Provides guidance for everyday neuro-ophthalmology practice
Discusses diagnosis, treatment and rehabilitation
Lavishly illustrated throughout

This practical guide provides a complete algorithm for diagnosis and treatment, from ‘having a problem with vision’, via background and diagnosis, to treatment and eventually to rehabilitation of visual loss and eye-movement disorders in the central nervous system.

Following on from introductory sections devoted to the role of neuro-ophthalmology, recent developments in the field, and an overview of neuro-ophthalmological examinations, there are sections devoted to the different parts of the visual system, and finally a section on rehabilitation. The handbook gives an overall picture for all interested in neuro-ophthalmology, borderline territories and overlaps.

Neuro-Ophthalmology is aimed at ophthalmologists, neurologists, neurosurgeons, traumatologists, neuroradiologists, experts in cardiology and stroke, and trainees in these areas. It will also be of interest to neuro-rehabilitation specialists, neuropsychologists, and those working in typhlopedagogy and health informatics.
Contents

Part I  The Importance and Role of Neuro-Ophthalmology

1  The Importance and Role of Neuro-ophthalmology in Ophthalmological Clinical Practice ................. 3
   Judit Somlai

2  The Importance of Neuro-ophthalmology in Neurology .......... 5
   Tibor Kovács

Part II  Objectives and Recent Results in the Neuro-Ophthalmological Clinical Practice

3  Mechanisms of Parallel Information Processing in the Visual System ........................................ 9
   György Benedek

4  A New Direction: Neuro-endocrino-immunology ............... 15
   Csaba Balázs

5  Visual and Oculomotor Disorders in Internal Diseases ........ 19
   György Pfliegler

6  Genetic Aspects of Neuro-ophthalmological Diseases ........... 27
   Mária Judit Molnár

7  Recent Knowledge in the Neurosurgical Practice Regarding the Visual System .............................. 33
   János Vajda

8  The Role of Gamma Knife Stereotactic Radiosurgery in the Treatment of Neuro-ophthalmological Diseases .......... 37
   György T. Szeifert and Jenô Szeifert

9  Neurointerventional Treatment of Diseases Causing Neuro-ophthalmological Symptoms .................. 47
   Istvan Szikora

10 Recent Results in Neuropathology: Demyelinating and Conformational Diseases ......................... 59
    Tibor Kovács
Part III  Conventional, Novel and Complementary Examinations in Ophthalmology

Functional Tests of the Visual Pathway System

11 Algorithm of the Neuro-ophthalmological Examination Used in the International Practice ............... 67
   Judit Somlai

12 Objective and Subjective Examination Methods of Visual Acuity ........................................ 79
   Márta Janáky

13 Examination of Contrast Sensitivity ...................... 83
   Márta Janáky

14 Examination of Color Vision ............................... 89
   Klára Aczél

15 Electrotretinography (ERG): Electrophysiological Examination of the Retina .......................... 97
   Ágnes Farkas

16 Functional Examinations of the Visual Pathway System with Electrophysiological Methods .......... 111
   Márta Janáky

17 Clinical Importance of Conventional and Modern Visual Field Tests in the Topographical Diagnostics of Visual Pathway Disorders .......................... 119
   Judit Somlai

18 The Differential Diagnosis of Visual Field Deficits at the Bedside ....................................... 133
   Gyula Gács and Ildikó Szilvássy

19 The Role of Fluorescein Angiography and Optical Coherence Tomography in the Examination of Circulatory Disorders of the Optic Disc ............................... 145
   Zsuzsa Récsán and Zsuzsa Szepessy

20 Optical Coherence Tomography of the Optic Disc and the Macula in Neurodegenerative Diseases ................................................ 157
   Gábor Márk Somfai, Erika Tátrai, and Magdolna Simó

Neuro-Ophthalmological Examinations of the Eye Movements

21 Diagnosis, Differential Diagnosis and Treatment of Congenital Ocular Motor Disorders ............. 171
   Anna Soproni and Patrícia Domsa

22 Polatest Procedure ........................................... 197
   Judit Pálfiia and Ernő Pálfiia
<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>23</td>
<td>Physiology and Examination Methods of the Pupillomotor Pathway</td>
<td>207</td>
</tr>
<tr>
<td></td>
<td>Bernadett Salomváry</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>Neuro-ophthalmological Methods for the Clinical Analysis of Double Vision</td>
<td>217</td>
</tr>
<tr>
<td></td>
<td>Judit Somlai</td>
<td></td>
</tr>
<tr>
<td>Supplementary Test Procedures</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>Duplex Ultrasound Examination of the Carotid and Vertebral Arteries</td>
<td>223</td>
</tr>
<tr>
<td></td>
<td>Péter Barsi</td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>Transcranial Doppler Examination</td>
<td>231</td>
</tr>
<tr>
<td></td>
<td>Gyula Pánczél</td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>Color Doppler Ultrasound Examination in Orbital Diseases</td>
<td>247</td>
</tr>
<tr>
<td></td>
<td>János Németh, Zoltan Harkányi, and Zita Morvay</td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>The Role of the Ophthalmologic Ultrasound in Neuro-ophthalmology</td>
<td>253</td>
</tr>
<tr>
<td></td>
<td>Béla Csákány and János Németh</td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>The Role of the EMG-ENG in Diagnosing Neuro-ophthalmologic Diseases</td>
<td>257</td>
</tr>
<tr>
<td></td>
<td>Mária Judit Molnár</td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>Computed Tomography Examinations</td>
<td>263</td>
</tr>
<tr>
<td></td>
<td>József Kenéz</td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>Neuroradiology, Functional MRI</td>
<td>271</td>
</tr>
<tr>
<td></td>
<td>György Várallyay and Lajos Rudolf Kozák</td>
<td></td>
</tr>
<tr>
<td>32</td>
<td>Novel Information Regarding the Visual and Eye Movement Systems in Otoneurology</td>
<td>283</td>
</tr>
<tr>
<td></td>
<td>Ágnes Szirmai</td>
<td></td>
</tr>
<tr>
<td>33</td>
<td>Electro-Oculography (EOG) Examination of Eye Movements</td>
<td>287</td>
</tr>
<tr>
<td></td>
<td>Szilvia Gulyás</td>
<td></td>
</tr>
<tr>
<td>34</td>
<td>The Importance of Familiar Thrombophilias in the Clinical Practice. Novel Ways in Anticoagulant Therapy</td>
<td>295</td>
</tr>
<tr>
<td></td>
<td>László Nemes</td>
<td></td>
</tr>
<tr>
<td>35</td>
<td>Novel Consideration Regarding the Role of Evoked Potential in Confirming the Diagnosis of Eye Movement Disorders of Brainstem Origin</td>
<td>305</td>
</tr>
<tr>
<td></td>
<td>Szabolcs Tóth</td>
<td></td>
</tr>
</tbody>
</table>
Part IV  Diseases of Retina and the Optic Nerve (Visual and Sensory System)

Congenital Diseases of the Retina and the Visual Pathway
36 Hereditary Diseases of the Retina .......................... 309 Ágnes Farkas
37 The Roles of Electroretinography (ERG) and Visual Evoked Potential (VEP) Examinations in the Diseases of the Retina and/or the Optic Nerve .......................... 325 Márta Janáky
38 Congenital Diseases of the Optic Nerve ........................ 333 Márta Janáky
39 Phacomatoses ........................................ 339 Judit Somlai

Acquired Diseases of the Optic Nerve

Inflammatory Diseases
40 Retrolubular Optic Neuropathy:
   From the Neurologist’s Approach .......................... 345 Gábor Lovas
41 Neuromyelitis Optica (Devic’s Disease):
   A New Concept for an Old Disease .......................... 351 Zsolt Illes
42 Acquired Inflammatory Diseases of the Optic Nerve:
   From the Neuro-Ophthalmologist’s Approach .......................... 361 Judit Somlai

Circulatory Disorders
43 Vascular Diseases of the Optic Nerve: Internal Medicine Aspects .......................... 369 György Pfliegler
44 The Cardiovascular Background of ‘Intracerebral Small Vessel Disease’ .......................... 377 Éva Nieszner
45 Vascular Diseases of the Optic Nerve:
   The Neuro-Ophthalmologist’s Approach .......................... 383 Judit Somlai

Compressive Optic Neuropathy
46 Diseases Causing Compression of the Optic Nerve:
   The Neurosurgeon’s Perspective .......................... 401 János Vajda
47 Neuro-Ophthalmological Aspects of Tumors Causing Compression of the Visual Pathway System .......................... 407 Bernadett Salomváry
Traumatic Optic Neuropathy

48 The Significance of Neuro-ophthalmology in the Diagnosis and Therapy of Cranial Trauma ........................................ 421
   György T. Szeifert and Judit Somlai

Toxic and Deficiency Optic Neuropathy

49 Toxic and Deficiency Optic Neuropathy ........................................ 433
   Vera Klein

Eye Related Symptoms and Signs of Intracranial Hypertension

50 Ocular Symptoms and Signs of Intracranial Hypertension .......................................................... 437
   Judit Somlai

51 Big Blind Spot Syndrome (Papillophlebitis) ........................................ 453
   Gyula Gács and Ildikó Szilvássy

Part V Neuro-Ophthalmologic Aspects of the Ocular Motor System

Disorders of the Pupillomotor Pathway

52 The Most Important Disorders of the Pupillomotor Pathway in the Clinical Practice ............................... 463
   Judit Somlai

Infranuclear and Nuclear Neurogenic Paresis

53 Congenital Eye Movement Disorders ........................................ 471
   Andrea Deák

54 The Most Important Clinical Syndromes of Acquired Nuclear and Infranuclear Eye Movement Disorders, and Their Diagnostic and Therapeutic Options ........................................ 483
   Judit Somlai

Neurogenic Paresis Due Too Dysfunction of the Brainstem

55 Eye Movement Disorders Related to Brainstem Dysfunctions -Types, Clinical Significance of Vertical Localization, Modern Therapeutic Principles ........................................ 493
   Judit Somlai

56 The Clinical Significance of Otoneurology in the Diagnosis of Brainstem Disorders ........................................ 507
   Ágnes Szirmai

57 Examination of the Eye Movements of the Patient in Coma ....................................................... 513
   György Geréby
Supranuclear Eye Movement Systems and Their Clinical Significance

58  Supranuclear Regulation of the Eye Movements and the Significance of Their Disturbances ............... 523
    Szilvia Gulyás

Disorders of the Neuromuscular Junction (MG and OMG), Non-isolated Ocular Muscle Paresis and Myogenic Paresis

59  Disorders of the Neuromuscular Junction and Their Diagnostics ....................................................... 535
    László Sándor Fornádi

60  The Ocular Characteristics and Differential Diagnostics of Mixed Types Eye Movement Disorders (Disorders of Ocular Neuromuscular Junction (OMG), Non Isolated Ocular Muscle Paresis and Myogenic Paresis) ............................................. 545
    Judit Somlai

61  Endocrine Myopathy and Orbitopathy ................................. 561
    Csaba Balázs

Part VI  Diseases of the Orbit

62  Diagnostics and Therapy of Diseases of the Orbit .................. 573
    Katalin Korányi

63  Traumatic Injuries of the Orbit .................................. 593
    György Pulay

Part VII  Neuro-Ophthalmological Considerations of the Facial Nerve

64  Tumor Lesions of the Facial Nerve ................................ 637
    Ildikó Gádor

Part VIII  The Neuro-Ophthalmological Aspects of Headaches

65  Neuro-Ophthalmological Aspects of Headaches from the Neurologist’s Aspect ................................. 647
    Csaba Ertsey

Part IX  Rehabilitation

66  Viewing Down from the Top: Visual Impairments Developing as a Consequence of Cortical Injury ........ 663
    Anna Verseghi and Zita Snagy Nagy

67  Ignored World Without Missing It Neglect ........................ 677
    Anna Verseghi and Zita Snagy Nagy
68  Introducing Tools and Services Helping Life of People with Impaired Vision .......................... 689
    Mihaly Szuhaj and Peter Szatmari

69  Elementary and Occupational Rehabilitation of People with Impaired Vision ....................... 705
    Marta Tolnayne Csattos and Laszlo Joszt

70  The Importance of Rehabilitation and the Options of a Neuro-ophthalmologist ................... 715
    Judit Somlai

Appendix: Colour Scheme of the Book Content .................................. 719

Index ......................................................... 000