Dutch Society for Sleep-Wake Research

Founded in Leiden, The Netherlands on June 7, 1990

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PREFACE

The Dutch Society for Sleep-Wake Research celebrated the first decade of its existence during the biannual meeting on November 10, 2000, hosted by professor Ton Coenen of the University of Nijmegen. During the scientific meeting a wide variety of topics, presented by young researchers among the membership, was discussed extensively. During the business meeting some changes in the Board were approved by the membership. The chair was transferred from Ton Coenen to Gerard Kerkhof, and Ingrid Verbeek succeeded Hans de Groen as treasurer. In addition, Marijke Gordijn and Hans Folgering were elected as members of the board. Furthermore, the membership ratified the guidelines for the accreditation of Sleep-Wake Disorders Centers and those for the admission into the register of Clinical Sleep-Wake specialists. In the year 2001 these guidelines will be implemented. Finally, in order to formulate consensus reports on the topics of ‘vigilance: its ins and outs’ and ‘medical treatment of sleep-wake disorders’, new committees were formed.

The Spring meeting of our society was held on March 16, 2001, jointly with the International Clinical Symposium on Sleep, organized by dr. Hans de Groen and his team at the Kempenhaeghe Institute, Heeze. The main topics of this smoothly organized and well-attended meeting were on obstructive sleep apnea, narcolepsy and insomnia, and overviews were presented by a selection of specialists. During this meeting, the consensus report on sleep apnea was presented.

In the autumn of this year, the long-awaited Dutch ‘Handboek slaap en slaapstoornissen’ (Handbook of Sleep and Sleep Disorders) will be published. It will be presented during a one-day symposium on sleep-wake disorders, planned for November 9. This symposium is intended to give greater publicity to the NSWO and its activities and expertise, in particular for those responsible for public health care.

Prof. dr. Gerard Kerkhof, president
Editorial Note
This 12th volume of our series of books contains 31 mini-papers presenting ongoing research in the field of sleep/wake research in The Netherlands. This scientific yearbook has proven to be a highly valued publication for both Dutch and foreign colleagues. Again, we gratefully thank the authors for sending their contributions.

Haarlem, September 2001
Alex L. van Bemmel

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AMSTERDAM: MEDCARE AUTOMATION
Sleep-wake research is concentrated on understanding the clinical mechanisms and the development of methods for systematic quantification of sleep physiology. The facilities of Medcare Automation are geared towards simulation, modelling, and analysis whereas clinical and experimental work is done in co-operation with universities, clinics and pharmaceutical research companies. Recently Medcare Automation has started focusing on multi-dimensional physiology of sleep fragmentation in order to understand the complex relationship between tiredness and sleepiness during the day and autonomic and cortical mechanism of poor sleep.
Researchers: Dr. W. Hofman, Dr. F.W. Bes, Dr. C. Lijzenga, Mr. B. van Son, Dr. A. Kumar.

AMSTERDAM: NETHERLANDS INSTITUTE FOR BRAIN RESEARCH
Sleep-wake research in this institute is concentrated on hypothalamic mechanisms. A main line deals with the role of the suprachiasmatic nucleus in the regulation of circadian rhythms. Furthermore, investigations are performed towards the early development of circadian rhythms in rats and children. Also rhythm research in ageing and neuro-degenerative disorders (Alzheimer and Parkinson) are topics of interest. The institute contains expertise in actigraphic assessment of circadian rhythms and tremor. The institute leads a multi-centre clinical trial on the long-term effects of daily melatonin and exposure to bright light on the course of development in behavioural, emotional and cognitive disturbances in demented...
eldey people. Moreover, the relation between temperature regulation and sleep is a main issue. Consequences of age-related disturbances in sleep and circadian rhythms for cognitive performance will be a major topic in the coming years. fMRI will be used to investigate to what extent age-related sleep disturbances contribute to age-related decrements in executive functioning, relying on the prefrontal cortex, and memory consolidation. Researchers: Drs. R. van Hutten, Drs. R. Raymann, Drs. R. Riemersma, Dr. E. van Someren, Prof. dr. D. Swaab.

**AMSTERDAM: UNIVERSITY HOSPITAL ‘VRIJE UNIVERSITEIT’**

The centre for sleep disorders located at the Department of Clinical Neurophysiology is managed by a multidisciplinary team. It has an outpatient clinic and facilities for ambulatory and clinical sleep registration. Important interests are the obstructive sleep apnea syndrome, narcolepsy and epilepsy during sleep. Researchers: Dr. A. Boonstra, Dr. L. Cohen, Prof. dr. C. Stam, Dr. E. van Nieuwkerk, Dr. R. Strijers.

**AMSTERDAM: UNIVERSITY OF AMSTERDAM**

The Department of Psychonomics is involved in sleep-wake research in the following areas: the influence of chronic insomnia on performance, the influence of disturbing effects on sleep and circadian rhythms, the inter-individual differences in adaptation to shifted sleep and, furthermore, the vulnerability to stress of circadian rhythms. Core variables are sleep-EEG, performance and 24-hour recording of body temperature. Researchers: Drs. A. van Eekelen, Dr. W. Hofman, Prof. dr. G. Kerkhof, Drs. M. Kolff, Dr. J. Snel.

**EDE: SLEEP CENTRE OF THE HOSPITAL ‘DE GELDERSE VALLEI’**

This sleep centre, situated in the midst of the Netherlands, has extensive possibilities to study disorders in outpatients as well as in hospitalized patients. Treatments are recommended that can be supervised by the patients’ general practitioners. Special interests are circadian rhythm disorders and sleep disorders in blind people, in autistic patients, in hyperactive children, as well as in elderly people. Effects of melatonin treatment on circadian rhythm disorders are presently evaluated. Researchers: Dr. M. Majoor, Drs. E. Nagtegaal, Dr. M. Smits, Dr. A. Vos.

**ENSCHENDE: SLEEP CENTRE OF THE ‘MEDISSCH SPECTRUM TWENTE’ HOSPITAL**

This sleep centre located in the east part of The Netherlands is an example of symbiosis between the Clinical Department of Respiratory Medicine and the Department of Clinical Neurophysiology. It fulfils a supra-regional function in the diagnosis of sleep disorders and nightly respiratory disturbances. Researchers: Drs. M. Eijsvogel, Mr. B. Hilhorst, Drs. G. Wilts.

**GRONINGEN: UNIVERSITY OF GRONINGEN**

The Research Group BCN-Behavioural Biology (Zoological Laboratory) has a long history of research in the field of causation, function and timing of behaviour in animals. Theoretical work on the temporal organisation of sleep-wake behaviour in humans has recently been given new impetus by the creation of a new temporary isolation facility. This facility is used to study timing and function of sleep. Animal research focuses on the generation and function of circadian rhythms and sleep in nocturnal and diurnal as well as in subterranean rodents, and on the role of circadian rhythms in growth and aging. There is a long-standing tradition of collaboration with various members of the Department of Biological Psychiatry of the Groningen University, which (in collaboration with the Institute of Pharmacology in Zürich) has led to the two-process model of sleep regulation. With the retirement of Prof. dr. R. van den Hoofdakker, the leave of Dr. D. Beersma and the completion of the thesis of Drs. K. Koorenga the intensive sleep research in the Department of Biological Psychiatry will come to an end. The appointment of Dr. Beersma in Behavioural Biology at the same time guarantees continued research on sleep-wake regulation in Groningen, now with a focus on healthy human subjects. Researchers: Dr. D. Beersma, Drs. B. Biemans, Prof. dr. S. Daan, Dr. M. Gerkema, Dr. M. Gordijn, Drs. M. Oklejewicz, Drs. M. Rüger, Drs. K. Spoelstra, Dr. A. Strijkstra, Drs. D. van der Veen, Dr. E. van der Zee.

**HEEZE: CENTRE FOR SLEEP-WAKE DISORDERS ‘KEMPENHAEGHE’**

The Centre for Sleep-Wake Disorders ‘Kempenhaeghe’, situated in the south of The Netherlands near the city of Eindhoven, is a clinical sleep centre for diagnosis and treatment of disorders of sleep and wakefulness and related complaints. The centre is specialised in neurological sleep disorders, including sleep epilepsy, in sleep related breathing disorders and in non-pharmacological treatment of insomnia. The centre is located at, and affiliated with, the epilepsy centre ‘Kempenhaeghe’. Researchers: Dr. A. Declerck, Dr. M. van Erp, Dr. J. de Groen, Drs. G. Konings, Drs. K. Schreuder, Drs. I. Verbeek, Dr. H. Pennings, Drs. K. de Waele.

**HEEUWARDEN: MCL CENTRE FOR SLEEP AND WAKE DISORDERS**

After starting off in the early nineties with a workgroup for sleep apnea, the Medical Centre Leeuwarden (MCL) has a fully equipped Centre for Sleep and Wake Disorders since 2000 for diagnosis of insomnia, parasomnias and the several forms of sleep apnea syndrome. The emphasis is on clinical oriented investigation. Most of the studies are outpatient studies. Hospital studies are used mainly for unsolved problems and for adjustment of patients to CPAP. The centre has a regional function for the province of Fryslân. Researchers: Drs. C. Henke, Drs. J. den Heijer, Drs. C. Oepkes, Drs. H. Pasma, Drs. H. Postma, Drs. C. Wiemer.
LEIDEN: STATE UNIVERSITY OF LEIDEN
Sleep-wake research at the Department of Physiology and Experimental Psychology concentrates on the following topics: inter-individual differences in circadian rhythms and sleep, stress and circadian rhythms, seasonal variation in circadian rhythms and circadian disorders. The methodology includes laboratory-based (e.g. constant-routine and time-isolation), as well as ambulatory 24-hour-recordings of body temperature, sleep, hormonal and cardiovascular variables.
Researchers: Drs. H. van Dongen, Prof. dr. G. Kerkhof.

The Department of General Practice is currently investigating sleep disorders and the prevalence of sleep apnea in general practice. The Dutch standard for general practitioners ‘Insomnia and Hypnotics’ is being evaluated. Furthermore, aspects of sleep disturbances in patients with chronic fatigue syndrome are evaluated.
Researchers: Drs. P. Eijkelenboom, Drs. A. Graffelman, Dr. A. Knuistingh Neven, Prof. dr. M. Springer.

LEIDEN: UNIVERSITY MEDICAL CENTER
Fundamental and clinical aspects of narcolepsy are evaluated at the Department of Neurology. The department also serves as the Dutch centre for the measurement of (CSF) hypocretin levels.
Researchers: Prof. dr. J. van Dijk, Dr. G.J. Lammers, Drs. S. Overeem.

MAASTRICHT: MAASTRICHT UNIVERSITY
The Department of Medical Psychology, in co-operation with the Department of Medical Microbiology, studies the association between disturbed sleep, inflammatory processes and cardiovascular disorders.
Researchers: Dr. R. van Diest, Drs. R. Havermans, Prof. dr. M. Maes, Dr. A. van der Ven.

NIJMEGEN: UNIVERSITY OF NIJMEGEN
At the Department of Psychology the neurophysiology and neuropsychology of sleep, including REM sleep, is the central topic, together with information processing during the various sleep-wake states, using the concept of ‘sensory gating’. This is partly done in cooperation with Dr. W. Drinkenburg, Janssen Pharmaceutica in Beerse, Belgium. Research is mainly approached in rats, using EEG, psychoactive drugs and behavioural techniques. The cognitive capacities of the sleeping brain are studied both in rats and humans. Also the classic benzodiazepine hypnotics are studied for their sedative and amnestic properties to unravel their working mechanisms and their effects on cognitive processes. The latter topic is human research.
Researchers: Prof. dr. A. Coenen, Dr. W. Drinkenburg, Drs. M. Kolff, Drs. H. van Lier, Dr. E. van Luitjelaar, Drs. A. Smit.

The Department of Pulmonary Diseases ‘Dekkerswald’ is specialised in sleep disordered breathing in patients with pulmonary diseases, such as asthma, chronic obstructive pulmonary disease, chest wall deformations, respiratory muscle failure, problems with control of breathing and obstructive sleep apnea syndrome. Research and patient care are performed on administration of nocturnal oxygen, on respiratory muscle training, on respiratory stimulants and on continuous positive air pressure treatment.
Researchers: Drs. F. Brijker, Dr. F. van den Elshout, Prof. dr. H. Folgering, Dr. Y. Heydra, Dr. P. Vos.

OSS: ORGANON (PHARMACEUTICAL COMPANY)
The effects of newly developed as well as established psychotropic drugs are studied on sleeping and waking. Special emphasis is given to the study of drug effects on electroencephalographic parameters during sleep-wake states. Most studies are being performed in healthy volunteers, but studies are occasionally done in depressed patients. Currently, a large multi-centre trial is ongoing to study the hypnotic effects of a non-benzodiazepine compound on sleep in insomniac patients.
Researchers: Mr. J. van Proosdij, Dr. G. Ruigt.

THE HAGUE: CENTRE FOR SLEEP AND WAKE DISORDERS OF THE M.C.H. ‘WESTEINDE’ HOSPITAL
The Centre for Sleep and Wake Disorders in the Westeinde Hospital is a clinically oriented sleep centre, specialised in the diagnosis and treatment of sleep disturbances of all kinds. Emphasis is laid on the treatment of sleep apneas, periodic limb movements and circadian rhythm disorders as well as on the non-pharmacological treatment of insomnia. Research topics are sleep disturbances in metabolic diseases, circadian rhythm disorders, psychophysiological treatment of insomnia and development of sleep algorithms.
Researchers: Dr. ir. B. Kemp, Prof. dr. G. Kerkhof, Drs. C. Kluft, Dr. A. Knuisingh Neven, Drs. R. Rijsman, Dr. R.J. Schimsheimer, Mrs. M. Verhelst, Dr. A. de Weerd.

The department’s homepage can be found at http://www.ziekenhuis.nl/domeinen/westeinde/slc/research/index.htm.

THE HAGUE: ‘PARNASSIA’ PSYCHO-MEDICAL CENTRE
The aim of this centre is to evaluate the subjective and objective aspects of sleep, mental status and circadian rhythms in the research program ‘Chronobiology and psychiatry’. The links between chronobiological disturbances and psychiatric disorders are examined in a clinical setting. Emphasis is put on the treatment with melatonin and bright light therapy in depression, sleep disturbances, chronic fatigue syndrome, dementia and post-partum depression. Moreover the role of melatonin in the human reproductive system is studied.
Researcher: Dr. P. Haffmans.