Department of Human Physiology
Vision and mission

Prof. Viliam Donic, MD, PhD.
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Teaching subjects

General Medicine

Physiology 1 - compulsory (2nd year of study)
Schedule, Study program, Syllabus, Criteria, Protocol of PL.

Physiology 2 - compulsory (2nd year of study)
Syllabus, Criteria, Protocol of PL.

Sleep Medicine - compulsory elective (5th year of study)
Syllabus, Announcement

Dental Medicine

General and Oral Physiology 1 - compulsory (2nd year of study)
Schedule, Study program, Syllabus, Criteria, Protocol of PL.
Lecture 1st week, Lecture 2nd week, Lecture 3rd week, Lecture 4th week, Lecture 5th week, Lecture 6th week

General and Oral Physiology 2 - compulsory (2nd year of study)
Syllabus, Criteria, Protocol of PL.

Study materials

Questions for oral exam
Question for exam from practical lesson
Study materials CNS
Guyton and Hall. Textbook of Medical Physiology (OnLine) (Virtual Private Network)

Pedagogic texts I:
History of Physiology, HELSINKI CONVENTION, Theheart, Circulation (Vessels)
About us:

The primary task of our department had been to ensure the proper content and organisation of teaching process of Medical physiology for students of General and Dental medicine of Medical faculty since 1949. The Medical physiology as a discipline about functioning of the healthy organism had a very important position in the teaching process because it had been integrating theoretical subjects and it was the basis for the pre-clinical and all clinical subjects, too. This is the reason why physiology teaching was orientated from the very beginning on complex approach to the human organism respecting the processes dynamics influenced by the internal and external factors. To reach this goal the method of problem orientated teaching process was used, it was continually developing, modernised and enriched by up to date foreign and home knowledge. The lectures, practical lessons and seminars were upgraded due to the development of teaching techniques such as teaching movies, slides, magnetic tape records, bio-telemetric transfer of specific experiment and examinations. The content of practical lessons was a result of the clinical medicine request to apply physiological knowledge, the necessity to use technical equipment and to approve manual laboratory skills. There were used the most modern examinational methods and experimental demonstrations during the practical lessons (X-ray sciascopy of thorax during the respiratory cycle, angiography, heart catheterisation and the measurement of heart volumes etc.).
The page you are trying to access requires authentication. Please sign in using your username and password:

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Password: yyyyMMdd0000 (date of birth)

Language: English

Sign In
Introduction to sleep medicine

Prof. V. Donič, MD, PhD.
Sleep laboratory
Medical faculty, Univ. PJ Šafárik
Košice, Slovakia
SLEEP LABORATORY
LF UPJS - KOSICE
Problems decreasing the life quality of patients with SDB during sleep

- frequent arousal
- snoring
- cardiac arrhythmias
- morning headache
- hypertension
- sleepiness
- loss of memory
- obesity
- social problems
- sweatenings
- sexual impotence
- many others
Thanks to my fellow worker

Maria Pallayova, MD, PhD.
Johns Hopkins, School of Medicine
Baltimore, USA.
Disorders of sleep and many vital functions
Slovenská lekárska spoločnosť
Slovenská spoločnosť spánkovej medicíny
Slovenská neurologická spoločnosť
Slovenská pneumologická a rtizeologická spoločnosť
Lekárska fakulta UPJŠ
Neurologická klinika LF UPJŠ a Univerzitnej nemocnice L. Pastieura Košice
Klinika pneumológie a rtizeológie LF UPJŠ a Univerzitnej nemocnice L. Pastieura Košice
Ústav lekárskej fyziológie LF UPJŠ
Slovenská Fyziologická Spoločnosť (SFyS)

X. Slovensko - Český a XV. Český zjazd
SPÁNKOVEJ MEDICÍNY
s medzinárodnou účastou

11. - 12. októbra 2013 Hotel Yasmin, Košice

PROGRAM A ABSTRAKTY
Sleep apnoea as an independent risk factor for cardiovascular disease: current evidence, basic mechanisms and research priorities.
McNicholas WT, Bonsignore MR; Management Committee of EU COST ACTION B26.

Erratum in

Abstract
Considerable evidence is available in support of an independent association between obstructive sleep apnoea syndrome (OSAS) and cardiovascular disease, which is particularly strong for systemic arterial hypertension and growing for ischaemic heart disease, stroke, heart failure, atrial fibrillation and cardiac sudden death. The pathogenesis of cardiovascular disease in OSAS is not completely understood but likely to be multifactorial, involving a diverse range of mechanisms including sympathetic nervous system overactivity, selective activation of inflammatory molecular pathways, endothelial dysfunction, abnormal coagulation and metabolic dysregulation, the latter particularly involving insulin resistance and disordered lipid metabolism. The present report, which arose out of a European Union Cooperation in the field of Scientific and Technical Research (COST) action on OSAS (COST B26), reviews the current evidence for an independent association and proposes research priorities to identify the underlying mechanisms involved, with a view to identifying novel therapeutic strategies. Large-scale collaborative studies of carefully defined patient populations with obstructive sleep apnoea syndrome, adequately controlled for potential confounders, are needed. Such studies carry the prospect of evaluating potential interactions between different basic mechanisms operating in obstructive sleep apnoea syndrome and cardiovascular disease, and interactions with other related disorders, such as obesity, diabetes and dyslipidaemia. Furthermore, translational studies involving cell culture and animal models linked to studies of obstructive sleep apnoea syndrome patients are necessary to integrate basic mechanisms with the clinical disorder.

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[PubMed - indexed for MEDLINE]  Free full text


Driving in Europe: the need of a common policy for drivers with obstructive sleep apnoea syndrome

DANIEL RODENSTEIN ON BEHALF OF COST-B26 ACTION ON SLEEP APNOEA SYNDROME

Center for Sleep Medicine and Pneumology Department Cliniques universitaires Saint-Luc Université catholique de Louvain, Brussels, Belgium

Accepted in revised form 21 April 2008; received 9 April 2008

SUMMARY Obstructive sleep apnoea syndrome (OSA) increases the risk of motor vehicle crashes, and of all medical disorders, has greatest risk in this respect. There is no consistency in the way OSA is considered by the national ‘Physical Fitness to Drive’ legislations within the 27 member countries of the European Union (EU), and most ignore OSA. This is further reflected by the absence of any reference to OSA in Annex III of the Directive 91/439/EEC, harmonizing Driving License regulations in the EU. A recent meeting brought together experts from several European and other countries, together with a representative of the European Commission. They discussed the best way to design and implement a uniform policy within Europe, for OSA and driving. It was agreed that: (i) other forms of pathological sleepiness be included, (ii) it covers both private and professional drivers, (iii) police accident report forms should explicitly consider sleepiness as a potential cause, (iv) sleep–wake education should be incorporated into the mandatory program of continuous education for professional drivers, ideally from 2010, (v) driver screening methods should contain questions on sleepiness at the wheel, habitual snoring and witnessed apnoeas during sleep, as well as the Epworth Sleepiness Score and Body Mass Index and (vi) following effective and efficient treatment, patients should be permitted to drive. In the light of medical, scientific and technical progress, EU procedures exist to enable the rapid modification of existing legislation. If such a procedure could be enacted for these aspects of driver sleepiness, then roads would be safer for 400 million people.

KEYWORDS driving license regulations, fitness to drive, motor vehicle crashes, obstructive sleep apnoea syndrome, sleepiness at the wheel

Falling asleep at the wheel is one of the most striking non-medical consequences of obstructive sleep apnoea (OSA), a disorder ‘active’ only during sleep. Research conducted in countries such as Spain, the United States, Switzerland, Germany, France, Canada, Japan or Australia have all found a significant excess of road traffic accidents caused by patients suffering from OSA, compared with healthy control subjects (Barbe et al., 1998; Cassel et al., 1996; Findley et al., 2000; George, 2001; Horstmann et al., 2000; Howard et al., 2004; Masa et al., 2000; Teran-Santos et al., 1999; Yamamoto et al., 2000; Young et al., 1997). This finding is present irrespective of different cultures, traffic densities and national topographies. The excess risk for motor vehicle crashes associated with OSA is greater than for any other medical disorder (Vaa, 2003).

Driving under the influence of alcohol (Borkenstein et al., 1964), long hours after a short sleep night (Peretz-Cha clo et al., 2005) or night driving by shift workers, also carry a high risk for these accidents. Various medical disorders also put road users at serious risk of injury, and are well-recognized hazards, to the point that all countries have taken legislative actions to deal with drivers having these disorders. Obtaining and retaining a driving license requires drivers to declare that they have no medical condition considered to impair driving ability,
### APPENDIX

List of participants to the October Brussels meeting

<table>
<thead>
<tr>
<th>Name</th>
<th>Country/Region</th>
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<tr>
<td>Alonderis, Audrey</td>
<td>Palanga, Lithuania</td>
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<tr>
<td>Anwaarts, Gilbert</td>
<td>Brusel, Belgium</td>
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<tr>
<td>Debacher, Wilfried</td>
<td>Antwerp, Belgium</td>
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<tr>
<td>Derek Eder</td>
<td>Göteborg, Sweden</td>
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<td>Dinges, David</td>
<td>Pennsylvania, USA</td>
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<td>Doniec, Vikram</td>
<td>Košice, Slovakia</td>
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<td>Dunn, Joaquin</td>
<td>Vitoria, Spain</td>
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<td>Fasullas, Franco</td>
<td>Pavia, Italy</td>
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<td>Garbatiaco, Sergio</td>
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<td>George, Charles</td>
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<td>Grunstein, Ron</td>
<td>Sydney, Australia</td>
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<td>Hadner, Jan</td>
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<td>Horna, Jim A</td>
<td>Leicesteerhire, UK</td>
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<td>Jennis, Paul</td>
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<td>Marrone, Oreste</td>
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<td>Maxa, Jacek Fernando</td>
<td>Caceres, Spain</td>
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<tr>
<td>McNicholas Walter</td>
<td>Dublin, Ireland</td>
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<td>Montserrat, Josep</td>
<td>Barcelona, Spain</td>
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<td>Parati, Gianfranco</td>
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<td>Phillip, Pierre</td>
<td>Bordeaux, France</td>
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<td>Pidin, Alessio</td>
<td>Rome, Italy</td>
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<td>Preti Martin</td>
<td>Prague, Czech Republic</td>
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<td>Prybylowska, Tadeusz</td>
<td>Warsaw, Poland</td>
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<td>Royer Louiee</td>
<td>Leicesteerhire, UK</td>
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<td>Rodenstein Daniel</td>
<td>Brussels, Belgium</td>
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<tr>
<td>Sanna, Antonio</td>
<td>Pistoia, Italy</td>
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<tr>
<td>Volmair, Joed</td>
<td>European Commission, Brussels, Belgium</td>
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<tr>
<td>Vennelle Marjorie</td>
<td>Edinburgh, UK</td>
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<tr>
<td>Verster, Joris</td>
<td>NL, Utrecht, the Netherlands</td>
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<tr>
<td>Zielinski, Jan</td>
<td>Warsaw, Poland</td>
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<tr>
<td>Zou Ding</td>
<td>China</td>
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The 8 chapters of the *ERS Handbook of Respiratory Sleep Medicine* cover all aspects of adult and paediatric sleep medicine, from physiology and anatomy to diagnosis and treatment. Editors Wilfried de Backer and Anita Simonds have brought together leading pulmonologists to produce a thorough yet easy-to-read reference to this important area of respiratory medicine. The *Handbook* is a valuable reference and an essential training resource for any practitioner of sleep medicine, whether they come from a respiratory, neurology, cardiology, dental or ENT background.

Anita K. Simonds is a consultant in respiratory medicine at the NIHR Respiratory Biomedical Research Unit, Royal Brompton & Harefield NHS Foundation Trust, London, and is ERS School Chair.

Wilfried de Backer is Professor of Respiratory Medicine of the Faculty of Medicine, University of Antwerp, and is head of the ERS Clinical Physiology and Integrative Biology Assembly.
WAKE-UP BUS

NÃO DÉ BOLEIA AO SONO. DON'T GIVE SLEEP A RIDE.
Annex 4

General Recommendations Regarding OSAS

1. OSAS diagnosis precludes unconditional certification.

2. A driver with an OSAS diagnosis may be authorized to drive if the following conditions are met:
   2A. The driver has untreated mild OSAS with an apnoea-hypopnoea index (AHI) of less than or equal to 15 (mild-moderate OSA), and
   2B. The driver does not admit to experiencing invalidating excess sleepiness during the major wake period (ESS < 15); denies motor vehicle accidents; does not suffer from hypertension requiring two or more agents to control it and BMI is less than 35 kg/m²)

3. The driver’s OSAS is being effectively treated
   3A. A driver with a moderate to severe OSAS diagnosis may be authorized to drive, based on demonstrating compliance with treatment. Minimally acceptable compliance with Positive Airway Pressure (PAP) treatment consists of at least 4 hours per day on 70% of days. The need for, and the compliance with, treatment should be subject to periodic medical review. The periodicity may differ in drivers from Group 1 and Group 2.
Electrical auricle stimulation novel treatment for obstructive and central sleep apnoea

Prof. Dr Viliam Donic¹, MD; RN. Sona Gresova¹; RN. Judita Stimmelova¹; Dr. Ivana Bacova¹, MD; Prof. Dr Zoltan Tomori¹, MD; Prof. Dr Johan Verbraecken², Drs. Boudewijn de Kerf³, and Drs. Gerrit J de Vos³.

¹Dept. of Physiology and Sleep laboratory, University PJ Safarik, Kosice, Slovakia; ²Multidisciplinary Sleep Disorders Centre, Antwerp University Hospital, Antwerp, Belgium; ³NasoPhlex, NasoPhlex BV, Zaandijk, Netherlands
Treatment of sleep apnoea syndrome with electrical auricle stimulation

In a proof of principle study, researchers at University PJ Safarik (Kosice, Slovak Republic) have developed a way to treat sleep apnoea syndrome by using electrical auricle stimulation to activate the brainstem's inspiratory generator. Viliam Donic and collaborators at Nasophlex BV (Zaandijk, The Netherlands) and the Multidisciplinary Sleep Disorders Centre at University IA Antwerp, Belgium) used an electrode embedded in a removable earplug to interrupt not only obstructive, but also central and mixed, apnoeic episodes in three men with sleep apnoea syndrome. Data obtained from the use of the electrode earplug during a total of 711 nights showed a 66·3% reduction in apnoeic index. In addition, the time without breathing decreased by 53·3%.
EAS, a single case study
Высокочастотная струйная вентиляция легких
Экспулсный и инпульсный эффекты

Prof. Viliam Donic, MD, PhD.
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Ďakujem za pozornost’
• Greater sleepiness before use CPAP and lesser sleepiness after CPAP treatment
• CPAP value therapy in heavy snorers disease or upper airway resistance syndrome, as well as SAHS
• MSLT does not reflect sleepiness decreasing in CPAP treatment
• The access risk for motor vehicle crashes associated with OSA is greater than for any other medical disorders (Vaa 2003).