

November 2022

# **Curriculum vitae: Prof. habil. Dr. Hanspeter Esriel Killer**

## **Professional Experience**

### **Current positions**

Consultant AZA Aarau

Department of Biomedicine University of Basel, Associate scientist

### **Past positions**

Senior consultant Department of Ophthalmology Kantonsspital Aarau

Chair Department of Ophthalmology, Kantonsspital Aarau

## **Education**

Medical school University of Zürich

Fellowship in Neuro-Ophthalmology Albert Einstein College of Medicine, New York

## **Topics of research**

- . Optic nerve
- . Glaucoma
- . Optic nerve compartmentalization
- . Cerebrospinal fluid dynamics and content
- . Strabismus

## **Surgical experience**

Cataract surgery  
Glaucoma surgery  
Strabismus surgery  
Oculoplastic / lid surgery  
Orbital surgery  
Retinal surgery  
Laser surgery in the anterior and posterior segment of the eye  
Optic nerve surgery

## **Funding History**

Messerli Stiftung  
Emilia Guggenheim-Schnurr Stiftung  
Freie Akademische Gesellschaft  
De Bernardi Fond  
Helmut Horten Stiftung  
KSA Forschungsrat  
Forschungsfond Kantonspital Aarau  
Total amount > 4 M

## **Awards and honors**

1987 Award for excellent thesis of University of Zürich 1987 (Experimental thesis on reinnervation of motor endplates after autologous muscle transplantation.)  
1993 Elected fellow North American Society of Neuro-Ophthalmology  
1994 Founding member of Swiss Society for Dystonia  
1995 Admission to the International Strabismus Society  
1995 Section Editor for European abstracts in J Neuro-Ophthalmology (official organ of the American society of Neuroophthalmology)  
1995 Member of Commission on strabismus Swiss Ophthalmological Society  
1998 Poster award of the Swiss Ophthalmological Society for best scientific poster  
1999 Invited visiting professor Albert Einstein College of Medicine, New York

2000 Fellow of the American Society of Neuro- Ophthalmology

2001 Member of the international editorial boards des U.S. Chinese J of Ophthalmology

2002 President of commission on strabismus Swiss Ophthalmological Society (until 2006)

2007 Associate professor University of Basel

2007 Alfred Vogt medal (Highest award for research in Ophthalmology in Switzerland)

2007 Faculty of 1000 (Global leaders expert knowledge) for the paper: Cerebrospinal fluid dynamics between the intracranial and the subarachnoid space of the optic nerve. Is it always bidirectional?

Brain 2007 Feb 130(Pt 2):514-20

2008 Member of the research committee of the EUNOS

2009 Visiting professor Johns Hopkins University, Baltimore

2009 Visiting professor New York Eye and Ear Infirmary

2009 Editorial member of J Frontiers of Neuro-Ophthalmology

2010 Visiting professor lecture New York University, USA

2010 Visiting professor lecture Mayo Clinic, Rochester, USA

2011 Consultant for NASA microgravity team

2011 Consultant for glaucoma think tank New York

2012 Invited member to von Graefe society

2013 Faculty member for the fourth annual "Managing Glaucoma: Beyond intraocular pressure, San Francisco

2013 Consultant NASA VIIP RCAP, Houston, Texas

2014 Lowi medal from ANZGIG, Perth, Australia

2014 Consultant for ESA

2014 Poster prize from SOG for best scientific poster

2014 Reviewer and consultant for International Life Sciences Research Announcement [2014-ILSRA, ESA, NASA] Washington

2015 Guest speaker: 66th International Astronautical Congress, 12 – 16 October 2015, Israel

2015 Member of Forschungsrat Kantonsspital Aarau

2015 Guest speaker: Congress of Belgium glaucoma society, Brussels

2016 Consultant for glaucoma think tank New York June 2016

2016 Invited member of intraocular and intercranial pressure summit, Peking

2016 Best poster price of the Gesellschaft für Neurowissenschaften der Schweiz

2017 Guest professorship Tongren Hospital / Peking university Peking China

2017 Honory Member AISG Rom

2028 Criden memorial lecture, Ohio StateUniversity

2018 Nuove frontier della chirurgia del glaucoma, Italy

2018 International glaucoma congress Barcelona: The relationship between IOP, optic nerve and cerebrospinal fluid

2020 Nuove frontier della chirurgia del glaucoma, Italy

### **Visiting professorships**

Johns Hopkins University, Baltimore

New York Eye and Ear Infirmary

New York University, USA

Mayo Clinic, Rochester, USA

Guest professorship Tongren Hospital / Peking university Peking China

### **Consultant for**

NASA

ESA

### **Peer-reviewed Publications**

2022 Further evidence for the presence of a glymphatic pathway in the human optic nerve. Wostyn P and Killer HE. *Surg Radiol Anat.* 2022 May;44(5):767-768.

2022 Problems in CSF and Ophthalmic disease research. Machiele R, Frankfort BJ, Killer HE and Fleischman D. *Front. Ophthalmol.*, 28 June 2022

2022 Elevated L-PGDS Concentration in the Subarachnoid Space of the Optic Nerve in Patients with Idiopathic Intracranial Hypertension and its clinical Implications. Achmed Pircher, Albert Neutzner, Margherita Montali, Jatta Berberat, Andreas Huber, Neil R Miller, Tom Mader, Bob Gibson, Luca Remonda and Hanspeter E Killer. *Brain communication* Sep 26;4(5):fcac240

2022 Cerebrospinal Fluid Dynamics in the Optic Nerve Subarachnoid Space and the Brain Applying Diffusion Weighted MRI in Patients With Idiopathic Intracranial Hypertension-A Pilot Study. Berberat J, Pircher A, Gruber P, Lovblad KO, Remonda L, Killer HE

2022 Special Cerebral and Cerebrospinal Features in Primary Open Angle Glaucoma and Normal Tension Glaucoma. Killer HE. *Klin Monbl Augenheilkd.* 2022 Feb;239(2):177-181

2021 Studies Utilizing Current Estimated CSF Pressure Equations Should Not Be Conducted and Published. Fleischman D, Killer HE. *Eye Brain.* 2021 Sep 24;13:239-24

2021 Unvalidated Cerebrospinal Fluid Pressure Equations Should Not Be Used For Research Fleischman D and Killer HE *Journal of Ophthalmic and Vision Research*

2021 Posture-Dependent Collapse of the Optic Nerve Subarachnoid Space: A Combined MRI and Modeling Study; Hanspeter E Killer , Jatta Berberat , Peter Wostyn 4, Achmed Pircher , Diego Rossinelli *Invest Ophthalmol Vis Sci* 2021 Dec 1;62(15):16.

2021 Studies Utilizing Current Estimated CSF Pressure Equations Should Not Be Conducted and Published David Fleischman , Hanspeter E Killer *Eye Brain* 2021 Sep 24;13:239-240

2021 Brain activation patterns in medicated versus medication-naïve adults with attention-deficit hyperactivity disorder during fMRI tasks of motor inhibition and cognitive switching Jatta Berberat , Ruth Huggenberger, Margherita Montali, Philipp Gruber, Achmed Pircher , Karl-Olof Lövblad , Hanspeter E Killer, Luca Remonda *BMC Med Imaging* 2021 Mar 19;21(1):53

2021 Comment on: The role of intracranial pressure in glaucoma. Pircher A, Killer HE. *Eye (Lond).* 2021 Jun;35(6):1793

2021 Lipocalin-type Prostaglandin D Synthase Concentration Gradients in the Cerebrospinal Fluid in Normal-tension Glaucoma Patients with Optic Nerve Sheath Compartmentation. Pircher A, Neutzner A, Montali M, Huber A, Scholl HPN, Berberat J, Remonda L, Killer HE. *Eye Brain.* 2021 Apr 14;13:89-97

2021 Letter to the Editor: Opto-chiasmatic apoplexy as a compartment syndrome? Anatomical and surgical considerations on two bleeding cavernous malformation. Pircher A, Killer HE. *Clin Neurol Neurosurg.* 2021 Aug;207:106714

2021. Are Generalized Reduced Cerebrospinal Fluid Dynamics and Optic Nerve Sheath

Compartmentation Sequential Steps in the Pathogenesis of Normal-Tension Glaucoma? [Response to Letter]. Killer HE, Pircher A. *Eye & Brain*. 2021 May 25;13:157-158

2021 Grüter BE, Kahles T, Anon J, Berberat J, Andereggen L, Killer HE, Gruber P. Carotid-cavernous sinus fistula following mechanical thrombectomy in acute ischaemic stroke: a rare complication *Neuroradiology*. 2021 Jul;63(7):1149-1152

2020 Hao J, Killer HE Is the optic nerve compartment syndrome implicated in the pathogenesis of the high-tension form of primary open-angle glaucoma? Response. *Clin Exp Ophthalmol*. 2020 Mar;48(2):272-273

2020 Mader TH, Gibson CR, Barratt MR, Miller NR, Subramanian PS, Killer HE, Tarver WJ, Sargsyan AE, Garcia K, Hart SF, Kramer LA, Riascos R, Brunstetter TJ, Lipsky W, Wostyn P, Lee AG. Persistent Globe Flattening in Astronauts following Long-Duration Spaceflight. *Neuroophthalmology*. 2020 Sep 3;45(1):29-35

2020 Hemion C, Li J, Kohler C, Scholl HPN, Meyer P, Killer HE, Neutzner Clearance of neurotoxic peptides and proteins by meningotheelial cells.A. *Exp Cell Res*. 2020 Nov 15;396(2):112322

2020 Killer HE. Is stagnant cerebrospinal fluid involved in the pathophysiology of normal tension glaucoma. *Prog Brain Res*. 2020;256(1):209-220

2020 Killer HE, Pircher A. What is the optimal glaucoma treatment: reducing aqueous humour production or facilitating its outflow? *Eye (Lond)*. 2020 Oct;34(10):1719-1721

2020 Mader TH, Gibson CR, Miller NR, Brunstetter TJ, Killer HE, Wostyn P, Lee AG. Letter: Brain Physiological Response and Adaptation During Spaceflight. *Neurosurgery*. 2020 Feb 1;86(2):E247-E249.

2020 Hao J, Pircher A, Miller NR, Hsieh J, Remonda L, Killer HE. Cerebrospinal fluid and optic nerve sheath compartment syndrome: A common pathophysiological mechanism in five different cases? *Clin Exp Ophthalmol*. 2020 Mar;48(2):212-219.

2019 Wostyn P, Mader TH, Gibson CR, Killer HE The perivascular space of the central retinal artery as a potential major cerebrospinal fluid inflow route: implications for optic disc edema in astronauts. *Eye (Lond)*. 2020 Apr;34(4):779-780. doi: 10.1038/s41433-019-0594-9. Epub 2019

2020 Cerebrospinal fluid and optic nerve sheath compartment syndrome: A common pathophysiological mechanism in five different cases?  
Hao J, Pircher A, Miller NR, Hsieh J, Remonda L, Killer HE. *Clin Exp Ophthalmol*. 2020 Mar;48(2):212-219

2020 Killer HE Validation of Noninvasive Absolute Intracranial Pressure Measurements in Traumatic Brain Injury and Intracranial Hemorrhage. *Oper Neurosurg (Hagerstown)*. 2019 Dec 1;17(6):E274-E275

2020: Wostyn P, Mader TH, Gibson CR, Killer HE The perivascular space of the central retinal artery as a potential major cerebrospinal fluid inflow route: implications for optic disc edema in astronauts. *Eye (Lond)*. 2019 Sep 20. doi: 10.1038/s41433-019-0594-9.

2020 Liu KC, Fleischman D, Lee AG, Killer HE, Chen JJ, Bhatti MT. Current concepts of cerebrospinal fluid dynamics and the translaminar cribrosa pressure gradient: a paradigm of optic disk disease. *Surv Ophthalmol*. 2020 Jan - Feb;65(1):48-66. doi: 10.1016/j.survophthal.2019.08.005. Epub 2019 Aug 23. Review.

2019 Killer HE, Pircher A. Response to: 'Comment on: Pressure and velocity in intraocular and subarachnoid space fluid chambers: an inseparable couple'. *Eye (Lond)*. 2019 Sep;33(9):1515-1516.

2019 Neutzner A, Power L, Dürrenberger M, Scholl HPN, Meyer P, Killer HE, Wendt D, Kohler C. A perfusion bioreactor-based 3D model of the subarachnoid space based on a meningeal tissue construct. *Fluids Barriers CNS*. 2019 Jun 13;16(1):17. doi: 10.1186/s12987-019-0137-6.

2019 Wostyn P, Mader TH, Gibson CR, Killer HE. The escape of retrobulbar cerebrospinal fluid in the astronaut's eye: mission impossible? *Eye (Lond)*. 2019 Oct;33(10):1519-1524. doi: 10.1038/s41433-019-0453-8. Epub 2019 May 7. Review.

2019 Killer HE. The Importance of the Lymphatic and the Glymphatic System for Glaucoma. *Klin Monbl*. 2019 2019 Feb;236(2):142-144

2019 Killer HE, Hou R, Wostyn P, Meyer P, Pircher A. Pressure and velocity in intraocular and subarachnoid space fluid chambers: an inseparable couple. *Eye (Lond)*. 2019 Mar;33(3):343-346.

2019 Liu L, Li X, Killer HE, Cao K, Li J, Wang N. Changes in retinal and choroidal morphology after cerebrospinal fluid pressure reduction: a Beijing iCOP study. *Sci China Life Sci*. 2019 Feb;62(2):268-271.

2018 Pircher A, Montali M, Pircher J, Berberat J, Remonda L, Killer HE. Periopic Cerebrospinal Fluid Dynamics in Idiopathic Intracranial Hypertension. *Front Neurol*. 2018 Jun 28;9:506. doi: 10.3389/fneur.2018.00506. eCollection 2018.

2018 Wostyn P, De Groot V, Van Dam D, Audenaert K, De Deyn PP, Killer HE. Letter to the Editor. Low ICP and normal tension glaucoma: optic nerve damage due to barotraumatic factors, failure of CSF dynamics, or both? *J Neurosurg*. 2018 Oct;129(4):1100-1103. doi: 10.3171/2017.11.JNS172939. Epub 2018 May 4. No abstract available.

2018 Fleischman D, Killer HE. Measurement and Associations of the Optic Nerve Subarachnoid Space in Normal Tension Glaucoma and Primary Open-Angle Glaucoma. *Am J Ophthalmol*. 2018 Apr 5. pii: S0002-9394(18)30121-1.

2018 Wostyn P, De Groot V, Van Dam D, Audenaert K, De Deyn PP, Killer HE. The First Histologic Evidence of a Paravascular Pathway Within the Optic Nerve. *Invest Ophthalmol Vis Sci*. 2018 Apr 1;59(5):1717.

2018 Pircher A, Montali M, Wostyn P, Pircher J, Berberat J, Remonda L, Killer HE. Impaired cerebrospinal fluid dynamics along the entire optic nerve in normal-tension glaucoma. *Acta Ophthalmol*. 2018 Mar 12. doi: 10.1111/aos.13647.

2018 Pircher A, Montali M, Wostyn P, Pircher J, Berberat J, Remonda L, Killer HE. Impaired cerebrospinal fluid dynamics along the entire optic nerve in normal-tension glaucoma. *Acta*

Ophthalmol. 2018 Mar 12.

2018 Killer HE, Pircher A. Normal tension glaucoma: review of current understanding and mechanisms of the pathogenesis. *Eye (Lond)*. 2018 Feb 19.

2017 Boye D, Montali M, Miller NR, Pircher A, Gruber P, Killer HE, Remonda L, Berberat J. Flow dynamics of cerebrospinal fluid between the intracranial cavity and the subarachnoid space of the optic nerve measured with a diffusion magnetic resonance imaging sequence in patients with normal tension glaucoma. *Clin Exp Ophthalmol*. 2017 Nov 25. PMID: 29178525.

2017 Danieli L, Montali M, Remonda L, Killer HE, Colosimo C, Cianfoni A. Clinically Directed Neuroimaging of Ophthalmoplegia. *Clin Neuroradiol*. 2018 Mar;28(1):3-16.

2017 Wostyn P, Killer HE, De Deyn PP. Why a One-Way Ticket to Mars May Result in a One-Way Directional Glymphatic Flow to the Eye. *J Neuroophthalmol*. 2017 Dec;37(4):462-463.

2017 Wostyn P, De Groot V, Van Dam D, Audenaert K, Killer HE, De Deyn PP. The Glymphatic Hypothesis of Glaucoma: A Unifying Concept Incorporating Vascular, Biomechanical, and Biochemical Aspects of the Disease. *Biomed Res Int*. 2017;2017:5123148. PMID: 28948167; PubMed Central PMCID: PMC5602488.

2017 Killer HE, Pircher A. Reduced Free Communication of the Subarachnoid Space Within the Optic Canal in the Human. *Am J Ophthalmol*. 2017 Nov;183:164-165.

2017 Zeleny TNC, Kohler C, Neutzner A, Killer HE, Meyer P. Cell-Cell Interaction Proteins (Gap Junctions, Tight Junctions, and Desmosomes) and Water Transporter Aquaporin 4 in Meningothelial Cells of the Human Optic Nerve. *Front Neurol*. 2017 Jun 29;8:308.

2017 Wostyn P, De Groot V, Van Dam D, Audenaert K, Killer HE, De Deyn PP. Evidence for the existence of a communication between the eye and the brain? *Acta Neurochir (Wien)*. 2017 Aug;159(8):1413-1414. 2017 May 17.

2017 Pircher A, Montali M, Berberat J, Remonda L, Killer HE. Relationship between the optic nerve sheath diameter and lumbar cerebrospinal fluid pressure in patients with normal tension glaucoma. *Eye (Lond)*. 2017 Sep;31(9):1365-1372.

2017 Pircher A, Montali M, Berberat J, Remonda L, Killer HE. The Optic Canal: A Bottleneck for Cerebrospinal Fluid Dynamics in Normal-Tension Glaucoma? *Front Neurol*. 2017 Feb 23;8:47. PMID: 28280481; PubMed Central PMCID: PMC5322576.

2017 Wostyn P, De Groot V, Van Dam D, Audenaert K, De Deyn PP, Killer HE. "Hypodense Holes" and the Ocular Glymphatic System: Author Response: "Black Holes" and the Ocular Glymphatic System. *Invest Ophthalmol Vis Sci*. 2017 Feb 1;58(2):1132-1133.

2017 Wostyn P, Killer HE, De Deyn PP. Glymphatic stasis at the site of the lamina cribrosa as a potential mechanism underlying open-angle glaucoma. *Clin Exp Ophthalmol*. 2017 Jul;45(5):539-547. Review.

2017 Pircher A, Remonda L, Weinreb RN, Killer HE. Translaminar pressure in Caucasian normal tension glaucoma patients. *Acta Ophthalmol*. 2017 Nov;95(7):e524-e531. 27966838.

2016 Kaeslin MA, Killer HE, Fuhrer CA, Zeleny N, Huber AR, Neutzner A. Changes to the Aqueous Humor Proteome during Glaucoma. *PLoS One*. 2016 Oct 27;11(10):e0165314. PMID: 27788204; PubMed Central PMCID: PMC5082887.

2016 Wostyn P, De Groot V, Van Dam D, Audenaert K, Killer HE, De Deyn PP. The two faces of the translaminar pressure difference: the biomechanical one and the biochemical one. *Clin Exp Optom*. 2017 Jan;100(1):102-103.

2016 Wostyn P, De Groot V, Van Dam D, Audenaert K, De Deyn PP, Killer HE. The Glymphatic System: A New Player in Ocular Diseases? *Invest Ophthalmol Vis Sci*. 2016 Oct 1;57(13):5426-5427.

2016 Wostyn P, De Groot V, Van Dam D, Audenaert K, Killer HE, De Deyn PP. Age-related macular degeneration, glaucoma and Alzheimer's disease: amyloidogenic diseases with the same glymphatic background? *Cell Mol Life Sci*. 2016 Nov;73(22):4299-4301.

2016 Wostyn P, De Groot V, Van Dam D, Audenaert K, Killer HE, De Deyn PP. Dilated Virchow-Robin spaces in primary open-angle glaucoma: a biomarker of glymphatic waste clearance dysfunction? *Acta Radiol Open*. 2016 Aug 10;5(8):2058460116653630.

2016 Wostyn P, De Groot V, Van Dam D, Audenaert K, Killer HE, De Deyn PP. Alzheimer's disease and glaucoma: can glymphatic system dysfunction underlie their comorbidity? *Acta Ophthalmol*. 2017 May;95(3):e244-e245.

2016 Killer HE, Pircher A. What Do We Really Know About Translaminar Pressure? *J Neuroophthalmol*. 2016 Mar;36(1):112-3. PMID: 26882237.

- 2016 Wostyn P, De Groot V, Van Dam D, Audenaert K, Killer HE, De Deyn PP. Fast circulation of cerebrospinal fluid: an alternative perspective on the protective role of high intracranial pressure in ocular hypertension. *Clin Exp Optom*. 2016 May;99(3):213-8. 26691953.
- 2016 Pircher A, Killer HE. TLP: a premature concept. *Eye (Lond)*. 2016 Jan;30(1):166-7. 26563655; PubMed Central PMCID: PMC4709552.
- 2015 Wostyn P, De Groot V, Van Dam D, Audenaert K, Killer HE, De Deyn PP. Glaucoma and the Role of Cerebrospinal Fluid Dynamics. *Invest Ophthalmol Vis Sci*. 2015 Oct;56(11):6630-1.
- 2015 Killer HE. Asymmetric Papilledema in Idiopathic Intracranial Hypertension: Comment. *J Neuroophthalmol*. 2015 Sep;35(3):330-1.
- 2015 Wostyn P, Van Dam D, Audenaert K, Killer HE, De Deyn PP, De Groot V. A new glaucoma hypothesis: a role of glymphatic system dysfunction. *Fluids Barriers CNS*. 2015 Jun 29;12:16. 26118970; PubMed Central PMCID: PMC4485867.
- 2015 Giger-Tobler C, Eisenack J, Holzmann D, Pangalu A, Sturm V, Killer HE, Landau K, Jaggi GP. Measurement of Optic Nerve Sheath Diameter: Differences between Methods? A Pilot Study. *Klin Monbl Augenheilkd*. 2015 Apr;232(4):467-70.
- 2014 Wostyn P, De Groot V, Van Dam D, Audenaert K, Killer HE, De Deyn PP. Glaucoma considered as an imbalance between production and clearance of neurotoxins. *Invest Ophthalmol Vis Sci*. 2014 Aug 26;55(8):5351-2.
- 2014 Li J, Fang L, Meyer P, Killer HE, Flammer J, Neutzner A. Anti-inflammatory response following uptake of apoptotic bodies by meningotheial cells. *J Neuroinflammation*. 2014 Feb 24;11:35.
- 2014 Berberat J, Killer HE, Remonda L. What is BOLD? *J Pediatr Ophthalmol Strabismus*. 2014 Jan-Feb;51(1):11. PMID: 24512589.
- 2014 Killer HE, Subramanian PS. Compartmentalized cerebrospinal fluid. *Int Ophthalmol Clin*. 2014 Winter;54(1):95-102. Review.
- 2013 Mader TH, Gibson CR, Pass AF, Lee AG, Killer HE, Hansen HC, Dervay JP, Barratt MR, Tarver WJ, Sargsyan AE, Kramer LA, Riascos R, Bedi DG, Pettit DR. Optic disc edema in an

astronaut after repeat long-duration space flight. *J Neuroophthalmol.* 2013 Sep;33(3):249-55.

2013 Killer HE. Production and circulation of cerebrospinal fluid with respect to the subarachnoid space of the optic nerve. *J Glaucoma.* 2013 Jun-Jul;22 Suppl 5:S8-10.

2013 Killer HE. Compartment syndromes of the optic nerve and open-angle glaucoma. *J Glaucoma.* 2013 Jun-Jul;22 Suppl 5:S19-20. Review.

2013 Killer HE, Jaggi G. Orbital cerebrospinal fluid space in glaucoma. *Ophthalmology.* 2013 Jun;120(6):e30-1. PMID: 23732063.

2013 Berberat J, Jaggi GP, Wang FM, Remonda L, Killer HE. Changes in the amygdala produced by viewing strabismic eyes. *Ophthalmology.* 2013 Oct;120(10):2125-9.

2013 Li J, Fang L, Killer HE, Flammer J, Meyer P, Neutzner A. Meningothelial cells as part of the central nervous system host defence. *Biol Cell.* 2013 Jul;105(7):304-15. 23634770.

2013 Killer HE, Jaggi GP. Authors' response to control issues. *Br J Ophthalmol.* 2013 Jan;97(1):112.

2013 Bauer G, Killer HE, Forrer A, Huber AR, Jaggi GP. Lipocalin-like prostaglandin D synthase (L-PGDS) concentration in aqueous humour in patients with open-angle glaucoma. *J Glaucoma.* 2014 Mar;23(3):164-8.

2012 Fan B, Bordigari G, Flammer J, Killer HE, Meyer P, Neutzner A. Meningothelial cells participate in immunological processes in the cerebrospinal fluid. *J Neuroimmunol.* 2012 Mar;244(1-2):45-50. 2012 Jan 20.

2012 Killer HE, Miller NR, Flammer J, Meyer P, Weinreb RN, Remonda L, Jaggi GP. Cerebrospinal fluid exchange in the optic nerve in normal-tension glaucoma. *Br J Ophthalmol.* 2012 Apr;96(4):544-8. 2011 Nov 24.

2011 Killer HE, Jaggi GP, Miller NR. Optic nerve compartment syndrome. *Acta Ophthalmol.* 2011 Aug;89(5):e472; author reply e472-3.

2011 Berkmann S, Fandino J, Zosso S, Killer HE, Remonda L, Landolt H. Intraoperative magnetic resonance imaging and early prognosis for vision after transsphenoidal surgery for sellar lesions. *J Neurosurg.* 2011 Sep;115(3):518-27.

- 2011 Xin X, Fan B, Flammer J, Miller NR, Jaggi GP, Killer HE, Meyer P, Neutzner A. Meningothelial cells react to elevated pressure and oxidative stress. PLoS One. 2011;6(5):e20142.
- 2011 Jaggi GP, Miller NR, Flammer J, Weinreb RN, Remonda L, Killer HE. Optic nerve sheath diameter in normal-tension glaucoma patients. Br J Ophthalmol. 2012 Jan;96(1):53-6.
- 2011 Killer HE, Jaggi GP, Miller NR, Huber AR, Landolt H, Mironov A, Meyer P, Remonda L. Cerebrospinal fluid dynamics between the basal cisterns and the subarachnoid space of the optic nerve in patients with papilloedema. Br J Ophthalmol. 2011 Jun;95(6):822-7.
- 2010 Killer HE, Jaggi GP, Miller NR. Progressive optic neuropathy in idiopathic intracranial hypertension after optic nerve sheath fenestration. J Neuroophthalmol. 2010 Jun;30(2):205. PMID: 20523199.
- 2010 Jaggi GP, Harlev M, Ziegler U, Dotan S, Miller NR, Killer HE. Cerebrospinal fluid segregation optic neuropathy: an experimental model and a hypothesis. Br J Ophthalmol. 2010 Aug;94(8):1088-93.
- 2010 Xin X, Fan B, Killer HE, Neutzner A, Flammer J, Meyer P. Primary cell culture of meningeothelial cells—a new model to study the arachnoid in glaucomatous optic neuropathy. Graefes Arch ClinExp Ophthalmol. 2010 Sep;248(9):1273-8.
- 2009 Killer HE, Jaggi GP, Miller NR. Papilledema revisited: is its pathophysiology really understood? Clin Exp Ophthalmol. 2009 Jul;37(5):444-7.
- 2009 Xin X, Huber A, Meyer P, Flammer J, Neutzner A, Miller NR, Killer HE. L-PGDS (betatrace protein) inhibits astrocyte proliferation and mitochondrial ATP production in vitro. J Mol Neurosci. 2009 Nov;39(3):366-71.
- 2009 Sutter R, Killer HE, Bilz S, Baumgartner M, Ott HW, Steck AJ, Renaud S. Cerebral edema and intracranial hypertension in an adult with maple syrup urine disease. Eur J Neurol. 2009 Mar;16(3):e45-6.
- 2009 Killer HE, Miller NR. The role of cerebrospinal fluid pressure in glaucoma pathophysiology: the dark side of the optic disc. J Glaucoma. 2009 Feb;18(2):172; author reply 172.
- 2008 Killer HE, Flammer J, Miller NR. Glaucoma and cerebrospinal fluid pressure. Ophthalmology. 2008 Dec;115(12):2316-7; author reply 2317.

2008 Jaggi GP, Killer HE. 'Spontaneous' periocular hemorrhage and macrohematuria. *Ophthalmologica*.2008;222(6):422-3.

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2008 Killer HE, Jaggi GP, Flammer J, Miller NR. Is open-angle glaucoma caused by impaired cerebrospinalfluid circulation: around the optic nerve? *Clin Exp Ophthalmol*. 2008 May;36(4):308-

2008 Jaggi GP, Flammer J, Huber AR, Killer HE. Lipocalin-like prostaglandin D synthase in subretinal fluid of detached retinas in humans. *Retina*. 2008 Jun;28(6):858-63.

2008 Jaggi GP, Wirthlin J, Eggmann A, Killer HE, Forrer A. Early detection of Best's disease in childhood due to ineffective orthoptic treatment. *Klin Monbl Augenheilkd*. 2008 May;225(5):465-8.

2007 Jaggi GP, Killer HE. Re: "D2-40 expression demonstrates lymphatic vessel characteristics in the dural portion of the optic nerve sheath". *Ophthal Plast Reconstr Surg*. 2007 Nov-Dec;23(6):504-5.

2007 Jaggi GP, L'uthi U, Forrer A, Hasler P, Killer HE. Complete recovery of visual acuity in two patients with giant cell arteritis. *Swiss Med Wkly*. 2007 May 5;137(17-18):265-8.

2007 Jaggi GP, Mironov A, Huber AR, Killer HE. Optic nerve compartment syndrome in a patient with optic nerve sheath meningioma. *Eur J Ophthalmol*. 2007 May-Jun;17(3):454-8.

2007 Knecht P, Groscurth P, Ziegler U, Laeng HR, Jaggi GP, Killer HE. Is silicone oil optic neuropathy caused by high intraocular pressure alone? A semi-biological model. *Br J Ophthalmol*. 2007Oct;91(10):1293-5.

2007 Grieshaber MC, Dubler B, Knodel C, Killer HE, Flammer J, Org'ul S. Retrobulbar blood flow in idiopathic dilated episcleral veins and glaucoma. *Klin Monbl Augenheilkd*. 2007 Apr;224(4):320-3.

2007 Killer HE, Jaggi GP, Flammer J, Miller NR, Huber AR, Mironov A. Cerebrospinal fluid dynamics between the intracranial and the subarachnoid space of the optic nerve. Is it always bidirectional? *Brain*. 2007 Feb;130(Pt 2):514-20.

2006 Killer HE, Jaggi GP, Flammer J, Miller NR, Huber AR. The optic nerve: a new window

into  
cerebrospinal fluid composition? *Brain*. 2006 Apr;129(Pt 4):1027-30.

2006 Hatz KB, Brodsky MC, Killer HE. When is isolated inferior oblique muscle surgery an appropriate treatment for superior oblique palsy? *Eur J Ophthalmol*. 2006 Jan-Feb;16(1):10-6.

2005 Jaggi GP, Laeng HR, Muntener M, Killer HE. The anatomy of the muscle insertion (scleromuscular junction) of the lateral and medial rectus muscle in humans. *Invest Ophthalmol Vis Sci*. 2005 Jul;46(7):2258-63.

2005 Kordic H, Flammer J, Mironov A, Killer HE. Perioperative posterior ischemic optic neuropathy as a rare complication of blepharoplasty. *Ophthalmologica*. 2005 May-Jun;219(3):185-8.

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## Further publications

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## **Invited lectures**

1. H.E. Killer. Neuroophthalmologisches Kolloquium (Optikusneuritis) Augenklinik Universitätsspital Zürich 1992.

2. H.E. Killer. Dystonien im Gesichtsbereich. Blepharospasmus, Hemispasmusfacialis und Lidöffnungsapraxie. Schweizerische Gesellschaft für Muskelerkrankungen. Zürich, November 1992.

3. H.E. Killer. Optic nerve sheathdecompression. Ben Gurion Universität, Beer Sheva, Israel 1993.

4. H.E. Killer. Vom Rezeptor zum Sehen. Vortrag an der Rehabilitationsklinik Zurzach August 1993.
5. H.E. Killer. Autoimmun-Optikus-Neuropathien. Zürcher Fortbildungskurs der Universität, Augenklinik, Zürich. 22. Oktober 1993.
6. H.E. Killer. Abklärung komplexer Hirnnervenparesen. Makkabi Medical Center Tel Aviv, Israel, 1994.
7. H.E. Killer. PION, Papillenödem ohne Hirndruck. Hypothesen und Tatsachen ONO - Kolloquium Universität Zürich, Oktober 1995.
8. H.E. Killer. Botulinumtoxin: Altes und Neues. Schweizerische Dystoniegesellschaft, Paulusakademie Zürich, März 1996.
9. H.E. Killer. Möglichkeiten des operativen Zugangs bei Schieloperationen: Gross- und Kleinschnittchirurgie. Jahrestag der operierenden Augenärzte Deutschlands, Nürnberg Juni 1996. Killer. Basiskurs Schielchirurgie. Jahrestag der operierenden
10. H.E. Augenärzte Deutschlands, Nürnberg 1996.
- Killer. Grand rounds. Albert Einstein College of Medicine, New
- Killer. Diagnostik und Therapie bei Retrobulbärneuritis. SOG
- Killer. Optikusscheidendekompression. Indikation, Technik. Kongress der Deutschen Ophthalmochirurgen. 1997 Nürnberg.
14. H.E. Killer. Diagnostik und Therapie bei Augenmuskelparesen. 10. Kongress der Deutschen Ophthalmochirurgen 1997 Nürnberg.
15. H.E. Killer. Differentialdiagnose der Retrobulbärneuritis. Einladung der Rheumaklinik Schinznach Bad 1998.
16. H.E. Killer. Stauungspapille ohne Hirndruck. Zürcher Fortbildungstag Neuroophthalmologie Zürich, 1998.
17. H.E. Killer. Was lehrt uns die Papille? Jahrestagung der schweizerischen Augenärztegesellschaft, 1998 Zürich.
18. H.E. Killer. Papillenödem: Von der Morphologie zur Diagnose. Ophthalmologie-Tagung Kantonsspital Luzern 1998.
19. H.E. Killer. Ptose, Diplopie und Hepatitis. Strabologische und Neuroophthalmologische Falldemonstrationen, St. Gallen März 1999.
20. H.E. Killer. The meninges of the optic nerve - new insights. Invited lecture: Albert Einstein College of Medicine, New York, März 1999
21. H.E. Killer. Management of Pseudotumor cerebri with and without papilledema. EUNOS, Jerusalem September 1999. (Chairperson für die Session: The optic nerve).

22. H.E. Killer. Ultrastructural anatomy of the meninges of the human optic nerve. New insights. EUNOS, Jerusalem September 1999. ( Chairperson für die Session über Erkrankungen des Sehnervs).
23. H.E. Killer. Wenn die Welt auf dem Kopf steht. Ophthalmologische Knacknüsse 2, Kantonsspital Luzern (25.2.2000).
24. H.E. Killer. Frontalissuspension bei schweren Fällen von Blepharospasmus. Jahrestagung der schweizerischen Dystoniegesellschaft. Paulusakademie Zürich. 12.3.2000.
25. H.E. Killer. Pseudotumor cerebri. SOG, Bern, 15.9.2000.
26. H.E. Killer. Klinisch wichtige Aspekte der Pupillenbahn. Ophthalmo-Meeting Basel, 20./21. Oktober 2000
27. H.E. Killer. Funktioneller Visusverlust. Strabismusseminar der SOG. Luzern, März 2001
28. H.E. Killer. Einseitiges Papillenödem. Klinik und Pathophysiologie. St. Galler Ophthalmologie-Tagung. St. Gallen. Mai. 2001
29. H.E. Killer. Optic nerve sheathfenestration. Universität Lausanne. 11.10. 2001
30. H.E. Killer. Papillenödem und Glaukom. Neue Aspekte. Neurologiefortbildung KSA. 8.11. 2001.
31. H.E. Killer, S. Frischknecht. Strabismussymposium der SOG. Luzern 12.4.2002
32. H.E. Killer. Abklärung der geschwollenen Papille im Kindesalter. Schweizerische Gesellschaft für Neuropädiatrie KSA 24.4.2002
33. H.E. Killer, J. Flammer. Einseitiges Papillenödem. Papillitis oder Stauungspapille oder beides zusammen. Strabologische und Neuroophthalmologische Falldemo St. Gallen 7.6.2002
34. H.E. Killer. Lidchirurgie. Vorlesung im Rahmen der Chirurgischen Fortbildung an der Universität Basel. 25.6.2002.
35. H.E. Killer. Entwicklung der kindlichen Sehkraft. Kantonale Gesellschaft für Schulkinderuntersuchungen. KSA 7.11.2002
36. H.E. Killer. The prominent optic disc. 1.1.2002 Rabbin Medical Center Tel Aviv, Israel
37. H.E. Killer. Unilateral papilledema and the missing tendon in extraocular muscles. 7.2.2003 Albert Einstein College of Medicine, New York
38. H.E. Killer. The anatomy of the muscle insertion of the medial and lateral extraocular muscles. North American Neuroophthalmological Society Snowbird USA, 10.2 2003
39. H.E. Killer. Vaskuläre Affektionen des Sehnervs und der Retina. Fortbildung für die Aargauischen Neurologen. 19.5.2003

40. H.E. Killer. Kortikale Bildgenese und Bildsteuerung. Jahrestagung der Schulpsychologen des Kantons St. Gallen. Rorschach. März 2004
41. H.E. Killer. Die Prominente Papille. DD und Therapie. Ophthalmologische Fortbildungskurse Von Hoff. April und Mai 2004, Zürich.
42. H.E. Killer. Wie und wo entstehen Bilder über die Welt in unserem Kopf? Publikumsvortrag am KSA Mai 2004
43. H.E. Killer. Visuelle Wahrnehmungsstörungen aus interdisziplinärer Sicht. Olten, Juni 2004
44. H.E. Killer. Anatomical considerations on papilledema. INOS 2004, July, Geneva
45. H.E. Killer. Entzündungen am Sehnerv. Basler Fortbildungstage Oktober 2004
46. H.E. Killer. P. Knecht, R.M. Laeng, P. Grosscurth. Is silicone oil optic neuropathy depending on intraocular pressure alone? An experimental study. NANOS (Colorado USA) Februar 2005
47. H.E. Killer. The anatomy of the SAS and its clinical implication on unilateral papilledema and cerebrospinal fluid composition and dynamics. A clinical and anatomical and biochemical study. EUNOS Moskau, Juni 2005
48. H.E. Killer. Der Sehnerv. Ein neues Fenster in den Liquor cerebrospinalis? Fortbildung Neurologie, Neurochirurgie und Ophthalmologie KSA 8.9.2005
49. H.E. Killer. The optic nerve. A separate CSF compartment? Hadassa University hospital, Jerusalem, Israel November 2005
50. H.E. Killer. Erkrankungen des Sehnervs. Basler Fortbildungstage Oktober 2005
51. H.E. Killer. Botulinumtoxin bei neuroophthalmologischen Indikationen. Interdisziplinäre Fortbildung Neurologie KSA, Juni 2006
52. H.E. Killer. Plenarsitzung (Panelmitglied) über Neuroophthalmologie an der SOG in Lugano, September 2006
53. H.E. Killer. Does the optic nerve live in a biotop? Basler Glaukومتage Oktober 2006
54. H.E. Killer. Diplopie, Zeichen einer neuroophthalmologischen Erkrankung. Strabismuskolloquium SOG Luzern. Mai 2006
55. H.E. Killer. Paneldiskussion über Neuroophthalmologie. SOG Luzern, Oktober 2006
56. H.E. Killer. Does the optic nerve live in a separate CSF compartment? Hadassa University hospital, Jerusalem, Israel. October 2006
57. H.E. Killer. Papilledema. 4.1.2007. Zentrum für Lehre und Forschung Basel. Einladung durch Prof. Steck. Neurologie Uni Basel.

58. H.E. Killer. Ocular motility. Optic nerve. Swiss eye weekly, basic science cours. Brunnen. 16.1.2007
59. H.E. Killer. Is normal tension glaucoma related to senescence of cerebrospinal fluid? AGS (American glaucoma society) San Francisco März 2007
60. H.E. Killer et al. Visual loss in idiopathic intracranial hypertension despite normal intracranial pressure. 1st world congress on controversies in Neurology, Berlin Sept 2007
61. H.E. Killer. Hirndruckpapille ohne Hirndruck. Universität Zürich. Fortbildung für Augenärzte. 15.10.2007
62. H.E. Killer. Ophthalmologische Notfälle. Interessegruppe Notfallpflege schweiz. Zentrum für Lehre und Forschung, Uni Basel. 24.10.2007
63. H.E. Killer. Basic science course optic nerve, strabismus. Brunnen, Feb. 2008
64. H.E. Killer. Is normal tension glaucoma related to reduced CSF circulation around the optic nerve. NANO 2008 Orlando
65. H.E. Killer. CSF in subarachnoid space and basal cisterns. INOS Napa valley, June 2008 Special lecture
66. H.E. Killer. Inkomitante Schielformen bei Hirnstammläsionen. SOG Sept 2008 Interlaken
67. H. E. Killer. Pathologie und Anatomie beim Pseudotumor cerebri. DOG Sept 2008 Berlin
68. H.E. Killer. Ocular motility and optic nerve and chiasm. Basic science course. Biel, February 2009
69. H.E. Killer. Is normal tension glaucoma caused by optic nerve compartments? New York Eye Infirmary, New York, May 2009
70. H.E. Killer. Ist die Pathophysiologie der Stauungspapille wirklich verstanden? Universitätsaugenklinik Tübingen. Tübinger Augenärzteabend. Juli 2009
71. H.E. Killer. Is strabismus surgery cosmetic surgery? Basler Augentage. Oktober 2009
72. H.E. Killer. "Papilledema: Is the pathophysiology really understood?" Wilmer Eye Institute, Johns Hopkins Hospital, August 2009
73. H.E. Killer. Papilledema and normal tension glaucoma. Two sides of the same coin? New York University, March 2010
74. H.E. Killer. Cerebrospinal fluid circulation in normal tension glaucoma. Mayo Clinic Ophthalmology department, Rochester, USA. Oktober 2010
75. H.E. Killer. Cerebrospinal fluid circulation in Papilledema. Mayo Clinics, dep. of Neurology, Rochester USA
76. H.E. Killer. Optic nerve, ocular motility. Swiss Eye Week, Biel. Januar 2011

77. H.E. Killer. Symposium: The optic nerve. UKNOSIG Birmingham, March 2011
78. H.E. Killer. SOE and AAO Geneva, Juni 2011
78. H.E. Killer. Optikus-Kompartementsyndrom. Augenärzte Fortbildung Uni Basel, August 2011
79. H.E. Killer. Painful oculomotor palsy. SOG Interlaken, August 2011
80. H.E. Killer. Optic nerve compartment syndroms. Glaucoma think tank, New York, September 2011
81. H.E. Killer. CSF Production and dynamics Glaucoma think tank, New York, September 2011
82. H.E. Killer. Entwicklung des Binokularsehens, Amblyopie. Universität Bern, Oktober 2011
82. H.E. Killer. The microenvironment of the optic nerve. New York University, March 2012
83. H.E. Killer. Nystagmus, Paresen und was wir sonst noch so lieben. Augenzentrum Basel Bahnhof, Januar 2012
84. H.E. Killer. Interdisziplinäre Fortbildung für Ophthalmologen, Gastroenterologen und Rheumatologen. Lenzburg, Juni 2012
85. HE Killer. Le nerf optique. Journee des Ophthalmologes Romands. Grandson. 1.11.2012
86. H.E. Killer. Optic nerve sheath compartment and normal tension glaucoma. Asian Pacific congress Hyderabad, India, January 2013
87. H.E. Killer. Optic nerve compartmentation in normal tension glaucoma. International Symposium on ocular pharmacology and therapeutics 2013, Paris (ISOPT 2013)
88. Strabismus und Amblyopie. Pädiatriekongress Aarau, März 2013
89. Sehnervenerkrankungen auf Erden wie im Himmel. Fortbildung Neurologie April 2013
90. H.E. Killer. Is it glaucoma? Managing glaucoma: Beyond intraocular pressure. San Francisco. April 2013
91. H.E. Killer. Relationship of ICP (and CSF pressure) to glaucoma damage: Managing glaucoma: Beyond intraocular pressure. San Francisco, April 2013
92. H.E. Killer Wer leidet durch den Strabismus?19. Strabologische und neuroophthalmologische Falldemonstrationen, St. Gallen, Juni 2013
93. H.E. Killer. Optic nerve compartment syndroms. NASA VIIP RCAP, November 2013, Houston Texas
94. H.E. Killer. Normal tension glaucoma and cerebrospinal fluid. ANZGIG Perth Feb. 2014

95. H.E. Killer. Der Grüne Star und der rote Planet. Was haben sie gemeinsam? Strabologische und neuroophthalmologische Falldemonstrationen, St. Gallen, Juni 2014
96. H.E. Killer. Glaukom und Normaldruckglaukom eine Pathologie hinter dem Auge? Inselspital Bern, November 2014
97. H.E. Killer. Visuelle Halluzinationen. Weihnachtslektüre für die Neurologen des Kantons Aargau, November 2014
98. H.E. Killer. Der Strabismus im Gehirn des Betrachters. Vorlesung Uni Mainz. Dezember 2014
99. H.E. Killer. Zermatt meeting glaucoma. January 2015
100. H.E. Killer. Visual impairment and intracranial pressure (VIIP) an emerging health issue in space. International astronomical congress. October 2015, Jerusalem
101. H.E. Killer. Is translaminar pressure relevant in glaucoma? Belgian glaucoma society Brüssel November 2015
102. H.E. Killer. Was ist das Glaukom – nicht. Basler Glaukومتage Basel 2015
103. Glymphatics in the optic nerve. Glaucoma think tank New york June 2016
104. Zwei Augen, ein Gehirn, drei Dimensionen. Jahrestagung der schweizerischen Neuropsychologen Zürich Mai 2016
105. Translaminar pressure. Holy grail or empty chalice. EGS Prag Juni 2016
106. Cerebrospinal fluid circulation and its relationship to glaucoma. Intraocular and intracranial pressure related disease. International summit Peking, china. August 2016
107. H.E. Killer. Die Bedeutung des Hirndrucks für das Glaukom. Glaukom workshop Berlin Januar 2017
108. HE Killer. Glaucoma and Alzheimers'disease . AISG Rom Mai 2017
109. HE Killer. The tow faces of the translaminar pressure. The biomechanical and the biochemical one. World congress Glaucoma Helsinki
110. HE Killer. Visuelle Halluzinationen. Was passiert im Kopf des Betrachters? Schweizerische Gesellschaft für allgemeine innere Medizin. Bern 14.9.2017
111. HE Killer „ Interdisziplinäre Zusammenarbeit bei der Abklärung und Therapie von vaskulären Erkrankungen. Augen Glattzentrum Zürich. Oktober 2017
112. Killer H.E Glaucoma, Alzheimers and the meningoethelial cell. Tongren Eye institue of Peking University October 2017
113. HE Killer. Cerebrospinal fluid pathway and the optic nerve

Key note lecture: Belgian congress of ophthalmology, Brussels November 2017

114. Killer HE. New frontiers in glaucoma research. Bassano del Grappa Italy April 2018

115. Optic nerve compartment syndrome and Neurodegeneration Hospital Jules Gonin.  
Meeting Club Neuroophthalmology Francophone (CNOF) 2019

116. Killer HE. New frontiers in glaucoma research. Bassano del Grappa Italy Januar 2020

117. Killer HE. The optic nerve compartment syndrome. Albert Einstein College of Medicine.  
Manhattan New York December 2020

118. Killer HE. Normal tension glaucoma: Neurodegeneration in a comparted subarachnoid  
space. Rabin Medical Center, Beilinson Hospital Israel. August 2021

119. Killer HE. Wie behandeln wir den Strabismus und was behandeln wir dabei. SOG St.  
Gallen August

120: Killer HE. CNS Lymphatics and Glymphatics and the Eye. North American Society of  
Neuroophthalmology Austin, Texas, USA.

121. Killer HE. Aus der Raumfahrt in die Praxis. SAoO Kongress Luzern. März 2022

122. Killer. Liquordynamik beim Glaukom. DOG September 2022