



Cerebral palsy (CP) is a condition often associated with HIE: common symptoms include spasticity and muscle tightness. Baclofen (Lioresal) is a drug that is used to reduce both of these problems. It can be administered orally or via a baclofen pump — because the drug's half-life is very short (approximately 3-4 hours), baclofen pumps are fairly common. The pump provides a continuous feed of baclofen to the cerebrospinal fluid (SCF). Placement of the pump is a surgical procedure under general anesthesia. The pump must be periodically refilled, and must be replaced every several years with another surgery. One of the advantages of using such a pump is low dosages - because medication is administered directly to the spine, the dose needed to produce the desired effect is much lower than the doses needed to produce the same effect when taken orally. Lower doses can mean avoiding unwanted side effects such as sleepiness and sedation. However, there are also unique risks associated with choosing the pump over the oral version.

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### What is Baclofen?

Baclofen, also known by the brand name Lioresal, is a muscle relaxant that reduces spasticity and muscle tightness by acting on the spinal cord and brain receptors. It can be taken orally (a prescription is necessary) or through a surgically-inserted pump. Both methods can have major benefits and serious side effects. Your doctor will discuss the advantages and risks associated with baclofen before prescribing it.

### Oral Baclofen

Doctors can prescribe oral baclofen either in the form of a tablet or a liquid. Although oral baclofen has been on the market for years and can be highly effective, there are also several side effects. A dose sufficiently high to control involuntary muscle spasms may also act as a sedative. In addition to drowsiness, patients using oral baclofen often report:

- Confusion
- Dizziness



- Nausea
- Weakness

Less common side effects include:

- Seizures
- Irregular heartbeat
- Breathing problems
- Hallucinations
- Blurred vision
- Ringing in ears
- Blood in urine
- Chest pain
- Rash
- Extreme weakness (1)

### The Baclofen Pump

The Baclofen pump, also known as ITB Therapy with Lioresal Intrathecal, is surgically placed under the skin in the abdominal area. It is wirelessly programmed to deliver liquid Baclofen directly into the intrathecal space, which is a fluid-filled area surrounding the spinal cord (2). The pump is about the size of a hockey puck. Before it is inserted, doctors can do a test called a lumbar puncture, in which they use a needle to insert a dose of baclofen into the spine and then have a physical therapist observe the patient to see how they react. Once the pump is inserted, it can last for about five years. Then it will need to be surgically removed, but the patient can have a new one inserted in its place (3).

Use of a baclofen pump has a couple of important advantages over oral administration. First, it is delivered right where it is needed, so a lower dose is effective. This generally means fewer side effects (4, 5). Second, patients do not need to remember to take it at the same time every day, because a doctor can program it to release doses matching their needs. They can even adjust the dose so that it is higher when the patient needs it the most, such as on



the day they have physical therapy appointments. However, it can still result in side effects similar to those from the oral version (though, again, usually to a lesser extent). There are also several potential complications of baclofen pumps, including:

- Unwanted movement of catheter or pump
- Skin over pump breaks down
- Infection or spinal fluid leak caused by surgery
- Pump or catheter failure leads to overdose or withdrawal symptoms (see next section)

### Issues Related to Baclofen Overdose and Withdrawal

For both the oral version and the pump, baclofen dosages must be very precise and tailored to the individual. Accidental overdose or underdose (complete or partial withdrawal) can have serious consequences. Withdrawal symptoms may include:

- Itching
- Lightheadedness
- Low blood pressure
- Tingling sensation
- Increase or return of spasticity
- Fever
- Altered mental state
- Muscle stiffness
- Organ failure, potentially resulting in death

Symptoms of overdose may include:

- Drowsiness
- Loose muscles
- Lightheadedness
- Low body temperature
- Seizures



- Difficulty breathing
- Loss of consciousness/coma (5).

Your doctor may be able to help you weigh the potential costs and benefits of taking baclofen or giving it to your child. It is important to remember that to maximize improvement of muscle spasms and tightness, baclofen/other medications can be used in conjunction with physical therapy and other types of interventions (pending the approval of medical professionals, of course).

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*The information presented above is intended only to be a general educational resource. It is not intended to be (and should not be interpreted as) medical advice. If you have questions about baclofen, please consult with a medical professional.*

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Sources:

[Baclofen \(Oral\): AboutKidsHealth](#)

[Why Consider a Baclofen Pump? Medtronic](#)

Cerebral Palsy and Spasticity Treatment: Seattle Children's Hospital

[Efficacy and safety of oral baclofen in the management of spasticity: a rationale for intrathecal baclofen: Journal of Rehabilitation Medicine](#)

[Benefits and Risks: Medtronic](#)