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Ocular components data in young adults and their correlation with the refractive error

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Purpose The aim was to investigate the correlation between the refractive error and ocular components in a group of young adults.

Methods The exams were performed on 119 young adults (71.4% females) with a mean age of 23.2 ± 2.37 years. Axial ocular dimensions, including axial length (AL), anterior chamber depth (ACD), lens thickness (LT), and vitreous chamber depth (VCD) were measured using an A-scan ultrasound device. Corneal radius (CR) and eccentricity (CE) was measured with an autokeratometer. The results obtained by the subjective distant refractive method with cycloplegia were used in the analysis and the refractive values were converted into spherical equivalents (SE) for some analysis. Myopia was defined as $SE < -0.50D$, emmetropia as $SE > +0.50D$ and $< +0.50D$ and hyperopia as $SE > +0.50D$.

Results The incidence of refractive errors was 26.9% miopes, 31.9% emmetropes and 41.2% hyperopes. The refractive error of the sample, ranged from $-9.75D$ to $+2.00D$, was $-0.357 \pm 1.60D$ (mean \pm SD). The maximum amount of astigmatism was $-2.50D$. The AL, ACD, LT, VCD, CR, and CE values were $23.49 \pm 0.99mm$ (mean \pm SD), $3.59 \pm 0.26mm$, $3.68 \pm 0.16mm$, $16.21 \pm 0.92mm$, $7.81 \pm 0.27mm$ and 0.49 ± 0.11 , respectively. There were found statistically significant differences ($p < 0.001$) between the three groups of refractive error (M, E and H) for the AL, ACD, and VCD. For LT, CR, and CE there are no significant differences. A statistically significant ($p < 0.001$) correlation between the refractive error and the ACD, VCD, and AL was found.

Conclusion The results show an incidence of refractive error similar to those obtained in other countries. The ACD, VCD, and AL are the ocular components with the highest influence in the refractive error state.

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Prospective Study on the Prevalence of Refractive Conditions in the North of Portugal

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Purpose The purpose of this study was to report the first estimations on the prevalence of refractive conditions in the Portuguese population

Methods The files of an optometrist consultant in the north of Portugal were reviewed, and the report of 4288 patients who attended the clinic at least once is given; only the first visit of each patient was considered. Results relate to spherical equivalent value under non-cycloplegic conditions. Values of non-cycloplegic refraction from the right eye were analyzed to estimate the prevalence of refractive conditions as a function of age and gender. The prevalence of anisometropia and presbyopic correction as a function of age and gender were also investigated

Results A total of 4288 patients with a mean age of 40.08 ± 18.75 (mean \pm SD). Mean spherical equivalent refractive error was $-0.29 \pm 2.01 D$, and no statistically significant gender differences were found. A total of 29.8% of the sample had myopia, 45% had emmetropia and 25.2% had hyperopia. Young adults ranging from 20 to 35 years of age presented the highest prevalence of myopia. Conversely, the peak of hyperopic condition was for the oldest population. There were not statistically significant differences between presbyopic correction between males and females and both followed the classical models of presbyopic correction as a function of age.

Conclusion The prevalence of refractive conditions has been established for a representative group of the Portuguese population. Important refractive changes were evidenced in the fifth decade of life, comprising an increase in the prevalence of hyperopia along with a shift in the amount of astigmatism

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An automated system of measuring decentration of anterior segment structures from geometric central axis

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Purpose To develop and test a system of automated analysis of amount of decentration of anterior segment structures from a geometric axis defined either by pupil or limbal landmarks. The system should be freely available and accessible for use without specialised equipment.

Methods The system consisted of a computer program developed using the Matlab programming platform. Standard digital images of anterior segments were used by the program to make measurements. The program code was also compiled for use on machines without the Matlab platform. The geometric central axis is computed based on either limbal or pupil structure, as defined by the user. The object to be measured is also defined by the user. This object may be the pupil itself (to be measured relative to limbus), crystalline lens, intraocular lens, corneal opacity, posterior capsule opacification or other anterior chamber body. The amount of decentration and angle of decentration of the object is calculated. The system was tested for reliability and validity.

Results The compiled system is fully functional on PCs running Windows XP. It is easily adaptable to assess decentration of a variety of structures using standard digital images. The reliability of the system was found to be high. Ample evidence for validity of the program was demonstrated.

Conclusion This paper presents as system of analysis of decentration of anterior segment bodies that requires no specialised equipment. The program and necessary files can be installed using the supplied software. The system is shown to be extremely versatile, valid and reliable. It may be used clinically to track progress of individual patients or as an objective measure for experimental studies.

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A Quick Look at the Lid Surgeries We Do

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Purpose Introduction: The types of surgery and procedures done on the lid are many for the various conditions like entropion, ectropion, dermatochalasis, papilloma and basal cell carcinoma. We thought it would be interesting to look into our lid surgeries and to note the results. Objectives: To study the outcome of various lid surgeries done at Sandwell Hospital between January 2001 and December 2002 on patients with Entropion, Ectropion and Dermatochalasis.

Methods Setting: Sandwell General Hospital in West Midlands, United Kingdom. Methodology: Retrospective analysis of case notes - 41 cases. We obtained the names of the patients from the theatre register and analysed it retrospectively. The following data was collected: patient details, diagnosis, reason for surgery, type of surgery, grade of surgeon, complications, surgical outcome, recurrence of symptoms and repeat operations. The number of male and female patients were 22 and 19 respectively.

Results Results: Out of 41 cases, 29 had good surgical outcome. Out of 12 cases which had a poor outcome, 6 were previous recurrences. Poor outcomes included recurrences, presence of notch and residual condition. The most common case operated was Entropion. Quickert's procedure was the most commonly done operation.

Conclusion Conclusion: According to our research, it was found that patients with medial canthal laxity had poorer results. It was decided that such patients and those with a recurrence should be sent to the oculoplastic surgeons in the future.