

# Baclofen

Also known as Chlorophenibut (brand names Kemstro, Lioresal, Liofen, Gablofen, Lyflex, Beklo and Baclosan) is a derivative of gamma-aminobutyric acid ([GABA](#)). It is primarily used to treat spasticity and is in the early research stages for use for the treatment of [alcoholism](#). It is also used by compounding pharmacies in topical pain creams as a muscle relaxant.

It is an agonist for the GABAB receptors.

Its beneficial effects in spasticity result from actions at spinal and supraspinal sites. Baclofen can also be used to treat [hiccups](#).

A beneficial property of baclofen is that tolerance does not seem to occur to a significant degree — baclofen retains its therapeutic anti-spasmodic effects even after many years of continued use.

## Indications

The use of oral baclofen (B-[4-chlorophenyl]-g-aminobutyric acid) has been established for the treatment of generalized spasticity. The oral form of the drug has shown clinical benefits for some patients.

Baclofen injection (Lioresal Intrathecal) is an option over oral administration of the drug for patients with severe spasticity.

Baclofen is used for treatment of the [spasticity](#) of spinal origin that is a common sequela of [spinal cord injury](#) and [multiple sclerosis](#); spasticity occurs in about 50% of patients affected by these disorders. In open-label studies of oral baclofen, the drug improved spasticity in 70-87% of patients; additionally, improvement in spasms was reported in 75-96% of patients. In double-blind, crossover, placebo-controlled trials, baclofen was reported to be effective, producing statistically significant improvements in spasticity.

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[Perampanel](#) with [baclofen](#) may be effective for [myoclonus](#) due to respiratory reflex disinhibition and can be used to treat [hiccups](#) derived from [cerebral infarctions](#) <sup>1)</sup>.

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Newer studies, however, indicate that tolerance may develop in some patients receiving intrathecal baclofen treatment.

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Tizanidine is the antispasticity drug that has been most widely compared with oral baclofen; studies have generally found the two drugs to have equivalent efficacy. However, tizanidine has better tolerability, in particular weakness was reported to be occur less frequently with tizanidine than with baclofen. The main adverse effects of oral baclofen include: sedation or somnolence, excessive weakness, vertigo and psychological disturbances. The incidence of adverse effects is reported to range from 10% to 75%. The majority of adverse effects are not severe; most are dose related,

transient and/or reversible. The main risks of oral baclofen administration are related to withdrawal: seizures, psychic symptoms and hyperthermia can occur. These symptoms improve after the reintroduction of baclofen, usually without sequelae. When not related to withdrawal; these symptoms mainly present in patients with brain damage and in the elderly. The limited data on baclofen toxicity in patients with renal disease suggest that administration of the drug in these persons may carry an unnecessarily high risk. Intrathecal baclofen is indicated for use in patients with spasticity of spinal origin unresponsive to treatment with maximum doses of oral baclofen, tizanidine and/or dantrolene. The benefits of continuous intrathecal baclofen infusion have been demonstrated: >80% and >65% of patients have improvement in tone and spasms, respectively. The main risks of intrathecal baclofen infusion are symptoms related to overdose or withdrawal; the latter is more important because of the associated severe effects on clinical status and the possibility of death, but it is responsive to rapid treatment. Overdose primarily arises from drug test doses or human error during refill and programming of the pump, and withdrawal most commonly occurs as a result of a problem with the delivery system. Since the adverse consequences do not exceed the benefits of oral and intrathecal baclofen for patients with spinal spasticity, the benefit/risk assessment is favourable <sup>2)</sup>.

## Intrathecal baclofen

see [Intrathecal baclofen](#).

<sup>1)</sup>

Morita K, Nuki Y, Hashizume H, Togo M. Persistent [Hiccups](#) Induced by [Supratentorial Infarcts](#) and Successful Treatments With Combination of [Perampanel](#) and [Baclofen](#): A Case Report. Clin Neuropharmacol. 2022 Aug 4. doi: 10.1097/WNF.0000000000000514. Epub ahead of print. PMID: 35947416.

<sup>2)</sup>

Dario A, Tomei G. A benefit-risk assessment of baclofen in severe spinal spasticity. Drug Saf. 2004;27(11):799-818. Review. PubMed PMID: 15350152.

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