

# Oral magnesium glycerophosphate for preventing hypomagnesaemia from recurring

Information for the public

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## About this information

This information explains the evidence summary about the unlicensed use of oral magnesium glycerophosphate for preventing hypomagnesaemia from recurring (or coming back) in people who have previously been treated for this condition. The evidence summary is an overview of the available information about this medicine. It aims to help prescribers and patients when they are considering whether or not to use an unlicensed or off-label treatment. The summary does not contain recommendations from NICE on whether the medicine should be used.

## Licensing medicines

In the UK, medicines need to have a licence before they can be marketed. To get a licence,

the manufacturer of the medicine has to provide evidence that shows that the medicine works well enough and is safe enough to be used for a specific condition and for a specific group of patients, and that they can manufacture the medicine to the required quality. Medicines can be prescribed without a licence (an 'unlicensed medicine') if there is no suitable licensed alternative and it is likely to benefit the patient.

A medicine can also be prescribed 'off-label'. This means the prescriber wants to use it in a different way than is set out in the terms of its licence. This could mean using the medicine for a different condition or a different group of patients, or it could mean a change in the dose or that the medicine is taken in a different way. There is more information about licensing medicines on [NHS Choices](#).

## What is hypomagnesaemia?

Hypomagnesaemia is a condition in which someone has abnormally low levels of magnesium in their blood. The condition can occur if people do not get enough magnesium in their diet, if they are not able to absorb magnesium properly, or if they lose too much magnesium in their urine.

Hypomagnesaemia can happen for a number of reasons, including if a person:

- has malnutrition or diarrhoea
- is taking certain types of medicines such as proton pump inhibitors (which reduce the amount of acid made by the stomach), diuretics (which help people lose water from their bodies), antibiotics (generally used to treat infections), some chemotherapy drugs (used to treat cancer), or immunosuppressants (drugs that weaken the immune system)
- has certain inherited kidney conditions, such as Gitelman's syndrome, or
- has had part of their small intestine removed (the small intestine is where most magnesium is absorbed by the body).

Often hypomagnesaemia does not cause any symptoms, but if someone's magnesium levels are low enough it can cause problems such as muscle weakness and tremors, seizures, and irregular heart rhythms. If someone has symptoms caused by hypomagnesaemia, they are often treated with an infusion (or 'drip') of magnesium into a vein (intravenous infusion). Sometimes they are given an injection of magnesium into the

muscle (intramuscular injection) instead, or an oral magnesium supplement, usually in the form of a tablet. Oral magnesium supplements are also used to prevent hypomagnesaemia from coming back, which is the focus of this evidence summary.

## About oral magnesium glycerophosphate

Oral magnesium glycerophosphate is not currently licensed in the UK for use in any condition. Therefore using oral magnesium glycerophosphate in the UK to prevent hypomagnesaemia from coming back in people who have previously been treated for this condition with a magnesium drip is described as 'unlicensed'.

Oral magnesium glycerophosphate is a form of magnesium that can be swallowed as a liquid or pills (these are known as oral medicines). By making more magnesium available for absorption, supplementation aims to increase the amount of magnesium taken up by the body.

Other forms of oral magnesium are available in the UK, but none of them is licensed to be used for preventing people who have had hypomagnesaemia from developing the condition again.

## Summary of possible benefits and harms

Oral magnesium glycerophosphate is listed as a possible treatment for preventing recurrence of hypomagnesaemia in the British national formulary (a reference book of information on medicines generally prescribed in the UK).

In 2011, there were just under 26,000 prescriptions for oral magnesium glycerophosphate given to people in England. This figure does not include prescriptions supplied in hospitals and the records don't include exactly why each person was given the medicine, or how well it worked. There are also other types of unlicensed oral magnesium salts available; these weren't prescribed as often as oral magnesium glycerophosphate.

No studies were identified that compared oral magnesium glycerophosphate with dummy pills (known as 'placebo' pills) or with other types of oral magnesium to prevent hypomagnesaemia from coming back. No studies of oral magnesium glycerophosphate in children were found.

Only 3 patient reports were found that looked at how well oral magnesium glycerophosphate worked for preventing hypomagnesaemia from coming back after treatment with a magnesium drip. The 3 patients were adults whose ability to absorb magnesium had been affected by having parts of their intestines removed (2 patients) or by taking a drug called omeprazole for problems with their digestive system (1 patient).

In all of these patients, taking oral magnesium glycerophosphate was not enough to maintain normal magnesium levels in their blood. The 2 patients who had had parts of their intestines removed were switched to another form of magnesium called magnesium oxide. In 1 of these patients, treatment with magnesium oxide maintained normal magnesium levels, however the other patient still needed a magnesium drip every 3 to 6 months. The third patient stopped taking omeprazole and their magnesium levels returned to normal.

The numbers of people reported on are so small that they may not be representative of what happens in all people who take oral magnesium glycerophosphate to prevent hypomagnesaemia from coming back. These reports also do not tell us how well it would work in people who have had hypomagnesaemia for reasons other than having parts of their intestines removed or taking omeprazole.

Taking oral forms of magnesium may cause diarrhoea. People whose kidneys are not working well may not be able to take oral magnesium glycerophosphate, or they may only be able to take a smaller dose of it. This is because their kidneys do not work well enough to remove any extra magnesium from the body.

## Prescribing oral magnesium glycerophosphate

If a prescriber wants to use an unlicensed or off-label medicine, they must follow their professional guide, for example for doctors the General Medical Council's [good practice guidelines](#). These include giving information about the treatment and discussing the possible benefits and harms so that the patient has enough information to decide whether or not to have the treatment. This is called giving informed consent.

The full version of the summary aimed at healthcare professionals is available at <http://publications.nice.org.uk/esuom4-preventing-recurrent-hypomagnesaemia-oral-magnesium-glycerophosphate-esuom4>. The summary for healthcare professionals does not contain recommendations from NICE on whether the medicine should be used.

If your doctor is suggesting that you might try oral magnesium glycerophosphate to prevent hypomagnesaemia from coming back, you might like to ask some of the questions below.

## Questions to ask

- Why am I being offered an unlicensed medicine?
- What does the treatment involve?
- What are the benefits I might get?
- How good are my chances of getting those benefits?
- Could having the treatment make me feel worse?
- Are there alternative treatments?
- What are the risks of the treatment?
- Are the risks minor or serious? How likely are they to happen?
- What may happen if I don't have the treatment?

## More information

The evidence summary and this information for the public were produced for NICE by Bazian Ltd.

NICE has published [information](#) about how evidence summaries for unlicensed and off-label medicines are developed.

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### Contact NICE

National Institute for Health and Clinical Excellence  
Level 1A, City Tower, Piccadilly Plaza, Manchester M1 4BT

[www.nice.org.uk](http://www.nice.org.uk); [nice@nice.org.uk](mailto:nice@nice.org.uk); 0845 033 7780