

## MASTER OF MIGRAINE AND HEADACHE MEDICINE

### *Abstract of the course structure*

The Master's degree is divided into four terms. The teaching sessions are focused on terms 1 to 3 (overview of the modules in attachment), the fourth term is allocated to the master's thesis. Each term is dedicated to a specific content area.

In the first term (Foundation, Organization, Clinical pathways), the foundation of headache disorders and the clinical processes in a hospital specialized in the treatment of headache disorders are presented. The focus hereby lies on epidemiology, classification, and pathophysiology of headache disorders. To focus on the economic implications, course participants will be informed early on about the economic impacts of headache therapies on the population, the cost structure of a hospital and the remuneration conditions in the inpatient and outpatient sector. At the end of the semester, three practical days in the hospital introduce course participants to the organization of the clinical everyday practice and to the duties of doctors, pain therapists and assisting personnel. Before, a detailed presentation of the ethics of the doctor-patient relationship, the organizational ethics in the hospital as well as concepts of distributive justice given scarcity of resources in the healthcare sector are discussed.

The second term (Diagnostic pathways and therapies) focuses on the methods and criteria for diagnosing different headache disorders. At the forefront lie interdisciplinary approaches using various evidence-based methods. A second module presents the specific treatment and prevention methods for the different entities of headache and facial pains. This is followed by a presentation of the large group of secondary headache disorders.

In the focus of the third term (Organization / Structure of headache treatment and prevention, perspectives for the coming decade) lies the concrete interdisciplinary teamwork in headache centres, which is presented as part of hospital days. This is preceded by a presentation (and practice exercises) of the models of teamwork as well as the requirements for leading a project team. The organizational prerequisites for an effective headache treatment are presented with an overview of the healthcare system and the different organizational forms of headache treatment. At the end of the term, research about headache disorders stands in the foreground. The basic frameworks for conducting clinical studies are presented and described at selected clinical studies. The same is true for experimental research as well as fundamental research.

The degree is concluded with a public perspective discussion, in which participants present their results for the further development of headache research and healthcare provision and discuss this with experts in this area.

The face-to-face teaching takes place in semesters 1 to 3. As an extra-occupational (part-time) degree, the on-site training during the first three semesters will take place during one attendance week as well as 5 attendance weekends (Friday to Sunday). The attendance weeks are mostly reserved for the clinical rotations which are prepared for in seminars and followed up with presentation from the students.

## Term 1: fundamental knowledge, organisation, clinical processes

code	module	submodule	title submodule	content	contact hours	ECTS
1.0	Epidemiology, classification, health economics of headache disorders	1.1	Epidemiology of headache disorders	fundamentals of epidemiological methods and strategies	4	5.0
				epidemiology of primary and secondary headache disorders	8	
		1.2	classification of headache and facial disorders	international classification of headache disorders, facial disorders and neuralgias	8	
				secondary headache and facial disorders	2	
		1.3	headache disorders in adolescence, pregnancy and old age	phenotypes of headache disorders in different ages	4	
		1.4	expenses of headache disorders per individuum and society	present state of health economics of migraine and headache disorders; impact on working environment; direct and indirect expenses; absenteeism and presenteeism; additional benefit and economy of innovations	8	
1.5	DRG-system (diagnosis related groups) for accounting; analysis of cost structure in a hospital	accounting systems in the in-patient and out-patient sectors; coding, syntax and typical codes; current developments	8			
<b>Stunden und ECTS Modul 1</b>					<b>42</b>	<b>5.0</b>
2.0	Pathophysiology, genetics and comorbidities	2.1	pathophysiology of migraine and headache disorders	fundamentals, central and peripheral control systems	4	4.0
				pathophysiology of primary headache disorders	4	
		2.2	fundamentals of psychology in the genesis and development of headache disorders	aversive, appetitive, operant and respondent learning mechanisms	4	
				neuropsychological mechanisms of headache disorders	4	
		2.3	comorbidities of headache disorders	neurological and mental comorbidities, mechanisms, relevance	4	
		2.4	fundamentals of genetics in the genesis of headache disorders	genetic fundamentals and methods for investigation of disorders	8	
twin and family studies; rare monogenic subtypes of migraine; gen-association studies: genvariants and genetic risk factors						
2.5	changes of structure and function of the CNS in migraine and headache disorders	population based MRT-studies on white matter abnormalities; META-analysis on PET-activation studies; META-analysis of studies on voxel-based morphometry; cortical changes and cortical depression	4			
<b>Stunden und ECTS Modul 2</b>					<b>32</b>	<b>4.0</b>
3.0	Ethics in medicine, organisation of clinical and outpatient treatment, clinical processes (clinical work experience), professional medical groups involved	3.1	ethics in medicine	fundamentals of medical ethics; physician-patient relation; ethical aspects of organisational processes in a hospital; ethical aspects of shortage in resources in the medical system; ethical aspects of medical innovations; ethical aspects in research activities	8	6.0
				3.2	professional medical groups in	
		psychological field, physiotherapy, ergotherapy	2			
		3.3	structure of processes in treatment of headache disorders	multimodal interdisciplinary structure; integrated coordinated care; organisation of treatment levels	2	
		3.4	clinical work experience	3.4.1 working day of a physician in a hospital ward	12	
				3.4.2 working day of a psychologist in a hospital ward	12	
3.4.3 working day in an out-patient ward	12					
<b>Stunden und ECTS Modul 3</b>					<b>50</b>	<b>6.0</b>
<b>Stunden und ECTS Semester 1</b>					<b>124</b>	<b>15.0</b>

## Term 2: Diagnostics and Therapy of primary and secondary headache disorders

Code	module	nr.	submodule	content	contact hours
4.0	diagnostics and investigation procedures	4.1	diagnotic procedures	fundamentals of imaging and use of this method in diagnostics of headache disorders; phenotype and clinical diagnostics; nociceptive reflexes, algesimetria; sensory testing; autonomic tests; provocation tests; liquor diagnostics; sleep-lab diagnostics	12
		4.2	coordinated investigation processes, case dependend diagnostics	rational of diagnostic program; exercises to design case dependent diagnostic programs	4
		4.3	clinical work experience (one day)	exercises in diagnostics	12
		4.4	the particular case	complex headache disorders; multiple diagnoses; operational assessment of the headache phenotype	8
<b>Stunden und ECTS Modul 4</b>					<b>36</b>
5.0	primary headache disorders: therapy and prevention	5.1	fundamentals in behavioural medicine and drug based therapy	information, education, training	6
				psychological fundamentals in the genesis of headache disorders	6
				digital health applications	4
				quality indicators in the treatment of headache disorders	4
		5.2	therapy of acute headache and facial disorders	therapy of acute migraine disorders	4
				therapy of acute tension headache disorders	4
				therapy of acute trigemino-autonomic headache disorders	4
				therapy of acute neuralgias and nerve disorders	4
				therapy of acute overuse drug intake headache disorders	4
		5.3	prevention of acute headache and facial disorders	prevention od migraine	4
				specialized processes in the prophylaxis or migraine disorders	4
				prevention of tension headache	4
				prevention of trigemino-autonomic disorders	4
			prevention ofneuralgias and nerve disorders	4	
<b>Stunden und ECTS Modul 5</b>					<b>60</b>
6.0	Sekundäre Kopfschmerzen: Pathomechanismen, Diagnostik und Therapie	6.1	pathomechanisms and classification of secondary headache disorders	classification of secondary headache disorders	2
				pathomechanisms of secondary headache disorders	4
		6.2	diagnostic and therapy in selected clinical fields	ophthalmology	4
				ear, nose and throat medicine	4
				neurosurgery	4
				neurology	4
			paediatrics	4	
<b>Stunden und ECTS Modul 6</b>					<b>26</b>
<b>Stunden und ECTS Semester 2</b>					<b>122</b>

### Term 3: Organisation and structures of prevention and therapy of headache disorders, perspectives for the next decade

Code	module	nr.	submodules	content	contact hours	ECTS
7.0	therapy of headache disorders in a tertiary health care centre	7.1	leadership, team and communication	leadership, distributed leadership: models for communication; techniques of communication; team development; support of teams in critical situations; role models in teams; success factors in the function of teams	20	6.0
		7.2	scientific bases of coordinated health care structures	organisation and evaluation of day-care models	8	
				organisation and evaluation of rehabilitation centres	8	
				organisation and evaluation of in-patient clinics	8	
		7.3	coordinated and integrated health care with the perspectives of the insurances	legal and regulatory general conditions	3	
implementation of co-ordinated and integrated health care structures	3					
<b>Stunden und ECTS Modul 7</b>					<b>50</b>	<b>6.0</b>
8.0	integrated health care, social health insurance, self-help support, public awareness	8.1	clinical experience (2 days)	integrated diagnostics in clinical cases	20	4.0
		8.2	German migraine and headache society	activity field of the German migraine and headache Society as a scientific interdisciplinary society	3	
		8.3	self-help support in treatment of headache disorders	concept and structure of self-help groups, involvement in therapy of headache disorders	4	
		8.4	prevention of migraine and headache in school, study and professional training	implementation and success of programs designed for use in schools, university and professional training	2	
		8.5	media work, Public Awareness	understanding in the society for prevention and treatment of headache disorders; communication, digital apps	8	
<b>Stunden und ECTS Modul 8</b>					<b>37</b>	<b>4.0</b>
9.0	clinical and experimental research, perspectives for treatment of patients with headache disorders	9.1	clinical research	legal and ethical regulations for research in humans	6	5.0
				design of studies, implementation and execution	8	
				the five most influential clinical research papers in prevention and treatment of migraine and headache disorders	8	
		9.2	experimental and basic research	definition; regulations for research in subjects, patients, animals and cell material; financial resources, research trends	12	
		9.3	progress in the treatment of headache disorders, perspectives and limitations	consented views of the participants of the master course on the development of the structures of headache care, research results of clinical and experimental research, development of financial support of research	1	
public discussion on the various hypothesis	2					
<b>Stunden und ECTS Modul 9</b>					<b>37</b>	<b>5.0</b>
<b>Stunden und ECTS Semester 3</b>					<b>124</b>	<b>15.0</b>