Betagan (Levobunolol) is medicine used as eye drops. Betagan eye drops are used for treatment of glaucoma by reducing the intraocular pressure, which occurs in the eye. Your eye contains a clear, watery fluid that nourishes its internal structure. This liquid is continuously removed from the eye and replaced. If there is a delay runoff liquid, there is an increase of intraocular pressure and because of that occurs glaucoma. Elevated eye pressure can damage your vision. Eye drops Betagan act to reduce the production fluid in the eye. In this way, its reducing the intraocular pressure. Betagan belongs to the group of medicines called beta-blockers.

Warning and precautions

Do not take Betagan eye drops:

- If you are allergic (hypersensitive) to Betagan.
- If you have or have had asthma or another lung disease and respiratory problems in breathing, wheezing in the lungs or chronic cough.
- If you have or have had heart problems eg. weakened heart or cardiac rhythm, and you do not have a pacemaker.

Betagan eye drops are not recommended for use in children. Tell your doctor before you take Betagan eye drops if you have or have had:

- Asthma or breathing problems.
- Heart disease (heart failure or slowed heart rate).
- Problems with blood pressure (pressure drop when standing up or standing).
• Chest pain during sleep (*Prinzmetal's angina*).
• Kidney problems or liver problems.
• Weakened circulation, especially to the brain, then the legs, arms and hands.
• Diabetes or a tendency to fall in the concentration of blood sugar (*hypoglycemia*).
• Increased acidity (*acidosis*) in the blood.
• Problems with the thyroid gland.
• Depression.
• Any allergy (*especially severe allergic reaction*).
• An adrenal gland tumor, which causes high blood pressure.
• Chronic inflammation of the eye.
• Skin rashes.
• Dry eyes.
• Surgery of the eye to reduce intraocular pressure.

If you have breathing problems or heart disease, a doctor must closely monitor your health status because it's recorded a rare cases of death while taking Betagan. If you are allergic and have severe allergic reactions you have to know, in case you need adrenaline you will probably have to take a higher dose. If there is irritation of the eye or appeared another problem, inform your doctor. Eye problems include redness or stinging eyes. If you have to undergo to general anesthesia, tell the doctor or dentist that you are taking Betagan eye drops. Betagan can show a positive result in anti-doping control.

**Use with other medicines (Interaction)**

Please tell your doctor or pharmacist if you are taking or have recently taken any other medicines, including those obtained without a prescription. If you are taking through the mouth a beta-blockers for lowering high blood pressure (**propranolol, metoprolol, bisoprolol etc**), tell your doctor before taking Betagan eye drops. Betagan eye drops are also beta-blocker, so your doctor needs to know if there is the risk of overdosing of beta-blockers. If you experience any of the following symptoms perhaps this is the case:

• Low blood pressure especially after getting up.
• Slowed heart rate.
• Dizziness or temporary loss of consciousness short.
• Low intraocular pressure.

It is important to tell your doctor if you are taking:

• Painkillers.
• Medicines to reat insomnia, anxiety and epilepsy.
• Medicines to control muscle activity, eg baclofen.
• Medicines to treat heart disease (*eg, irregular heartbeat*) such as beta blockers or digitalis glycosides (**digoxin**).
• Other eye drops for lowering intraocular pressure (**to treat glaucoma**).
• Medicines that widen the pupil for example adrenaline.
• Medicines to treat diabetes.
• Medicines to treat heartburn.
• Medicines that can act on the body like the hormones adrenaline and dopamine.
• Other medicines from the group of beta-blockers on either the oral use or in the form of eye drops.

If you need a radiological examination (**X-ray**), tell your doctor or dentist that you are taking
Betagan eye drops. Tell your doctor about any change of dosage of the medicine you are taking or if you regularly drinking alcohol. Do not use Betagan if you have a eye contact lenses. Wait 15 minutes after using the drops and then reinsert the lens into the eye.

Pregnancy and breast-feeding

Warn your doctor before you start taking Betagan eye drops if you are pregnant or planning to become pregnant, or are breast-feeding. Betagan eye drops should not be used during pregnancy and lactation unless if the benefit of treatment for mother clearly exceeds the potential risk to the fetus. Before using any medication please consult your doctor or pharmacist.

Driving and operating machinery

Betagan eye drops can cause fatigue, dizziness, or blurred vision/disturbed vision. Do not drive and do not operate the machine until the symptoms pass.

Medicines use

Always use Betagan eye drops exactly as your doctor has prescribed. If you are not sure consult your doctor or pharmacist. The usual dosage is one drop into the affected eye one to two times per day.

1. Wash your hands. Tilt your head back and look up at the ceiling.
2. Position the index finger on the face in the lower eyelid and gently pull down until create a small pocket.
3. Turn the bottle down and gently press to leave one drop in the eye to be treat.
4. While holding the eye closed, press eyelid with your finger in the corner of your nose and hold for 1 minute.

If a drop misses the eye, repeat the process. To prevent infection, the tip of the bottle does not touch the eye, face or any other area. After use, close the bottle tightly. It is very important to apply the drops properly. In case of any questions, please contact doctor or pharmacist.

Overdose

If you take more Betagan eye drops than you may it is unlikely that you will something happen. In this case, flush eyes with water and dry with a clean towel. Take the next dose at the usual time. If anyone accidentally drink a medicine, you should immediately contact your doctor.

If you forget to use Betagan eye drops

If you forget to take your dose in time as usual are taking medication, take it as soon as you remember unless it is nearing time to take the next dose. Take the next dose at the usual time. Do not take a double dose to make up for the forgotten.

If you stop taking levobunolol

If you stop taking Betagan eye drops, eye pressure may increase, so do not stop taking the
Betagan eye drops should be taken as recommended by your doctor. For any questions about this medicine, contact your doctor or pharmacist.

**Side effects**

Contact your doctor immediately or go to hospital if you experience or observe:

- Rash, difficulty swallowing or difficulty breathing, swelling of the lips, face, throat or tongue (*it may be signs of an allergic reaction*).
- Respiratory problems (*including asthma*).
- Loss of consciousness or sense of loss of consciousness.
- Low blood pressure.

The side effects listed above are serious and in rare cases can be life threatening. The following side effects can occur when you are taking Betagan eye drops.

**Very common side effects**

- Irritation.
- Irritation/redness of the outer layer of the eye.

**Common side effects**

- Inflammation of the eyelids and the outer layer of the eye.

**Side effects of unknown frequency**

- Unusual, irregular or rapid heartbeat.
- Slow heart rate.
- Asthma.
- Difficulty breathing.
- Depression.
- Dizziness.
- Tingling, coldness, numbness, and discoloration of the hands and feet.
- Low blood pressure.
- Low concentration of sugar (*glucose*) in the blood.
- Swelling of the face.
- Dry eye.
- Reduced blinking.
- Inflammation of the iris and the inner part of the eye as well as the surface of the eye.
- Vision problems.
- Itching of the eye and eyelid.
- Swollen eye/eyelid.
- Discomfort in the eye, or tearing of the eye.
- Decreased coordination.
- Distraction.
- Dizziness.
- Drowsiness, lack of energy, fatigue.
- Headache.
- Hallucinations.
- Erectile dysfunction.
• Deterioration and spasms in legs which affects walking (*intermittent claudication*).
• Sleep disturbances and nightmares.
• Throat irritation.
• Unpleasant sensation in the nose.
• Abdominal pain.
• Nausea, vomiting, diarrhea.
• Skin rash, hives and itching.
• Appearance of rough, dry skin.
• Redness.

If any of these side effects become serious or you notice any side effects there is not above, tell your doctor or pharmacist.