have a family history of epilepsy; if you have Tourette’s disorder or a history of tics; if you have liver disease, high blood pressure or any cardiovascular disease; if you have glaucoma; if you have any history of abuse of alcohol or drugs, particularly amphetamines or cocaine; if you will be undergoing anesthesia or surgery while taking this drug. **Inform your clinician if you are or might be pregnant.** Methylphenidate may be harmful to the fetus and should not be used by pregnant women or nursing mothers. It is not advised for use in children under six because it may retard growth. It is sometimes used cautiously in the elderly, though little systematic study has been done of its use in this population.

**This drug has potential for abuse and dependence.** Over time, tolerance may develop in those who are prone to addiction. Dosage escalation may then lead to abnormal behaviors including aggression, violence, and psychosis (hearing voices, delusions). In withdrawal, some abusers of methylphenidate become profoundly depressed and suicidal. It is important that your supply of this drug be carefully safeguarded.

**This drug may cause changes in level of alertness and coordination.** If so, avoid driving or operating machinery until you are sure it is safe to do so.

**Interactions:**

**Alcohol:** Alcohol in combination with stimulants can be dangerous. Drinking is not advised while using stimulant drugs.

**Food:** No restrictions, but the time it takes for the drug to become effective may be increased when it is taken with a high-fat meal. Minimize caffeine use, since caffeine is also stimulating and may increase side effects.

**Smoking:** No restrictions.
Other drugs: Methylphenidate may INCREASE the blood levels of the anticoagulant Coumadin; of various anticonvulsants, including phenobarbital, phenytoin (Dilantin), and primidone; and of the tricyclic antidepressants (imipramine, desipramine, clomipramine, nortriptyline, amitriptyline). Dosage adjustment of these drugs may be needed when used in combination with methylphenidate. Methylphenidate may DECREASE the effectiveness of the blood pressure medication guanethidine. It should not be used at all in combination with the drug clonidine (Catapres) or with MAO-inhibitors (Nardil, Parnate).

Antihistamines such as Benadryl (diphenhydramine) are sedating and may counteract the effect of stimulants.

Antacids or acid blockers (Axic, Pepcid, Zantac) may delay the release of long-acting stimulant preparations, as absorption is dependent on acid in the stomach.

Long-term Use:

ADD and ADHD are chronic conditions, and long-term use of stimulants is common. However, treatment should be multi-faceted, including education about the problem, counseling and skill-building, and medications. Sometimes, families are included in treatment, especially with children.