Contents

Part 1 Visual perception

Pai	t 1 Visual perception			symptoms • Ocular symptoms • Referred	
1	Neurology of visual perception Gordon Ruskell Retina • Optic nerve • Chiasma • Optic tract • Lateral geniculate body • Optic radiations • Striate cortex •	3	6	Retinoscopy Stephen Taylor The optics of retinoscopy • General technique of static retinoscopy •	81
2	The psychology of vision Jim Gilchrist Understanding visual perception • Levels of visual processing • Specifying visual information • Optical processing—the retinal image • Neural	25		Difficulties in retinoscopy • Dynamic retinoscopy • Accuracy and reliability of retinoscopy • Additional non-refractive uses of retinoscopy • Choice of instrument	
	processing—receptive fields and edge detection • Spatial visual performance • Spatiotemporal visual performance		7	Computerized refractive examination Ivan Wood The electro-optical principles of	92
3	Neurophysiology of vision and its clinical application Graham Harding Recording techniques • The electroretinogram • The electro-oculogram • Visual evoked potentials • Clinical electrodiagnosis	44		autorefractors • Digital electronic alignment and measurement system • Operating principles • Problems of infrared refractors • General specification of infrared refractors • Automated subjective refraction • Imaged subjective refractors • Future developments	
Par	t 2 Clinical optometry		8	Subjective refraction	111
4	Aims of examination Deryck Humphriss How to handle the patient • Taking the case history • The determination of astigmatism • Unsatisfactory refractions	63	J	Daniel O'Leary Visual acuity charts • The basis of visual acuity • Subjective refraction • The cross-cylinder technique for determining astigmatism • Refining the	
5	Symptomatology Geoffrey Ball Clinical data • Clinical recording • Visual	70		sphere • Laser refraction • Further considerations of the sphere • Binocular balancing • The precision of subjective refraction	

9	Binocular refraction Deryck Humphriss The advantages of binocular	140		Strabismic concepts in cellular terms: two types of AC variability • Depth perception in	
	refraction • Conditions for binocular refraction • The psychological septum • The binocular refraction of presbyopia • Advantages of HIC binocular	r		anomalous correspondence • Central peripheral differences in AC • Concluding remarks	
	refraction • The binocular HIC technique		15	Techniques of investigation of binocular vision anomalies <i>Ronald Mallett</i>	238
10	Near point testing Rogers Reading Measurement of accommodation • Determination of the near additions	150		Symptoms • History • General observations of the patient • Screening for active pathology • Refraction • Investigation of binocular vision anomalies • The microtropias • Dissociated vertical	
Pai	t 3 Paediatric optometry			divergence • Diagnostic occlusion and other tests • Motility	
1	Visual development: acuity and binocularity Jerry Nelson	161		investigation • Investigation of sensory status in concomitant strabismus • Evaluation of	
	Maturation of the visual pathways • Basic visual skills • Oculomotor development • Stereoscopic depth • Special topics • Concluding remarks			suppression in strabismus • Fusional amplitudes in strabismus • Depth perception • The further investigation of heterophoria • Near point of convergence • Compensation tests	
12	Examination techniques Keith Edwards Methods of assessment • Refractive error • Binocular status • Ophthalmoscopy • Vision screening in children	176	16	The management of binocular vision anomalies Ronald Mallett Principles of refractive management • Treatment of amblyopia • Management of	270
Pai	rt 4 Binocular visual function			non-strabismic amblyopia • Management of anomalous retinal correspondence •	
13	Amblyopia: the cortical basis of binocularity and vision loss in			Management of heterophoria • After care • Conclusion	
	strabismus Jerry Nelson Retinocortical pathways •	189			
	Amblyopia • Critical period • W, X and Y visual subsystems • Tests of binocularity loss in man •		Par	t 5 Ocular examination	
	Investigation of amblyopia • Conclusions		17	Clinical pathology of ocular disease Alan Bird and Janet Silver Eyelid • Conjunctiva • Cornea • The	287
14	Binocular vision: disparity detection and anomalous correspondence <i>Jerry Nelson</i> Stereopsis and fusion • The horopter •	217		pupil • Lens • Glaucoma • Intraocular inflammation • Retina • Optic nerve disease • Tropical eye disease	
	The cellular basis of disparity detection • Cellular definition of correspondence • A neurophysiological approach to anomalous correspondence •		18	Anterior eye examination Harry Stockwell and Janet Stone Slitlamp biomicroscopy • Keratometry (and allied techniques)	309

19	Fundus examination Richard Llewellyn Introduction and historical development • Direct and indirect ophthalmoscopes • Record keeping •	321	26	Colour vision assessment Jennifer Birch Defective colour vision • Colour vision tests • Occupational requirements	407
20	Clinical use of the ophthalmoscope Ophthalmic photography Colin Hood Ophthalmic photography • Fluorescein angiography • Conclusion	335	27	Aniseikonia—a classical and clinical review Kenneth Harwood Early history • The symptoms of aniseikonia • Instrumentation • Method of measurement • Conclusion	418
21	Ultrasonography of the eye John Storey Transducers • Forms of display • Cataract, retinal detachment and	342	Par	rt 7 Ocular pharmacology	
	vitreous haemorrhage • Biometry • Calculation of implant power • Tumours contained within the eye • Orbital work and the adnexa of the eye • Anterior segstudies • Foreign bodies • Other	ment	28	Pharmacological principles Janet Vale Ophthalmic drugs • Site of drug action • Selective toxicity	427
P	art 6 Further investigative techniques		29	Drug use in optometry Janet Vale Cycloplegics • Mydriatics • Miotics • Local anaesthetics • Antimicrobial drugs • Staining agents • Drugs used in first aid	439
22	Visual fields Elizabeth McClure The field of vision • Measuring the field • Establishing normality • Establishing abnormality • Instruments and techniques • Screening devices • Common causes of visual field defects	355	30	and emergency procedures Side-effects of drugs Janet Vale Ocular side-effects of ophthalmic drugs • Systemic effects from locally applied drugs • Ocular effects from systemically administered drugs	451
23	Michael Wolffe Measurements of intraocular pressure • Indentation tonometry • Applanation tonometry	380	31	Legal aspects Janet Vale Misuse of Drugs Act 1971 • Medicines Act 1968	458
2	Sarah Janikoun	394	Pai	rt 8 Prescribing and patient management	
2	Applications • Principles of gonioscopy • Anatomy • Estimation of the angle • Hazards and implications • Referral • Conclusions 5 Sphygmomanometry and ophthalmodynamometry Simon Barnard Sphygmomanometry • Ophthalmodynamometry	397	32	General considerations in prescribing Henri Obstfeld Asthenopia • The first prescription • Prescribing spherical corrections • Prescribing cylindrical corrections • Prescribing spherocylindrical corrections • Aphakia • Anisometropia • Prisms • Non-tolerance cases	465

Part 9 Dispensing the correction

wear • Therapeutic indications for

contact lenses • Contraindications •

33 Prescribing and patient

John Grundy

management: occupational and

Main working positions • Direction

Stereoscopic vision • Colour vision •

475

486

recreational considerations

of gaze • Working distances •

34 Clinical applications of contact

Size of detail of the task •

Visual fields • Visibility •

Lighting • Conclusion

Geoffrey Woodward
Indications for contact lens

Risks and benefits

The choice of lens form and type Colin Fowler
 General considerations • Lens material • Tint • Lens form

Index

Delivery of service

• The low vision examination • The diagnosis • Training • Light

sensitivity • Dispensing • Follow-up •

549