

Lithium

Brand and Generic Names

- **Eskalith[®]**
 - Capsules: 300 mg
- **Eskalith CR[®] – slow–release**
 - Tablets: 450 mg
- **Lithobid[®] – slow–release**
 - Tablets: 300 mg
- **Generic name = lithium carbonate (tablets and capsules), or lithium citrate (liquid)**
 - Tablets: 300 mg
 - Capsules: 150 mg, 300 mg, 600 mg
 - Slow-release tablets: 300 mg, 450 mg
 - Liquid: 300 mg/5 mL (300 mg per teaspoonful)

What is lithium and what does it treat?

Lithium carbonate is a salt that was first approved in the United States in 1970 to treat manic depression (bipolar disorder). Today, it remains a commonly used medication for this illness. There are several different brands of lithium dispensed as tablets, capsules, or liquid (the most commonly used products are listed above). A manic episode, or mania, is when a person experiences several of the following symptoms at the same time: "high" or irritable mood, very high self esteem, decreased need for sleep, pressure to keep talking, racing thoughts, being easily distracted, frequently involved in activities with a large risk for bad consequences (for example, excessive buying sprees). A depressive episode, or depression, is when a person experiences several of the following symptoms at the same time: "low" or depressed mood (for example, sad, empty, tearful), decreased interest in

most or all activities, changes in appetite (usually decreased), changes in sleep (usually poor sleep), loss of energy, feeling worthless/guilty/ hopeless/ helpless, difficulty concentrating, thoughts of death (suicidal thinking). Bipolar disorder is an illness which exposes people to these mood changes over the course of time.

Lithium is used to even out the highs (mania) and lows (depression) in mood associated with of bipolar disorder. In some cases, lithium is used to treat people with depression even though they have never experienced a manic episode. Many of these patients have not responded adequately to antidepressants alone, so the addition of lithium to an antidepressant is tried for some people.

Lithium has also been used to treat people with schizophrenia in cases where changes in thinking happen at the same time as a mood change that looks like either mania or depression.

What is the most important information I should know about lithium?

- Bipolar disorder requires long-term treatment. Only your healthcare provider can determine the length of lithium treatment that is right for you.
- The amount of lithium in the blood can be measured. Studies have generally shown that blood levels between 0.6–1.2 (mmol/L) give patients the best chance of response to lithium. In the beginning of treatment, your doctor may check your blood once or twice a week. Once your symptoms are controlled well, blood samples are drawn less frequently.
- Periodically, your healthcare provider may ask you to provide a blood sample so that the level of lithium can be measured to ensure safety and effectiveness. High blood levels can result in more side effects, and low blood levels may not treat symptoms well.
- In order for lithium to work properly, it should be taken every day in regularly spaced doses as ordered by your healthcare provider. This is to maintain a steady level of drug in your body. Do not stop taking the medication even when you feel better.
- The loss of too much water or salt from your body can lead to serious side effects from this medication. Make sure you drink enough water in hot weather, during activities that cause you to sweat (exercise, saunas, hot baths), or when you have the flu and are experiencing vomiting and/or diarrhea.
- Lithium may be prescribed by itself or along with other medications to help manage your Bipolar mood symptoms.
- Lithium has been associated with a decrease in suicidal thinking and action and may reduce risk of this outcome. Suicide prevention requires many other intervention elements as well for most people.
- Ask your doctor about what other clinical approaches might help you best manage your illness to add to your medications.

Are there specific concerns about lithium and pregnancy?

If you are planning on becoming pregnant, notify your healthcare provider so that he/she can best manage your medications. People living with bipolar illness who wish to become pregnant face important decisions, each with risks and benefits as it relates to how the illness medications and the risks to the fetus may interact. This is complex as untreated bipolar illness has risk as well to mother and fetus. There are many dimensions to these choices, so be sure to confer with your doctor and caregivers.

For example, exposure to lithium during the first three months of pregnancy is associated with a slightly increased risk of "Ebstein's Anomaly", a heart valve defect. The risk of this heart valve problem in the general population is approximately 1 in every 20,000 births. The risk to a baby which is exposed to lithium during the first three months of pregnancy is between 1 in every 2,000 (0.05%) to 1 in every 1,000 (0.1%) births. Thus, although lithium increases the risk above the general population risk, the risk of having a child with this problem remains relatively low. In order to try and avoid this risk, exposure to lithium during the first three months should be avoided if possible. Some patients may require continuation of lithium in order to avoid going back into either mania or depression. If lithium is used during pregnancy, use of the lowest possible dose, close monitoring of serum levels, and appropriate monitoring of the baby are recommended. Cases of newborn infants having too much lithium in their bodies has caused muscle weakness, poor sucking and grasp reflexes, shallow respirations, and lethargy. Rare cases of thyroid abnormalities in the newborn have also been reported.

Breast feeding mothers should be aware that lithium does pass into breast milk. Adverse effects such as lethargy, muscles weakness, and changes in heart rhythm have been observed in breast-fed infants.

What should I discuss with my healthcare provider before taking lithium?

- Symptoms that are most bothersome to you about your condition
- If you have thoughts of suicide
- Any medical problems you have, especially involving the kidney disease, thyroid disease, heart disease, or diabetes
- If you experience difficulty urinating
- If you are pregnant, plan to become pregnant, or are breast-feeding
- Medications you have taken in the past to treat bipolar disorder
- All other medications you are currently taking and any medication allergies you have
- Any medication side effects that you may have experienced in the past, or are currently experiencing

- If you drink alcohol or use illegal drugs

How should I take lithium?

- Lithium tablets or capsules are usually taken 2 or 3 times daily, however, lithium may be taken once daily as long as a person tolerates the possible stomach upset. Your healthcare provider will determine the dose that is right for you based upon blood level and your response. While many people take 900–1200 mg/day, you may need higher or lower doses.
- Taking lithium with food can help decrease or avoid stomach upset.
- Lithium should not be taken with coffee, tea, or cola since caffeine can decrease lithium levels in your body.
- Use a pillbox or calendar to help you remember to take your medication.

What happens if I miss a dose?

If you miss a dose of lithium, take it as soon as you remember if it is not too close to when your next dose is due - discuss this with your healthcare provider. If it is close to your next dose, wait until then to take the medication and *skip the missed dose*. Do not double your next dose or take more than what you have been told to take.

What should I avoid while taking lithium?

- Lithium may cause dizziness or drowsiness, especially when first starting the medication. Make sure you know how you react to the medication before you drive, operate machinery, or do other activities that may be dangerous if you are not alert.
- Patients taking lithium should not start a low salt diet without talking with their healthcare provider, since low sodium blood levels can increase the risk of lithium toxicity.
- Avoid excessive intake of caffeinated beverages, such as coffee, tea, or cola
- Avoid drinking alcohol or using illegal drugs

What happens if I overdose?

- If an overdose occurs, whether intentional or accidental, immediate medical attention is necessary. Call your doctor or emergency medical service (911).
- Symptoms that may occur in an overdose: confusion, difficulty concentrating, sluggishness, vomiting, diarrhea, poor coordination, tremor, and muscle weakness or

twitching. In severe cases, people can develop seizures, respiratory difficulty, coma, and death is possible.

What are the possible side effects of lithium?

Common side effects of lithium include nausea, loss of appetite, and mild diarrhea. These side effects will usually go away after the first few weeks as your body adjusts to the medication. Dizziness and hand tremors have also been reported. Increased production of urine and excessive thirst are two common side effects that are usually not serious problems. Other side effects of lithium include weight gain, hypothyroidism (low levels of thyroid hormone), increased white blood cell count, acne, and skin rashes. Signs of hypothyroidism include dry skin, hair loss, sensitivity to cold, hoarseness, mental depression, and weight gain.

Consumers should tell their doctor immediately if they develop lack of coordination, muscle weakness, slurred speech, nausea, vomiting, diarrhea, confusion, or an increase in tremors or shaking. These symptoms may be a sign of having too much lithium in the body which requires medical attention.

Are there any risks for taking this medication for long periods of time?

With long-term use of lithium, hypothyroidism can occur; however, it can be treated with thyroid supplementation. Kidney damage may also occur, but it is rare. In order to minimize risk, your healthcare provider will periodically measure kidney function and lithium levels with a simple blood test.

What other drugs may interact with this medication?

People who are taking lithium should consult their doctor before taking or discontinuing the following:

- Diuretics may *increase* the amounts of lithium in the body, these include:
 - hydrochlorothiazide (Microzide[®])
 - acetazolamide (Diamox[®])
 - chlorothiazide (Diuril[®])
 - furosemide (Lasix[®])
 - chlorthalidone (Thalitone[®])
- Antipsychotics may *increase or worsen* the side effects of lithium, examples include:
 - clozapine (Clozaril[®])
 - haloperidol (Haldol[®])
 - olanzapine (Zyprexa[®])
 - fluphenazine (Prolixin[®])
 - risperidone (Risperdal[®])
 - perphenazine (Trilafon[®])

- quetiapine (Seroquel[®])
 - ziprasidone (Geodon[®])
 - aripiprazole (Abilify[®])
 - loxapine (Loxitane[®])
 - chlorpromazine (Thorazine[®])
 - thioridazine (Mellaril[®])
- Anti-inflammatory drugs may *increase* the amounts of lithium in the body, examples include:
 - ibuprofen (Advil[®])
 - naproxen (Aleve[®], Naprosyn[®])
 - celecoxib (Celebrex[®])
 - Antihypertensive drugs may *increase or worsen* the side effects of lithium
 - Calcium channel blockers (i.e. verapamil, diltiazem)
 - Angiotensin converting enzyme inhibitors (i.e. enalapril, captopril, benazepril, fosinopril)
 - Carbamazepine (TegretoI[®]/Equetro[®]) may *increase or worsen* the side effects of lithium
 - Some drugs may *decrease* the amounts of lithium in the body, examples include:
 - caffeine
 - theophylline (Theo-Dur[®], Slo-Bid[®])

How long does it take for lithium to work?

For lithium to reach its maximum effectiveness, two to three weeks are often required. To control severe mania, healthcare providers will often prescribe other medications while waiting for lithium to take effect. When the manic symptoms improve, the other medications may eventually be stopped or lowered. However, in many cases, people need more than one medication to maintain longterm stability.

What is the usual duration of treatment for lithium?

Mood stabilizer treatment is generally needed lifelong for persons with Bipolar illness. Your doctor can best discuss the duration of treatment you need based on your symptoms and course of illness.

*Updated by Leena B. Menon, Pharm.D.
(August 2005)*



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