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Drug Class Literature Scan: Glaucoma Drugs

Date of Review: August 2026

Literature Search: 01/01/2023-05/01/2026
Date of Last Review: April 2023

Current Status of PDL Class:

See **Appendix 1**.

Plain Language Summary:

- Glaucoma is an eye disease that damages the optic nerve, often due to high eye pressure, and can lead to permanent vision loss or blindness.
- Glaucoma treatment lowers eye pressure most commonly with eye drops to prevent further damage.
- The Oregon Health Plan (OHP) has numerous treatments for glaucoma available on the Preferred Drug List (PDL). No meaningful differences in effectiveness have been identified with the eye drops used to treat glaucoma.

Conclusions:

- No new high-quality systematic reviews have been published since the last review of this drug class. Two high-quality guidelines have been published. Both guidelines support current OHP fee-for-service (FFS) policies for preferred ophthalmic medications.
- The FDA has issued safety warnings for several ophthalmic medications. These warnings are summarized in **Table 1**.

Recommendations:

- No changes to the PDL are recommended based on review of recent evidence.
- Review drugs costs in executive session.

Summary of Prior Reviews and Current Policy

- The glaucoma drug class was last reviewed by the Pharmacy and Therapeutics Committee at the April 2023 meeting. After reviewing evidence for a new prostaglandin analog, omidenepag, the Committee agreed to maintain the medication product as non-preferred on the PDL. No additional PDL changes were recommended based on a review of the evidence.
- No evidence of meaningful differences in efficacy or effectiveness was identified with the ophthalmic products used to treat glaucoma. Fixed-combination products have not shown to provide substantial clinical benefit over the individual drug products.
- The OHP provides broad coverage for glaucoma treatments for each class of therapies: miotics, alpha- adrenergic agonists, beta-blockers, carbonic anhydrase inhibitors, and prostaglandin analogs (**Appendix 1**). No clinical prior authorization criteria are implemented for these drugs.
- About 1,700 OHP members have a glaucoma diagnosis, and these products are commonly utilized in OHP FFS program.

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Methods:

A Medline literature search for new systematic reviews and randomized controlled trials (RCTs) assessing clinically relevant outcomes to active controls, or placebo if needed, was conducted. The Medline search strategy used for this literature scan is available in **Appendix 3**, which includes dates, search terms and limits used. The OHSU Drug Effectiveness Review Project, Agency for Healthcare Research and Quality (AHRQ), National Institute for Health and Clinical Excellence (NICE), Department of Veterans Affairs, the Scottish Intercollegiate Guidelines Network (SIGN), and the Canada's Drug Agency (CDA-AMA) resources were manually searched for high quality and relevant systematic reviews. When necessary, systematic reviews are critically appraised for quality using the AMSTAR tool and clinical practice guidelines using the AGREE tool. The FDA website was searched for new drug approvals, indications, and pertinent safety alerts.

The primary focus of the evidence is on high quality systematic reviews and evidence-based guidelines. Randomized, comparative, controlled trials will be emphasized if evidence is lacking or insufficient from those preferred sources.

New Systematic Reviews:

After review, 4 systematic reviews were excluded due to poor quality, wrong study design of included studies (e.g., observational), comparator (e.g., no control or placebo-controlled), or outcomes studied (e.g., non-clinical).[1-4]

No high-quality systematic reviews were identified.

New Guidelines:

European Glaucoma Society

Guidelines from the European Glaucoma Society (EGS) were updated in 2025. Two updated guidelines reinforce the current OHP PDL status for glaucoma medications. The EGS recommend:

- Initiate monotherapy to treat high intraocular pressure (IOP). Laser trabeculoplasty is also a recommended option as first-line treatment. Patients with high IOPs (e.g., high 20 mms Hg or above) or severe disease may need a combination of drugs, laser trabeculoplasty or surgery (trabeculectomy). (Strength of Recommendation: Strong; Level of Evidence: High).[5]
- Prostaglandin analogs are the most effective medications and are usually recommended as a first-line treatment option for open-angle glaucoma. (Strength of Recommendation: Strong; Level of Evidence: High).[5]

National Institute for Health and Care Excellence

NICE published guidance for latanoprost-netarsudil for previously treated primary open angle glaucoma or ocular hypertension in 2024. NICE recommends:

- Latanoprost–netarsudil is an option for reducing IOP in adults with primary open-angle glaucoma or ocular hypertension when a prostaglandin analogue alone did not sufficiently reduced IOP, and if:
    - A fixed-dose combination treatment has not sufficiently reduced IOP; OR
    - A fixed-dose combination treatment containing a beta-blocker is clinically inappropriate.[6]

New FDA Safety Alerts:

Table 1. Description of New FDA Safety Alerts.[7]

Generic Name	Brand Name	Month / Year of Change	Location of Change (Boxed Warning, Warnings, CI)	Addition or Change and Mitigation Principles (if applicable)
Tafluprost	ZIOPTAN	2/2026	Warnings and Precautions	**Contact Lens Use** Contact lenses should be removed prior to the administration of ZIOPTAN and may be reinserted 15 minutes after administration.
Brimonidine	ALPHAGAN ALPHAGAN P COMBIGAN	9/2025	Warnings and Precautions	**Contamination of Topical Ophthalmic Products After Use** Do not touch the tip of the dispensing container to the eye or surrounding structures. Serious damage to the eye and subsequent loss of vision may result from using contaminated solutions.
Netarsudil	RHOPRESSA	9/2024	Warnings and Precautions	**Epithelial Corneal Edema** Epithelial corneal edema, described as honeycomb or bullous, has been reported in some patients with pre- existing corneal stromal edema or following ocular procedures that could affect corneal endothelial function. Epithelial corneal edema typically resolves upon discontinuation of RHOPRESSA. Advise patients to notify their physician if they experience eye pain or decreased vision while using RHOPRESSA.
Latanoprost/Netarsudil	ROCKLATAN	1/2025	Warnings and Precautions	**Epithelial Corneal Edema** ROCKLATAN contains netarsudil which has been associated with epithelial corneal edema, described as honeycomb or bullous, and has been reported in some patients with pre-existing corneal stromal edema or following ocular procedures that could affect corneal endothelial function. Epithelial corneal edema typically resolves upon discontinuation of ROCKLATAN. Advise patients to notify their physician if they experience eye pain or decreased vision while using ROCKLATAN.

References:

1. Zhang D, Ren C, Wang X, et al. Treatment of glaucoma with drug-loaded contact lenses: A systematic review and meta-analysis. *Eur J Pharmacol*. 995:177425.
2. Shaikh O, Kuziez L, Saeedi OJ, Abbasian J, Elhusseiny AM. Topical Netarsudil in Childhood Glaucoma: A Systematic Review. *Curr Eye Res*. 50(5):461-466.
3. Martinez-de-la-Casa J, Corsino P, Grzybowski A, Tatham A, Vignesh SO, Hassan T. Latanoprost/timolol fixed-dose combination: two decades of efficacy and safety in glaucoma management. *BMC ophthalmol*. 26(1):14.
4. Lin JB, Harris JM, Baldwin G, Goss D, Margeta MA. Ocular effects of Rho kinase (ROCK) inhibition: a systematic review. *Eye*. 38(18):3418-3428.
5. Pazos M, Traverso CE, Viswanathan A. European Glaucoma Society - Terminology and guidelines for glaucoma, 6th Edition. *Br J Ophthalmol*. Sep 8 2025;109(Suppl 1):1-212. doi:10.1136/bjophthalmol-2025-egsguidelines
6. National Institute for Health and Care Excellence. Latanoprost-netarsudil for previously treated primary open angle glaucoma or ocular hypertension. October 2024. https://www.nice.org.uk/guidance/ta1009 Accessed May 6, 2026.
7. Food and Drug Administration. Drug Safety Labeling Changes (SLC). https://www.accessdata.fda.gov/scripts/cder/safetylabelingchanges/. Accessed May 6, 2026.

Appendix 1: Current Preferred Drug List

Generic	Brand	Form	PDL
betaxolol HCl	BETAXOLOL HCL	DROPS	Y
brinzolamide	AZOPT	DROPS SUSP	Y
brinzolamide	BRINZOLAMIDE	DROPS SUSP	Y
carteolol HCl	CARTEOLOL HCL	DROPS	Y
dorzolamide HCl/timolol maleat	COSOPT	DROPS	Y
dorzolamide HCl/timolol maleat	DORZOLAMIDE-TIMOLOL	DROPS	Y
dorzolamide/timolol/PF	COSOPT PF	DROPERETTE	Y
dorzolamide/timolol/PF	DORZOLAMIDE-TIMOLOL	DROPERETTE	Y
latanoprost	LATANOPROST	DROPS	Y
latanoprost	XALATAN	DROPS	Y
pilocarpine HCl	PILOCARPINE HCL	DROPS	Y
timolol maleate	TIMOLOL MALEATE	DROPS	Y
timolol maleate	TIMOPTIC	DROPS	Y
travoprost	TRAVATAN Z	DROPS	Y
travoprost	TRAVOPROST	DROPS	Y
acetylcholine chloride	MIOCHOL-E	KIT	N
apraclonidine HCl	IOPIDINE	DROPERETTE	N
apraclonidine HCl	APRACLONIDINE HCL	DROPS	N
betaxolol HCl	BETOPTIC S	DROPS SUSP	N
bimatoprost	BIMATOPROST	DROPS	N
bimatoprost	LUMIGAN	DROPS	N
brimonidine tartrate	ALPHAGAN P	DROPS	N
brimonidine tartrate	BRIMONIDINE TARTRATE	DROPS	N
brimonidine tartrate/timolol	BRIMONIDINE TARTRATE-TIMOLOL	DROPS	N
brimonidine tartrate/timolol	COMBIGAN	DROPS	N
brinzolamide/brimonidine tart	SIMBRINZA	DROPS SUSP	N
carbachol	MIOSTAT	VIAL	N
dorzolamide HCl	DORZOLAMIDE HCL	DROPS	N
dorzolamide HCl	TRUSOPT	DROPS	N
latanoprost/PF	IYUZEH	DROPERETTE	N
latanoprostene bunod	VYZULTA	DROPS	N
levobunolol HCl	LEVOBUNOLOL HCL	DROPS	N
netarsudil mesylat/latanoprost	ROCKLATAN	DROPS	N
netarsudil mesylate	RHOPRESSA	DROPS	N
tafluprost/PF	TAFLUPROST	DROPERETTE	N
tafluprost/PF	ZIOPTAN	DROPERETTE	N
timolol	BETIMOL	DROPS	N
timolol	TIMOLOL	DROPS	N

timolol maleate	ISTALOL	DROP DAILY	N
timolol maleate	TIMOLOL MALEATE	DROP DAILY	N
timolol maleate	TIMOLOL MALEATE	SOL-GEL	N
timolol maleate	TIMOPTIC-XE	SOL-GEL	N
timolol maleate/PF	TIMOLOL MALEATE	DROPERETTE	N
timolol maleate/PF	TIMOPTIC OCUDOSE	DROPERETTE	N
bimatoprost	DURYSTA	IMPLANT	
travoprost	IDOSE TR	IMPLANT	

Appendix 2: Medline Search Strategy

Ovid MEDLINE(R) ALL <1946 to May 01, 2026>

1	Betaxolol/	687
2	Carbonic Anhydrase Inhibitors/ or brinzolamide.mp.	6270
3	Carteolol/	348
4	dorzolamide.mp.	1307
5	Latanoprost/	1671
6	Pilocarpine/	7593
7	Timolol/	3994
8	Travoprost/	503
9	Acetylcholine/	51228
10	Adrenergic alpha-2 Receptor Agonists/ or apraclonidine.mp. or Adrenergic alpha-Agonists/	13509
11	Bimatoprost/	634
12	Brimonidine Tartrate/	1647
13	Carbachol/	13936
14	Levobunolol/	246
15	netarsudil.mp. or Protein Kinase Inhibitors/	68083
16	tafluprost.mp. or Prostaglandins F/	7892
17	Timolol/ or Brimonidine Tartrate, Timolol Maleate Drug Combination/	3994
18	1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17	171272
19	Glaucoma/	44749
20	18 and 19	2976
21	limit 20 to (english language and humans and yr="2023 -Current")	120

Appendix 3: Key Inclusion Criteria

Population	People with Glaucoma
Intervention	Ophthalmic Preparations in Appendix 1
Comparator	Other ophthalmic preparations in Appendix 1
Outcomes	Reduction in intraocular pressure by 25-30%
Setting	Outpatient