



台灣睡眠醫學學會 115 年度會員大會暨第 24 屆學術研討會
24th Annual Meeting of Taiwan Society of Sleep Medicine (TSSM)

10/31

Keynote Lecture 1

Prof. Peter Cistulli

現職：

2005 - Senior Staff Specialist, Dept of Respiratory Medicine, Royal North Shore Hospital

2005 - Director, Centre for Sleep Health & Research, Royal North Shore Hospital

2015 - Professor of Sleep Medicine (ResMed Chair), Faculty of Medicine & Health, University of Sydney

2016- Theme Leader, Sleep, Charles Perkins Centre, University of Sydney

2017- Visiting Medical Officer (Honorary), Department of Respiratory Medicine, Royal Prince Alfred Hospital, Sydney

學歷：

1980 Higher School Certificate, De La Salle College, Sydney, Australia (Dux of School)

1981 - 1985 University of New South Wales, Faculty of Medicine (MBBS)

Awarded Honours (Class 2)

1991 - 1994 University of Sydney, Faculty of Medicine (PhD)

2001 - 2003 Macquarie University, Graduate School of Management (MBA)

Allen Knott Scholar Award (University Medal)

經歷：

2009 - 2022 Founding Head, Discipline of Sleep Medicine, Faculty of Medicine & Health, University of Sydney

2005 - 2015 Professor of Respiratory Medicine, University of Sydney

2011 - 2014 Head, Department of Respiratory & Sleep Medicine, Royal North Shore Hospital

2007 - 2009 Head, Department of Respiratory Medicine, Royal North Shore Hospital

專長：

- Precision medicine applications to sleep-disordered breathing
- Cardiometabolic outcomes in sleep disordered breathing
- Obesity and Sleep-disordered Breathing
- Sleep technology as an enabler for enhanced diagnostics and chronic disease management
- Comparative effectiveness of treatments for sleep-disordered breathing
- Big data analyses in obstructive sleep apnoea



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Symposium 1

寇巍主任醫師

現職：

四川大學華西第二醫院，耳鼻咽喉頭頸外科，副主任醫師

學歷：

重慶醫科大學畢業

經歷：

重慶醫科大學附屬兒童醫院耳鼻咽喉科副主任，博士，美國約翰霍普金斯大學醫學院博士後，中國醫師協會兒科分會耳鼻咽喉青委會副主任委員，重慶醫學會耳鼻咽喉青年分會副主任委員。

專長：

兒童鼾症、兒童過敏性鼻炎、兒童鼻竇炎、兒童鼻息肉、兒童中耳炎、兒童聽力障礙、兒童先天性耳鼻咽喉疾病、兒童鼻孔閉鎖、兒童耳畸形、兒童喉軟化症



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馮媛主任

現職：

2007 年 7 月-至今南方醫科大學南方醫院睡眠中心住院醫師、主治醫師、副主任醫師

學歷：

博士華南科技大學同濟醫學院神經內科

本科華南科技大學同濟醫學院臨床醫學

經歷：

2015 年 8 月-2016 年 12 月美國賓夕法尼亞大學睡眠醫學系、睡眠節律和神經實驗室

2007 年 10 月-2007 年 11 月香港大學醫學院 睡眠中心 RPSGT 培訓項目

專長：

習慣性打鼾和頑固性睡眠呼吸暫停，頑固性失眠和嗜睡症。鼾症及睡眠呼吸障礙，合併各種心腦血管疾病的阻塞性睡眠呼吸暫停的診斷與治療，心衰合併陳施呼吸的診治，疑難睡眠疾病的診治。



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謝江教授

現職：

首都醫科大學附屬北京安貞醫院呼吸與危重症醫學科主任醫師，教授，博士研究生導師

學歷：

2010 年，首都醫科大學博士畢業

經歷：

2010 年，首都醫科大學博士畢業，進入安貞醫院；2014 年晉升副主任醫師；2019 年晉升主任醫師。

2015 年 1 月-2016 年 12 月美國梅奧診所訪問學者。

專長：

在呼吸系統疾病的診療方面具有較豐富的經驗。擅長治療：睡眠呼吸暫停、鼾症、呼吸機治療、慢性阻塞性肺疾病、支氣管哮喘、肺間質疾病。



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Symposium 2

林澂教授

現職：

國立中央大學生醫科學與工程學系 副教授

學歷：

國立中央大學系統生物與生物資訊研究所 博士

經歷：

國立中央大學生醫科學與工程學系 助理教授

國立中央大學數據分析方法研究中心 助理研究員

史丹佛大學睡眠中心 博士後研究員

專長：

可攜式醫療裝置於睡眠醫學、心血管生理學之應用



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劉文德醫師

現職：

大安丰采睡眠醫學診所 院長
臺北醫學大學醫學院 呼吸治療學系 教授
衛生福利部雙和醫院胸腔內科 主治醫師

學歷：

國立成功大學工程科學系 博士

經歷：

臺北醫學大學醫學院人工智慧醫療碩士在職專班 主任
衛生福利部雙和醫院睡眠中心 主任
林口長庚醫院胸腔內科 主治醫師
林口長庚醫院胸腔內科 總醫師

專長：

胸腔醫學、智慧醫療、睡眠醫學



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羅士傑醫師

現職：

嶺先牙醫診所院長

學歷：

臺北醫學大學牙醫學系

成功大學生理學研究所碩士

台北陽明大學腦科學研究所博士班

經歷：

美國隱適美黑鑽石認證醫師

臺灣美容植牙醫學會會員暨專科醫師

臺灣微整型美容醫學會專科醫師

中華植體美學醫學會會員暨專科醫師

專長：

隱形矯正、兒童早期功能性矯正、美容牙科、全口重建、睡眠呼吸中止症



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Symposium 3

Dr. Olivia Walch

現職：

Arcascope

Arlington, VA

CEO

2020 - Present

- Founded company aimed at taking circadian science to clinical care
- Currently leading a team of six to rescue drugs which failed due to mistiming

University of Michigan

Ann Arbor, MI

ADJUNCT RESEACH INVESTIGATOR

2019 - Present

學歷：

College of William & Mary

Williamsburg, VA

B.S. IN MATHEMATICS AND BIOPHYSICS

Sept. 2007 - May 2011

University of Michigan

Ann Arbor, MI

PH.D APPLIED MATHEMATICS

September 2016

經歷：

I've been PI on multiple grants from the NIH. I've released several open source libraries for sleep and circadian rhythms along with datasets of gold standard PSG with co-recorded Apple Watch acceleration. I've been involved in several RCTs showing personalized circadian interventions can improve patient and user outcomes.

R42HL163783 (NHLBI, 2024 - 2026)

Large scale trial evaluating real world translatability of personalized circadian interventions to shift workers

R41HD114317 (NICHD, 2025 - 2025)

Evaluation of personalized circadian rhythms recommendations in pregnant women to reduce pre-term birth

R41HL164294 (NHLBI, 2023 - 2024)

Development of a mobile app to reduce cancer-related fatigue in children with acute lymphoblastic leukemia

R44CA236557 (2020 - 2023)

Randomized controlled trial to evaluate the effects of a personalized circadian intervention for reducing cancer-related fatigue in breast, prostate, and bone marrow transplant patients

專長：

studied the mathematics of sleep



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楊建銘教授

現職：

國立政治大學 心理學系 特聘教授

台灣臨床心理學會 常務理事

台灣睡眠醫學學會 監事

學歷：

紐約市立大學 心理學系 博士

紐約市立大學 心理學系 碩士

國立政治大學 心理學系 學士

經歷：

國立成功大學行為醫學研究所 助理教授

天主教輔仁大學心理學系 助理教授

國立政治大學學務處 副學務長

國立政治大學學務處 副學務長

國立政治大學身心健康中心 主任

臺灣臨床心理學會 理事長

台灣睡眠醫學學會 理事

專長：

臨床心理學、行為睡眠醫學



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谷大為醫師

現職：

中國醫藥大學北港附設醫院 精神科主治醫師兼教研部教學組長

中國醫藥大學醫學系 助理教授

學歷：

英國倫敦國王學院老年精神醫學博士

經歷：

中國醫藥大學附設醫院精神醫學部 住院醫師、總醫師、研究醫師

專長：

憂鬱、失智、睡眠障礙、穿戴式科技、老化



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Symposium 4

机彗禎技師

現職：

光田綜合醫院睡眠中心睡眠技師/組長

學歷：

中山醫學大學護理學系 學士

經歷：

保健安股份有限公司 睡眠中心組長

中山醫學大學附設醫院外科加護病房 護理師

專長：

睡眠醫學



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賴又嘉技師

現職：

馬偕醫院 醫檢師

學歷：

長庚大學醫學生物技術暨檢驗學系 碩士

經歷：

馬偕醫院 醫檢師

專長：

醫院內部睡眠中心培訓講師，針對夜班醫護人員的睡眠健康宣導



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劉勝義技師

現職：

台灣睡眠醫學學會 理事

台北榮總胸腔部睡眠中心 技術顧問

學歷：

國立台灣師範大學健康促進與衛生教育系 學士

經歷：

台北榮總胸腔部 技術員

台北榮總胸腔部 副技師

台北榮總胸腔部 技師

國立陽明大學醫技系 臨床講師

美國史丹福大學睡眠中心 進修

美國威斯康辛大學睡眠中心 進修

交通大學腦科學研究中心 臨床顧問

專長：

睡眠檢查 睡眠醫學



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Symposium 5

林以志醫師

現職：

台北醫學大學雙和醫院 睡眠中心主任
台北醫學大學雙和醫院 耳鼻喉科部主治醫師

學歷：

台北醫學大學公共衛生 博士

經歷：

台北醫學大學附設醫院 耳鼻喉科部住院醫師

專長：

耳鼻喉科、睡眠醫學、公共衛生



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康焜泰醫師

現職：

衛生福利部臺北醫院耳鼻喉科 主治醫師

學歷：

臺灣大學公共衛生院流行病學與預防醫學研究所預防醫學碩士

經歷：

台大醫院兒童醫院耳鼻喉部 兼任主治醫師

專長：

睡眠呼吸中止症；統合分析；健保資料庫



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蔡明劭醫師

現職：

嘉義長庚醫院 教授級主治醫師

嘉義長庚醫院耳鼻喉部口腔咽喉科主任

學歷：

國立台灣大學醫學系 學士

經歷：

林口長庚醫院耳鼻喉科住院醫師

林口長庚醫院耳鼻喉科總醫師

專長：

打鼾及睡眠呼吸中止症



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Symposium 6

劉泳鈞醫師(Dr. Irene Lau)

現職：

Founding Partner & Dental Surgeon

T.O.P Dental by Family Smile Limited, Mongkok, Kowloon, Hong Kong

August 2022 – Present

Founder

Hello Smile Hong Kong Limited (NGO, Section 88 Charity), Hong Kong

November 2020 – Present

Founding Partner & Dental Surgeon

Family Smile Limited (formerly Central Smile Limited), Central, Hong Kong

June 2017 – Present

Clinic Self-Inspection Program (CSIP) Assessor

Hong Kong Dental Association (HKDA)

May 2024 – Present

Clinical Lecturer, BDS Programme; Part-time Dental Officer (Trainer)

Prince Philip Dental Hospital, Hong Kong

August 2016 – Present

學歷：

Doctor of Dental Surgery (DDS)

New York University, College of Dentistry, New York, USA

August 1999 – May 2003

Bachelor of Science, Nutrition Science (Dean' s List 1996 – 1999)

Purdue University, West Lafayette, Indiana, USA

August 1995 – May 1999

經歷：

Chief, Division of Pediatric Dentistry & Orthodontics; Pediatric Dentist

United Family Hospital, Guangzhou, China

November 2015 – June 2016

Chief, Division of Pediatric Dentistry & Orthodontics; Pediatric Dentist

United Family Hospital, Beijing, China

February 2013 – October 2015

Pediatric Dentistry Clinical Instructor

Mount Sinai Medical Center, New York, USA

July 2008 – May 2011



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何禮妍醫師(Dr. HO Lai-in)

現職：

Dr. Ho is a Senior Dental Officer of Dentistry and Maxillofacial Surgery at Hong Kong Children's Hospital and United Christian Hospital in Hospital Authority. She is also a part-time clinical lecturer at the University of Hong Kong.

學歷：

Dr. Ho graduated with distinction from the University of Hong Kong in 2008. She obtained her Membership in Oral and Maxillofacial Surgery from the Royal College of Surgeons of Edinburgh in 2012 and her Fellowship in Oral and Maxillofacial Surgery from the College of Dental Surgeons of Hong Kong in 2016.

經歷：

She holds the current position of the Honorary Treasurer of the Hong Kong Association of Oral and Maxillofacial Surgeons since 2016 and one of the starting Council Members of the Young Oral and Maxillofacial Surgeons of Hong Kong established since 2014. She is the founding president of Hong Kong Association of Dental Sleep Medicine established in 2024.

專長：

obstructive sleep apnea and craniofacial deformities



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陳裕豐醫師

現職：

高雄醫學大學口腔顎面外科 主治醫師

高雄醫學大學牙醫學系 助理教授

高雄醫學大學睡眠中心 主治醫師

學歷：

國立成功大學口腔醫學研究所 碩士

經歷：

美國史丹佛大學耳鼻喉科 研究員

中華民國口腔顎面外科學會 監事

台灣睡眠醫學學會 理事

專長：

睡眠呼吸中止症、睡眠手術、顱顏面顎骨手術



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Symposium 7

張宏名 教授

現職：

臺北醫學大學 醫學院 醫學系 解剖學暨細胞生物學科 教授

臺北醫學大學 生技醫療產業研發博士學位學程 合聘教授

學歷：

國立臺灣大學解剖學暨細胞生物學研究所 博士

經歷：

中山醫學大學 醫學院 醫學系 教授兼副系主任

中山醫學大學 醫學院 醫學系 剖學科 副教授

中山醫學大學 醫學院 醫學系 解剖學科 助理教授

專長：

睡眠醫學 (實驗神經科學), 嗅覺系統, 奈米材料, 抗氧化物, 牙周病學, 離子暨超微結構影像分析



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陳玠文助理教授

現職：

國立政治大學神經科學研究所 助理教授

國立政治大學心智、大腦與學習研究中心 助理研究員

學歷：

國立陽明交通大學腦科學研究所 博士

經歷：

元培醫事科技大學健康休閒管理系 兼任助理教授

國立陽明交通大學腦科學研究所 博士後研究員

專長：

睡眠生理學、自律神經系統、生醫訊號分析、認知神經科學、神經退化性疾病



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張芳嘉教授

現職：

國立臺灣大學獸醫學系 特聘教授

國立臺灣大學神經生物與認知科學研究中心 主任

學歷：

美國德州大學神經科學 博士

經歷：

國立臺灣大學獸醫專業學院院長

國立臺灣大學獸醫學系 教授

專長：

神經科學、神經生理、睡眠醫學



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Keynote Lecture 2

Prof. Yves Dauvilliers

現職

Professor of Neurology and Physiology, University of Montpellier

Head / Director, Sleep and Wake Disorders Centre, Department of Neurology, Gui de Chauliac Hospital, CHU Montpellier, France

Coordinator, French National Reference Network for Narcolepsy and Idiopathic Hypersomnia

學歷

Specialist in Neurology, Montpellier University, 1995

University diploma, "Clinical Neurophysiology", Montpellier, 1997

University diploma, "Wake and Sleep", France, 1998

Medical thesis, "Genetic and familial aspects of narcolepsy", Montpellier, 2000

PhD in Neurosciences, "Neurobiology and Genetics of Narcolepsy", Montpellier, 2004

經歷

Resident, Teaching Hospital, Montpellier

Chief Resident

專長

Research studies in the diagnosis, epidemiology, pathophysiology and therapy of sleep disorders related to neurological disorders including narcolepsy, hypersomnias, parasomnia, insomnia, Parkinson, Alzheimer and RLS.



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Keynote Lecture 3

Dr. Philip Cheng

現職

2022 - Present Associate Scientist Henry Ford Health

2021 - Present Research Associate Professor Department of Psychiatry, University of Michigan

學歷

2008 - 2014 Ph.D. in Clinical Psychology

University of Michigan, Ann Arbor

Dissertation: Sleep, Depression, and Resilience: Connecting the sleeping and waking brain.

2004 - 2008 Bachelor of Science in Brain, Behavior, and Cognitive Science

University of Michigan, Ann Arbor

經歷

2017 - 2022 Assistant Scientist Sleep Disorders and Research Center, Henry Ford Health

2015 - 2017 Research Scientist / Instructor

Sleep Disorders and Research Center, Henry Ford Hospital

2014 - 2015 Postdoctoral Fellow Sleep Disorders and Research Center, Henry Ford Hospital

2013 - 2014 Clinical Internship University of Wisconsin - Madison, Department of Psychiatry



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Symposium 8

黃舒儀醫師

現職：

嘉義長庚胸腔內科 主治醫師

嘉義長庚睡眠中心 主任

學歷：

長庚大學醫學系 學士

經歷：

長庚紀念醫院內科住院醫師

林口長庚紀念醫院胸腔內科住院醫師

專長：

睡眠呼吸疾病、胸腔內科疾病



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李佩玲醫師

現職：

台灣大學醫學系臨床 副教授

學歷：

國立臺灣大學醫學院 臨床醫學研究所博士

經歷：

台大醫院睡眠中心 主任



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陳永瑄醫師

現職：

台大醫院 院聘主治醫師

台灣大學 臨床講師

學歷：

中國醫藥大學醫學系 學士

經歷：

台大醫院雲林分院 主治醫師

台大醫院 院聘住院醫師

台大醫院 畢業後一般醫學訓練醫師

專長：

一般胸腔醫學、睡眠醫學、重症醫學



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Symposium 9

陳兆煒醫師

現職：

- 2026.02- 臺北醫學大學醫學科技學院神經醫學博士學位學程合聘副教授
- 2026.02- 臺北醫學大學醫學系神經學科副教授
- 2021.08- 臺北市立萬芳醫院生技創新中心副主任
- 2021.05- 台灣神經學學會副秘書長
- 2020.03- 臺北醫學大學醫加加速器執行長
- 2015.06- 臺北市立萬芳醫院神經科主治醫師

學歷：

- 2014-2021 臺北醫學大學神經再生醫學博士學位學程博士
- 2002-2008 印尼大學醫學系學士

經歷：

- 2024.01-2026.01 臺北醫學大學醫學科技學院神經醫學博士學位學程合聘助理教授
- 2022.02-2026.01 臺北醫學大學醫學系神經學科助理教授
- 2021.10-2023.11 臺北醫學大學 Biodesign Center 產業副執行長
- 2020 史丹福大學 Biodesign 創新醫材設計全球導師
- 2017-2018 台灣—柏克萊醫療器材產品設計之人才培訓(BTB)計畫學者
- 2009-2015 臺北市立萬芳醫院神經科住院醫師

專長：

睡眠障礙、失智症、腦血管疾病、一般神經科疾病



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邱銘章醫師

現職：

台大醫學院神經科 兼任教授

台大醫院神經部兼任主治醫師

學歷：

台灣大學醫學系 學士

台灣大學電機系 博士

經歷：

台大醫院神經部 主任

台大醫院神經部 專任主治醫師



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楊鈞百醫師

現職：

光田綜合醫院神經醫學部部長

光田綜合醫院醫學高壓氧中心主任

光田綜合醫院睡眠醫學中心主任

光田綜合醫院靜脈雷射中心主任

光田綜合醫院重複經顱磁刺激中心主任

學歷：

長庚大學臨床醫學所醫學博士

中國醫藥大學中西醫結合所碩士

中國醫藥大學中西醫學學士

美國史丹佛大學睡眠中心進修

經歷：

台中光田醫院神經內科主治醫師

弘光科技大學暨教育部部定講師（講字第 101938 號）

弘光科技大學暨教育部部定助理教授（助理字號第 038310 號）

台中光田醫院醫學研究部副主任

台中光田醫院醫學研究部主任

台中光田醫院睡眠醫學中心主任

專長：

各種頭痛、頭暈（暈眩、耳鳴）、各種疼痛（疱疹後神經痛、糖尿病神經痛、坐骨神經痛、肩頸酸痛、骨刺、開刀後慢性疼痛、手麻腳麻、顏面神經麻痺）、睡眠障礙（疲倦、憂鬱失眠）、腦中風及其後遺症、失智症、動作障礙（巴金森氏症、不自主運動）、癲癇。特殊治療項目 肉毒桿菌注射治療慢性偏頭痛、睡眠呼吸中止症治療(正壓呼吸器配戴及牙套治療)。



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Symposium 10

黃玉書教授

現職：

林口長庚醫院 兒童心智科主治醫師(精專字 000659 號)

林口長庚醫院 睡眠中心主治醫師

長庚大學 副教授

學歷：

長庚大學 醫學系學士

經歷：

林口長庚醫院 精神科主治醫師

基隆長庚醫院 精神科住院醫師

林口長庚醫院 兒童心智科主治醫師

史丹福大學睡眠醫學中心 研究員



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金韋志醫師

現職：

林口長庚精神科副教授級主治醫師

學歷：

國立成功大學醫學系學士

經歷：

林口長庚紀念醫院 精神科 住院醫師

林口長庚紀念醫院 兒童心智科 研習醫師

林口長庚紀念醫院 睡眠中心 研習醫師

美國史丹福大學 睡眠中心 臨床觀察員

專長：

兒童精神醫學、睡眠醫學



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蕭穎聰教授

現職：

長庚大學 醫學影像暨放射科學系 教授

學歷：

紐約州立大學石溪分校 (SUNY Stony Brook) 電機系 博士

經歷：

SUNY at Stony Brook 博士後研究員

長庚大學 人工智慧學士學位學程 合聘教授

長庚大學 醫學影像暨放射科學系 助理教授

長庚大學 醫學影像暨放射科學系 副教授

專長：

醫學影像處理，腦神經影像處理與定量分析，正子影像診斷生物標誌之開發



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Satellite Symposium

Prof. Peter Cistulli

現職：

2005 - Senior Staff Specialist, Dept of Respiratory Medicine, Royal North Shore Hospital

2005 - Director, Centre for Sleep Health & Research, Royal North Shore Hospital

2015 - Professor of Sleep Medicine (ResMed Chair), Faculty of Medicine & Health, University of Sydney

2016- Theme Leader, Sleep, Charles Perkins Centre, University of Sydney

2017- Visiting Medical Officer (Honorary), Department of Respiratory Medicine, Royal Prince Alfred Hospital, Sydney

學歷：

1980 Higher School Certificate, De La Salle College, Sydney, Australia (Dux of School)

1981 - 1985 University of New South Wales, Faculty of Medicine (MBBS)

Awarded Honours (Class 2)

1991 - 1994 University of Sydney, Faculty of Medicine (PhD)

2001 - 2003 Macquarie University, Graduate School of Management (MBA)

Allen Knott Scholar Award (University Medal)

經歷：

2009 - 2022 Founding Head, Discipline of Sleep Medicine, Faculty of Medicine & Health, University of Sydney

2005 - 2015 Professor of Respiratory Medicine, University of Sydney

2011 - 2014 Head, Department of Respiratory & Sleep Medicine, Royal North Shore Hospital

2007 - 2009 Head, Department of Respiratory Medicine, Royal North Shore Hospital

專長：

- Precision medicine applications to sleep-disordered breathing
- Cardiometabolic outcomes in sleep disordered breathing
- Obesity and Sleep-disordered Breathing
- Sleep technology as an enabler for enhanced diagnostics and chronic disease management
- Comparative effectiveness of treatments for sleep-disordered breathing
- Big data analyses in obstructive sleep apnoea



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Keynote Lecture 1

Prof. Peter Cistulli

Topic : CPAP and beyond: The evolving treatment landscape for OSA

Abstract : Obstructive sleep apnea (OSA) is increasingly recognised as a heterogeneous disorder, with substantial variation in underlying pathophysiology, clinical presentation, comorbidities, and response to treatment. Continuous positive airway pressure (CPAP) remains the most efficacious and widely used therapy, particularly for moderate-to-severe OSA, but its real-world effectiveness is influenced by patient acceptance and long-term adherence.

The therapeutic landscape is now expanding rapidly. Oral appliance therapy, positional approaches, weight management and emerging metabolic pharmacotherapy, upper-airway surgery, hypoglossal nerve stimulation, and novel pharmacological therapies provide increasing opportunities to individualise treatment. Advances in OSA phenotyping and endotyping may further enable treatment to be matched to the mechanisms driving disease in an individual patient.

This presentation will review these developments and consider how OSA management can evolve from a predominantly CPAP-centred model toward a personalised, multimodal approach that integrates treatment efficacy, patient preference, comorbidity, and long-term clinical outcomes.

Symposium 1

寇巍主任醫師

Topic : 兒童鼻竇炎與阻塞性睡眠呼吸中止症的診治

Abstract : Pediatric chronic rhinosinusitis and obstructive sleep apnea (OSA) may coexist and contribute to significant respiratory and sleep-related morbidity. This presentation will discuss the clinical relationship between sinonasal disease and pediatric OSA, with emphasis on appropriate diagnostic evaluation and treatment strategies. The role of upper-airway inflammation, nasal obstruction, adenotonsillar disease, and multidisciplinary management will be reviewed to facilitate timely diagnosis and individualized treatment in children with overlapping sinonasal and sleep-related disorders.

馮媛主任

Topic : 女性 OSA 的臨床特徵與精準治療

Abstract :

Obstructive sleep apnea in women may present differently from the classical clinical phenotype described in men, contributing to underrecognition and delayed diagnosis. This presentation will review sex-specific clinical manifestations, symptom profiles, comorbidities, and diagnostic considerations in women with OSA. It will further discuss individualized treatment strategies, including positive airway pressure and other therapeutic options, with emphasis on tailoring management according to clinical phenotype, disease severity, and patient characteristics.



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謝江教授

Topic : OSA 患者高血壓特徵及 CPAP 治療策略

Abstract : Hypertension is one of the most important cardiovascular comorbidities associated with obstructive sleep apnea (OSA). This presentation will characterize the clinical features of hypertension in patients with OSA and discuss the cardiovascular implications of sleep-disordered breathing. Particular attention will be given to patient selection, treatment adherence, and individualized CPAP strategies. Understanding the interaction between OSA and hypertension may help clinicians identify patients who are most likely to benefit from effective and sustained PAP therapy.

Symposium 2

林澂教授

Topic : Multimodal Home Sleep Physiological Monitoring: Sensing Technologies, Clinical Validation, and Applications in Sleep Medicine

Abstract : Polysomnography (PSG) remains the reference standard for sleep staging and the diagnostic evaluation of sleep disorders. However, laboratory-based, single-night assessments may not fully capture habitual sleep patterns, night-to-night variability, circadian timing, or longitudinal responses to treatment in the home environment. Recent advances in home sleep monitoring have expanded beyond conventional actigraphy toward multimodal sensing platforms that integrate neurophysiological, cardiopulmonary, autonomic, movement, pressure, acoustic, environmental, and contactless signals. This presentation provides an overview of emerging technologies across wearable, bed-based, and ambient monitoring platforms, with emphasis on their potential roles in sleep assessment, long-term monitoring, and longitudinal care. Potential clinical applications of these technologies will also be discussed.

劉文德醫師

Topic : Novel Myofunctional Training Technology for the Treatment of Sleep Disordered Breathing

Abstract : Sleep-disordered breathing (SDB) is not solely an anatomical narrowing problem; it often intertwines with daytime mouth breathing, unfavorable tongue posture, and insufficient oropharyngeal muscle tone and sensorimotor coordination. From a developmental perspective, modern soft diets and reduced mastication may lessen craniofacial stimulation, while chronic mouth breathing can perpetuate a vicious cycle—lowered tongue posture, maxillary narrowing, mandibular clockwise/posterior growth tendency, and reduced pharyngeal space.

Orofacial/oropharyngeal myofunctional therapy (OMT) is supported by trials and meta-analyses: with adequate adherence and dosing, adult AHI reductions on the order of roughly 30–50% have been reported, with often striking benefits for snoring, sleepiness (ESS), and sleep quality. Quality-of-life gains sometimes appear as salient as, or earlier than, AHI change, potentially reflecting upper-airway dilator function, arousal-threshold stabilization, and modulation of hypoxia-related neural sensitivity.



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The practical bottleneck is protocol heterogeneity and home adherence: cue-based training rarely verifies nasal routing or tongue-to-palate contact objectively. This talk presents a monitored oral muscle-function training system/method (patent pathway) that detects respiratory physiological signals, extracts features related to oral-muscle activity, and determines whether posture/movement meets training criteria—enabling feedback, comparability, and remote continuity. Product embodiment is illustrated by the Good Sleep Trainer (GST): nasal-preferential inspiration, tongue-to-palate posture (full dorsum seal, zero gap), and monitored sensorimotor learning. Technology-assisted OMT bridges nighttime airway support with trainable, verifiable daytime sensorimotor restoration.

羅士傑醫師

Topic : Precision Digital Dentistry and Sleep Medicine: Interdisciplinary Innovation in Mandibular Advancement Device Therapy for Sleep Disordered Breathing.

Abstract : 睡眠呼吸障礙，尤其是阻塞型睡眠呼吸中止症，需要兼具療效、以病人為中心，並能因應個別顱顏、牙科與功能特徵的治療策略。下顎前移裝置（mandibular advancement device, MAD）已成為非持續性正壓呼吸器治療的重要選項；然而，其臨床療效仍受病人篩選、裝置設計、下顎前移調整、咬合狀態、顱顎關節功能及長期配戴依從性等因素影響。

本演講探討精準數位牙科如何透過睡眠醫學、牙科、齒顎矯正、生物醫學工程及數位健康之跨學科協作，推動 MAD 治療的創新發展。數位口內掃描、三維顱顏評估、虛擬治療規劃、電腦輔助設計與製造，以及客觀睡眠與生理監測等技術，可使治療流程由傳統裝置製作進一步邁向個人化、數據導向的治療模式。

本演講將提出一項整合式臨床架構，涵蓋睡眠呼吸障礙之篩檢、表型與牙科評估、MAD 的數位設計與製作、下顎前移調整策略、追蹤評估，以及治療療效與牙齒顎面副作用之監測。並特別討論數位工作流程在提升治療可再現性、配戴舒適度、病人依從性、跨專業溝通及長期療效評估上的潛在價值。透過將 MAD 治療定位於精準牙科與睡眠醫學的交會點，本研究旨在建立睡眠呼吸障礙更個人化、可量測且具長期可持續性的治療與轉譯研究方向，並進一步提出未來在數位 MAD 設計優化、病人分層及治療成效評估上的重要課題。

Symposium 3

Dr. Olivia Walch

Topic : Translational circadian biology and implications for cancer treatment

Abstract : In this talk, I will discuss how personalized circadian interventions built on consumer wearables hold promise for cancer care. I will start with a brief introduction of how real-world circadian tracking can be achieved, discuss how we at Arcascope have.

楊建銘教授

Topic : “Social Jetlag” or “Catch-Up Sleep”? The Dilemma of Weekend Sleep Extension

Abstract : 現代社會由於工作、學業及休閒社交活動的需求以及網路科技的使用，許多人在平日必須



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配合固定的工作或就學時間而縮短睡眠，到了週末則延後入睡與起床，並延長睡眠時間來進行補眠，週末延長睡眠成為補償平日睡眠不足的自然調節方式。從睡眠恆定歷程（homeostatic process）的角度而言，週末補眠（weekend catch-up sleep）可降低平日睡眠不足所累積的睡眠壓力，可能有助於恢復認知與日間功能，減少睡眠不足對心理及生理健康的負面影響；部分研究亦顯示，適度的週末補眠可能與較佳的健康結果相關。然而，當個體在週末延後入睡與起床時間的同時，平日與週末睡眠時間點的差異也可能形成社交時差（social jet lag），造成內在生理時鐘與外在社會時間要求之間的不一致，進而增加晝夜節律失調（circadian misalignment）的可能性；既有研究亦顯示，較大的社交時差與較差的睡眠品質及日間功能，以及較高的情緒、代謝與其他健康風險相關。因此，週末延長睡眠呈現一個重要的睡眠健康兩難：增加睡眠時數可能補償平日累積的睡眠債，但伴隨的睡眠時間延後卻可能以晝夜節律失調為代價；換言之，同一個週末補眠行為可能同時具有恢復性的效益與節律失調的風險。本演講將以睡眠雙歷程模式（two-process model）為理論架構，整合睡眠恆定與晝夜節律兩個歷程，透過研究結果檢視睡眠時數與睡眠時間點的變化對於週末補眠的效益及負面影響。

谷大為醫師

Topic : Wearable devices: underrepresentation and unmet needs in the super-aged society

Abstract : Taiwan has become a super-aged society by the end of 2025, bringing with it geriatric depression, dementia, and accompanying behavioral and psychological symptoms of dementia (BPSD), which will impose a heavier burden on healthcare and caregiving systems. Currently, geriatric depression and BPSD primarily rely on pharmacological treatments. If wearable devices can be worn regularly by elderly patients, they can help objectively track data such as sleep, physical activity, and light exposure, thereby facilitating the assessment and research in old age psychiatry. On the therapeutic side, if older adults can accept specific wearable technology—such as wearable near-infrared light therapy devices or wearable circadian rhythm regulation devices—it may reduce their exposure to medications that carry risks of falls, daytime drowsiness, and even cardiovascular diseases. Dr Guu will discuss the potential of wearable technology on the assessment side to assist in recording and analysing the behaviors of older adults, as well as its application on the therapeutic side to further improve these symptoms and even alleviate caregiver stress.

Symposium 4

机慧禎技師

Topic : 睡眠多項生理檢查與認知障礙之關係探討

Abstract : 台灣邁入超高齡社會使認知障礙照護需求攀升，因既有研究多仰賴與客觀生理相關性偏低的主觀量表，本研究採回溯性設計，透過睡眠多項生理檢查（PSG）分析中部某區域教學醫院睡眠中心 107 位受試者之睡眠分期與呼吸事件對認知功能的影響。研究依臨床失智量表（CDR）將受試者分為認知正常組（n = 61）與異常組（n = 46），並進一步依年齡交叉分為四組進行變異數分析、Tukey HSD 事後比較及皮爾森相關分析。結果顯示，認知異常組年齡與醒後血壓較高，且具較低睡眠效率、較短 N2 與 REM 時間、較差血氧



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(平均與 Lowest SpO2 降低) 及較高 ODI；其中「年長 × 認知異常組」在 N2、REM、Lowest SpO2 及 ODI 上表現最差，部分指標亦在年齡分組中呈現差異化趨勢。相關分析指出，N2、REM 與血氧指標 (Lowest SpO2、ODI) 與多項認知功能呈中度相關，並與注意力、記憶、語言及執行功能等構面維持穩定關聯；組別分析更顯示生理指標對認知的影響具族群異質性，如年輕認知異常組在 REM 潛伏期呈現特異性變化。本研究證實 PSG 睡眠結構與夜間缺氧跟中高齡者認知功能表現具一致關聯，指出 N2 與 REM 減少及缺氧惡化可作為早期認知退化之敏感生理特徵，建立之本土 PSG × 年齡 × 認知資料對失智症早期偵測與睡眠醫學具重要參考價值。

賴又嘉技師

Topic：嬰幼兒睡眠調壓

Abstract：本演講將以一名嬰幼兒個案為例，說明雙壓呼吸器調壓的完整過程。內容涵蓋個案病史、睡眠相關症狀及檢查資訊，並依實際調壓紀錄，介紹壓力設定、觀察重點與調整邏輯。嬰幼兒的調壓基本原則雖與成人相近，但仍須特別留意年齡、體型、面罩配戴耐受度、睡眠型態、呼吸事件表現及照顧者配合情形。本次分享將透過個案的雙壓調壓歷程，整理嬰幼兒調壓的實務重點與常見注意事項，作為臨床評估及照護溝通的參考。

劉勝義技師

Topic：Actigraphy Combined with One Channel EEG.

Abstract：1997年美國Respironics發佈的腕動計開始應用於失眠症和日夜節律障礙的診療。因為成本較低、技術簡單和使用方便，所以適合長期居家睡眠-清醒的活動檢測。腕動計利用事件標記按鈕和光通量及加速度感應器，測量受檢者清醒和睡眠的身體活動。檢測資料傳送至電腦後，軟體進行分析並且繪製圖表。目前腕動計更進一步地應用於多眠症、猝睡症和兒童睡眠障礙的診療。

睡眠中心施行腕動檢測時，為了保證資料的準確性，受檢者必須填寫睡眠日誌。它的內容包括就寢時間、起床時間、未戴腕錶時間、午睡時間、生病、飲用咖啡因製品、服用影響睡眠的藥物和其它特殊事件。睡眠技師將檢測資料顯示於電腦螢光幕時，必須立即核對睡眠日誌，並且釐清檢測資料和睡眠日誌的差異，以確認睡眠時間的始末和摒棄雜訊或錯誤資料。

結合睡眠日誌的腕動檢測能夠大概評估躺床時間、入睡潛伏期、睡眠時間、入睡後清醒時間和睡眠效率。2010年德國SOMNOmedics發佈結合單頻道腦電圖的腕動計(SOMNOWatch plus EEG)。它是利用快速傅立葉轉換(Fast Fourier Transformation, FFT)演算法分析F4-M1或F3-M2頻道的腦波頻率，區別清醒期、非快速動眼第一期、第二期、第三期和快速動眼期。隨後睡眠醫師和研究學者發表的文獻已經證實腦波頻率分析的可信度和精確性。

茲以中榮睡眠中心Jing-Jie Wang, and Ming-Feng Wu(2026)的臨床研究實例解說如何利用 $A+B(\alpha + \beta)$ FFT、 $\Delta(\delta)$ FFT和 $\Sigma(\sigma)$ FFT的腦波頻率分析結合紡錘波、K複合波、活動量、睡眠姿勢和光通量參數，手動判讀躺床時間、入睡潛伏期、睡眠時間、入睡後清醒時間、睡眠效率、睡眠期和腦波覺醒。除了可以節省人力和時間，並且能夠提升檢測報告的精確性。



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Symposium 5

林以志醫師

Topic : OSA and Cardiometabolic Outcomes: Predicting Diabetes and MACE for Precision Treatment

Abstract : Obstructive sleep apnea (OSA) is associated with increased risks of diabetes mellitus (DM) and major adverse cardiovascular events (MACE). However, AHI alone may not adequately reflect individual risk. This presentation will review whether sleep-study parameters beyond AHI—including oxygen desaturation index, mean and minimum oxygen saturation, T90, REM-related events, hypoxic burden, and heart-rate responses—can improve prediction of future DM and cardiovascular events.

The second part will compare the effects of different OSA treatment strategies, including CPAP, sleep surgery, and pharmacologic weight-management therapy such as tirzepatide, with emphasis on their impact on cardiometabolic outcomes. Integrating risk prediction with treatment effectiveness may help move OSA management toward more individualized prevention of DM and MACE.

康焜泰醫師

Topic : Pediatric Sleep-Disordered Breathing: From Multisystem Impact to Precision Care

Abstract : Pediatric sleep-disordered breathing (SDB), ranging from primary snoring to obstructive sleep apnea (OSA), is an important health concern in children. Intermittent hypoxemia, sleep fragmentation, and altered autonomic function may contribute to neurocognitive and behavioral problems, cardiovascular and metabolic dysfunction, impaired growth, and reduced quality of life.

This section elaborates the impact of pediatric SDB on multi-systems and highlights the transition toward precision medicine. Advances in polysomnographic phenotyping, upper airway evaluation, biomarkers, imaging, and individualized risk assessment facilitate the diagnosis and treatment of pediatric SDB.

Although adenotonsillectomy remains a cornerstone of treatment, positive airway pressure, weight management, anti-inflammatory therapy, orthodontic interventions, and multidisciplinary care may benefit selected patients. A better understanding of disease heterogeneity and multisystem consequences is essential for early recognition, personalized treatment, and improved long-term outcomes in children with SDB.

蔡明劭醫師

Topic : When OSA Surgery Fails: Why and What's Next?

Abstract : 阻塞型睡眠呼吸中止症 (Obstructive Sleep Apnea, OSA) 的手術治療已逐漸由傳統單一術式，走向以阻塞型態與患者表型為核心的精準治療。然而，即使經過適當手術，部分患者仍可能出現治療反應不佳、殘餘性 OSA，甚至在長期追蹤後再次惡化。當 OSA 手術「失敗」時，真正需要回答的問題不只是「手術是否有效」，而是：我們是否選對病人、找對阻塞位置，並選擇了正確的治療策略？



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本演講將從臨床實務角度重新解析 OSA 手術治療成效不佳的原因，包括術前患者選擇、解剖與非解剖表型、睡眠內視鏡（DISE）評估、多層次上呼吸道阻塞、手術範圍與技術，以及肥胖、體重變化與共病等因素。同時探討如何重新評估術後殘餘 OSA，辨識仍可介入的阻塞位置與可修正因素。

面對手術後仍存在的 OSA，治療並非走到終點，而是進入下一階段的精準決策。透過重新評估與表型導向策略，可進一步整合 CPAP、體重管理與 GLP-1 類藥物、口腔矯治器、進一步的多層次睡眠手術、經口機器人手術（TORS）及其他新興治療，為患者規劃個人化的後續治療路徑。

OSA 手術的成功，不應只由單一次手術或單一 AHI 數值定義。真正的目標，是了解「為什麼沒有達到預期」，並據此找到下一個最適合患者的治療選擇。

Symposium 6

劉泳鈺醫師(Dr. Irene Lau)

Topic : Intervene early, change the future: Multidisciplinary strategies for pediatric sleep disordered breathing.

Abstract : Pediatric sleep-disordered breathing (SDB) is far more than snoring. It is a modifiable risk factor with lasting consequences for craniofacial growth, behavior, cognition, and cardiometabolic health if left unaddressed. Yet SDB remains widely underdiagnosed, often dismissed as a phase children will outgrow, while the window for effective, low-morbidity intervention quietly closes.

This lecture presents a case-driven framework for early identification and management of pediatric SDB, seen through the lens of the pediatric dentist as one of the frontline gatekeepers in the child's airway health journey. Drawing on clinical experience as a pediatric dentist working alongside otolaryngology, oral and maxillofacial surgery, speech-language pathology, and myofunctional therapy, the talk will explore how airway-focused screening can be integrated into everyday clinical practice, the craniofacial and functional red flags that should not be overlooked, and how timely referral and coordinated, team-based treatment from tongue-tie release and myofunctional therapy to orthodontic airway expansion and ENT evaluation can meaningfully redirect a child's growth and developmental trajectory.

何禮妍醫師(Dr. HO Lai-in)

Topic : From Obstruction to Resolution: Restoring the Airway in Syndromic Pediatric OSA

Abstract : For selected syndromic pediatric patients with complex OSA, advanced airway surgery offers a life-changing, definitive pathway from severe obstruction to functional resolution. Detailed assessment, precise planning, and meticulous surgical execution within a multidisciplinary care framework optimize the anatomical framework and restore the functional airway. Dedicated long-term follow-up and timely management remain essential to secure sustained health and quality-of-life trajectories in this vulnerable group of pediatric patients.

陳裕豐醫師

Topic : Rethinking Airway Geography: Decoding the Multifactorial Nature of OSA with Machine Learning



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Abstract : Obstructive sleep apnea (OSA) presents a complex biomechanical challenge and is traditionally evaluated using polysomnography (PSG) for disease severity, drug-induced sleep endoscopy (DISE) for dynamic airway collapse, and cone-beam computed tomography (CBCT) for static anatomy. Previous studies examining the relationship between airway morphology and OSA severity have yielded inconsistent findings, partly because conventional linear regression may not adequately capture the nonlinear and multifactorial nature of the disease.

To address this limitation, a recent study applied a Random Forest machine-learning model to a cohort of 40 patients to evaluate the relative predictive importance of airway parameters for the apnea-hypopnea index (AHI). DISE identified complete oropharyngeal collapse as being associated with greater disease severity; however, patterns of dynamic obstruction at the velum, tongue base, and epiglottis showed limited correlation with overall AHI. Likewise, individual static CBCT parameters demonstrated limited predictive value when assessed using conventional linear regression. In contrast, nonlinear machine learning substantially improved prediction and highlighted maximal cross-sectional area (Max-CSA) as one of the most important predictors of OSA severity.

These findings offer a different perspective on airway morphology. Max-CSA measurements at the velum, oropharynx, and tongue-base levels showed greater predictive importance than either the narrowest airway dimension (Min-CSA) or most dynamic DISE parameters. This observation introduces the concept of structural reserve capacity: a larger maximal airway dimension may provide greater anatomical reserve, helping preserve airway patency as neuromuscular tone decreases during sleep. From a preoperative surgical perspective, CBCT may therefore provide information beyond static anatomical description, potentially serving as a useful tool for estimating overall disease severity and underlying airway resilience when interpreted within a nonlinear, multivariable framework.

Symposium 7

張宏名 教授

Topic : Paternal and Maternal Early-life Sleep Deprivation Divergently Program Offspring Development: A Sex-Specific Dichotomy

Abstract : Developmental origins of health and disease (DOHaD) is a well-established framework proposing that environmental factors during early-life, such as chronic sleep deprivation (CSD), can permanently influence individual's long-term health and vulnerability to chronic diseases. However, the transgenerational impact of parental early-life sleep history on the offspring remains poorly understood. Moreover, whether parental CSD would exert sex-specific, divergent programming effects on offspring health still remains largely unknown. This study aims to delineate the transgenerational consequences of maternal and paternal CSD on musculoskeletal, neuro-cognitive, and metabolic development of the offspring. Weaning male and female rats were subjected to three weeks of CSD (PPD 21-42 days). Following recovery, rats were mated, and their offspring were evaluated at adulthood. Multidisciplinary approaches including spectrometric, ultrastructural, biochemical, immunohistochemical, bioenergetic, and behavioral methodologies were used to detect the calcium intensity, protein expression, cellular bioenergetics, oxidative stress level, osteo-microarchitecture, and cognitive/metabolic function of the hippocampus, liver, and femoral bone, respectively. Maternal CSD significantly compromised offspring neuro-cognitive and metabolic function, evidenced by reduced hippocampal calcium and pCREB expression, exhibit anxiolytic-like behavior in elevated plus-maze test, increased hepatic stress protein, impaired serum metabolic profiles, alongside elevated hippocampal and hepatic



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malondialdehyde level and decreased bio-energetic markers (cytochrome oxidase, Na⁺/K⁺ ATPase). Conversely, paternal CSD specifically resulted in reduced bone mineral density and disrupted trabecular microarchitecture of the femoral bone. These findings demonstrate a sex-specific dichotomy in developmental programming of the offspring. Maternal CSD programs “software” deficits in neuro-cognitive and metabolic function, while paternal CSD impairs “hardware” musculoskeletal integrity.

陳玠文助理教授

Topic : Gut-Brain Axis Modulation in Sleep Disturbance: Effects of Probiotic Intervention in Animal Models of Chronic Insomnia and Alzheimer's Disease

Abstract : Background: Sleep disturbance is closely linked to autonomic dysfunction, neuroinflammation, affective symptoms, and cognitive decline. Growing evidence also implicates the gut-brain axis in both chronic insomnia and Alzheimer's disease (AD), but the microbial changes accompanying probiotic-related improvements in sleep and brain function remain incompletely understood. We therefore evaluated probiotic interventions in two distinct animal models: rats with caffeine-induced chronic insomnia and APP/PS1 transgenic mice.

Methods: In the chronic insomnia study, sustained caffeine release through subcutaneous osmotic pumps was used to disrupt sleep in rats for four weeks. Animals received either a live probiotic preparation or its heat-treated postbiotic preparation for six weeks, beginning two weeks before caffeine exposure. Wireless electroencephalogram, electromyogram, and electrocardiogram recordings were combined with behavioral testing and analyses of inflammatory markers and neural activity in sleep-promoting and wake-promoting brain regions. Fecal microbiota were characterized using 16S rRNA sequencing. In the AD study, APP/PS1 mice received a probiotic formulation combining two strains for eleven weeks, beginning at 20 weeks of age, an early stage in the disease course. Sleep and autonomic function, anxiety-like behavior, learning and memory, amyloid-beta deposition, neuroinflammation, and fecal microbiota were assessed during and after the intervention.

Results: In the chronic insomnia model, sustained caffeine exposure increased wakefulness, reduced quiet sleep, and disrupted sleep architecture during the light phase. It also increased anxiety-like behavior, impaired memory, elevated plasma corticosterone and inflammatory markers, activated wake-promoting hypothalamic neurons, and suppressed sleep-promoting neurons. Both the live probiotic and heat-treated postbiotic preparations ameliorated these abnormalities and improved autonomic regulation during sleep. Gut microbiota analysis showed that the live probiotic produced a more consistent microbial community structure across animals, whereas the heat-treated preparation had a less pronounced effect. In the AD study, APP/PS1 mice showed prolonged sleep latency, more frequent sleep interruptions, and lower delta power during quiet sleep, together with impaired self-care, greater anxiety-like behavior, and deficits in short- and long-term memory. The two-strain probiotic formulation shortened sleep latency, reduced anxiety-like behavior, enhanced spatial learning and memory, and decreased amyloid-beta deposition and neuroinflammation. Gut microbiota analysis showed that AD mice had greater individual variation in microbial composition, whereas probiotic treatment partially reduced this variability and promoted a more



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consistent microbial community structure.

Conclusions: Across two distinct models of sleep disturbance, probiotic or postbiotic interventions improved sleep patterns, autonomic regulation, and behavioral outcomes while attenuating neuropathological changes. These improvements were accompanied by changes in gut microbial community structure, supporting further investigation of the gut–brain axis as a potential therapeutic target for chronic insomnia and AD-related sleep disturbance.

Keywords: chronic insomnia; Alzheimer's disease; sleep; autonomic regulation; probiotics; gut-brain axis; gut microbiota

張芳嘉教授

Topic : IPCEF1-mediated NMDA receptor trafficking links IL-1 β to epilepsy and cortical synchrony

Abstract : Epilepsy is frequently accompanied by severe sleep disturbances, yet the molecular mechanisms linking neuroinflammation to both seizure generation and sleep dysfunction remain poorly understood. Here, we identified a neuroinflammatory signaling cascade that couples epileptogenesis with non-rapid eye movement (NREM) sleep disruption using a pentylenetetrazol (PTZ)-kindled mouse model of chronic epilepsy. We demonstrate that activation of interleukin-1 β (IL-1 β) signaling stimulates the phosphatidylinositol-3,4,5-trisphosphate (PIP3)–AKT–NF- κ B pathway, leading to transcriptional upregulation of interaction protein for cytohesin exchange factors 1 (IPCEF1). Elevated IPCEF1 enhances synaptic membrane trafficking of N-methyl-D-aspartate receptors (NMDARs), particularly the GluN2B subunit, thereby promoting neuronal hyperexcitability, increasing seizure susceptibility, and impairing NREM slow-wave activity. Pharmacological inhibition of IL-1 receptors or PIP3–AKT signaling attenuated seizure severity and restored normal sleep architecture. Notably, IPCEF1 knockdown suppressed epileptic activity and rescued physiological NREM slow-wave synchronization without affecting total sleep duration, indicating that cortical synchrony can be selectively restored independent of sleep quantity. Together, these findings identify the IL-1 β –PIP3–AKT–NF- κ B–IPCEF1–NMDAR signaling axis as a mechanistic link between neuroinflammation, epileptogenesis, and sleep dysfunction, and establish IPCEF1 as a promising therapeutic target for simultaneously alleviating seizures and epilepsy-associated sleep comorbidities.

11/1

Keynote Lecture 2

Prof. Yves Dauvilliers

Topic : Hypersomnolence, Narcolepsy and Idiopathic Hypersomnia: Mechanisms and Implications for Precision Medicine

Abstract : Hypersomnolence is a frequent multidimensional complaint with excessive daytime sleepiness, excessive quantity of sleep, and sleep inertia. It is associated with altered quality of life, accidents, and often with cardiovascular, psychiatric and neurological disorders. Many different sleep and non-sleep causes are associated with hypersomnolence. Current criteria used for presence of hypersomnolence and related disorders need to be improved and revised. The more severe causes of central disorders of hypersomnolence



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are narcolepsy type 1 and type 2, idiopathic hypersomnia, being orphan sleep disorders. The main pathophysiologic feature is thought to reflect a deficiency of arousal systems, rather than an overactivity of sleep systems or an imbalance between both. However, large gaps persist in our understanding of the neurobiological causes of hypersomnolence and related disorders except for narcolepsy type 1 with impaired neurotransmission of hypocretin/orexin, by a probable autoimmune process. We need to 1/ better understand what determines an individual's sleep need and identify biomarkers for the different forms of hypersomnolence, 2/ better precise how disorders of hypersomnolence progress over the years, and 3/ better treat our patients with precision medicine.

Keynote Lecture 3

Dr. Philip Cheng

Topic : Personalization of Sleep and Circadian Medicine

Abstract : Insomnia and circadian misalignment are highly prevalent, yet standard interventions are typically delivered as one-size-fits-all protocols that overlook individual differences in symptom presentation, treatment response, and biological timing. This talk examines the impact of shifting from generalized and static approaches to individualized approaches in sleep and circadian medicine, drawing on research spanning digital behavioral interventions and wearable-based circadian assessment. Two organizing themes are addressed: first, how attention to multilevel factors that impact digital interventions, and evaluating effectiveness across various populations; and second, how individual-level circadian phase data can move interventions beyond fixed, schedule-based recommendations toward timing that reflects a person's actual physiology. Together, these themes point toward a broader model of precision sleep/circadian health — one in which personalization is built on both social determinants and biological measurement, rather than treated as an afterthought to standardized care. The influence of infrastructure, measurement, and implementation challenges will be discussed in the context of translating this model into scalable practice.

Symposium 8

黃舒儀醫師

Topic : Artificial Intelligence in Sleep Medicine

Abstract : 近年來 AI 在睡眠醫學領域發展相當迅速，從睡眠檢查判讀、自動化診斷、風險預測，到結合穿戴裝置與居家監測等應用皆有不少進展。介紹AI在睡眠醫學中的主要應用、最新發展趨勢，以及未來可能的臨床實務方向。

人工智慧 (AI) 與機器學習技術的迅速演進，正在重塑睡眠醫學的臨床與研究典範。近年 AI 在睡眠醫學領域的關鍵進展與臨床實務應用，範疇涵蓋四大維度：診斷與監測、治療與優化、臨床照護 workflow、以及前瞻醫學研究。在診斷端，深度學習模型已在多頻道睡眠生理檢查 (PSG) 自動分期與呼吸事件判讀中展現超越傳統專家間一致性 (inter-rater agreement) 的水準，結合穿戴式裝置、智慧音訊與多模態生理訊號更推動了居家篩檢與長時監測。在治療端，機器學習有助於解析阻塞型睡眠呼吸中止症 (OSA) 之異質表型 (phenotypes) 與內在型 (endotypes)，並精準預測連續陽壓呼吸器 (CPAP) 的治療順從性；此外，AI 亦拓展至快速動眼期睡眠行為障礙 (RBD) 的神經退化轉化風險預測、時間



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生物療法 (chronotherapy) 的最佳給藥排程，以及數位失眠認知行為治療 (CBT-I) 的個人化調整。最後，本演講將深入剖析臨床落地所面臨的實質瓶頸，包括資料異質性、演算法偏差、跨中心泛化落差 (generalization gap)、法規監管與倫理治理規範。透過整合常規臨床巨量數據與先進 AI 工具，期望引領睡眠醫學邁向真正的個體化與精準醫療。

李佩玲醫師

Topic : Beyond the Sleep Lab: Integrating Sleep Apnea, Sleep Regularity, and Circadian Rhythm Through Sleep Technology

Abstract : Advances in wearable and non-wearable sleep technologies, together with artificial intelligence, have extended sleep assessment beyond the sleep laboratory. Current technologies can detect obstructive sleep apnea (OSA) while providing longitudinal information on sleep duration, timing, regularity, and circadian patterns.

This presentation will review current approaches to OSA detection using medical- and consumer-grade technologies and discuss the additional information derived from repeated measurements. The apnea-hypopnea index (AHI) may vary substantially across nights, while single-night testing provides limited information on habitual sleep patterns. Longitudinal monitoring allows assessment of AHI variability together with sleep duration and regularity, chronotype, and circadian rhythm. Physiological measures, including hypoxic burden and apnea-specific pulse-rate responses, may further characterize the consequences of OSA beyond event frequency. Integrating apnea detection with sleep and circadian information provides a broader assessment of OSA and sleep health. How these multidimensional measures should be interpreted and incorporated into clinical practice remains an important consideration as sleep technologies continue to evolve.

陳永瑄醫師

Topic : Cardiometabolic Phenotyping in OSA: Who Benefits Most from Treatment?

Abstract : Obstructive sleep apnea (OSA) is a heterogeneous disorder, and the apnea-hypopnea index alone does not adequately capture individual cardiometabolic risk. Emerging evidence suggests that nocturnal hypoxemia, sleep characteristics, symptom profiles, metabolic dysfunction, and inflammation may identify clinically meaningful OSA phenotypes with different cardiovascular risks and treatment responses. This presentation will review current approaches to cardiometabolic phenotyping in OSA and explore how these characteristics may help identify patients most likely to benefit from treatment. Moving beyond an AHI-centered approach may enable more precise risk stratification and support personalized treatment strategies aimed at improving cardiovascular and metabolic outcomes.

Symposium 9

陳兆煒醫師



台灣睡眠醫學學會 115 年度會員大會暨第 24 屆學術研討會 24th Annual Meeting of Taiwan Society of Sleep Medicine (TSSM)

Topic：從臨床需求到智慧睡眠解決方案：Biodesign 在睡眠醫學的精準落地

Abstract： This presentation introduces the Biodesign process as a practical framework for developing innovations in sleep medicine. It follows the three stages of Identify, Invent, and Implement, beginning with clinical immersion, need characterization, and need screening, then moving through concept development, clinical validation, intellectual property, regulatory strategy, reimbursement, and commercialization planning. A sleep-medicine case study shows how an unmet need in obstructive sleep apnea assessment led to the development and initial validation of an AI-enabled, microphone-based jaw-movement and respiratory-event detection system for home use. The final section examines what happens after a project is launched: how hospital and university resources, accelerators, mentors, industry partners, and early adopters help a team move from a research prototype toward a deployable product. It also explains how development milestones, early clinical traction, and a credible regulatory and reimbursement plan shape subsequent fundraising and investor readiness.

邱銘章醫師

Topic：神經退化性疾病與其常見的睡眠障礙：臨床與致病機轉的探討

Abstract： Sleep disorders are common in patients with neurodegenerative diseases and may significantly affect disease progression and quality of life. This presentation will discuss the clinical features of common sleep disorders associated with neurodegenerative diseases, as well as their underlying pathophysiological mechanisms, with a focus on the complex interactions between sleep, neurodegeneration, and disease-related symptoms.

楊鈞百醫師

Topic：經顱磁刺激治療 (rTMS) 在失眠的運用

Abstract： 重複性經顱磁刺激 (rTMS) 為一種非侵入性腦部刺激技術，近年基於系統性文獻回顧 (Meta-analysis) 及雙盲臨床試驗 (RCTs) 等神經科學實證，已逐漸被應用於治療慢性失眠。

其主要作用原理在於改善失眠患者大腦皮質的「過度喚起」狀態。rTMS 透過磁場脈衝穿透頭骨，於特定腦區（如背外側前額葉皮質）誘發微電流以調節神經活動。針對單純失眠，臨床多採「低頻」刺激來抑制並穩定活躍腦區，促使大腦放鬆；若失眠伴隨憂鬱症狀，則傾向以「高頻」刺激調節神經傳導物質，兼顧情緒與睡眠的改善。

儘管文獻均支持 rTMS 在失眠治療上的安全性與潛力，但目前包含台灣衛福部 (TFDA) 在內，其官方首要核准適應症仍為「難治型憂鬱症」。因此，將 rTMS 專門用於治療單純失眠，現階段在臨床上多屬於「仿單核准適應症外使用 (Off-label use)」。

Symposium 10

黃玉書教授

Topic： Efficacy and safety of repetitive transcranial magnetic stimulation (rTMS) in narcolepsy with



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depression : a preliminary study

Abstract : Background: Repetitive transcranial magnetic stimulation (rTMS) is a non-invasive neuromodulation technique that uses rapidly changing magnetic fields to induce electrical currents in targeted cortical regions, thereby modulating cortical excitability and synaptic plasticity. The efficacy, tolerability, and safety of several rTMS protocols have been established in double-blind, sham-controlled randomized trials and meta-analyses of treatment-resistant depression. Depression and insomnia are among the most common psychiatric comorbidities of narcolepsy, while hypersomnia symptoms occur in up to half of patients with depression. However, the relationship between hypersomnia and depression remains incompletely understood. Narcolepsy and depression appear to have a bidirectional association, and their comorbidity rate has been estimated to exceed one-third. Pharmacological management is often challenging because antidepressant response may be suboptimal, and psychotropic adverse effects may aggravate excessive daytime sleepiness, nocturnal sleep disruption, or cognitive impairment. Therefore, rTMS may offer a clinically meaningful non-pharmacological treatment option for patients with narcolepsy and comorbid depression.

Methods: We designed a randomized, single-blind, case-controlled, parallel-group study with an additional major depressive disorder (MDD) comparison group. Adults aged 20–45 years who met the ICSD-3 criteria for narcolepsy and had comorbid depression diagnosed according to DSM-5 criteria. Participants with narcolepsy and depression were assigned to one of three interventions: high-frequency rTMS using intermittent theta-burst stimulation (iTBS). Treatment was delivered two to three times weekly for two to four consecutive weeks, for a total of 10 sessions, targeting the left dorsolateral prefrontal cortex. Outcomes included depressive symptom severity measured using the Beck Depression Inventory-II, daytime sleepiness assessed using the Epworth Sleepiness Scale and a visual analogue scale, subjective sleep quality assessed using the Pittsburgh Sleep Quality Index, and objective sleep–wake parameters measured by actigraphy. Outcomes were evaluated after treatment and during follow-up for up to six months.

Results: rTMS was associated with improvements in depressive symptoms, excessive daytime sleepiness, subjective nighttime sleep quality, and actigraphy-derived sleep parameters. The therapeutic response appeared particularly prominent in patients with narcolepsy type 2 and comorbid depression. Improvements in selected clinical and sleep-related outcomes were sustained for up to six months after treatment. These findings suggest that improvements were not limited to mood symptoms but extended to clinically relevant sleep and daytime functional domains in this difficult-to-treat population over extended follow-up periods. No treatment-related adverse events were observed during the study period.

Conclusions: Left dorsolateral prefrontal rTMS may improve both depressive and sleep-related symptoms in patients with narcolepsy and comorbid depression, particularly those with narcolepsy type 2. Its potential benefits across mood, daytime alertness, nighttime sleep, and daily functioning suggest that rTMS may serve as an additional treatment option.



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Topic : Effects of intermittent theta-burst stimulation on sleep quality in patients with narcolepsy type 1 and type 2 with comorbid depression

Abstract : Background

Patients with type 1 (NT1) and type 2 (NT2) narcolepsy often experience comorbid depression that worsens sleep quality. Here, we investigated the impact of left dorsolateral prefrontal cortex (DLPFC) intermittent theta-burst stimulation (iTBS) on sleep quality in NT1 and NT2 patients with comorbid depression, assessed by subjective questionnaires and actigraphy.

Methods

This is an open-label clinical study and a total of fifty-one patients with narcolepsy and comorbid depression were recruited. Intermittent theta burst stimulation (iTBS) was administered over the left dorsolateral prefrontal cortex (DLPFC) at 1,000 pulses/session (9 minutes duration) at 100% RMT in three consecutive sessions. Clinical assessments were performed at baseline and post-treatment follow-ups by subjective questionnaires and actigraphy monitoring during the follow-up period. Within-group changes were evaluated using the Wilcoxon signed-rank test. Differences between groups were evaluated using the Mann–Whitney U test.

Results

The NT2 group demonstrated significant, sustained reductions in the total Pittsburgh Sleep Quality Index (PSQI) scores across all follow-ups ($p = 0.012$), driven by improvements in subjective sleep quality, sleep latency, and daytime functioning. The NT1 group showed minimal change in total PSQI scores, yielding a significant between-group difference ($p = 0.013$). In Depressive Symptoms, NT2 patients showed a substantially higher reduction in the BDI scores compared to NT1 patients ($p = 0.001$). Both groups showed initial modest improvements in the ESS scores that attenuated over time, with no significant between-group differences during later follow-ups. Most actigraphy parametric variables showed no significant within-group changes across follow-ups.

Conclusion

Left DLPFC iTBS significantly improved subjective sleep quality and depressive symptoms in NT2 patients with comorbid depression, whereas NT1 patients demonstrated minimal response. These findings suggest that therapeutic response to prefrontal neuromodulation can be subtype-dependent, likely reflecting the more severe, uncompensated orexinergic deficit in NT1. Randomized sham-controlled trials are required to confirm these preliminary findings.

蕭穎聰教授

Topic : A Preliminary Longitudinal ^{18}F -FDG PET Study of Cerebral Glucose Metabolism in Narcolepsy

Abstract : Previous ^{18}F -FDG PET studies have demonstrated altered cerebral glucose metabolism in patients with narcolepsy, including distinct metabolic patterns between narcolepsy type 1 (NT1) and type 2 (NT2). However, the longitudinal evolution of these metabolic alterations remains unclear. This preliminary study aims to investigate changes in cerebral glucose metabolism over time using serial ^{18}F -FDG PET imaging in patients with narcolepsy. Within-subject metabolic changes will be evaluated using regional and voxel-based analyses and explored in relation to clinical characteristics. This longitudinal approach may clarify whether metabolic abnormalities in narcolepsy represent stable disease-related features or dynamic changes associated with disease course, treatment, or neurobiological development.



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Satellite Symposium

Prof. Peter Cistulli

Topic : Enhancing PAP Clinical Outcomes Through Connected Care, Digital Health, and Personalized Treatment

Abstract : Positive airway pressure (PAP) therapy remains a cornerstone of treatment for obstructive sleep apnea, but achieving optimal clinical outcomes requires more than prescribing an effective device. Early experiences with therapy, treatment-related side effects, patient engagement, and timely clinical support can strongly influence long-term use and effectiveness.

Connected PAP platforms and digital health technologies are creating opportunities to move from episodic follow-up toward more proactive, data-informed care. Remote monitoring can identify problems such as mask leak, residual respiratory events, pressure intolerance, and declining usage, while patient-facing applications, digital education, and telehealth can support engagement and facilitate earlier, targeted intervention.

This presentation will examine how connected care can be integrated into clinical pathways to support PAP initiation and long-term management. It will also explore how device-derived data, clinical information, and patient-reported experience can be combined to personalise treatment and support, with the goal of improving adherence, therapeutic effectiveness, patient experience, and efficiency of care.