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Full Name	Won Seok Chang
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Department	Neurosurgery
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Curriculum Vitae	
Education	Yonsei university, M.D (2000) Yonsei university, M.Sc (2011) Yonsei university, Ph.D (2019)
Professional Experience	2001-2005 Neurosurgical residency, Gang-Nam Severance hospital 2008-2011 Clinical fellow, Department of Neurosurgery, Yonsei University college of medicine 2010 Research visit, Mayo clinic, Rochester, MN (USA) 2011-2014 Clinical assistant professor, Department of Neurosurgery, Yonsei University college of medicine 2014-2019 Assistant professor, Department of Neurosurgery, Yonsei University college of medicine 2018-2019 Research fellow, University of Toronto, the hospital for sick children (epileptology), ON (Canada) 2019-2024 Associated professor, Department of Neurosurgery, Yonsei University college of medicine 2024- Professor, Department of Neurosurgery, Yonsei University college of medicine
Research Interests	Epilepsy surgery, neuromodulation, neuroscience, non/minimally invasive brain surgery
Membership	Korean neurosurgical society Korean epilepsy society Korean society of stereotactic and functional neurosurgery Korean society of therapeutic ultrasound
Major Publications (for the past 5 years)	Optimal timing for drug delivery into the hippocampus by focused ultrasound: A comparison of hydrophilic and lipophilic compounds Seo Y, Chang KW, Lee J, Kong C, Shin J, Chang JW, Na, YC, Chang WS. <i>Heliyon</i> . 2024;e29480 Stereotactic radiosurgery for noncavernous sinus dural arteriovenous fistulas: treatment outcomes and their predictors Kim J, Hong SW, Jung HH, Kim YB, Chung J, Chang WS, Park KY. <i>J Neurosurg</i> . 2023 (E-pub) Long-term results on the suppression of secondary brain injury by early administered low-dose baclofen in a traumatic brain injury mouse model.

Park JY, Park J, Baek J, Chang JW, Kim YG, Chang WS. *Sci Rep.* 2023 Oct 30;13(1):18563

Long-lasting restoration of memory function and hippocampal synaptic plasticity by focused ultrasound in Alzheimer's disease

Kong C, Ahn K, Kim S, Park JY, Na YC, Chang JW, Chung S, Chang WS. *Brain Stimulation* 2023 16(3):857-866

Combined Effects of Focused Ultrasound and Photodynamic Treatment for Malignant Brain Tumors Using C6 Glioma Rat Model.

Park J, Kong C, Shin J, Park JY, Na YC, Han SH, Chang JW, Song SH, Chang WS. *Yonsei Med J.* 2023 Apr;64(4):233-242

Endogenous Neural Stem Cell Activation after Low-Intensity Focused Ultrasound-Induced Blood-Brain Barrier Modulation.

Seo Y, Han S, Song BW, Chang JW, Na YC, Chang WS. *Int J Mol Sci.* 2023 Mar 16;24(6):571

Preclinical Research on Focused Ultrasound-Mediated Blood-Brain Barrier Opening for Neurological Disorders: A Review.

Kong C, Chang WS. *Neurol Int.* 2023 Feb 14;15(1):285-300

Comparison of Single-Session, Neoadjuvant, and Adjuvant Embolization Gamma Knife Radiosurgery for Arteriovenous Malformation.

Kim MJ, Jung HH, Kim YB, Chang JH, Chang JW, Park KY, Chang WS. *Neurosurgery.* 2023 May 1;92(5):986-997

Efficacy and safety of stereotactic radiosurgery versus endovascular treatment for symptomatic cavernous sinus dural arteriovenous fistula without ophthalmological emergency: a single-center 10-year experience

Kim MJ, Hong SW, Kim DJ, Kim BM, Kim YB, Chang WS, Park KY. *J Neurosurg* 2022 (online ahead of print)

Pseudoprogression and peritumoral edema due to intratumoral necrosis after Gamma knife radiosurgery for meningioma.

Jung IH, Chang KW, Park SH, Jung HH, Chang JH, Chang JW, Chang WS. *Sci Rep.* 2022 Aug 11;12(1):13663

Clinical application of deep learning-based synthetic CT from real MRI to improve dose planning accuracy in Gamma Knife radiosurgery: a proof of concept study.

Park SH, Choi DM, Jung IH, Chang KW, Kim MJ, Jung HH, Chang JW, Kim H, Chang WS. *Biomed Eng Lett.* 2022 Jun 13;12(4):359-367

Early-onset adverse events after stereotactic radiosurgery for jugular foramen schwannoma: a mid-term follow-up single-center review of 46 cases

Kim YG, Park CK, Jung NY, Jung HH, Chang JH, Chang JW, Chang WS. *Radiat Oncol* 2022 7;17(1):89

Epidural grid, a new methodology of invasive intracranial EEG monitoring: A technical note and experience of a single center

Park SH, Jung IH, Chang KW, Oh MK, Chang JW, Kim SH, Kang HC, Kim HD, Chang WS. *Epilepsy Res.* 2022 May;182:106912