

Hyung-Jin Lee, Ph.D.

Assistant Professor

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Biography

Dr. Lee is a widely experienced clinical anatomist, specializing in human gross anatomy with a strong focus on the application of anatomy in medical interventions, clinical research, and sports performance. His expertise extends across diverse interests, including the detailed study of human facial and skeletal muscle variations, the impact of clinical procedures such as thread-lifting and injections on anatomical structures, and the relationship between anatomical features and myofascial pain syndrome. His work aims to bridge the gap between anatomical knowledge and its practical application, exploring how basic anatomical knowledge can be leveraged to improve clinical practices and enhance sports performance.

Originally from Seoul, Dr. Lee earned his B.S. in Physical Education from Korea National Sport University in Seoul, South Korea. Here, he cultivated a deep interest in the architecture of human muscles and their functional relationship to sports performance.

Following his B.S., Dr. Lee pursued a Ph.D. in Gross Anatomy at the Yonsei University. His doctoral research focused on using ultrasonography to study the muscle structures of cyclists and how these structures correlate with cycling performance, aiming to identify key muscle architecture parameters for performance prediction. Throughout his Ph.D., he also delved into head and neck anatomy related to clinical interventions like head and neck surgery, botulinum toxin, and filler injections, employing a variety of research methods such as dissection, ultrasonography, whole-mount nerve staining, micro-computed tomography, and machine learning. This work significantly expanded his research scope in the functional and clinical anatomy of facial, upper, and lower limb muscles.

These experiences led him to participate in a National Research Foundation grant project titled "Use of Machine Learning to Develop a System for Real-time Ultrasound Image Analysis and Segmentation" as a postdoctoral research fellow. He also served as a research assistant professor on the project "Anatomical Analysis of Musculoskeletal Structure of the Korean Adult to Improve the Massage Effect in the Massage Chair" at Yonsei University. More recently, he began collaborating with Dusseldorf University in Germany, with Professor Timm. J. Filler, to compare facial anatomy variations and other body areas.

In addition to his research, Dr. Lee has extensive experience leading dissection-based gross anatomy courses at several universities for second-year medical and dental students in South Korea, including the College of Medicine of The Catholic University of Korea and the University of Ulsan, as well as the College of Dentistry of Yonsei University and Wonkwang University. His responsibilities included

overseeing the entire anatomy course, developing the anatomy curriculum, and creating educational content to enhance understanding of human anatomy through ultrasonography, dissection techniques, and the use of photography and 3D videos. Furthermore, he has conducted cadaver dissection-based international clinical anatomy workshops for clinicians specializing in head and neck surgery and non-aesthetic procedures, sharing his expertise in a hands-on learning environment.

Keywords: Gross Anatomy, Dissection, Pain management, Ultrasonography, Head and Neck

Research Areas

Gross anatomy, clinical anatomy using cadaver dissection and ultrasound, head and neck surgical anatomy, pain management, aesthetic anatomy, botulinum neurotoxin, and filler injections, a thread lifting procedure, functional anatomy (cycling performance)

Education

Ph.D. | in Gross Anatomy (Applied Life Science), Yonsei University, Seoul, Korea, 2018

BS | in Physical Education, Korea National Sport University, Seoul, Korea, 2012

Research Experience

Research Assistant Professor | Catholic Institute for Applied Anatomy, Department of Anatomy, College of Medicine, The Catholic University of Korea, 2022-2024

- exploring ethnic variations in facial muscles and skulls between Korean and German
- determined the relationship between the territories of the motor endplate and the myofascial trigger point using a whole-mount nerve staining (Sihler's staining)

Research Assistant Professor | Division in Anatomy & Developmental Biology, Department of Oral Biology, College of Dentistry, Yonsei University, 2020-2022

- developed the facial ultrasonography image analysis methods using machine learning tools
- suggested methods for effectively scanning facial structures using ultrasonography

Postdoctoral Fellow with Dr. Hee-Jin Kim, Division in Anatomy & Developmental Biology, Department of Oral Biology, College of Dentistry, Yonsei University, 2019-2020

- established a novel concept of deep temporal fascia anatomy
- provided several effective and safe botulinum toxin and filler injection methods

Graduate Student, Division in Anatomy & Developmental Biology, Department of Oral Biology, College of Dentistry, Yonsei University, 2012-2019

- identified tendinous structures within the masseter muscle
- described the intercanthal vein structure in the nasoglabellar area
- determined ethnic variations in facial vessels and muscles

Research and Teaching Assistant, Division in Anatomy & Developmental Biology, Department of Oral Biology, College of Dentistry, Yonsei University, 2012-2019

- learn cadaver dissection skills
- established cadaver dissection protocol for 2nd-3rd undergraduate medical and dental students

Teaching Experience

Research Assistant Professor

Research Assistant Professor, **Anatomy**, College of Medicine, The Catholic University of Korea, **2023**

- presented two lectures (Back, pelvic, and perineum), led and facilitated cadaver dissection labs for second-year undergraduate medical students in the *Human Structure and Function* course

Research Assistant Professor, **Anatomy**, College of Medicine, The Catholic University of Korea, **2022**

- led and facilitated cadaver dissection labs for second-year undergraduate medical students in the *Human Structure and Function* course

Research Assistant Professor, **Anatomy**, Division in Anatomy Development Biology, Yonsei University, **2019-2020**

- presented one lecture (Lower limb anatomy), led and facilitated cadaver dissection labs for second-year undergraduate dental students in the Anatomy course

Lecturer

Anatomy, University of Ulsan College of Medicine, Korea, **2023**

- led and facilitated cadaver dissection labs for second-year undergraduate medical

students in the *Structure and Function* course

Anatomy, Namseoul University, Department of Nursing, **2022**

- led the entire *Anatomy* course for first-year undergraduate students

Anatomy and Dissection lab, College of Dentistry, Wonkwang University, Korea, **2020-2021**

- led and facilitated the entire *Anatomy and Dissection lab* course for second-year undergraduate dental students

Anatomy & Physiology, Department of Biomedical Engineering, Sungkyunkwan University, Korea, **2020**

- led the entire Anatomy & Physiology course for first-year undergraduate students

Anatomy & Physiology, Department of Dental Hygiene, Gangdong University, Korea **2018-2019**

- led the entire Anatomy & Physiology course for first-year undergraduate students

Oral Anatomy, Department of Dental Hygiene, Gangdong University, Korea, **2018- 2019**

- led the entire Oral Anatomy course for first-year undergraduate students

Head and Neck Anatomy & Practice, Department of Dental Hygiene, Sunmoon University, **2018**

- led the entire Head and Neck Anatomy & Practice course for first-year undergraduate students

Oral Anatomy & Practice, Department of Dental Hygiene, Daewon University, Korea, **2018**

- led the entire Oral Anatomy & Practice course for first-year undergraduate students

Instructor

Human Anatomy & Practice for undergraduate paramedical students, Surgical Training Center, College of Medicine, Yonsei University, Korea, **2018-2021**

- led the entire Human Anatomy & Practice course for undergraduate paramedical students

Cadaver Workshops

Faculty, HUGEL, H.E.L.F (Hugel Expert Leader's Forum) Train-The-Trainer 2024, 'Review of the Comprehensive Facial Anatomy', South Korea, Seoul, 25, April 2024

Instructor, Medytox International Advanced CADAVER WORKSHOP, Medytox, South Korea, Seoul, 25, Oct 2023

Instructor, (International Course) **Clinical Anatomy of Head, Neck, Breast, and Gluteal Region**, CELL & GROWTH FACTOR BIOTECHNOLOGY, South Korea, Seoul, Feb 2023-Feb 2024, 10 times

Instructor, (International Course) **Clinical Anatomy of Head, Neck, Breast, and Gluteal Region**, CELL & GROWTH FACTOR BIOTECHNOLOGY, South Korea, Seoul, Feb 2022-Feb 2023, 10 times

Instructor, (International Course) **HEALLUX i-THREAD Cadaver Workshop**, HEALLUX, South Korea, Seoul, May 2023, 2 times

Academic Positions & Appointment

Assistant Professor | Department of Anatomy, CHA University School of Medicine, March 2024-present

Research Assistant Professor | Catholic Institute for Applied Anatomy, Department of Anatomy, College of Medicine, The Catholic University of Korea, March 2022- February 2024

Research Assistant Professor | Division in Anatomy & Developmental Biology, Department of Oral Biology, College of Dentistry, Yonsei University, March 2020~February 2022

Honors and Awards

2023 Best Papers from Plastic and Reconstructive Surgery (Guidelines for Botulinum Neurotoxin Injection for Facial Contouring), United States, 2023

Best Poster Award from Korean Association of Anatomists, Korea, 2020

New Researcher Award from The Korean Academy of Oral Anatomy, Korea, 2020

The Keith and Marion Moore Blue Box Award (Best student-authored publication in Clinical Anatomy in 2017), 'The Facial Artery: A Comprehensive Anatomical Review', The American Association of Clinical Anatomists (AACCA), Atlanta, Georgia, 2018

Best Poster Award from Yonsei Dental International Symposium, Korea, 2016

Best Oral Presentation Award from The Korean Academy of Oral Anatomy, Korea, 2016

Best Oral Presentation Award from Korean Association of Physical Anthropologists, Korea, 2016

Professional Activities

Reviewer of Scientific Journals

Botulinum neurotoxin treatment in pain management and aesthetic aspect

TOXINS, Multidisciplinary Digital Publishing Institute

Gross Anatomy, Clinical Anatomy

Clinical Anatomy, Wiley

Aesthetic Surgery Journal, Oxford University

Anatomy and Cell Biology, South Korea

Journal of Cosmetic Dermatology, Wiley

Dermatologic Surgery, Lippincott Williams & Wilkins

Journal of Oral Rehabilitation, Wiley

Professional Membership

Member, American Association of Clinical Anatomists (AACCA) 2013-Present

Member, European Association of Clinical Anatomists (EACA) 2013-Present

Member, Korean Association of Anatomists 2012-Present

Invited Talks

Instructor, **Surface Anatomy of Lower Limb**, Korea Athletic Trainer Association, 2018-2023

Instructor, **Essential Anatomy of the Face with Layered Illustrations for Aesthetic Procedure**, KOAT Cadaver Workshop, CELL & GROWTH FACTOR BIOTECHNOLOGY and Korean Academy of Obesity & Aesthetic Treatment, Apr 2023

Instructor, **Clinical Anatomy of Head, Neck, Breast, and Gluteal Region**, CELL & GROWTH FACTOR BIOTECHNOLOGY, Feb 2023

Instructor, **Surface Anatomy of Lower Limb**, CELL & GROWTH FACTOR

Publications

Clinical anatomy (using dissection, ultrasonography, and 3D scanner)

1. KH Yi, [HJ Lee](#), WR Kim, MH An, HJ Park, H Hu, HJ Kim: Does injecting small amounts of fillers prevent the development of secondary blindness? *Journal of Cosmetic Dermatology*. 23(1):84-89, Jan 2024 (IF=2.3) *co-1st author*
2. KH Yi, [HJ Lee](#), JH Lee, MH An, KW Lee, H Hu, MS Kim, H Choi, HJ Kim. Sonoanatomy of the platysmal bands: What causes the platysmal band? *Surgical and Radiologic Anatomy*. 45(11):1399-1404. Nov (2023) (IF=1.4) *co-1st author*
3. KH- Yi, JH Lee, HW Hu, [HJ Lee](#), YJ Choi, HJ Kim: Distribution of the intramuscular innervation of the triceps brachii: Clinical importance in the treatment of spasticity with botulinum neurotoxin. *Clinical Anatomy*. 36(7):964-970. Oct 2023 (IF=2.4)
4. KH Yi, JH Lee, HW Hu, YJ Choi, KW Lee, [HJ Lee](#), HJ Kim: Novel anatomical proposal for botulinum neurotoxin injection targeting depressor anguli oris for treating drooping mouth corner. *Anatomy and Cell Biology*. 56(2):161-165, Jun 2023
5. KH Yi, JH Lee, KW Lee, HW Hu, [HJ Lee](#), HJ Kim: Anatomical Proposal for Botulinum Neurotoxin Injection Targeting the Platysma Muscle for Treating Platysmal Band and Jawline Lifting: A Review. *TOXINS*. 14(12):868. Dec 2022 (IF=4.2)
6. KH Yi, [HJ Lee](#), HW Hur, KK Seo, HJ Kim: Guidelines for botulinum neurotoxin injection for facial contouring. *Plastic and Reconstructive Surgery*. 150(3), p562e-571e, Sep 2022 (IF=5.169) *co-1st author*
7. Hormazabal-Peralta A, KW Lee, [HJ Lee](#), YJ Choi, Hu KS, HJ Kim: Clinical anatomy considerations on the muscular and vascular components of the midface by ultrasonographic imaging. *Clinical Anatomy*. 34(8), 1142-1149, Nov 2021 (IF=2.414)
8. HS Ahn, JS Kim, [HJ Lee](#), JH Lee, HM Kim, HJ Kim: Anatomical Continuation Between the Sub-Superficial Musculoaponeurotic System Fat and Retro-Orbicularis Oculi Fat: The True Nature of the Retro-Orbicularis Oculi Fat. *Facial Plastic Surgery & Aesthetic Medicine*. 23(5), 362-336, Sep 2021 (IF=4.611)

9. YJ Choi, YJ We, [HJ Lee](#), KW Lee, YC Gil, KS Hu, T Tansatit, HJ Kim: Three-Dimensional Evaluation of the Depressor Anguli Oris and Depressor Labii Inferioris for Botulinum Toxin Injections. *Aesthetic Surgery Journal*. 41(6), NP456-NP461, May 2021(IF=4.283)
10. KH Yi, [HJ Lee](#), JH Lee, KK Seo, HJ Kim: Application of Botulinum Neurotoxin Injections in TRAM Flap for Breast Reconstruction: Intramuscular Neural Arborization of the Rectus Abdominis Muscle. *TOXINS*. 13(4). 269. Apr 2021 (IF=4.379)
11. [HJ Lee](#), Jung SJ, ST Kim, HJ Kim: Ultrasonographic Considerations for Safe and Efficient Botulinum Neurotoxin Injection in Masseteric Hypertrophy. *TOXINS*. 13(1). p-28. Jan 2021 (IF=5.075)
12. KH Yi, [HJ Lee](#), JH Lee, KL Lee, HJ Kim: Effective botulinum neurotoxin injection in treating iliopsoas spasticity. *Clinical Anatomy*. 34(3). 431-436. Apr 2021 (IF=2.414)
13. [HJ Lee](#), KW Lee, T Tansatit, HJ Kim: Three-Dimensional Territory and Depth of the Corrugator Supercilii: Application to Botulinum Neurotoxin Injection. *Clinical Anatomy*. 33(5). 795-803. Jul 2020 (IF=2.414)
14. KH Yi, [HJ Lee](#), YJ Choi, JH Lee, KS Hu, HJ Kim: Intramuscular Neural Distribution of Rhomboid Muscles: Evaluation for Botulinum Toxin Injection Using Modified Sihler's Method. *TOXINS*. 12(5). p-289. May 2020 (IF=4.546)
15. KL Lee, [HJ Lee](#), KH Youn, HJ Kim: Positional Relationship of Superior and Inferior Labial Artery by Ultrasonography Image Analysis for Safe Lip Augmentation Procedures. *Clinical Anatomy*. 33(2). 158-164. Mar 2020 (IF=2.414)
16. Y Cho, [HJ Lee](#), KW Lee, KL Lee, JS Kang, HJ Kim: Ultrasonographic and Three-Dimensional Analyses at the Glabella and Radix of the Nose for Botulinum Neurotoxin Injection Procedures into the Procerus Muscle. *TOXINS*, 11(10): pii: E560, Sep 2019 (4.546)
17. [HJ Lee](#), YJ Choi, KW Lee, KS Hu, ST Kim, HJ Kim: Ultrasonography of the internal architecture of the superficial part of the masseter muscle in vivo. *Clinical Anatomy*, 32(3): 446-452, Apr 2019 (IF=1.908)
18. [HJ Lee](#), SY Ryu, L Cong, HJ Ahn, MK Park, HJ Kim, KS Hu: Anatomy of Superficial Venous Structures of the Neck: A Cadaveric Study to Guide Superficial Injections. *Dermatologic Surgery*, 45(2), p 203-209, Feb 2019 (IF=2.471)
19. KW Lee, YJ Choi, [HJ Lee](#), YC Gil, HJ Kim, T Tansatit, KS Hu: Classification of unusual insertion of the pectoralis minor muscle. *Surgical and Radiologic Anatomy*, 40(12): 1357-1361, Dec 2018 (IF=1.003)

20. [HJ Lee](#), YJ Choi, KW Lee, HJ Kim: Positional Patterns Among the Auriculotemporal Nerve, Superficial Temporal Artery, and Superficial Temporal Vein for use in Decompression Treatments for Migraine. *Scientific Reports*, 8(1): 16539, Nov 2018 (IF=4.122)
21. [HJ Lee](#), JS Kim, KH Youn, JW Lee, HJ Kim: Ultrasound-Guided Botulinum Neurotoxin Type A Injection for Correcting Asymmetrical Smiles. *Aesthetic Surgery Journal*, 38(9): NP130-134, May 2018 (IF=2.824)
22. [HJ Lee](#), SY Won, JH O, KS Hu, SY Mun, HM Yang, HJ Kim: The Facial Artery: A Comprehensive Anatomical Review. *Clinical Anatomy*, 31(1):99-108, Jan 2018 (IF=1.908)
23. [HJ Lee](#), IW Kang, KK Seo, YJ Choi, ST Kim, KS Hu, HJ Kim: The Anatomical Basis of Paradoxical Masseteric Bulging after Botulinum Neurotoxin Type A Injection. *TOXINS*, 9(1), 14, Jan 2017 (IF=3.571)
24. YJ Choi, Lee WJ, [HJ Lee](#), KW Lee, HJ Kim, KS Hu: Effective botulinum toxin injection guide for treatment of temporal headache. *TOXINS*, 8;9(9), Sep 2016 (IF=3.571)
25. SH Lee, [HJ Lee](#), YS Kim, T Tansatit, HJ Kim: Novel Anatomic Description of the Course of the Inferior Palpebral Vein for Minimally Invasive Aesthetic Treatments. *Dermatologic Surgery* 42(5):618-23, May 2016 (IF=2.109)
26. JG Lee, HM Yang, KS Hu, YI Lee, [HJ Lee](#), YJ Choi, HJ Kim: Frontal branch of the superficial temporal artery: anatomical study and clinical implications regarding injectable treatments, *Surgical and Radiologic Anatomy*, 37(1):61-8, Jan 2015 (IF=1.130)
27. SH Lee , [HJ Lee](#), YS Kim , HJ Kim, KS Hu : What is the difference between the inferior labial artery and the horizontal labiomental artery?, *Surgical and Radiologic Anatomy*, 37(8):947-53, Oct 2015 (IF=1.130)
28. [HJ Lee](#), KS Choi, SY Won, P Apinuntrum, KS Hu, ST Kim, T Tansatit, HJ Kim: Topographic relationship between the supratrochlear nerve and corrugator supercillii muscle-can this anatomical knowledge improve the response to botulinum toxin injections in chronic migraine?, *TOXINS*, 17;7(7):2629-38, Jul 2015, (IF=2.938)
29. JW Kim, YJ Choi, [HJ Lee](#), KH Lee, HJ Kim, KS Hu: Anatomic Study of the Dorsalis Pedis Artery, First Metatarsal Artery, and Second Metatarsal Bone for Mandibular Reconstruction, *Journal of Oral and Maxillofacial Surgery*, 73(8):1627-36, Aug 2015 (IF=1.779)
30. DW Rha, SH Lee, [HJ Lee](#), YJ Choi, HJ Kim, SC Lee: Ultrasound-Guided Injection of the Adductor Longus and Pectineus in a Cadaver Model, *Pain Physician*, 18(6):E1111-7, Dec 2015 (IF=3.542)

31. [HJ Lee](#), IW Kang, SY Won, JG Lee, KS Hu, T Tansatit, HJ Kim: Description of a novel anatomic venous structure in the nasoglabellar area. *Journal of Craniofacial Surgery* 25(2):633-5, Mar 2014 (IF=0.676)
32. [HJ Lee](#), SY Ryu, HJ Ahn, SW Cho, HJ Kim, KS Hu: Does retaining ligament exist in the neck?. *Korean Journal of Physical Anthropology* 30(2):47-51, June 2017
33. HM Yang, II Lee, JG Lee, YJ Choi, [HJ Lee](#), SH Lee, KS Hu, Kim HJ: Topography of Superficial Arteries on the Face. *The Korean Journal of Physical Anthropology* 26(4):131-40, 2013

Pain management (nerve staining, ultrasound, and 3D anatomy)

1. KH Yi, DC Kim, S Lee, [HJ Lee](#), JH Lee: Intramuscular Neural Distribution of the Gluteus Maximus Muscle: Diagnostic Electromyography and Injective Treatments. *Diagnostics*. 14(2): 140, Jan 2024 (IF=3.6) *co-corresponding author*
2. KH Yi, MH An, JH Lee, [HJ Lee](#): Intramuscular neural distribution of the obturator internus muscle regarding injective treatment. *Surgical and Radiologic Anatomy*. 45(10):1239-1244. Aug 2023 (IF=1.4)
3. SH Kim, [HJ Lee](#): Unusual insertion of the levator scapulae muscle: a case report. *Anatomy and Cell Biology*. 56(3):398-400. Sep 2023
4. [HJ Lee](#), JH Lee, KH Yi, HJ Kim: Sonoanatomy and an ultrasound scanning protocol of the intramuscular innervation pattern of the infraspinatus muscle. *Regional Anesthesia and Pain Medicine*. 48(4):175-179. Apr 2023 (IF=5.1)
5. KH Yi, H Hu, JH Lee, MH An, [HJ Lee](#), YJ Choi, HJ Kim: Sihler's staining technique: How to and guidance for botulinum neurotoxin injection in human muscles. *Clinical Anatomy*. 37(2):169-177 March 2024 (IF=2.4)
6. H Hu, MH An, [HJ Lee](#), KH Yi: Guidance in botulinum neurotoxin injection for lower extremity spasticity: Sihler's staining technique. *Surgical and Radiologic Anatomy*. 45(8):1055-1062 Aug 2023 (IF=1.4) *co-corresponding author*
7. KH Yi, JH Lee, H Hu, HJ Park, [HJ Lee](#), YJ Choi, HJ Kim: Botulinum neurotoxin injection in the deltoid muscle: application to cosmetic shoulder contouring. *Surgical and Radiologic Anatomy* 45(7):875-880 (IF:1.4)
8. KH Yi, HJ Park, JH Kim, SO Kim, GW Cheon, MH A, [HJ Lee](#), JH Lee: Intramuscular Neural Distribution of the Gastrocnemius for Botulinum Neurotoxin Injection: Application to Cosmetic Calf Shaping. *Yonsei Medical Journal* 64(8):581-585. Aug 2023 (IF: 2.4). *co-corresponding author*

9. KH Yi, KW Lee, Y Hwang, MH An, HS Ahn, H Hu, JH Lee, [HJ Lee](#): Intramuscular Neural Distribution of Adductor Pollicis Muscle Spasticity in Cadaver Model Regarding Botulinum Neurotoxin Treatment. *Yonsei Medical Journal* 64(9):581-585. Sep 2023 (IF: 2.4)
10. JH Lee, KW Lee, KH Yi, [HJ Lee](#): Anatomical analysis of the intramuscular distribution patterns of the levator scapulae and the clinical implications for pain management. *Surgical and Radiologic Anatomy* 45(7):859-864 2023 (IF: 1.4)
11. JH Lee, KW Lee, KH Yi, [HJ Lee](#): Ultrasound-guided Injection of the Levator Scapulae Muscle in a Cadaver Model. *Pain Physician*. 26(4):E389-E395. Jul 2023 (IF: 3.7)
12. [HJ Lee](#), JH Lee, KH Yi, HJ Kim: Anatomical analysis of the motor endplate zones of the suprascapular nerve to the infraspinatus muscle and its clinical significance in managing pain disorder. *Journal of Anatomy*. 243(3):464-474. Sep 2023 (IF=2.4)
13. [HJ Lee](#), JH Lee, KH Yi, HJ Kim: Sonoanatomy and an ultrasound scanning protocol of the intramuscular innervation pattern of the infraspinatus muscle. *Regional Anesthesia & Pain Medicine*. 48(4):175-179. Apr 2023 (IF=5.564)
14. BH Kim, DH Kim, JH Lee, [HJ Lee](#), HJ Kim: Evaluating intramuscular neural distribution in the cricopharyngeus muscle for injecting botulinum toxin. *Auris Nasus Larynx*. S0385-8146(22)00134-1, May 2022 (IF=1.969)
15. [HJ Lee](#), JH Lee, KH Yi, HJ Kim: Intramuscular Innervation of the Supraspinatus Muscle Assessed Using Sihler's Staining: Potential Application in Myofascial Pain Syndrome. *TOXINS*. 14(5), 310, April 2022 (IF=5.075)
16. KH Yi, [HJ Lee](#), KK Seo, HJ Kim: Intramuscular Neural Arborization of the Latissimus Dorsi Muscle: Application of Botulinum Neurotoxin Injection in Flap Reconstruction. *TOXINS*. 14(2), 107, Jan 2022 (IF=5.075) *co-1st author*
17. KH Yi, [HJ Lee](#), KK Seo, HJ Kim: Botulinum neurotoxin injection guidelines regarding flap surgeries in breast reconstruction. *Journal of Plastic, Reconstructive & Aesthetics Surgery*. 75(1), 503-505, Jan 2022 (IF=2.740)
18. KH Yi, [HJ Lee](#), YJ Choi, KW Lee, JH Lee, HJ Kim: Anatomical guide for botulinum neurotoxin injection: Application to cosmetic shoulder contouring, pain syndromes, and cervical dystonia. *Clinical Anatomy*, 34(6), 822-828, Sep 2021 (IF=2.414)
19. KH Yi, DW Rha, SC Lee, L Cong, [HJ Lee](#), YW Lee, HJ Kim, KS Hu: Intramuscular nerve distribution pattern of ankle invertor muscles in human cadaver using sihler stain. *Muscle & Nerve* 53(5):742-7, May 2016 (IF=2.283)

20. KH Yi, KW Lee, HW Hu, JH Lee, [HJ Lee](#): A practical guide to botulinum neurotoxin treatment of teres major muscle in shoulder spasticity: Intramuscular neural distribution of teres major muscle in cadaver model. *PM & R* 16(2):160-164, Feb. 2024 (IF=2.1)

Deep learning

1. KW Lee, [HJ Lee](#), H Hu, HJ Kim: Analysis of facial ultrasonography images based on deep learning. *Scientific Reports*. 12, 16480, Oct 2022 (IF=4.996) *co-1st author*

Functional anatomy

1. JH Lee, KW Lee, KH Yi, YJ Choi, HW H, [HJ Lee](#): A standardized protocol for needle placement in the infraspinatus muscle: an anatomical perspective. *Surgical and Radiologic Anatomy*, 45(12):1579-1586. Dec 2023 (IF: 1.4)
2. [HJ Lee](#), KW Lee, K Takeshi, YW Lee, HJ Kim: Correlation analysis between lower limb muscle architectures and cycling power via ultrasonography. *Scientific Reports*. 11. p-5362. Mar 2021 (IF=4.996)
3. [HJ Lee](#), KW Lee, YW Lee, HJ Kim: Correlation Between Cycling Power and Muscle Thickness in Cyclists. *Clinical Anatomy*, 31(6): 899-906. Sep 2018 (IF=1.908)
4. JG Lee, SJ Jung, [HJ Lee](#), JH Seo, YJ Choi, HS Bae, JT Park, HJ Kim: Quantitative anatomical analysis of facial expression using a 3D motion capture system: application to cosmetic surgery and facial recognition technology, *Clinical Anatomy*, 28(6):735-44. Sep 2015 (IF=1.159)
5. [HJ Lee](#), YW Lee: Correlation between Cyclists' Quadriceps Femoris Thickness and Isokinetic Strength. *The Korean Journal of Sport* 17(4):1617-1624. Dec 2019

Gross and surgical anatomy

1. KH Yi, S Lee, JH Lee, [HJ Lee](#): Observation of Anatomical Structures in the Human Larynx Using Micro-Computed Tomography with Lugol's Solution Enhancement. *Diagnostics*. 13(18): 3005. Sep 2023 (IF=3.6)
2. [Lee HJ](#), YJ Choi. A three-dimensional analysis of the tibialis anterior tendon: emphasizing tendon insertion patterns for effective repair and understanding hallux valgus development. *Surgical and Radiologic Anatomy*, 45(10):1197-1204. Oct 2023 (IF: 1.4)

Presentations of the International Congress

International Anatomy Congress

1. The Perforating Branches of the Transverse Facial Artery: Anatomical Consideration for Thread Lifting. International Master Course on Aging Science (IMCAS). February, Paris, France, 2024
2. Ultrasound-Guided Botulinum Neurotoxin Type A Injection for Correcting Asymmetrical Smiles. The International Congress of Aesthetic Dermatology (ICAD). November, Bangkok, Thailand, 2023
3. Guidelines for Botulinum Neurotoxin Injection for Facial Contouring. The International Congress of Aesthetic Dermatology (ICAD). November, Bangkok, Thailand, 2023
4. The Internal Architecture of the Masseter Muscle: Cadaveric Dissection and Ultrasonography Findings, International Master Course on Aging Science (IMCAS). June, Bangkok, Thailand, 2023
5. Novel Clinical Anatomic Consideration of the Superficial and Deep Layers of the Deep Temporal Fascia. International Master Course on Aging Science (IMCAS). June, Bangkok, Thailand, 2023

International Clinical Congress

1. Three-Dimensional Territory and Depth of the Asian Corrugator Supercilii Regarding to BTX-A Injection, Annual Meeting of American Association Clinical Anatomists, Atlanta, Georgia, USA, 2018
2. Architectural Characteristics of the Superficial Part of the Masseter Muscle in Vivo by Ultrasonography, Annual Meeting of American Association Clinical Anatomists, Atlanta, Georgia, USA, 2018
3. Positional relationship between the auriculotemporal nerve and the superficial temporal artery and vein, The British & European Associations of Clinical Anatomists, Warwick, England, UK, 2017
4. Smart-sensing diagnostic device and new therapeutic oral appliances for snoring and sleep apnea, The British & European Associations of Clinical Anatomists, Warwick, England, UK, 2017
5. Anatomic Considerations Regarding the Paradoxical Muscle Bulging of the Masseter Muscle After the Botulinum Neurotoxin Type A Injection, 32nd Annual Meeting of American

- Association Clinical Anatomists, Oakland, California, 2016
6. Anatomical Considerations of the Pharyngeal Muscles in Relation to Their Function, 32nd Annual Meeting of American Association Clinical Anatomists, Oakland, California, 2016
 7. Anatomical study of venous structure for dermal filler injection to release the cervical wrinkles, International Congress of Clinical Anatomy, Rouen, France, 2015
 8. Description of a novel anatomic venous structure in the nasoglabellar area, 31st Annual Meeting of American Association Clinical Anatomists, Orlando, Florida, 2014
 9. Description of a novel anatomic venous structure in the nasoglabellar area, The 2nd congress of the Asian Association of Clinical Anatomists, Tokyo, Japan, 2014
 10. The relationship between corrugator supercilii muscle and supratrochlear nerve, European Joint Congress of Clinical Anatomy, Lisbon, Portugal, 2013
 11. Topographic relationship between supratrochlear nerve and corrugator supercilii muscle, The 1st congress of the Asian Association of Clinical Anatomists, Busan, Korea, 2012

Research project

Ongoing projects

NRF(Korea National Research Foundation) | \$ 163,460 (210,000,000 won) | June 2022-May 2025

Title: 3D Clinical Anatomy of Korean's Larynx Structures for Dysphonia and Dysphagia

Source: Korea National Research Foundation

Role: Principal Investigator

Description: In Korean individuals, we will 1) standardize the size of the laryngeal structures, the morphology of muscles, the distribution of nerves, and the location of blood vessels, and 2) visualize the positional relationship of the laryngeal structures according to clinical anatomical landmarks. These steps will be undertaken to establish an anatomical foundation for the safe and effective treatment of voice and swallowing disorders in the future.

Past projects

NRF(Korea National Research Foundation) | \$ 230,000 (300,000,000 won) | March 2019-February 2022

Title: Use of Machine Learning to Develop a System for Real-time Ultrasound Image Analysis and Segmentation

Source: Korea National Research Foundation

Role: Principal Investigator

Description: The ultimate goal of this research project is to complete a program for real-time analysis and refinement of ultrasound images of the facial region using machine learning. Furthermore, we aim to establish an automated method for analyzing facial ultrasound images, a field that is currently not well-defined. Through this, we intend to develop a fast, accurate, and versatile medical imaging auto-analysis program that can be applied in various fields. We hope to introduce a new paradigm in the field of facial ultrasound image analysis in the global artificial intelligence market.

Bodyfriend | \$ 38,920 (50,000,000 won) | June 2021-June 2022

Title: Anatomical analysis of musculoskeletal structure of the Korean adult to improve the massage effect in the massage chair

Source: Bodyfriend

Role: Principal Investigator

Description: The purpose of this research is to analyze the anatomical structure of the human body (the position of muscles and bones) while sitting in a massage chair, a concept not yet well-defined. This analysis will be done anthropometrically through ultrasound and direct measurements. Through this research, we aim to establish baseline data for an optimal massage system. Furthermore, we seek to develop foundational data that can be applied in future massage modules and in various other fields, with the ultimate goal of providing basic information for the establishment of an industrial base.

Patents

1. Pad for sensing of snoring and sleep apnea, REGISTRATION OF PATENT, KOREA, 10-1776237, 2017
2. System for sensing and treatment of snoring and sleep apnea, REGISTRATION OF PATENT, KOREA, 10-1695223, 2017
3. Apparatus for preventing of snoring and sleep apnea, REGISTRATION OF PATENT, KOREA, 10-1654279, 2016