

World Optometry 2017



World Congress and Expo on

OPTOMETRY & VISION SCIENCE

July 17-19, 2017

Chicago, USA

Special Session

Day 1

World Congress and Expo on

Optometry & Vision Science

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Sergio Ozan

University of Buenos Aires, Argentina

Scleral prosthetic lenses

This is a case study of a 51 year-old-patient with double corneal transplant in right eye; first corneal transplant was done in 1993 and the transplant was rejected in a few months. Cornea was turned into leukomatous and second corneal transplant was done by the end of 1993. The transplant was successful until 1999 when patient started losing vision; cornea became totally leukomatous and irregular. It started with deformation of corneal limbus and the eyeball descending to lower eyelid (keratoglob). In 2016, I met the patient for the first time with ophthalmologist diagnosis of eyeball evisceration. Thus the patient was with deep depression. Due to the irregular and deformed cornea neither an ocular prosthesis nor soft prosthetic lens could be adapted. So I tried with a scleral lens. In the first test the general condition of her irregular cornea improved considerably, permitting a good tear film flow between the cornea and the lens. I checked again her cornea and there was neither vision nor light reflection. I used a Scleral lens Atlantis by X-Cell with high permeability and adhered in the internal face a soft lens with black pupil and iris hand painted. Thus the landing in the sclera was improved and was not ejected. I adapted a scleral lens X-cell Atlantis, base curve 7.50, diameter 17.5 double flap. The patient felt very comfortable, with improved quality of life, could insert herself at work again and now her life has completely changed for the better.

Biography

Sergio Ozán, is an Optician, University of Buenos Aires, Argentina; Specialist in Contact Lenses; Specialist and Manufacturer of ocular prosthesis; Scientific Adviser for ocular prosthesis in APO (Asociación Profesional de Optómetras in Argentina); Precursor and Creator of multiperforated orbital implant, JUMAT; Precursor and Creator of expander orbit asmotic hydrogel filling for microphthalmia and; Precursor and Creator of Ocular prosthetics with magnifying glass for microphthalmias. He is the Director of CEPROC, Developer of two-hour customized ocular prosthesis method, unique in Latinamerica and Precursor and Creator of the first prosthetic scleral lens.

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Scientific Tracks & Abstracts

Day 1

World Congress and Expo on

Optometry & Vision Science

July 17-19, 2017 Chicago, USA

What is the difference of visual therapy of neural stimulation with magnetic therapy and photon therapy?

Ricardo Yamasaki
Otica Yamasaki, Brazil

Neural visual therapy as a kind of personalized treatment that aims to cure different visual deficiencies is they of a perceptual, cognitive or oculomotor order. In this process, there are a number of exercises that seek to help the brain control and expand its capacity on different factors, such as eye alignment, the ability to focus on images, processing of vision information, and eye movements for adults or children Such as complications in visual memory, eye-hand coordination problems, difficult convergence, poor binocular coordination (that is, when the two eyes do not work concomitantly effectively), and also in cases of strabismus and amblyopia. Neural visual therapy that we use goes far beyond what is imagined as physiotherapy or stimulation to the eyes. Our visual therapy is based on cerebral neuroplasticity and our goal is to create a new learning about visual abilities. Visual therapy with photon therapy and bioenergetics, improvement in visual acuity, low vision, amblyopia, catagara and macular degeneration, photon platinum is a mass of three metals composed of aluminum, titanium and platinum, resulting in permanent radiation, identical to the most beneficial of solar radiation. This radiation produces rotational and vibratory movements to the water molecules of our body, generating a permanent process of fragmentation of these molecules, which causes the water (which constitutes 60 percent of the human body) to circulate better through of cells, thus promoting a constant process of cell detoxification. This results in the fact that photon-platinum radiation facilitates the adhesion and osmosis of water molecules through the cell membrane. The three metals fused at 1000 degrees (reduced to microscopic particles) are embedded in fabrics or other materials that we bring glued to the body or next to us. When using photon platinum products it is as if we are permanently exposed to the sun at the time when solar radiation is most beneficial, thus receiving our body, constantly the most beneficial of the radiation that a human being can receive: infrared ray emitting between 4 and 14 microns. Photon platinum thus contributes to the improvement of blood circulation. The bio fibrous energy that nanoceramic emit activates the water molecules of the organism dynamiting the clusters, and facilitating the cellular osmosis (exchange of substances through the membrane) and thus contributing a multitude of benefits to the cells and tissues of the organism, In order to improve overall metabolism. According to the most explicit scientific studies, the effects of photon-fiber platinum are potentially beneficial for: Blood circulation, blood pressure, oxygenation of muscles and brain, and also improving visual acuity.

Biography

Ricardo Yamasaki has studied at Instituto Filadélfia - Óptica e Optometria, and currently he is working as a senior at optometrista proprietário at Otica Yamasaki, Brazil.

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Notes:

World Congress and Expo on

Optometry & Vision Science

July 17-19, 2017 Chicago, USA

Nutritional Support for Dry Eye

Sandra Young

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What is dry eye? And, who is affected? Symptoms and prevalence of dry eye Patients with: advancing age, hormonal imbalances, diabetes, autoimmune disease, rosacea, pharmacological side effects, ocular trauma 2. Tears and their function Basal tears, reflex tears, emotional tears Tear film: inner mucin, middle aqueous, outer lipid 3. Dry eye categories A. Aqueous tear production deficiency Autoimmune disease: rheumatoid arthritis, lupus, Sjogren's syndrome Medications: antihistamines, beta blockers, diuretics, sleep aides, some pain relievers Decreased corneal sensation: herpes zoster, refractive surgery, diabetes Systemic dehydration: drink water! B. Excessive tear evaporation Meibomian gland dysfunction (MGD) Lipid layer: decreased lipid production or excessive production Scarring: ocular pemphigoid, trauma 4. Nutritional goals for dry eye Tamp down ocular and systemic inflammation Improve tear film composition A "dry eye" diet should include: • Omega-3 fatty acids: ALA, EPA, DHA Improve tear film stability and lid inflammation Especially important for MGD Food sources of omega-3 fatty acids • Omega-6 fatty acids: GLA Tamps down inflammation How to include GLA in your diet • Omega-7 fatty acids Improves tear osmolarity How to include omega-7 fatty acids in your diet • Vitamins A, C, D, E, phytonutrients Support of ocular surface and tear film Anti-inflammatory, antioxidant effects How to include Vitamins A, C, D, E, phytonutrients in your diet • Probiotics Gut health and inflammation Foods to promote gut health.

Biography

Dr Sandra Young is currently an optometrist at Visionary Kitchen: A Cookbook for Eye Health, USA, she is specialized at treating Dry eyes and she is a currently a member of Ocular Nutrition Society.

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Notes:

World Congress and Expo on

Optometry & Vision Science

July 17-19, 2017 Chicago, USA

MicroRNA-200b expression in vitreous humor of patients with proliferative diabetic retinopathy

Amir Ramadan Gomaa, Eman Tayae Elsayed and Reham Fadl Mofteh
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Background: Proliferative Diabetic Retinopathy (PDR) is one of the leading causes of blindness. The role of microRNA-200b (miRNA-200b) in the pathogenesis of PDR has been suggested in diabetic animal models. The aim of this study was to assess miRNA-200b expression level for the first time in the vitreous of patients with PDR and to study its relation to vascular endothelial growth factor (VEGF) as one of the pathogenic mechanisms in PDR.

Methods: Quantitative reverse transcription polymerase chain reaction (qRT-PCR) was used to measure miRNA-200b expression in the vitreous samples obtained from 29 eyes with PDR and from 30 eyes with idiopathic macular hole, as a control group. In addition, enzyme linked immunosorbent assay was used to measure VEGF in these vitreous samples.

Results: MicroRNA-200b expression was increased by about 5-folds in the vitreous samples from eyes with PDR compared with the controls ($P < 0.001$). Logistic regression analysis revealed for the first time that vitreous miRNA-200b was an independent risk factor for the development of PDR. VEGF level in the vitreous was significantly higher than controls ($P < 0.001$), but no significant correlation was found between miRNA-200b and VEGF.

In Conclusion: MiRNA-200b and VEGF were significantly increased in the vitreous of eyes with PDR, but in a non-correlated pattern. Overexpressed miRNA-200b independently increased the risk of PDR occurrence. Further studies are needed to identify the miRNA-200b targeted genes involved in the pathogenesis of PDR and examine the potential role of miRNA-200b as a target for PDR treatment.

Biography

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Notes:

World Congress and Expo on

Optometry & Vision Science

July 17-19, 2017 Chicago, USA

An introduction to scleral lenses

Suzanne W Sherman and Fiza Shuja
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Scleral contact lenses have been a part of management and treatment of corneal disease since the 19th century. Due to difficulty with manufacturing, improper fitting and poor patient comfort, scleral lenses were not as frequently used as rigid gas permeable lenses. Significant advances in technology have allowed scleral lenses to become a more important player in the management of diverse groups of conditions. The development of high Dk lens material, the same used for rigid gas permeable lenses, has reduced hypoxic related complications that prevented scleral lenses from being the primary lens used for corneal conditions. These new lenses have increased oxygen permeability, tear flow and are able to vault the limbus appropriately preventing limbal cell damage. The enhancement in design features of scleral lenses is evidenced by the various eye conditions treated, including ocular surface disease, keratoconus, pellucid marginal degeneration, post-operative or post-trauma corneal disease, and irregular astigmatism. By creating a smooth refractive surface, scleral lenses have optimized visual performance and clarity. Scleral lenses have given patients increased options for visual enhancement without requiring surgery or the need for glasses. This lecture will guide practitioners through a basic scleral lens fitting starting from lens selection to fit evaluation.

Biography

Suzanne W Sherman is working as an Instructor in Optometric Science in Ophthalmology at Columbia University Medical Center. She is board certified from the American Board of Optometry and National Board of Examiners in Optometry (NBEO). She is graduated from SUNY College of Optometry and completed a residency in Ocular Disease and Primary Care from Bronx Lebanon Hospital Center

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Notes:

World Congress and Expo on

Optometry & Vision Science

July 17-19, 2017 Chicago, USA

Eye rehabilitation in patients with microphthalmia

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This is the case of female 10 month-old patient, who is brought by her parents for consultation after she had been diagnosed left microphthalmia at birth in Teodoro Shestakof Hospital, in San Rafael, Mendoza. The baby girl were not under any kind of treatment in her first months of life, so I started rehabilitation of the orbit cavity when I received her. In the first meeting parents bring TAC report: no bone alterations in either orbit structure. Microphthalmia with slight deformation of left eye globe, maximum transversal diameter of eye globe 12 mm and 9 mm anteroposterior. Extrinsic musculature and optical nerve impress by this method of normal characteristics, without retrobulbar lesions. Optical ducts, preserved. In addition to Magnetic Resonance, it is reported to observe reduction of volume of the left eyeball with alteration of its signal intensity, resulting in Ptisis bulbi. In the anamnesis the cavity is underdeveloped, with conjunctival sac and narrow palpebral groove due to the lack of stimulation for the development and growth of these structures. Considering the size and deformation of the orbital cavity, rehabilitation started, using visualization technique and molding the first wax shaper, of 18mm as the largest horizontal diameter and 12 mm the vertical largest one. Then the first medical device was made with thermo-curable polymer and it was placed in the patient for one week in the first control there was good acceptance, passing to a progressive increase of 2mm in both diameters, vertical and horizontal, every 15 days, checking the tissue expansion and tolerance to change in each control. After the forth change of shape, the patient interrupted controls for 60 days and stop using the shaper due to the fact that because of lack of bigger size and child's friction the shaper had been ejected. When the patient attended a new control, the problem was the last shaper couldn't be used as the cavity had retracted, thus being as in the situation of the second shaper of the treatment, observing a regression in the tissue rehab. Then parents realized the importance of the continuity of the treatment and the commitment needed so as to have good results. Today, a year later, the patient is wearing a customized prosthetic eye, with stable cavity and considerable facial symmetry with his age and a new control in a year's time.

Biography

Andrea Lorena Bergon is presently an optician at Berprot Centro Optico in Argentina. She is a Specialist in Contact Lenses and as well as an Ocularist. She Graduated at the Universidad de Morón, School of Natural, Chemistry and Exact Sciences- Buenos Aires, Argentina. With degree as: Technical Optician. Postgrade in Specialization in Contact Lenses. Specialist in the fabrication of prosthetic eye. Technical director in Berprot Optical Center.

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Notes:

World Congress and Expo on

Optometry & Vision Science

July 17-19, 2017 Chicago, USA

A correlation between measurements obtained with the LEA symbols visual acuity chart and the gold standard ETDRS VA chart for a 3 to 7 year old normal

Safiah H Mulla

King Saud University, King Saudi Arabia

Introduction: This study is a comparison between the Visual Acuity (VA) measurements with the preliterate LogMAR LEA symbols VA chart (LH) and the standardized Early Treatments for Diabetic Retinopathy Study VA chart (ETDRS) in young children to help further define reported validity limitations of the former.

Methods: 40 healthy and visually normal children age 40 to 83 months were recruited in a cross-sectional prospective study with all participants being required of being able to recognize the 10 Sloan letters. Under a standardized and controlled clinical setting, VA was measured monocularly and randomly using both the LEA and the ETDRS charts.

Results: VA scores of the two charts were highly correlated with a clinically insignificant over estimation of 0.04 LogMAR in the LEA chart scores regardless of the subject's age or gender. The two charts were in total agreements in the detection of subject's inter-ocular difference.

Conclusion: This study indicates that the preliterate LEA chart can provide a valid alternative to the ETDRS chart among normal preschoolers.

Biography

Safiah H Mulla is a Faculty Staff in the Department of Optometry, King Saud University, Riyadh, Saudi Arabia, where she has been a Member of the Academic Staff since 1997. She holds a BSc (1987) in Optometry from King Saud University and MSc (2007) in Clinical Vision Science from Dalhousie University. From 1990 to 1997, she was running an Optometry clinic at Security Forces Hospital, Outpatient Department, Riyadh, Saudi Arabia. In 2000, she has received a scholarship to Canada to get a diploma in Orthoptic and Master's degree in Clinical Vision Science. She is also a Board Member for the Saudi Association of Optometry and Vision Science as well as a certified Orthoptist.

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Notes:

World Congress and Expo on

Optometry & Vision Science

July 17-19, 2017 Chicago, USA

Corneal aberrations assessment with Rose K2 vs. Rose K2 XL in keratoconus

Prince Raghuvveer Singh Chouhan, Vandana Nath, Shail Vasavada, Viraj Vasavada and Abhay Vasavada
L V Prasad Eye Institute (LVPEI), India

Purpose: To compare corneal aberrations with Rose K2 vs. Rose K2 XL lenses fitted in keratoconus.

Methods: Five patients (8 eyes) were evaluated for corneal aberrations in Keratoconus with Rose K2 vs. semi-scleral lenses; using itracey. A comprehensive ophthalmic examination was performed on all patients, which included the uncorrected and corrected visual acuity, bio-microscopy, pentacam and fundus examination.

Results: A total of 8 eyes statistically showed significant HOA ($p < 0.008$), Coma ($p < 0.01$), Trefoil ($p < 0.04$) pre and post lenses. No significant HOA, Coma and Trefoil ($p > 0.05$) compared with Rose K2 and Rose K2 XL.

Conclusions: This study identified Coma more reduced with semi-scleral lenses, but not significant.

Biography

Raghuvveer Singh has completed his studies from School of Optometry at Global Hospital Institute of Ophthalmology. He is working as Optometrist at L V Prasad Eye Institute (LVPEI) and Senior Clinical Consultant Optometrist at Raghudeep Eye Clinic.

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Notes:

World Optometry 2017



World Congress and Expo on

OPTOMETRY & VISION SCIENCE

July 17-19, 2017 Chicago, USA

Scientific Tracks & Abstracts

Day 2

World Congress and Expo on

Optometry & Vision Science

July 17-19, 2017 Chicago, USA

Trends in the treatment of presbyopia

Maria Soledad Romero

Johns Hopkins University, USA

Presbyopia is an aging process of the crystalline lens, and ciliary muscle that limits the ability of achieving adequate near sightedness. Prevalence studies report that it is more common in females and in developed communities. Presbyopia has a high impact on quality of life, as well as, increasing concomitant financial costs. The purpose of this review is to examine and help the audience to better understand the current trends in presbyopia therapy. A detailed review of the FDA approved and off-label therapies was performed. Studies performed overseas were also a part of this review. The different modality therapies involved in this review involves standard glasses, contact lens corrections, topical instillation of eye drops, as well as, surgical approaches such as refractive surgery, refractive surgery combined with intraocular implants, intraocular surgery, and corneal inlays and onlays. A discussion will also be held regarding better customized treatment for those patients with underlying ocular pathology.

Biography

Maria Soledad Romero is an Ophthalmologist focusing on Anterior Segment Surgery. She completed her Residency in Ophthalmology at LSU/Ochsner and then joined the Wilmer Eye Institute at Johns Hopkins University, where she was an Assistant Professor in the Comprehensive Ophthalmology Service.

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Notes:

World Congress and Expo on

Optometry & Vision Science

July 17-19, 2017 Chicago, USA

Visual and eye disorders: As a result of impairment of the immunological system in pediatric patients

Daniel Valverde

University of Guayaquil, Ecuador

The immune system to fully renew itself does so in an average of four months, it is important that at the end of its renovation, all cells have activated its action memory of recognizing and rejecting the antigens causing the imbalance of health. Something as simple as that at birth the child has not properly matured his immune system. Results in a child with high probability of having allergic disorders, hyperactivity, and fragility of the immune system causing many pediatric diseases, aggressively attack. The imbalance of the immune system making it strong through an auxiliary therapy with strong transfer factors not only allows us to make this patient stronger against the attack of: microorganisms, bacteria, protozooids, fungi, and even cancer, but also helps us to overcome neuromuscular alterations and visual alterations caused by the stress of the immune system or its effect aggravated by this situation. In hyperactive patients, the whole neuromuscular system is also stressed and causes hairs, which produce aggravated symptomatology in hypermetropic patients mainly, but also in myopic patients; in these patients the most common characteristic is that when they are evaluated, they are very restless during the period of the evidence, often giving false results. When the situation of hyperactivity is managed, tests can be performed with more reliable results, and with better post-therapy results, the change is radical both in their visual and ocular health. The approach of this subject is not very common and we are consolidating more complete reports with a greater and appropriate studied, for considering fellow researchers and restless to know and develop new tools in the treatment of visual and ocular problems. Here is the motivation to share this research with you in the hope of applying it in every pediatric consultation to be developed..

Biography

Daniel Valverde is Specialised in Medical Retina, Ocular Nutrition Low Vision, Vision Pediatric, Public Health Community Development Projects in Public Health. He is the Faculty of Medical Sciences at University of Guayaquil and completed Fellow in Public Health by Interamerican University of Puerto Rico, School of Optometry – USA and is further continuing his education at The New England College of Optometry, Boston, USA. He is also a PhD candidate at Atlantic International University - Honolulu –USA. He is member of the AOA American Optometric Association, International Council of Ophthalmology, Ophthalmic Education Committee, Ocular Nutrition Society USA, OSH, as well as President Lecturer in North America, Central America, South America, Europe, Asia.

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Notes:

World Congress and Expo on

Optometry & Vision Science

July 17-19, 2017 Chicago, USA

The application of phase-shifting technique in surface topographic measurement

Jiahua Kou

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Statement of the Problem: Surface topographic measurement plays an increasingly significant role in optical measurement, such as automatic visual inspection, ultra-precision manufacturing and other fields. The latest hard drives and optical instruments require the chips with ultra-fine surfaces, as well as the corresponding detecting technique to carry out online measurement and monitor the relevant parameters. The phase-shifting interferometry is one of the most widely applied technique of which the principle is introducing time modulation into the phase difference of two beams of coherent light. By the photoelectric detector the phase can be demodulated from the interference pattern via considerable phase-unwrapping algorithms. However, the inevitable noise leads to the error and distortion of several points in the phase diagram.

Methodology & Theoretical Orientation: We propose a K-means clustering unwrapping algorithm for the error reduction. Based on "bad points" to avoid the path integral, our algorithm can complete the three-dimensional morphology online. Compared with the traditional algorithms which might result in failure to unwrap when the reference points happen to be noise points, our algorithm is put forward to extract independent noise areas, such as faults, holes, etc. and can separate the effective phase information by using the clustering analysis. The detailed algorithm is as follows: (1) Giving pixel gray difference T of each cluster center, and then calculating the clustering parameter K based on the interference pattern; (2) Considering K and the gray values g of each pixel as variables and analyzing the pixel set G in clustering process; (3) Establish the original image index matrix, generating new clustering image by replacing the original pixel values with new clustering centroids and separating independent noise area according to the distance d and weight τ and (4) Completing the unwrapping calculation.

Conclusion & Significance: We build the surface topographic experiment system and the error has been successfully made less than $0.004 \mu\text{m}$. Therefore, the K-means clustering unwrapping algorithm, of which the result is compared to that of the calibration equipment, has been valid. Consequently, the relevant online measurement can be more accurate.

Biography

Jiahua Kou has received his Bachelor's degree in 2014 from Tianjin University and is currently studying for his Master's degree at Tsinghua University. His main research orientations are medical instruments and blood coagulation testing.

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Notes:

World Congress and Expo on

Optometry & Vision Science

July 17-19, 2017 Chicago, USA

Visual therapy with photon therapy and bioenergetics, improvement in visual acuity, low vision, abliopia, catagara and macular degeneration

Ricardo Yamasaki

Otica Yamasaki, Brazil

Visual Therapy with Photon Therapy and Bioenergetics, Improvement in Visual Acuity, Low Vision, Abliopia, Catagara and Macular Degeneration, Photon Platinum is a mass of 3 metals composed of aluminum, titanium and platinum, resulting in permanent radiation, identical to the most beneficial Of solar radiation. This radiation produces rotational and vibratory movements to the water molecules of our body, generating a permanent process of fragmentation of these molecules, which causes the water (which constitutes 60 percent of the human body) to circulate better through Of cells, thus promoting a constant process of cell detoxification. "This results in the fact that photon-platinum radiation facilitates adhesion and osmosis of water molecules across the cell membrane." The three metals fused at 1000 degrees (reduced to microscopic particles) are embedded in fabrics or other materials that we bring glued to the body or next to us. When using Photon Platinum products it is as if we are permanently exposed to the sun at the time when solar radiation is most beneficial, thus receiving our body, which is constantly the most beneficial of the radiation that a human being can receive: infrared ray emitting between 4 And 14 microns. Photon Platinum thus contributes to the improvement of blood circulation, has an anti-inflammatory action and exerts a thermal regulating effect, causing the internal temperature of our body to keep to 37 degrees. More explicit scientific studies, the effects of photon fiber platinum are potentially beneficial for: blood circulation, blood pressure, oxygenation of muscles and brain, and also improving visual acuity.

Biography

Ricardo Yamasaki has studied at Instituto Filadélfia - Óptica e Optometria, and currently he is working as a senior at optometrista proprietário at Otica Yamasaki, Brazil.

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Notes:

World Congress and Expo on

Optometry & Vision Science

July 17-19, 2017 Chicago, USA

Difference between the students with visual and auditory impairment in self-handicapping

Kourosh Amraei¹ and Mohammadparsa Azizi²¹Lorestan University, Iran²Islamic Azad University, Iran

Self-handicapping represents a strategy whereby individuals actively arrange the causes of their behavior to preserve self-esteem within socially evaluative situations. Self-handicapping has two forms of behavioral self-handicapping and claim self-handicapping. Behavioral self-handicapping consists of performing or not performing a task in order to make excuses and to claim self-handicaps, a verbal effort to convince the others about the reasons behind the failure so, that the individual is not being questioned or blamed. In the present study, self-handicapping among students with visual and auditory impairment is compared. In this causal-comparative study, 46 blind students and 38 deaf students were selected through multi-cluster sampling. They were required to answer Jones and Rodvelt self-handicapping Questionnaire. The multi-variable variance analysis MANOVA had done about data. Research results demonstrate that the blinds and the deaf don not differ in adopting claimed self-handicapping mechanism. Comparing the blind students, the deaf students showed a greater use of behavioral self-handicapping mechanism and general self-handicapping, however. Regarding the results of this study (i.e. difference between the deaf and the blinds in adopting self-handicapping mechanism), contributes to instructional and rehabilitating programs in the two groups.

Biography

Dr Kourosh Amraei is an ophthalmologist at Lorestan University, Iran

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Notes:

World Optometry 2017



World Congress and Expo on

OPTOMETRY & VISION SCIENCE

July 17-19, 2017

Chicago, USA

Special Session

Day 3

World Congress and Expo on

Optometry & Vision Science

July 17-19, 2017 Chicago, USA



Sergio Ozan

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JUMAT orbit implant

This implant was created considering the good qualities of previous ones and improving their flaws. To start the fabrication, I looked for material that was easy to get in the market and with low cost. JUMAT is made with hypoallergenic high-density polymethylmethacrylate. It is made in different sizes, from 10 mm to 22 mm. This is really helpful for the surgeon, as he counts with different sizes at the operation theater and can select on site the most suitable one. This is essential for the successful adaptation of the implant. JUMAT orbit implant has multiple perforations of different diameters, being the principal one, the one that marks the implant axis and crosses it completely. This perforation has larger diameter in the back area and smaller in the front one. All other perforations connect with the principal one and interconnect among themselves too. This system of perforations is essential to foster an excellent vascularization. Within ten days of surgery the patient is ready to start with the testing for the adaptation of a prosthetic eye. As from 2010 to present time, 235 JUMAT implants have been implanted with only two expulsions reported. These cases were studied in detail. It was observed that both cases involved children with retinoblastoma. They were enucleated and were implanted with JUMAT. These two children were derived to Children's Garrahan Hospital in Buenos Aires, leading children's hospital in Argentina. They were under radiotherapy and chemotherapy. These two processes avoided tissue vascularization by necrosis, which determined the expulsion of the implant. Considering material, cost of material, availability of various implant dimensions, surgeon possibility of choosing exact measure during operation, JUMAT implant proves to be the best option.

Biography

Sergio Ozan is an Optician at the University of Buenos Aires, Argentina. He is a Specialist in Contact Lenses, specialist and manufacturer of ocular prosthesis. He is a scientific adviser for ocular prosthesis in APO (Asociación Profesional de Optómetras in Argentina). He is a Precursor and creator of multiperforated orbital implant, JUMAT. He is a Precursor and creator of expander orbit osmotic hydrogel filling for microphthalmia. He is the Director of CEPROC and the Director of Ocular Prosthesis Division in Perfect Vision, Santiago, Chile. He is the Developer of one-hour customized ocular prosthesis method, unique in Latin-America and the Precursor and creator of the first prosthetic sclera lens.

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Notes:

World Optometry 2017



World Congress and Expo on

OPTOMETRY & VISION SCIENCE

July 17-19, 2017

Chicago, USA

Scientific Tracks & Abstracts

Day 3

World Congress and Expo on

Optometry & Vision Science

July 17-19, 2017 Chicago, USA

Blue light- yesterday and today

Martin de Tomas

Martin Luther University, USA

My contribution to the event is from my specialty and it is about the new technologies in ophthalmic lenses that exceed 400 nm of visible spectrum protection but without altering the perception of colors. I was able to read the following when I entered the site eye 2017: We strive to provide a perfect stage to share knowledge and experiences and to encourage people to carry out effective research and work to combat the global threat, BLIND. That we all understand and explain how important it is to protect childhood from the visual system of spectral radiation through ophthalmic lenses is one of the first steps to combat this threat. We will provide a brief introduction of how the human being was exposed in its principles to the spectral fringe of the blue light and how does it changed drastically in the last ten years. We will also discuss about light visible high energy and phototoxic effect on the retina as it impacts in the short and long term, the blue violet light, in the different structures of the eye and in the quality of the vision; evolution of ophthalmic filters: What types of filters have we used in ophthalmology for many years to filter the blue? How to reintroduce the old concepts in the prevention of led light? And we will also compare the main filtering technologies as lenses with 400 nm visual spectrum are not enough anymore and about light blue cut before and after on the ophthalmic lenses.

Biography

Martin de Tomas is currently associated as a researcher at Laboratorio Óptico De Tomás, USA

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Notes:

World Congress and Expo on

Optometry & Vision Science

July 17-19, 2017 Chicago, USA

3D technology applied in the rehabilitation of patients with total or partial loss of the ocular globe

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Objective: The objective of the study is to demonstrate the effectiveness of 3D technology in the ocular rehabilitation of patients with total or partial loss of the eyeball.

Material & Methods: A prospective, unicentric clinical trial was conducted with patients with total and partial loss of the eyeball. In total, eight wells were studied, over a period of 15 months. These patients were initially evaluated with the protocol pre-established by Proofel and adapted with ocular prostheses made based on the topographic interpretation of the cavity (visualization technique and wax modeling of previous models), taking of quantitative and quantitative measurements, and evaluation of the three adaptation criteria: Mobility, symmetry and aesthetics and parameterization of the final devices. Once the patients were adapted, controls were performed, where the three adaptation criteria were evaluated again and once the stability of the adaptation was confirmed, the data collection stage was started for the three-dimensional reconstruction of the cavities under study, with the use of a high-tech scanner capable of capturing complex geometries, sharp edges, thin slits and with a resolution of up to 0.1mm, the necessary images were captured and then exported through files to a 3D design software where the computer aided design, which was subsequently printed by computer-aided manufacturing, making this impression the future prosthesis model for each patient. We then performed an analysis of the parameters of the devices in use and those obtained by 3D printing; we also applied a survey that allowed us to compare the two techniques from the patient's appreciation.

Results: Patient-friendly, objective, reliable, comfortable, zero contact technology with minimal exposure time to collect precise information about the cavity, for use in all types of patients with total or partial loss of the eyeball.

Conclusions: 3D technology is the current technology that gives the possibility of disintegrating the manufacturing and the adaptation process because it is effective and effective, for the three-dimensional obtaining of the cavity form of patients with total or partial loss of the globe ocular, allows to design a device personalized computer aided and to measure real, that satisfies the exigencies of that cavity, being reflected in a natural adaptation that fulfills the three criteria of adaptation.

Biography

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Notes:

World Congress and Expo on

Optometry & Vision Science

July 17-19, 2017 Chicago, USA

Correlation between tear film lipid layer and symptoms in diabetic patients with meibomian gland dysfunction

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Purpose: To assess the tear film lipid layer pattern in type 2 diabetes patients and healthy subjects, the correlation of the symptoms between the Ocular Surface Disease Index (OSDI) symptom questionnaire and the National Eye Institute Vision Functioning Questionnaire (NEI-VFQ).

Methods: This is a case-control study and all patients were investigated for the presence of meibomian gland dysfunction/ MGD using the International Work Shop in MGD's criteria according to the meibomian glands/MG secretion's quality and viscosity, MG's morphology, and lipid layer thickness/LLT. The LLT was measured using interferometry Polaris system prior and subsequent to a 10-minute period. The Ocular Surface Disease Index (OSDI) symptom questionnaire and the National Eye Institute Vision Functioning Questionnaire (NEI-VFQ) were correlated. The results between groups were analyzed using the statistical Kruskal-Wallis and Mann-Whitney tests association between variables was explored by Spearman's correlation.

Results: 73 subjects were studied (37 diabetics and 36 controls). The mean age was 59±8.7% of participants presented MGD (76% diabetics and 67% controls). The symptoms through OSDI questionnaire was significantly higher ($p=0.016$) in the diabetic group with a lower NEI VFQ (67.86; $p=0.002$). The lipid layer pattern was lower in diabetic patients group with DGM; NIBUT was lower in the diabetic group (sg 2.47±1.2), with a significant inverse correlation (52.22%) with MG inflammation and a moderate correlation (32.4%) with corneal staining. The LLT presented a positive correlation between the meibomian gland alteration as hyperkeratinisation and inflammation ($p=0.0005$) and symptoms. Positive correlations were found in diabetic group between corneal staining and symptoms with OSDI questionnaire.

Conclusions: A correlation was found between NIBUT, inflammation and obstruction of the MG in symptomatic type 2 diabetes patients. The LLT is lower in diabetic group than in normal subjects, which implies decreased tear film stability and increased subjective symptoms associated with a decreased quality of life.

Biography

Johanna Garzón P is a candidate of Doctor with PhD in Advanced Optometry and Vision Sciences in Advanced at Valencia University, Spain. She is an Optometrist of The Salle University, Specialist in Ocular Primary Care at Andina University FUAA-Colombia, Master's in Pharmacology Sciences at National University of Colombia, UNAL. She has her expertise and research job in ocular surface, dry eye and ocular pharmacology. She is titular Professor at the Salle University in Bogotá Colombia, and is the President of Fedopto, the Professional College of Optometry in Colombia.

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Ocular status, health seeking behaviors and barriers to uptake eye care services among children of slum community in Chittagong, Bangladesh

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The purpose of this study was to find out the ocular status, health seeking behaviors and barriers to uptake eye care services among children of slum community in Chittagong, Bangladesh. The study was conducted in several urban slums in Chittagong city, which is home of slum children. A total of 410 children were clinically examined. Their accompanying guardians were also interviewed for collecting health seeking behaviors and identifying the barriers, if any, to uptake eye care services. Three focus group discussions were held with guardians. Nearly 47.3% of the sampled children were male and 52.7% female. About 40% of children had different ocular complaints, where we found 36.6% having some ocular abnormalities. Most of them (73%) had never seen an eye care specialist. About 89.6% of the respondents have normal visual acuity 6/6. The common ocular problems encountered were Refractive Error (26.7%), Allergic Conjunctivitis (21.3%), Blepharitis (16.0%), Squint (7.3%), Convergence Insufficiency (4.0%), Meibomian Gland Dysfunction (8.7%), Dacrocystitis (3.3%), Congenital Cataract (2.7%), Conjunctivitis (4.0%), Xerophthalmia (1.3%), microphthalmos (1.3%), Ocular FB (1.3%). Infrequently Entropion, Corneal Opacities, Retinobulbar Neuritis, Retinal Detachment, Episceleritis, Scelritis, Chalazion, and Stye were also present among children. About 4.9% children have night vision problem. About 16.8% of the children complained to have some abnormalities. It may be mentioned that, any complaint does not mean that the children have abnormalities, because they have not been assessed clinically. Many slum dwellers strongly believe about traditional treatment, but most of the guardians (70%) know where to go for the treatment. However, the guardian's of slum children cannot afford medical treatment due to their low financial condition.

Biography

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Impact of myopia on macular thickness: An optical coherence tomography study of young Sudanese

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Aim: The aim of the study is to investigate the changes in macular thickness of myopic eyes using spectral domain optical coherence tomography (OCT).

Methods: A prospective cross-sectional study was performed in 100 young Sudanese patients (15-30 years) with myopia in period from June to December 2015 at Makkah Eye complex, Khartoum, Sudan. Patients were divided into three groups according to their refractive error and axial length: low and medium myopia (LMM), high myopia (HM) and super high myopia (SHM). A comprehensive ophthalmic examination was performed; including measurement of visual acuity, refraction, and axial length. Subjects with ophthalmic abnormalities were excluded. Thus, Carl Zeiss OCT was used to evaluate total macular thickness, foveal thickness, parafoveal and perifoveal thickness and macular volume. The differences among experimental groups were analyzed by one-factor analysis of variance. However, associations between macular thickness and refractive error/axial length were analyzed by Pearson's correlation analysis.

Results: The study revealed that there was no significant difference in age among the three groups ($p=0.278$). The mean of refractive error in the LMM, HM, and SHM was -3.11 ± 1.20 D, -7.49 ± 1.03 D and -16.58 ± 5.00 D, respectively ($p<0.001$). The foveal thickness of the three groups was 236.38 ± 20.80 μm , 245.43 ± 29.55 μm and 258.93 ± 32.38 μm , respectively, and there was statistically significance between the groups. In addition, the total macular thickness, parafoveal and perifoveal thickness, and macular volume decreased with increased myopia and axial length. Whereas, foveal thickness has negative correlations with refractive error and axial length ($p<0.001$).

Conclusion: When myopia and axial length increase the foveal thickness increase. In contrast parafoveal, perifoveal and total macular thickness decreased. Also the macular volume decreased.

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Reading speed in emmetropes and myopes: A comparative study

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Aim: The aim of the study is to compare the reading speed of myopes with the emmetropes.

Methodology: Students were selected using a qualitative non-random sampling strategy. A brief history was taken on the basis of the inclusion and exclusion criteria. Those, meeting the eligibility criteria of the research were contacted through door to door survey and were invited to the clinic. The aided vision was taken in the clinics using Log MAR chart for myopes. We included only simple myopes in the study. The emmetropes were also checked for their vision. Extra-ocular and anterior segment evaluation was performed with the help of Slit lamp examination. The reading speed was taken using N notation SUSSEX vision card and a stop watch. The candidate was told to read aloud and as fast as he/she can without hampering the accuracy of the words. Their reading voice was recorded in the voice recorder and then was analysed for errors. The number of words read correctly was divided by the time taken to read the whole text. The value was then calculated in words per minute.

Results: The mean reading speed of myopes' is 146.9506 w/min with the standard deviation of 34.71026 and the mean reading speed in the emmetrope is 147.3201 with the standard deviation of 28.88421.

Conclusion: The initial reading speed of the myopes is not more than that of the emmetropes. Emmetropes have better reading speed. However, the difference is not significant.

Biography

Pinaz Nasim has currently completed her Optometrist degree at Amity Medical School, Amity University, Haryana, India and is currently associated with Amity University

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