

## Supplemental Online Content

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This supplemental material has been provided by the authors to give readers additional information about their work.

## eAppendix 1

### Search equation

SRCTITLE (ophthalm\*) OR SRCTITLE(optomet\*) OR SRCTITLE("vision research") OR SRCTITLE(eye) OR SRCTITLE(cataracts) OR SRCTITLE(refractive AND surgery) OR SRCTITLE(contact AND lens) OR SRCTITLE(glaucoma) OR SRCTITLE(retina\*) OR SRCTITLE("physiological optics") OR SRCTITLE( hindsight AND saint AND louis AND mo) OR SRCTITLE(ocular) OR SRCTITLE(cornea) OR SRCTITLE("journal of vision") OR SRCTITLE("molecular vision") OR SRCTITLE("CLAO Journal") OR SRCTITLE(journal AND of AND aapos ) OR SRCTITLE("vision science") OR SRCTITLE(strabismus) OR SRCTITLE(orthoptic\*) OR ISSN(0301-0066) OR SRCTITLE("visual neuroscience") AND (EXCLUDE(SRCTYPE, "b") OR EXCLUDE(SRCTYPE, "k") OR EXCLUDE(SRCTYPE, "d")) AND (EXCLUDE(DOCTYPE, "ch") OR EXCLUDE(DOCTYPE, "bk")) AND (EXCLUDE(SUBJAREA, "VETE")) AND (LIMIT-TO(LANGUAGE, "English")) AND (EXCLUDE(EXACTSRCTITLE, "Economic Eye")) AND (EXCLUDE(EXACTSRCTITLE, "In Through The Eyes Of An Eagle 11th World Conf On Nondestructive Testing")) AND (EXCLUDE(EXACTSRCTITLE, "Needle S Eye"))

**eTable 1**  
**Most Highly Cited Articles Published in the Ophthalmic Literature.**

Rank	Title	First Author	Journal	Year Volume; Pages	Citations	Key aspects of the paper		
						Objective	Key findings	Relevance
1	The number of people with glaucoma worldwide in 2020	Harry Quigley	British Journal of Ophthalmology	2006 90; 262-7	5,147	To estimate the number of people with open angle (OAG) and angle closure glaucoma (ACG) in 2010 and 2020	There will be 60.5 million people with OAG and ACG in 2010, increasing to 79.6 million by 2020, and of these, 74% will have OAG.	Glaucoma is the second leading cause of blindness worldwide, disproportionately affecting women and Asians.
2	Global prevalence of glaucoma and projections of glaucoma burden through 2040: A systematic review and meta-analysis	Yihchung Tham	Ophthalmology	2014 121; 2,081-90	3,147	To examine the global prevalence of OAG and primary ACG, and projected the number of affected people in 2020 and 2040.	In 2013, the number of people (aged 40-80 years) with glaucoma worldwide was estimated to be 64.3 million, increasing to 76.0 million in 2020 and 111.8 million in 2040.	These estimates are important in guiding the designs of glaucoma screening, treatment, and related public health strategies.
3	Standardization of uveitis nomenclature for reporting clinical data. Results of the first international workshop	Douglas Jabs	American Journal of Ophthalmology	2005 140; 509-16	2,876	To begin a process of standardizing the methods for reporting clinical data in the field of uveitis.	Standardized grading schema for anterior chamber cells, anterior chamber flare, and vitreous haze are advised, as well as standardized methods of recording complications and defining outcomes.	Standardizing the approach to reporting clinical data in uveitis research will assist clinical management of this condition.
4	The ocular hypertension	Michael Kass	Archives of Ophthalmology	2002 120; 701-13	2,797	To determine the safety and efficacy	At 60 months, the probability of	Clinicians should consider initiating

	treatment study: A randomized trial determines that ocular hypertension medication delays or prevents the onset of primary open-angle glaucoma					of topical ocular hypotensive medication in delaying or preventing the onset of primary open-angle glaucoma (POAG).	developing OAG was 4.4% in the medication group and 9.5% in the control, with little evidence of systemic or ocular risk associated with ocular hypotensive drugs.	treatment for individuals with ocular hypertension who are at moderate or high risk for developing OAG.
5	A randomized, placebo-controlled, clinical trial of high-dose supplementation with vitamins C and E, beta carotene, and zinc for age-related macular degeneration and vision loss: AREDS report no. 8	Aaron Kassof	Archives of Ophthalmology	2001 119; 1,417-36	2,564	To evaluate the effect of high-dose vitamins C and E, beta carotene, and zinc supplements on age-related macular degeneration (AMD) progression and visual acuity.	Both zinc and antioxidants plus zinc significantly reduced the odds of developing advanced AMD in a higher-risk group.	Those with extensive intermediate size drusen, at least 1 large druse, noncentral geographic atrophy in 1 or both eyes, or advanced AMD or vision loss due to AMD in 1 eye, and without contraindications such as smoking, should consider taking a supplement of antioxidants plus zinc
6	Sparse coding with an overcomplete basis set: A strategy employed by V1?	Bruno Olshausen	Vision Research	1997 37; 3,311-25	2,531	To examine the neurobiological implications of sparse coding in the mammalian striate cortex.	Sparsifying the code will recruit only those basis functions necessary for representing a given input, and so the input-output function will deviate from being purely linear.	Deviations from linearity provide a potential explanation for the weak forms of non-linearity observed in the response properties of cortical simple cells.
7	Photocoagulation for diabetic macular edema: Early treatment diabetic	Early treatment of diabetic retinopathy	Archives of Ophthalmology	1985 103; 1,796-1,806	2,494	To compare the benefits of immediate vs. deferred focal argon laser	The beneficial effects of treatment are demonstrated.	All eyes with clinically significant diabetic macular edema should be considered for

	retinopathy study report number 1	study research group				photocoagulation in patients with macular edema and mild to moderate diabetic retinopathy.		immediate focal photocoagulation.
8	Reduction of intraocular pressure and glaucoma progression: Results from the early manifest glaucoma trial	Andels Heijl	Archives of Ophthalmology	2002 120; 1,268-79	2,489	To compare the effect of immediately lowering intraocular pressure (IOP), vs no treatment or later treatment, on the progression of newly detected OAG.	Treatment reduced the IOP by 5.1 mm Hg or 25%. Progression was less frequent in the treatment group than in controls and occurred significantly later in treated patients	Considerable benefits of treatment that significantly delayed progression were demonstrated. Treatment effects were present in both older and younger patients, high- and normal-tension glaucoma, and eyes with less and greater visual field loss.
9	The definition and classification of dry eye disease: Report of the definition and classification subcommittee of the international dry eye workshop	Michael Lemp	Ocular Surface	2007 75-92	2,339	To provide a contemporary definition of dry eye disease, supported within a comprehensive classification framework.	A new definition of dry eye was developed to reflect current understanding of the disease, and a three-part classification system was recommended.	These guidelines should prove helpful in the conduct of clinical practice and research.
10	Prevalence of age-related macular degeneration in the United States	David Friedman	Archives of Ophthalmology	2004 122; 564-72	2,332	To estimate the prevalence and distribution of AMD in the United States by age, race/ethnicity, and gender.	The prevalence of neovascular AMD and/or geographic atrophy in the US population > 40 years is 1.47% with 1.75 million citizens having AMD.	Owing to the rapid aging of the US population, this number will increase to almost 3 million by 2020.
11	A saliency-based search mechanism for overt and covert	Laurent Itti	Vision Research	2000 40; 1489-506	2,330	To describe a detailed computer implementation of a	A model was developed that can be applied to	The successful performance of this computer model can be

	shifts of visual attention					model of visual search based on the concept of a saliency map,	common psychophysical stimuli as well as to a very demanding visual search task.	used to address the extent to which the primate visual system carries out visual search via one or more saliency maps.
12	The Advanced Glaucoma Intervention Study (AGIS): 7. The relationship between control of intraocular pressure and visual field deterioration	Douglas Gaasterland	American Journal of Ophthalmology	2000 130; 429-40	2,304	To investigate the association between control of intraocular pressure after surgical intervention for glaucoma and visual field deterioration.	Eyes with 100% of visits with IOP less than <18 mm Hg over 6 years had mean changes from baseline in visual field defect score close to zero during follow-up, whereas eyes with < 50% of visits with IOP < 18 mm Hg worsened by 0.63 units of visual field defect score.	Low intraocular pressure is associated with reduced progression of visual field defect.
13	Global estimates of visual impairment: 2010	Donatella Pascolini	British Journal of Ophthalmology	2012 96; 614-8	2,270	To undertake a systematic review of published and unpublished surveys from 2000 to the present concerning the magnitude of visual impairment and its causes.	The global prevalence of visual impairment is 285 million, with 39 million being blind. The major causes of visual impairment are uncorrected refractive errors (43%) followed by cataract (33%).	Visual impairment in 2010 is a major health issue that is unequally distributed among the WHO regions.
14	Keratoconus	Yaron Rabinowitz	Survey of Ophthalmology	1998 42; 297-319	2,249	To describe the prevalence, etiology and treatment of keratoconus.	Keratoconus is a bilateral noninflammatory corneal ectasia with an incidence of 1 in 2,000. Contact lenses are the most	Gene studies may provide the clues needed to enable us to better understand the underlying mechanisms that cause the corneal thinning in keratoconus.

							common treatment modality; if this fails, corneal transplant is the best surgical option	
15	Proposed international clinical diabetic retinopathy and diabetic macular edema disease severity scales	Charles Wilkinson	Ophthalmology	2003 110; 1677-82	2,228	To develop consensus regarding clinical disease severity classification systems for diabetic retinopathy and diabetic macular edema.	A 5-stage disease severity classification for diabetic retinopathy includes 3 stages of low risk, a 4th stage of severe nonproliferative retinopathy, and a 5th stage of proliferative retinopathy. Diabetic macular edema is classified as apparently present or apparently absent.	The proposed clinical classification systems provide a means of appropriately categorizing diabetic retinopathy and macular edema.
16	The Lens Opacities Classification System III	Leo Chylack	Archives of Ophthalmology	1993 111; 831-6	2,214	To develop the Lens Opacities Classification System III (LOCS III) to overcome the limitations inherent in lens classification using LOCS II.	The LOCS III consists of 6 slit lamp images for grading nuclear color (NC) and nuclear opalescence (NO), 5 retro-illumination images for grading cortical cataract (C), and 5 retro-illumination images for grading posterior subcapsular (P) cataract.	The LOCS III is an improved LOCS system for grading slit-lamp and retroillumination images of age-related cataract.
17	Grading diabetic retinopathy from stereoscopic color fundus	[No authors listed]	Ophthalmology	1991 98; 786-808	2,195	To extend the modified Airlie House classification of diabetic	The revised classification provides additional steps in the some	A double grading system, with adjudication of disagreements of two or

	photographs—An extension of the Modified Airlie House Classification: ETDRS report number 10					retinopathy for use in the Early Treatment Diabetic Retinopathy Study (ETDRS).	grading scales, separates other U characteristics, expands the section on macular edema, and adds several characteristics.	more steps between duplicate gradings, can improve reproducibility for most characteristics.
18	The international classification of retinopathy of prematurity revisited: An international committee for the classification of retinopathy of prematurity	Graham Quinn	Archives of Ophthalmology	2005 123; 991-9	2,128	To offer a more quantitative approach to some of the characteristics described in the International Classification of Retinopathy of Prematurity (ICROP).	An enhanced approach includes the introduction of (1) the concept of a more virulent form of retinopathy, (2) a description of an intermediate level of plus disease, and (3) a practical clinical tool for estimating the extent of zone I.	The enhanced ICROP furthers our understanding of retinopathy of prematurity – a potentially blinding disorder.
19	Causes and prevalence of visual impairment among adults in the United States	Nathan Congdon	Archives of Ophthalmology	2004 122; 477-85	2,085	To estimate the cause-specific prevalence and distribution of blindness and low vision in the US by age, race/ethnicity, and gender, and to estimate the change in prevalence over the next 20 years.	An estimated 937,000 (0.78%) Americans >40 years were blind and 2.4 million (1.98%) had low vision. The leading cause of blindness among white persons was AMD (54.4% of the cases), versus cataract and glaucoma among black persons. Cataract was the leading cause of low vision.	The specific causes of visual impairment, and especially blindness, vary greatly by race/ethnicity. The prevalence of visual disabilities will increase markedly during the next 20 years, owing largely to the aging of the US population.
20	The Ocular Hypertension Treatment Study:	Mae Gordon	Archives of Ophthalmology	2002 120; 714-20	2,066	To describe baseline demographic and clinical factors that	Baseline factors that predicted the development of OAG	Baseline age, vertical and horizontal cup-disc ratio, pattern standard



	Baseline factors that predict the onset of primary open-angle glaucoma					predict which participants in the Ocular Hypertension Treatment Study (OHTS) developed OAG.	included older age, larger vertical or horizontal cup-disc ratio, higher intraocular pressure, greater pattern standard deviation, and thinner central corneal measurement.	deviation, and intraocular pressure are good predictors for the onset of OAG. Central corneal thickness is a powerful predictor for the development of OAG
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**eTable 2.**  
**Crude Bibliometrics of Other Medical Specialty Journals.**

Rank	Specialty	h-index	Citation range of top 20 articles	# Articles
1	Oncology	730	3,019 - 8,115	472,081
2	Psychiatry	714	4,825 – 28,163	335,951
3	Neurology	657	3,864 – 25,820	320,234
4	Cardiology	542	2,169 – 5,644	245,097
5	Endocrinology	530	2,013 – 6,684	225,871
<b>6</b>	<b>Ophthalmic</b>	<b>494</b>	<b>2,066 – 5,147</b>	<b>471,184</b>
7	Gynecology	394	1,146 – 3,455	244,984
8	Urology	372	1,449 – 4,308	210,287
9	Orthopedics	342	2,021 – 3,969	175,537
10	Pediatrics	316	1,088 – 3,185	373,199
11	Hematology	284	922 - 4,681	133,754

## **eAppendix 2**

### **Monitoring future ophthalmic bibliometric trends**

Over time, the metrics relating to the various entities assessed here will change, which will be accompanied by a shift in rankings. This work provides a means of tracking such changes, whereby the search equation presented under the heading ‘Search protocol’ can be entered into Scopus, and once the rank order listing of papers appears down the left side of the window, and specific journals, authors, institutions or countries can be selected for analyses using the ‘Limit to’ or ‘Exclude’ tools. Subject-specific h-indices can be simply derived using the methodology described here, although this analysis must be performed manually, as Scopus does not do this automatically. In this way, it is possible to track bibliometric trends over time, construct updated ranking lists, etc.