Editorial

Aravind Eye Hospital's routine activities continue to be at the peak, focusing on patient care, awareness programmes and continuing medical education (CME) programmes. Recently, an awareness programme was organised at Sivakasi Government Hospital, highlighting the crucial role of healthcare professionals in promoting eye donation.

World Retinoblastoma Awareness Week was observed in a meaningful manner at Aravind. Retinoblastoma is a rare and rapidly growing eye cancer that primarily affects infants and young children, often leading to removal of the eye. In severe cases, it can be fatal. Raising awareness about this condition is vital to protect the eyesight and lives of children. Hence, during the awareness week, Aravind Eye Hospitals organised a Survivors' meet in Madurai and Coimbatore, focusing on educating individuals about the genetic causes of retinoblastoma, the importance of early detection, and the available treatment options.

Furthermore, during the Annual Meeting of the Association for Research in Vision and Ophthalmology 2023 held in New Orleans, US, senior scientists and research students from Aravind Medical Research Foundation (AMRF) visited various laboratories, enriching their expertise and getting updated on the recent trends in eye research. This issue features updates on these and numerous other topics.

Aravind Events

Internal Capacity Building *Vellore*, 9th June

R. Devi, Data Coordinator, Department of Biostatistics, attended the REDCap software database development and management workshop organised by the Biostatistics Department of CMC, Vellore.

CME - 'DCR - From Inside and Outside' Aravind-Madurai, 3rd June

Dr. R. Kim, Chief Medical Officer, Aravind-Madurai welcomed the participants, and Dr. R.D. Ravindran, Chairman, Aravind Eye Care System (AECS), delivered the inaugural address. Dr. R. Usha Kim, Chief, Orbit and Oculoplasty Services, Aravind-Madurai, the organising secretary, provided an introduction and overview of the CME. Dr. Devjyoti Tripathy, Consultant, Ophthalmic Plastic Surgery, Orbit and Ocular Oncology, LV Prasad Eye Institute, Bhubaneswar and an alumnus of Aravind, participated as a guest faculty and shared his vast experiences in the field. A total of 60 participants, comprising of Orbit fellows and postgraduates from across all Aravind centres attended the programme.

Orbit and Oculoplasty Services, Aravind-Madurai organised a one day CME for all Aravind centres. This CME on Dacryocystorhinostomy (DCR) focus was on the anatomy, complications and management of lacrimal system disorders.









Aravind-Theni, 3rd *June*

Sivakasi, 30th May

To address the issue of space constraint in the nurses' hostel, Aravind-Theni opened an additional facility. Vasthupooja and Ganapathy Homam of the new building were performed in the presence of Dr. P. Namperumalsamy, Chairman-Emeritus, and Dr. G. Natchiar, Director-Emeritus, AECS.





Rotary Aravind International Eye Bank (RAIEB), Aravind-Madurai organised the programme at the Government Hospital, Sivakasi. D. Saravanan, Manager, RAIEB spoke about the importance of eye donation and the hospital's cornea retrieval programme. He also emphasised the crucial role of health care professionals in the cornea retrieval

Aravind-Madurai/Coimbatore, 20th *May*

Eye Donation Awareness Programme

programme. A total of 40 participants, including doctors and nurses attended.

Survivor's Meet during World Retinoblastoma Awareness Week



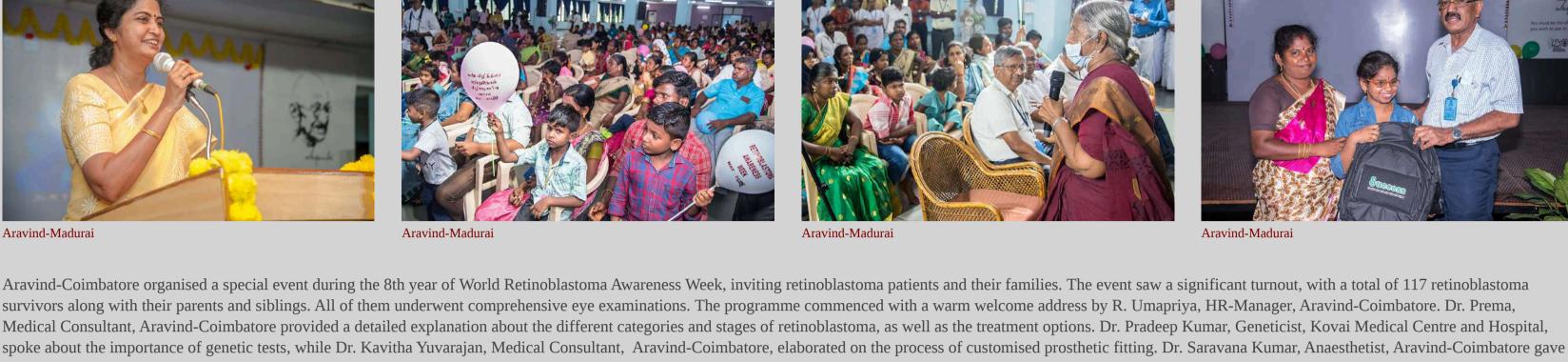


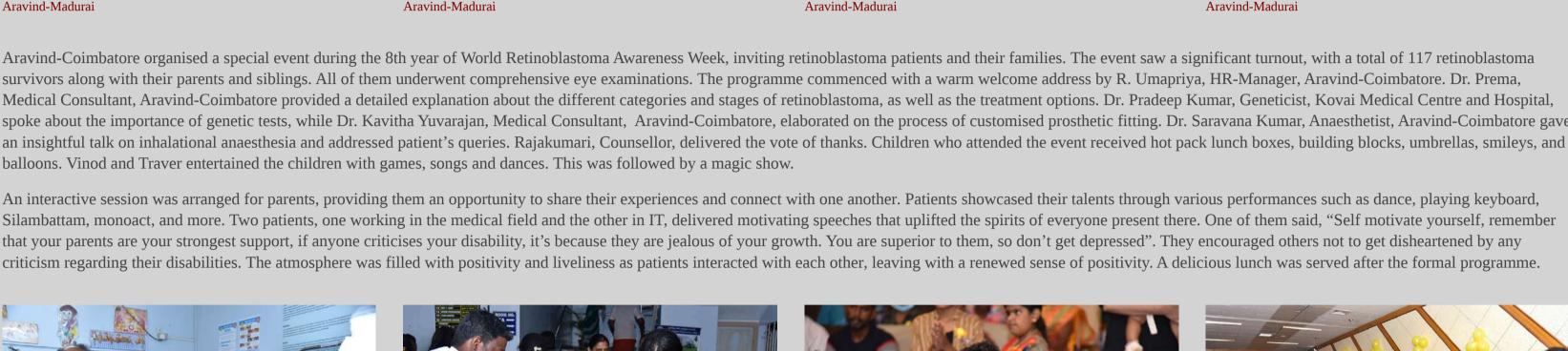
programme was attended by 150 children with their parents and siblings. Dr. Usha Kim extended a warm welcome to the attendees and highlighted the importance of retinoblastoma management. The event recognised the remarkable achievements of some of these children who have cleared board exams and have excelled in various fields, despite their challenges. Dr. P. Namperumalsamy stressed Aravind's efforts in raising awareness, establishing a research centre, and providing rehabilitation activities to fight against the disease. M.V. Muthuramalingam, Chairman of Velammal Group of Institutions, acknowledged the continuous learning experience he gained during his visits to Aravind. Dr. R.D. Ravindran shared a patient's success story regarding retinoblastoma genetic testing at Aravind. Dr. VR. Muthukkaruppan, Advisor, AMRF, discussed genetic testing and the affordable cost of testing at Aravind compared to foreign countries. Dr. K. Dharmalingam, Director-Research, AMRF, highlighted Aravind's dual focus on treatment and prevention, with research and medicine playing integral roles in patient care. Dr. P. Vijayalakshmi, Senior Medical Consultant, Paediatric Ophthalmology, Aravind-Madurai, spoke about the children's experience when they were able to see through eyeglasses. Dr. Natchiar, reassured parents that after disease identification and tumour removal, routine follow-up visits reduces further issues. The event featured video clips showcasing the talents of the retinoblastoma survivors, including dancing, singing, poetry recitation, playing musical instruments and many others. The dedicated team of doctors, fellows, MLOP, genetic

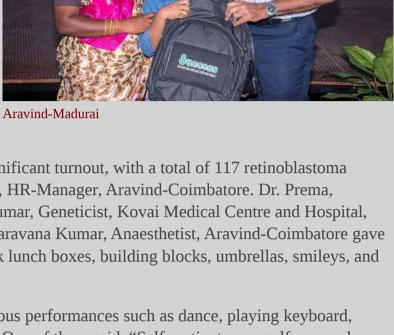
During Retinoblastoma Awareness Week, Aravind-Madurai organised the annual survivor's meet for children who have overcome Retinoblastoma. The event featured cultural activities by these children, making it a special occasion. The

testing team, and research students were introduced to the audience. Jayanthi, a 21-year-old retinoblastoma survivor currently pursuing B.Ed. in special education encouraged parents to be supportive to their children in order to boost their confidence. Survivors and their family were provided sumptuous food, and children were given attractive gifts.



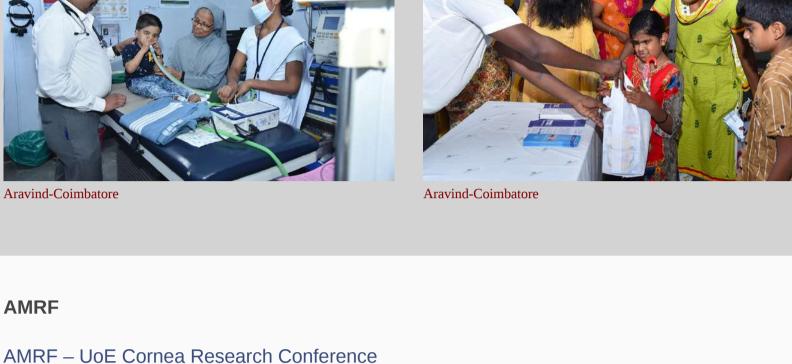






balloons. Vinod and Traver entertained the children with games, songs and dances. This was followed by a magic show. An interactive session was arranged for parents, providing them an opportunity to share their experiences and connect with one another. Patients showcased their talents through various performances such as dance, playing keyboard, Silambattam, monoact, and more. Two patients, one working in the medical field and the other in IT, delivered motivating speeches that uplifted the spirits of everyone present there. One of them said, "Self motivate yourself, remember that your parents are your strongest support, if anyone criticises your disability, it's because they are jealous of your growth. You are superior to them, so don't get depressed". They encouraged others not to get disheartened by any criticism regarding their disabilities. The atmosphere was filled with positivity and liveliness as patients interacted with a renewed sense of positivity. A delicious lunch was served after the formal programme.









Madurai, 14-15 June AMRF conducted a two-day Cornea Research Conference in collaboration with the University of Edinburgh (UoE). This conference was initiated through the interaction between Dr. N. Venkatesh Prajna, Chief, Cornea & Refractive

AMRF

Surgery Services, Aravind-Madurai, Prof. Kev Dhaliwal and Dr. Beth Mills, Centre for Inflammation Research, Institute for Regeneration and Repair, the University of Edinburgh, UK. The conference was led by Prof. K. Dharmalingam, and coordinated by Dr. D. Bharanidharan, Scientist-Microbiology and Bioinformatics, AMRF. During the conference, scientists from UoE introduced a new technology called "FluoroPi" aimed at establishing and developing a cost-effective device for diagnosing the causative microbe of microbial keratitis in patients. Further,

Additionally, 16 posters were presented.

• Hariharan G's poster titled *Isolation and characterisation of the extracellular vesicles from Aspergillus flavus clinical isolate* received the Favourite Poster Award.

A total of 14 papers were presented by UoE, AEH and AMRF team over the course of two days, covering various aspects of corneal research.

Below is the list of presented papers: • Prof. K. Dharmalingam – Comparatives proteomics of conidial surface proteome and early exoproteome of A.flavus and A.fumigatus • Dr. Lalitha Prajna – *Microbial keratitis* – *current clinical diagnostics*, *pitfalls*, *and wish-list* • Dr. N. Venkatesh Prajna – *Microbial keratitis* – *current treatments*, *patient prognosis and state of the art (trials)* • Dr. Stuart Dickson – *Seeing is believing: Microscopic molecular imaging. The distal lung as a window to the eye*

AMRF. Sharing of the research activities between the two institutions served as a remarkable initiative, laying foundation for ongoing and future collaborative projects, as well as fostering long-term associations between them.

clinicians, scientists, and research scholars engaged in brainstorming the current challenges and solutions in microbial keratitis. Dr. Bharanidharan also provided an overview of the core research facilities and ongoing research projects of

• Dr. Syam Mohan & Dr. Kay Russell – *Development & evaluation of FluoroPi: a frugal microscope for microbial keratitis diagnosis with SmartProbes* • Dr. Beth Mills – *AspLFD*: point of care diagnosis of *Aspergillus causing fungal keratitis*

• Dr. Leonie Fingerhut – *Approaches to 3D cell culture model of microbial keratitis* • Dr. Sheelagh Duncan – *Antimicrobial photodynamic therapy: a new approach for treating microbial keratitis* • Dr. Gowri Priya C – *MiRNAs regulating human limbal epithelial stem cells*

• Dr. N. Siddharth – *Development and clinical evaluation of A CRISPR/Cas12a based diagnostic platform for ocular fungal infections*

- D. Bharanidharan *MiRNAs role in fungal keratitis*
- Dr. OG. Ramprasad *Exploring the mechanism of action of a novel chemical crosslinker designed to treat keratoconus* • Dr. Daipayan Banerjee – *Comparative transcriptomic and proteomic analysis to identify key genes and pathways in pterygium in the Indian population* • Dr. Anshupa Patnaik – *Proteomics in fungal keratitis- a clinician's perspective*







30th On-site Ophthalmic Instrument Maintenance Course *Rwanda*, 22-26 *May* Prof. N. Manickam, Consultant and N. Kasthuri and S. Meenakshi, Bio Medical Engineers, Instruments and

LAICO

organised by The Fred Hollows Foundation, Rwanda. A total of 17 Biomedical Technicians from various Government General Hospitals in Rwanda, selected by the Health ministry of Rwanda, attended the programme. The five-day course included discussions and demonstrations on the basic equipment used in eye clinics, such as Direct Ophthalmoscope (DO), Streak Retinoscope, Indirect Ophthalmoscope (IO) and Slit Lamp. These instruments were

dismantled and reassembled in front of the trainees. The trainees brought 21 different non-working instruments including, Streak, DO, Autorefractometer, Non-Contact Tonometers, Applanation Tonometer, Autoclave, Slit Lamp, Lensometer (Manual and Auto), A /B Scan and Keratometer. Most of the equipment was successfully repaired and some were made functional by simple replacement of parts. Needs Assessment Visit to Indira Gandhi Eye Hospital & Research Centre Gurugram, Haryana, 29-31 May

Equipment Maintenance Department, Aravind-Madurai, were the resource persons for the on-site programme

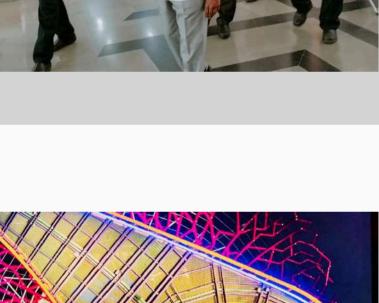














Dr. N. Venkatesh Prajna, Chief, Cornea & Refractive Surgery Services, Aravind-Madurai Topic: *Update on fungal keratitis -Newer trends in diagnosis*

Prof. Dr. K. Dharmalingam

women cancers.

Dr. Gowri Priya Chidambaranathan

Annual Meeting of the Association for Research in Vision and Ophthalmology 2023 New Orleans, US, 23-27 April

Title: *Defining the host response to ocular pathogens using transcriptomics and proteomics* (Paper presentation)

Title: *Decline in the function of adult human retinal pigment epithelial stem cells with ageing* (Paper presentation)

P. Saranya Title: *Decline in the adult human lens epithelial stem cell function with ageing and in cataract* (Paper presentation) K. Saraswathi Title: *Genomic and transcriptomic profiling identifies aberrant signalling pathways in ocular B cell lymphoma* (Paper presentation)

Dr. A. Vanniarajan Title: *Distinct epigenomic alterations in retinoblastoma* (Poster presentation) R. Iswarya Title: *Human trabecular meshwork stem cells derived exosomes enhanced wound healing and antioxidant property: an attempt towards a cell-free therapy for glaucoma* (Poster presentation)

During the visit to US, the research students had the opportunity to visit various renowned institutions and interact with experts in their respective fields. At Tulane University, New Orleans, they visited the Structural and Cellular Biology laboratory and interacted with Dr. Muralidharan Anbalagan, who is working on metastasis in cancer models. Dr. Anbalagan's expertise includes working with animal models, xenografting, imaging techniques and various molecular techniques.

The team also visited Albert Einstein School of Medicine, New York, where they interacted with Dr. Satish Nandakumar, who is working on hematopoietic stem cells- CRISPR/Cas9 mediated Stem Cell Editing to study the mechanism of blood cancer predisposition. Additionally, they visited Dr. Jurkunas Lab and other general lab facilities at Schephens Eye Research Institute, Boston, where they observed instrumentation facilities such as ultracentrifuge, Mass spectrometry, Live cell imaging system, learned mice eye dissection from them and had discussion with Dr. Joseph Ciolino who is working on exosomes from various cells and cell lines. Dr. Vanniarajan had meetings with experts during his visit. He met with Dr. Lieberman at Georgia Institute of Technology, Atlanta to discuss structural alterations of the mutant proteins especially myocilin. He also had discussions with Dr.

University School of Medicine in Atlanta to discuss the research on non-human primate models for bacterial and viral infections.

Srinivasan, at the Center for Disease Control and Prevention, in Atlanta focusing on developing methods for microbial detection, especially Streptococcus Pneumoniae. Additionally, he held a meeting with Dr. Vijayakumar, at Emory

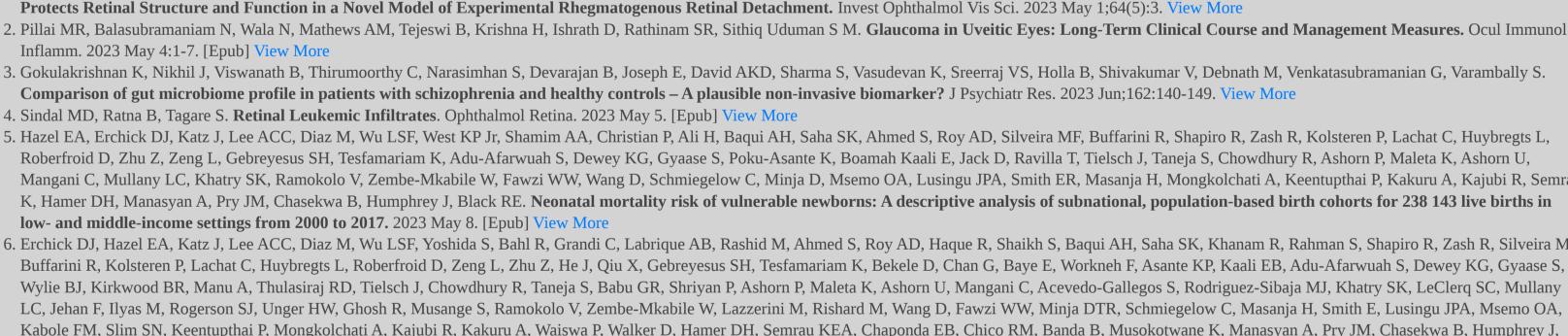
At Tulane University School of Medicine, New Orleans, Dr. Vanniarajan met Dr. Muralidharan and discussed mouse xenograft and bone metastatic cancer models. He also had meeting with Dr. Paul Bernstein at the Moran Eye Centre, Salt Lake City discussing nutritional intervention for retinal dystrophies. Furthermore, at the University of Texas Health in San Antonio, he met Suryavathi to discuss patient-derived explants in mice for studying cancer progression in



Indian J Ophthalmol. 2023 May;71(5):2257-2259. View More

Enrolments for June 2023

Training Centre

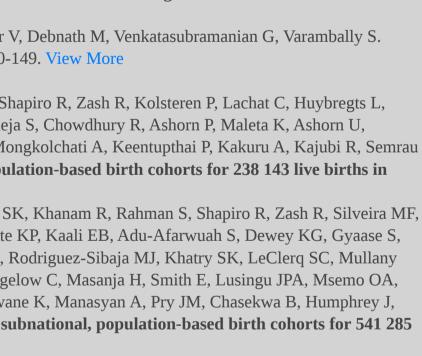


16. Murugan SB, Somanath A. **Uveitis following mRNA COVID-19 vaccination: Is it real?** Indian J Ophthalmol. 2023 May;71(5):2282-2283. View More

19. Gurnani B, Kaur K, Chaudhary S, Balakrishnan H. **Ophthalmic manifestations of monkeypox infection**. Indian J Ophthalmol. 2023 May;71(5):1687-1697. View More

No. of enrolments





live births in 23 countries, 2000-2021. 2023 May 8. [Epub] View More 8. Young BK, Cole ED, Shah PK, Ostmo S, Subramaniam P, Venkatapathy N, Tsai ASH, Coyner AS, Gupta A, Singh P, Chiang MF, Kalpathy-Cramer J, Chan RVP, Campbell JP. Efficacy of Smartphone-Based Telescreening for Retinopathy of Prematurity with and without Artificial Intelligence in India. JAMA Ophthalmol. 2023 May 11. [Epub] View More 9. Venugopalan LP, Aimanianda V, Namperumalsamy VP, Prajna L, Kuppamuthu D, Jayapal JM. Comparative proteome analysis identifies species-specific signature proteins in Aspergillus pathogens. Appl Microbiol Biotechnol. 2023 May 11. [Epub] View More

16(5):640. View More

Course title

Long Term Fellowship Programmes – For Ophthalmologists

11. Yolin Angel, Anitha V, Meenakshi R, Kasi M. Therapeutic contact lens-related infection by a novel pathogenic fungus Coniochaeta hoffmannii-a case report. Indian J Med Microbiol. 2023 Jul-Aug;44:100361. View More 12. Pawar N, Ravindran M, Fathima A, Ramakrishnan K, Chakrabarthy S, Aparna K, Uduman MS. Assessment of parental awareness about pediatric visual problems by Knowledge-Attitude-Practice survey in South India. Indian J Ophthalmol. 2023 May;71(5):2175-2180. View More 13. Bhirud A, Chandrakanth P, Agrawal M, Mishra A. Universal slit-lamp-mounted mobile adapter with 20 D lens for fundus photography: "Litter to glitter". Indian J Ophthalmol. 2023 May;71(5):2222-2224. View More 14. Jerrome S, Joseph S, Niranjana B, Vidya S, Kumaragurupari T, Balagiri S, Senthilkumar VA, Krishnadas SR. Evaluation of the agreement and reliability of Transpalpebral Tonometers compared with Goldmann Applanation **Tonometer – A systematic Review and Meta-Analysis Protocol.** Indian J Ophthalmol. 2023 May;71(5):2225-2229. View More 15. Vivekanandan Ramakrishnan VR, Venugopal A, Benzy M, Venkatesh R, Ravindran M. A novel transconjunctival, intrascleral, ab-externo, knotless, and double-flanged technique with 6-0 Prolene for iridodialysis repair.

10. Rajendra S, Shah VM, Manayath GJ, Kumar K. Multimodal Imaging Features of Subacute Methanol-Induced Bilateral Optic Neuropathy. J Neuroophthalmol. 2023 May 11. [Epub] View More

20. Subbulakshmi S, Kavitha S, Venkatesh R. **Prostaglandin analogs in ophthalmology.** Indian J Ophthalmol. 2023 May;71(5):1768-1776. View More 21. Dhanaseelan T, Odayappan A, Vivekanandan VR, Venkatesh R. Retrospective analysis of the role of anterior segment optical coherence tomography and outcomes of cataract surgery in posterior polar cataract. Indian J Ophthalmol. 2023 May;71(5):1913-1917. View More 22. Sen S, Udaya P, Maheshwari JJ, Ramasamy K, Kannan NB, Dharmalingam K. Profiling of idiopathic macular hole vitreous proteome identifies the role of extracellular matrix remodelling, epithelial-mesenchymal transformation and unfolded protein-response pathways. Indian J Ophthalmol. 2023 May;71(5):2027-2040. View More 23. Murugan SB, Somanath A. Commentary: Systemic lupus erythematosus retinopathy: Eye or multisystem involvement? Indian J Ophthalmol. 2023 May;71(5):1994-1995. View More

25. Magagnoli J, Narendran S, Pereira F, Cummings TH, Hardin JW, Sutton SS, Ambati J. Association between Fluoxetine Use and Overall Survival among Patients with Cancer Treated with PD-1/L1 Immunotherapy. 2023;

26. Govindaraj I, Kuriakose A, Rajendran A. Enlarging aneurysm with paracentral acute middle maculopathy in idiopathic retinal vasculitis, aneurysms and neuroretinitis (IRVAN) – a case report. Eur J Ophthalmol. 2023 May

24. Shetty SB, Aguiar M, Vijayalakshmi P, Pradhan P. Augmented loop myopexy with concurrent intraocular lens implantation for myopic strabismus fixus. Indian J Ophthalmol. 2023 May;71(5):2089-2093. View More

18. Chandrakanth P, Gosalia H, Verghese S, Shiroya P, Narendran V. Fungal corneal ulcer detection in a slit-lamp-based intraocular lens microscopy clinical setup. Indian J Ophthalmol. 2023 May;71(5):2301-2302. View More

17. Joshi SM, Nagtode AH, Gosalia H, Chandrakanth P, Venkatesh R. Social media: A new-age educational platform for the millennial ophthalmologist! Indian J Ophthalmol. 2023 May;71(5):2292-2293. View More

- 15. [Epub] View More 27. Rammohan R, Baidwal S, Venkatapathy N, Lorenzo-Morales J, Raghavan A. A 5-Year Review of Coinfections in Acanthamoeba keratitis From South India. Eye Contact Lens. 2023 May 24. [Epub] View More **Training**

Fellowship in Anterior Segment / Intraocular Lens Surgery	Chennai	1
Fellowship in Glaucoma	Madurai	1
Fellowship in Cornea	Chennai	1
Fellowship in Medical Retina	Chennai	1
Fellowship in Retina and Vitreous	Chennai	2
	Coimbatore	2
Fellowship in General Ophthalmology	Chennai	1
Short Term Training Programmes – For Opht	halmologists	
Phacoemulsification	Madurai	2
	Tirunelveli	2
Filacoemaisincation	Pondicherry	1
	Coimbatore	2
HelpMeSee Simulation-based Training in MSICS	Madurai	1
	Madurai	2
Small Incision Cataract Surgery	Tirunelveli	1
Small incision Calaract Surgery	Pondicherry	1
	Coimbatore	1
Short Term Training Program – For Paramedi	icals	
Fundus Fluorescein Angiography & Ultrasonography	Madurai	1
Instrument Maintenance – For Technicians		
Online Course on Ophthalmic Instruments Maintenance – Part I	LAICO	2
Management Courses		
Community Outreach and Social Marketing of Eye Care Services	LAICO	16
Statistics		
	Patient Statis	stics – May 2023

					Pat	tient Statis	stics –	May 20)23						
Hospitals	Total	Madurai	Tirunelveli	Theni	Coimbatore	Pondicherry	Tirupur	Dindigul	Salem	Tuticorin	Udumalpet	CbeCC	Chennai	Tirupati	Kovilpa
Hospital Out-pa	tient visits	·													
Paying (New & Review)	299,720	70,566	36,559	10,312	41,409	31,908	5,383	9,694	13,964	6,277	5,251	5,236	42,984	16,910	3,2
Free: Direct walk-in (New & Review)	107,631	25,391	8,388	3,182	13,817	11,583	2,445	1,559	5,033	1,751	2,511	_	13,748	17,257	9
Outreach Out-pa	atients														
Comprehensive Eye Camps	33,748	8,617	4,294	836	5,532	7,368	245	-	1,708	490	120	_	2,663	1,875	
Diabetic Retinopathy Camps	1,743	669	-	276	722	76	-	_	-	-	-	_	_	_	
Glaucoma Camps	_	-	_	_	_	_	_	_	_	_	-	_	_	-	
Refraction Camp	3,740	1,021	903	713	730	_	259	_	-	_	114	_	-	-	
Mobile Refraction Unit	1,805	-	_	-	698	_	_	_	1,107	_	_	_	-	-	
School Screening	-	-	_	-	_	_	-	_	-	_	_	_	-	-	
Paediatric Eye screening camps	-	-	-	_	_	_	_	_	_	_	-	_	_	_	
RoP Screening	1,658	290	241	196	659	76	_	_	_	_	_	_	167	29	
Vision Centres	80,584	26,902	14,925	6,313	6,199	15,686	1,623	_	4,397	_	2,152	_	2,387	_	
Community / City Centres	18,276	9,542	3,093	2,554	_	3,087	_	_	_	_	-	_	_	-	
Total OP Examinations	548,905	142,998	68,403	24,382	69,766	69,784	9,955	11,253	26,209	8,518	10,148	5,236	61,949	36,071	4,2
Total number of camps	219	47	31	16	43	32	3	-	10	3	2	_	18	14	
Surgeries															
Cataract	50,986	12,742	5,040	1,421	7,011	7,113	785	1,060	3,092	887	1,126	344	5,784	4,190	3
*Other Surgeries	25,711	7,384	3,312	523	4,678	3,077	114	209	817	69	72	186	3,590	1,654	
Total Surgeries	76,697	20,126	8,352	1,944	11,689	10,190	899	1,269	3,909	956	1,198	530	9,374	5,844	4

Archives

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