Wee Seng Kwee

Senior Principal Physiotherapist, Rehabilitation Centre, TTSH
Associate Professor, SIT

Research Interests:

- Neurorehabilitation
- Vestibular Rehabilitation
- Rehabilitation Technology – Robotics, Virtual Reality, Brain-Computer Interface, Wearable Sensors

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Biography

Associate Professor Wee Seng Kwee is a Senior Principal Physiotherapist who has been working in Tan Tock Seng Hospital Rehabilitation Centre, Singapore, for the past 28 years. He graduated from King's College London with BSc(Hons) Physiotherapy in 1994, under the Public Service Commission (PSC) Scholarship. He obtained his PhD in Neurorehabilitation from the University of Southampton, United Kingdom in 2015. Currently, he holds the joint appointment as Associate Professor at the Singapore Institute of Technology, teaching in the undergraduate physiotherapy, occupational therapy and nursing programme. In addition, he is a Research Scientist at the Rehabilitation Research Institute of Singapore (RRIS), a joint research institute by NHG, NTU and A*STAR. Being a passionate clinical educator, he is an active member of the Education Group of the International Industry Society in Advanced Rehabilitation Technology (IISART); contributing to the cause of creating awareness of clinical application of rehabilitation technology.

He is a Certified Brain Injury Specialist and a Vestibular Rehabilitation Therapist who manages patients with acquired brain injury, balance and vestibular dysfunction. He has been sharing his expertise in neurorehabilitation, vestibular rehabilitation and robot-assisted therapy via workshops conducted in Asia-Pacific and Europe since 1999. Prof Wee has published and presented papers on vestibular rehabilitation, brain injury, stroke and rehabilitation technology in local and international scientific conferences. He serves as an Executive Committee Member of the Neuro-Vestibular Special Interest Group of the Singapore Physiotherapy Association.

Selected Publications

- Wee SK, Hughes AM, Warner MB, Burridge JH. **Trunk Restraint to Promote Upper Extremity Recovery in Stroke Patients: A Systematic Review and Meta-analysis**. *Neurorehabilitation and Neural Repair*. 2014; 28(7):660-677.
- Wee SK, Hughes AM, Warner MB, Brown S, Cranny A, Mazomenos EB, Burridge JH. **Effect of Trunk Support on Upper Extremity Function in People with Chronic Stroke and Healthy Controls**. *Physical Therapy*. 2015; 95(8):1163-1171.
- Alhwoaimel N, Turk R, Warner MB, Verheyden G, Wee SK, Hughes AM. **Do Trunk Exercises Improve Trunk and Upper Extremity Performance, Post Stroke? A Systematic Review and Meta-analysis**. *Neurorehabilitation*. 2018; 43(4):395-412.
- Lin J, Anopas D, Milbreta U, Lin PH, Chin JS, Zhang N, Wee SK, Tow A, Ang WT, Chew SY. **Regenerative Rehabilitation: Exploring the Synergistic Effects of Rehabilitation and Implantation of Bio-functional Scaffold in Enhancing Nerve Regeneration**. *Biomaterials Science.* 2019; 7(12):5150-5160. doi: 10.1039/C9BM01095E.

- Liang P, Kwong WH, Sidarta A, Yap CH, Tan WK, Lim LS, Chan PY, Kuah CWK, Wee SK, Chua K, Quek C, Ang WT. **An Asian-centric Human Movement Database Capturing Activities of Daily Living**. *Scientific Data-Nature*. 2020; 7:290. https://doi.org/10.1038/s41597-020-00627-7.
- Alhwoaimel N, Warner MB, Hughes AM, Ferrari F, Burridge JH, Wee SK, Verheyden G, Turk R. **Concurrent Validity of a Novel Wireless Inertial Measurement System for Assessing Trunk Impairment in People with Stroke**. *Sensors*. 2020; 20:1699. doi:10.3390/s20061699.
- Wee SK, Ho CY, Tan SL, Ong CH. **Enhancing Quality of Life in Progressive Multiple Sclerosis with Powered Robotic Exoskeleton**. *Multiple Sclerosis.* 2021; 27(3):483–487. doi: 10.1177/1352458520943080.
- Lambercy O, Lehner R, Chua K, Wee SK, Rajeswaran DK, Kuah CWK, Ang WT, Liang P, Campolo D, Hussain A, Aguirre-Ollinger G, Guan C, Kanzler CM, Wenderoth N and Gassert R. **Neurorehabilitation From a Distance: Can Intelligent Technology Support Decentralized Access to Quality Therapy?**. *Front. Robot. AI*. 2021; 8:612415. doi:10.3389/frobt.2021.612415.
- Alhwoaimel N, Turk R, Hughes AM, Ferrari F, Burridge JH, Wee SK, Verheyden G, Warner MB. **Instrumented Trunk Impairment Scale (iTIS): A Reliable Measure of Trunk Impairment in the Stroke Population**. *Topics in Stroke Rehabilitation*. 2021; 28(6):456 – 463. doi.org/10.1080/10749357.2020.1834273.
- Wee SK, Warner MB, Hughes AM, Burridge JH. **Longitudinal Analysis of the Recovery of Trunk Control and Upper Extremity in People with Subacute Stroke: An Individual Growth Curve Approach**. *Topics in Stroke Rehabilitation.* 2022; 29(1):58-73. doi.org/10.1080/10749357.2021.1878333.

Notable Research Awards & Grants From Past 5 Years

Name of Awards & Grants	Year Obtained
Ministry of Health (MOH) Enabling Innovation Grant: National Innovation Challenge (NIC) on Active and Confident Ageing	2017