



# Endo Optiks®

## ECP Study Summary

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**Over 20 years of clinical research summarized below to illustrate:**

- ECP is effective for a wide range of types and severities of glaucoma.
- ECP is a safe procedure. No cases of hypotony or phthisis reported in combined Phaco/ECP cases. Authors uniformly note that the complications for high risk refractory glaucoma patients were equal to or less severe than tubes or trabs.
- ECP is titratable so treating more ciliary processes has a greater impact without effecting safety.

### Combined Phaco /ECP

Year	Publication/ Meeting	Title (comments)	Author	# Eyes	Mean F/U mths	Pre-Op IOP mmHg	Post-Op IOP mmHg	Pre-Op Meds	Post-Op Meds
2017	EJO	<b>Phaco plus ECP vs phaco alone in primary open-angle glaucoma</b> 270-360°. Phaco-ECP resulted in greater reduction in IOP and meds than phaco alone.	Bartolome, F.P., Rodrigues, I.A., Goyal, S. et.al. <i>Control Group</i>	69	12	21.5	<b>16.8</b>	2.62	<b>1.89</b>
				30		18.5	<b>16.6</b>	1.2	<b>0.96</b>
2017	AGS	<b>Long-term Follow-up of Combined Phacoemulsification and ECP in the Treatment of Mild to Moderate Glaucoma ( 180-360°.</b>	Sara Khandan, Les Siegel, et. al.	261	72	17.2	<b>13.9</b>	1.3	<b>.25</b>
2017	AGS	<b>Results of Endocyclophotocoagulation in a Pre-dominantly Haitian and Hispanic Population 120 – 180°. Complications: No Hypotony, post-op inflammation or LLP.</b>	Corey Waldman, M.D.	20	6	18	<b>15.8</b>	2.4	<b>1.25</b>
2016	Int’l Jrnl Ophth.	<b>Efficacy of combined cataract extraction and endoscopic cyclophotocoagulation for the reduction of intraocular pressure and medication burden.</b> 200-270°.	Samiie J. Roberts, Matthew Mulvahill, et. al.	91	12	16.65	<b>13.38</b>	1.88	<b>1.48</b>
2014	JCRS	<b>ECP combined with phacoemulsification versus phacoemulsification alone in medically controlled glaucoma</b> 270-360°.	Brian A. Francis, et.al. <i>Control Group</i>	80	36	18.1	<b>15.4</b>	1.5	<b>.4</b>
						18.1	<b>17.2</b>	2.4	<b>2.3</b>
2013	Clinical & Exper. Ophth.	<b>Combining phacoemulsification with endoscopic cyclophotocoagulation to manage cataract and glaucoma (270-360°)</b> 45 eyes POAG, 18 Refractory gl.	Philip Bloom, et. al.	63	12	21.1	<b>16.1</b>	2.7	<b>1.3</b>
2012	BMJ	<b>Phaco-ECP: combined endoscopic cyclophotocoagulation and cataract surgery to augment medical control of glaucoma</b> *Meds were intentionally maintained. Conclusion: This study confirms safety as well as IOP impact of ECP independent of meds change.	Dan Lindfield, et. al.	58	24	21.5	<b>14.4</b>	2	<b>2.1*</b>



## Combined Phaco /ECP (cont.)

Year	Publication/ Meeting	Title (Comments)	Author	# Eyes	Mean F/U mths	Pre-Op IOP mmHg	Post-Op IOP mmHg	Pre-Op Meds	Post-Op Meds
2007	Journal of Glaucoma	<b>One-Site Versus Two-Site ECP:</b> 1 site-240° 2 site 360°	Malik Kahook, M.D, et. al.	15	6	23.6	16	2.5	1.9
				25	6	24.5	13	2.6	.5
2006	ASCRS	<b>ECP with Phaco in Medically Controlled Glaucoma: Prospective Randomized Controlled Long-Term Study</b>	Mike McFarland, M.D. et. al.	127	37	22.8	16.1	1.6	.8
2000	AGS J. Glaucoma	<b>ECP and Phaco in the treatment of Medically Controlled POAG</b> 180-300° treatment. Study supports 360° treatment. No significant Complications.	Stanley J. Berke, M.D.	26	3	20.4	19.1	1.7	.7
1999	JCRS	<b>Combined cataract and glaucoma surgery: Trabeculectomy versus endoscopic laser cycloablation</b>	Johnny Gayton, M.D.	29	24	24.8	16	2.5	1.1
1997	AJO	<b>ECP of the Ciliary Body for the treatment of Refractory Glaucomas</b> Subgroup of Phaco/ECP	Jorge Alvarado, M.D.	12	13	27	14	2.8	2.2
1995	Ophthalmic Surgery	<b>Combined Phacoemulsification, ECP and Intraocular Lens Insertion in Glaucoma Management</b>	Martin Uram, M.D.	10	20	31.4	13.5	3.2	.8

## ECP with other MIGS

Year	Publication/ Meeting	Title (Comments)	Author	# Eyes	Mean F/U (mths)	Pre-Op IOP mmHg	Post-Op IOP mmHg	Pre-Op Meds	Post-Op Meds
2017	JCRS	<b>Microbypass stent implantation with cataract extraction and endocyclophotocoagulation versus microbypass stent with cataract extraction for glaucoma</b> Safety: No significant post-op complications noted in either group.	Tanner J. Ferguson, John Berdahl, et. al.	51	12	21.49	14	1.78	1.10
				<i>Control Group</i>	50	12	20.66	16	1.68
2017	AGS	<b>Phacoemulsification Combined With Trabecular Microbypass Stent (iStent) and Endolaser Cyclophotocoagulation (ECP).</b> Objective to reduce meds. Maintained a high safety profile.	Ronald Corona, M.D.	46	12	18	16.5	2.3	1.0

## Refractory Glaucoma

Year	Publication/ Meeting	Title (Comments)	Author	# Eyes	Mean F/U (mths)	Pre-Op IOP mmHg	Post-Op IOP mmHg	Pre-Op Meds	Post-Op Meds
2017	AGS	<b>Clinical Results of ECP in Refractory Glaucoma</b>	Maria Corina Ponte-Davila, et. al.	50	24	22.3	<b>13</b>	2	<b>2.2</b>
2015	Journal of Glaucoma	<b>ECP and Pars Plana Ablation (ECP-Plus) to Treat Refractory Glaucoma</b>	Brian Francis, M.D., et.al	53	12	27.9	<b>10.7</b>	3.4	<b>.7</b>
2010	Journal of Glaucoma	<b>ECP in the management of Uncontrolled Glaucoma with prior aqueous tube shunt</b>	Brian Francis, et. al.	25	18	24	<b>15.3</b>	3.2	<b>1.5</b>
2009	AGS	<b>Use of ECP in Patients with Uncontrolled Refractory Glaucoma</b> Low complications for poor prognosis patients.	George L. Spaeth, M.D.	17	2-17	25.12	<b>10.53</b>	3.76	<b>.94</b>
2007	ASCRS	<b>A Long Term Retrospective Study of ECP in Refractory Glaucoma</b>	Francisco Lima, M.D., et. al.	539	60	37.9	<b>15.7</b>	3.4	<b>1.5</b>
2004	Journal of Glaucoma	<b>A prospective, comparative study between ECP and the Ahmed drainage implant in refractory glaucoma</b> Significantly more worsening of VA with Ahmed valve compared with ECP)	Francisco Lima, M.D., et. al.	68	24	41.3	<b>14</b>	3.0	<b>2.0</b>
						<i>Control Group</i>	41.6	<b>14.7</b>	3.5
1997	AJO	<b>Endoscopic Cyclophotocoagulation of the Ciliary Body for Treatment of Refractory Glaucomas</b> 180 - 360° treatment. No hypotony or phthisis.	Janet Chen, M.D., Jorge Alvarado, M.D., et. al.	68	12.9	27.7	<b>17</b>	3	<b>2</b>

## Neovascular Glaucoma

Year	Publication/ Meeting	Title (Comments)	Author	# Eyes	Mean F/U (mths)	Pre-Op IOP mmHg	Post-Op IOP mmHg	Pre-Op Meds	Post-Op Meds
2014	Retina	<b>Case-matched comparison of vitrectomy, peripheral retinal endolaser and ECP vs standard care in neovascular glaucoma.</b> 360°. Complications not different to control group.	Jorge Arroyo, M.D.	27	12	40.7 (±12.40)	<b>12.3</b> (±4.84)	3.1	<b>.5</b>
			<i>Control Group</i>	27	12	34.7 (±12.38)	<b>23</b> (±12.34)	1.30	<b>1.89</b>
1992	Ophthalmology	<b>Ophthalmic Laser Microendoscope Ciliary Process Ablation in the Management of Neovascular Glaucoma</b>	Martin Uram, M.D., MPH	10	9	43.6	<b>15.3</b>	Meds Reduced	



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