



Joseph Lo Zhiwen

Consultant Vascular and Endovascular Surgeon, Department of Surgery, Woodlands Health
NHG-LKCMedicine Clinician-Scientist Fellow

Research Interests:

- Diabetic Limb Salvage
- Wound Care
- Artificial Intelligence in Healthcare
- Chronic venous insufficiency and iliac vein pathology
- Open and endovascular renal dialysis access

Email: zhiwen_lo@whc.sg

Biography

Joseph is a Vascular Surgeon by training with clinical and research interests in diabetic limb salvage, wound care, Artificial Intelligence in healthcare, health economics, iliac venous disease and renal vascular access. He is currently the lead of Diabetic Foot in Primary and Tertiary (DEFINITE) Care and co-lead of Wounds iCare Collaborative (WiCC) Clinical and Research Workgroup. He is a NHG-LKCMedicine Clinician-Scientist Fellow and to date, has received more than \$3,500,000 in dedicated research grants, co-authored 54 publications, reviewed for 15 journals and is on the editorial board of 5 journals. He had been awarded the Society of Vascular Surgery International Scholars Program in 2020 and NMRC Research Training Fellowship in 2021. He serves on the board of the Chapter of General Surgeons, College of Surgeons (Singapore) and is currently the Secretary of the Society for Vascular and Endovascular Surgeons of Singapore.

Selected Publications

- **ZJ Lo**, X Lim, D Eng, J Car, Q Hong, E Yong, L Zhang, S Chandrasekar, GWL Tan, YM Chan, SC Sim, CW Oei, X Zhang, A Dharmawan, YZ Ng, K Harding, Z Upton, CW Yap, BH Heng. Clinical and economic burden of wound care in the tropics: a 5-year institutional population health review. *Int Wound J.* 2020; 17:790-803
- KS Chan, **ZJ Lo**. Wound assessment, imaging and monitoring systems in diabetic foot ulcers: A systematic review. *Int Wound J.* 2020; 1-15
- **ZJ Lo**, NK Surendra, A Saxena, J Car. Clinical and economic burden of diabetic foot ulcers: A 5-year longitudinal multi-ethnic cohort study from the tropics. *Int Wound J.* 2021; doi:10/1111/iwj.13540

- KS Chan, YM Chan, AHM Tan, S Liang, YT Cho, Q Hong, E Yong, LRC Chong, L Zhang, GWL Tan, S Chandrasekar, **ZJ Lo**. Clinical validation of an artificial intelligence-enabled wound imaging mobile application in diabetic foot ulcers. *Int Wound J*. 2021; doi:10.1111/iwj.13603
- **ZJ Lo**, S Chandrasekar, E Yong, Q Hong, L Zhang, LRC Chong, G Tan, YM Chan, HY Koo, T Chew, NF Sani, KY Cheong, LRQ Cheng, AHM Tan, S Muthuveerapa, TP Lai, CC Goh, GY Ang, Z Zhu, WH Hoi, JHX Lin, DEK Chew, B Lim, PS Yeo, H Liew. Clinical and Economic Outcomes of a Multi-Disciplinary Team Approach in a Lower Extremity Amputation Prevention Program for Diabetic Foot Ulcer Care in an Asian Population – A Case-Control Study. *Int Wound J*. 2021; doi:10.1111/iwj.13672
- T Riandini, D Pang, MPHS Toh, CS Tan, AMTL Choong, **ZJ Lo**, S Chandrasekar, ES Tai, KB Tan, K Venkataraman. National rates of lower extremity amputations in people with and without diabetes in a multi-ethnic Asian population: a ten-year study in Singapore. *Eur J Vasc Endovasc Surg*. 2021; doi:10.1016/j.ejvs.2021.09.041

Notable Research Awards & Grants From Past 5 Years

Name of Awards & Grants	Year Obtained
A*STAR Biomedical Research Council funding with NTU LKCMedicine and Institute of Medical Biology for “Biochemical and Microbial Analysis of the Wound Environment” (H17/01/a0/0Z9)	2018
A*STAR-Skin Research Institute of Singapore and Konica-Minolta for “Clinical Validation and Development of WoundAide”	2019
Collaboration with Tetsuyu for “Clinical Validation of C4W Imaging System”	2019
A*STAR-Skin Research Institute of Singapore for “Wound Care Innovations in Tropics National Wound Registry” (H17/01/a/0/0Y9)	2019
A*STAR-Skin Research Institute of Singapore for “Lower Extremity Amputation Prevention Program (LEAPP) Collaboration” (H17/01/a/0/0PP9)	2019
Collaboration with Urgo Medical for “Evaluation of the efficacy and safety of a sequential treatment protocol in the management of venous leg ulcers”	2020
NHG Population Health Grant (PHG20/S/X/1/1) with KTPH, NHGP for “Diabetic Foot in Primary and Tertiary (DEFINITE) Care”	2020
Skin Innovation Grant with eKare funding and Skin Research Institute of Singapore (SIG2002) funding for “Pilot study on efficacy of patient-owned wound surveillance system for diabetic foot ulcer care (ePOWS Study)”	2020
National Research Medical Council (NMRC) Research Training Fellowship (RTF) for “Evaluating and Decreasing the Socio-Economical Burden of Wound Care in Singapore through Health Systems Innovations and Health Literacy” (FLWSHP19nov-0015)	2021
Collaboration with AITI Solutions (spin-off from Delta Capita Limited) for “Clinical Validation of Artificial Intelligence Image Analysis on Asian Wound Images”	2021

Translating Research Into Healthcare

- A*STAR prototypes 3D printer for wounds. *Channel News Asia*. Published 8 September 2018. <https://www.channelnewsasia.com/news/videos/a-star-prototypes-3d-printer-for-wounds-video-10695938>
- Five-year review of Singapore primary care system demonstrates rising impact of chronic wounds. *iWounds News*. Published 20 March 2020. <https://iwoundsnews.com/five-year-review-singapore-rising-impact-chronic-wounds/>
- Clinical Validation and Improvement of WoundAide Imaging System. *NHG e-Catalyst*. Published Nov-Dec 2020. https://www.research.nhg.com.sg/wps/wcm/connect/49652d0040f223fb8780f70c9e9c42b6/eCatalyst_42.pdf?MOD=AJPERES
- Rate of amputation drastically reduced for more than 2,700 patients with diabetes who participated in the foot care programme (DEFINITE Care Program). *Lianhe Zaobao*. Published 1 October 2021. <https://www.zaobao.com.sg/news/singapore/story20211002-1199251>
- NHG launches new program to reduce diabetes-related amputations (DEFINITE Care Program). *8world*. Published 1 October 2021. <https://www.8world.com/singapore/nhg-diabetes-foot-care-1605371>
- NHG programme for diabetic foot disease reduces major amputations by 40 per cent (DEFINITE Care Program). *The Straits Times*. Published 7 October 2021. <https://www.straitstimes.com/singapore/health/nhg-programme-for-diabetic-foot-disease-reduces-major-amputations-by-40-per-cent>
- 40 per cent reduction in amputation cases for patients with diabetes (DEFINITE Care Program). *Berita Harian*. Published 7 October 2021. <https://www.beritaharian.sg/setempat/kes-amputasi-bagi-pesakit-kencing-manis-kurang-40>
- Putting a “DEFINITE” Foot Forward. 2020/2021 NHG Corporate Yearbook : Population Health. <https://corp.nhg.com.sg/Documents/CYB%202021%20Digital/population-health.html>