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主要學歷

臺灣大學工學院醫學工程學研究所 博士
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臺灣大學醫學院物理治療系 學士

現職

長庚大學物理治療系　教授兼系主任
長庚大學動作科學暨輔助科技研究室　主持人
長庚醫院骨骼關節研究中心　合聘副研究員

校外社團組織委員

臺灣物理治療學會 理事 (2020.1 訖今)
臺灣物理治療學會 公共關係與活動委員會主任委員 (2020.1 訖今)
Physical Therapy Reviews 期刊編輯 (2017.3 訖今)
臺灣生物力學學會 理事 (2016.3 訖今)
物理治療期刊 副總編輯 (2015.1 訖今)
臺灣復健工程暨輔具科技學會 理事 (2014.3 訖今)
臺灣復健工程暨輔具科技學會 資訊與傳播委員會主任委員 (2014.1 訖今)
臺灣生物力學學會 秘書長 (2014.1~2016.2)
臺灣復健工程暨輔具科技學會 副秘書長 (2012.7~2014.3)
中華民國物理治療學會 財務委員會 副主任委員 (2011.4~2014.1)
臺灣物理治療學會 副秘書長 (2017.3~2019.12)

教授課程

大學部

物理治療導論，肌動學，運動醫學，機能再教育，輔具學，生物力學，骨科物理治療學，操作治療學，物理因子治療學

研究所

復健生物力學特論，生醫儀器學，復健科學化評量，臨床專業決策，復健科學研究趨勢，骨骼肌肉系統復健工程高階分析

Publications

1. Nikkhoo M, **Cheng CH**, Wang JL, Niu CC, Nikkhoo P, Khalaf K* (2020) The Biomechanical Response of the Lower Cervical Spine Post Laminectomy: Geometrically-Parametric Patient-Specific Finite Element Analyses. *Journal of Medical and Biological Engineering*, **(SCI)** in press doi: 10.1007/s40846-020-00579-8

2. Nikkhoo M, Niu CC, Fu CJ, Lu ML, Chen WC, **Cheng CH*** (2020) Reliability and Validity of a Mobile Device for Assessing Head Control Ability. *Journal of Medical and Biological Engineering*, **(SCI)** in press doi: 10.1007/s40846-020-00577-w

3. Chen JL, Chen CH, **Cheng CH**, Chen CC, Lin KY, Chen CPC* (2020) Can the addition of ultrasound-guided genicular nerve block using 5% dextrose water augment the effect of autologous platelet rich plasma in treating elderly patients with knee osteoarthritis? *Biomedical Journal*, **(SCI)** in press, doi: 10.1016/j.bj.2020.08.011

4. Fu CJ, Chen WC, Lu ML, **Cheng CH**, Niu CC* (2020) Comparison of paraspinal muscle degeneration and decompression effect between conventional open and minimal invasive approaches for posterior lumbar spine surgery. *Scientific Reports*, 10:14635. **(SCI)** doi: 10.1038/s41598-020-71515-8

5. **Cheng CH**, Lai DM, Lau PY, Wang SF, Chien A, Wang JL, Hsu WL (2020) Upright Balance Control in Individuals with Cervical Myelopathy Following Cervical Decompression Surgery: A Prospective Cohort Study. *Scientific Reports*, 10(1):10357. **(SCI)** doi: 10.1038/s41598-020-66057-y.

6. Lin CC, Hua SH, Lin CL, **Cheng CH**, Liao JC, Lin CF (2020) Impact of Prolonged Tablet Computer Usage with Head Forward and Neck Flexion Posture on Pain Intensity, Cervical Joint Position Sense and Balance Control in Mechanical Neck Pain Subjects. *Journal of Medical and Biological Engineering*, **(SCI)** doi: 10.1007/s40846-020-00525-8

7. Nikkhoo M, Khoz Z, **Cheng CH**, Niu CC, El-Rich M, Khalaf K (2020) Development of a Novel Geometrically-Parametric Patient-Specific Finite Element Model to Investigate the Effects of the Lumbar Lordosis Angle on Fusion Surgery. *Journal of Biomechanics*, 2:109722. **(SCI)** doi: 10.1016/j.jbiomech.2020.109722.

8. Cheng YS, Chien A, Lai DM, Lee YY, **Cheng CH**, Wang SF, Chang YJ, Wang JL, Hsu WL (2020) Perturbation-Based Balance Training in Postoperative Individuals with Degenerative Cervical Myelopathy. *Frontiers in Bioengineering and Biotechnology*, 8(108). **(SCI)**

9. Hsu WL, Chen CP, Nikkhoo M, Lin CF, Ching CT, Niu CC, **Cheng CH*** (2020, Apr) Fatigue changes neck muscle control and deteriorates postural stability during arm movement perturbations in patients with chronic neck pain. *Spine Journal*, 20(4): 530−537. **(SCI)** doi: 10.1016/j.spinee.2019.10.016.

10. Lin IS, Lai DM, Ding JJ, Chien A, **Cheng CH**, Wang SF, Wang JL, Kuo CL, Hsu WL (2019) Reweighting of the sensory inputs for postural control in patients with cervical spondylotic myelopathy after surgery. *Journal of NeuroEngineering and Rehabilitation*, 25;16(1):96. **(SCI)** doi: 10.1186/s12984-019-0564-2.

11. Chen HB, Chang LW, **Cheng CH*** (2019) Aging effects on the mechanical energy transfer through the lower extremity joints during the swing phase of level walking. *Scientific Reports*, 2;9(1):9555. **(SCI)** doi: 10.1038/s41598-019-45267-z.

12. Nikkhoo M, **Cheng CH**, Wang JL, Khoz Z, El-Rich M, Hebela N, Khalaf K (2019) Development and Validation of A Geometrically Personalized Finite Element Model of the Lower Ligamentous Cervical Spine for Clinical Applications. *Computer in Biology and Medicine*, 109: 22-32. **(SCI)**

13. Liu WY, Lien HY, Li YC, Chen CN, Chen CY, Chen YC, **Cheng CH**, Lin YH* (2019) Core Values of Physical Therapy Professionalism: The Viewpoints of Clinical Physical Therapists in Taiwan. *Formosan Journal of Physical Therapy*, 44(1): 1-8

14. Lin YC, Niu CC, Nikkhoo M, Lu ML, Chen WC, Fu CJ, **Cheng CH*** (2018) Postural stability and trunk muscle response to dynamic and static balance tasks in people with and without degenerative lumbar disease. *Gait & Posture*, 64: 159-64 **(SCI)**

15. Khoz Z, Nikkhoo M, **Cheng CH** (2018) "Parametric Patient-Specific Finite Element Modeling of Lumbar Spine Based on Anatomical Parameters", (In Farsi). *Iranian Journal of Orthopaedic Surgery*, 16:195-203

16. Ju YY, Liu YH, **Cheng CH**, Lee YL, Chang ST, Sun CC, Cheng HYK* (2018) Effects of combat training on visuomotor performance in children aged 9 to 12 years - an eye-tracking study. *BMC Pediatrics*, 18(39):1-9 **(SCI)**

17. HsiehTH, Peng CW, Chen KY, Huang YZ, Lin YH, Zong WZ, Liang JI, Zhao J, Cheng CY, Chang YJ, **Cheng CH**, Chuang YF*, (2018) The Applications of Smart Mobile Device for Detecting Balance Dysfunction in Individuals with Down Syndrome. *Biomedical Engineering-Applications Basis Communications*, 30(1):1850007(1-9).

18. Chen CPC, **Cheng CH**, Hsiu CC, Lin HC, Tsai YR, Chen JL, (2017) The Influence of Platelet Rich Plasma on Synovial Fluid Volumes, Protein Concentrations, and Severity of Pain in Patients with Knee Osteoarthritis. *Experimental Gerontology*, 93: 68-72 **(SCI)**

19. Ng HH, Lin WY, Lei KF, **Cheng CH**, Jeng SC, Lin YH, (2017) Reliability of mechanomyographic amplitude measurements for trunk muscles during maximal voluntary isometric contraction. *J Back Musculoskelet Rehabil*. 30: 979–985 **(SCI)**

20. Ching CTS*, Liao SY, Cheng TY, **Cheng CH**, Sun TP, Yao YD, Hsiao CS, Chang MK, (2017) A mechanical sensor designed for dynamic joint angles measurement. *Journal of Healthcare Engineering*, Article ID 8465212, 12 pages **(SCI)**

21. Cheng HYK, Chen LY, **Cheng CH**, Ju YY, Chen CL, Tseng K, (2016) A Multimedia Child Developmental Screening Checklist: Design and Validation. *Journal of Medical Internet Research*, 18(10):e277 DOI: 10.2196/jmir.6249 **(SCI)**

22. **Cheng CH**, Chien A, Hsu WL, Chen CPC, Cheng HYK (2016) Investigation of the differential contributions of superficial and deep muscles on cervical spinal loads with changing head postures. *PLOS ONE*, 11(3) DOI: 10.1371/journal. pone.0150608 **(SCI)**

23. Lin YC, Tsai LC, Cheng HYK, Lin YH, **Cheng CH*** (2016) Postural steadiness after prolonged standing on different sloped surface in young healthy adults. *Biomedical Engineering-Applications Basis Communications*, 28(1): 1650007(1-7).

24. Chien A, Lai DM, Wang SF, Hsu WL, **Cheng CH**, Wang JL* (2016) Comparison of cervical kinematics, pain and functional disability between single- and two-level Anterior Cervical Discectomy and Fusion. *Spine (Phila Pa 1976)*, 41(15):E915-22 **(SCI)**

25. **Cheng CH**, Chien A, Hsu WL, Lai DM, Wang SF, Wang JL* (2016) Identification of head control deficits following anterior cervical discectomy and fusion in patients with cervical spondylotic myelopathy. *European Spine Journal*, 25(6):1855-60 **(SCI)**

26. **Cheng CH***, Chen RW, Tsai LC, Chang YJ, Tang WT, Liu WY (2016) Comparisons of fatigue effect due to competitive tennis match or simulated tennis stroke on exercise physiology and performance of tennis players: a literature review. *Physical Education Journal*, 49(3):253-262 **(TSSCI)**

27. **Cheng CH**, Tsai LC, Chung HC, Hsu WL, Wang SF, Wang JL, Lai DM, Chien A* (2015) Exercise training for non-operative and post-operative patient with cervical radiculopathy: a literature review. *Journal of Physical Therapy Science*, 27: 3011-8 **(SCI)**

28. Yang WC, **Cheng CH**, Wang HK, Lin KH, Hsu WL* (2015) Multi-muscle coordination during a challenging stance. *European Journal of Applied Physiology*, 115(9):1959-66 **(SCI) (Co-first author)**

29. Chien A, Lai DM, **Cheng CH**, Wang SF, Hsu WL, Wang JL* (2015) Responsiveness of the Chinese versions of the Japanese orthopaedic association cervical myelopathy evaluation questionnaire and neck disability index in postoperative patients with cervical spondylotic myelopathy. *Spine (Phila Pa 1976)*, 40(17), 1315-21 **(SCI)**

30. Wang SF*, Li PJ, Hsieh NY, **Cheng CH**, Hsu WL, Lai DM, Wang JL (2015) Motor control exercise prevent decrease of multifidus thickness in patients with cervical spondylotic myelopathy undergone anterior cervical discectomy and fusion. *Physiotherapy*, 101: e867 - e868 **(SCI)**

31. **Cheng CH**, Chen RW, Chen LY, Liu XT, Yin YT, Chen YK, Lo YC, Sha IH, Wen YL, Cheng HYK* (2015) Biomechanical analysis into the differences between the skilled and non-skilled badminton players performing the overhead stroke. *Physiotherapy*, 101: e233 **(SCI)**

32. Chien A, Lai DM*, Wang SF, **Cheng CH**, Hsu WL, Wang JL* (2015) Differential segmental motion contribution of single- and two-level anterior cervical discectomy and fusion. *European Spine Journal,* 24(12):2857-65 **(SCI)**

33. **Cheng CH**, Chien A, Hsu WL, Yen LW, Lin YH, Cheng HYK* (2015) Changes of postural control and muscle activation pattern in response to external perturbations after neck flexor fatigue in young subjects with and without chronic neck pain. *Gait & Posture*, 41(3):801-7 **(SCI)**

34. Cheng HYK, Ju YY, Chen CL, Chuang LL, **Cheng CH*** (2015) Effects of whole body vibration on spasticity and lower extremity function in children with cerebral palsy. *Human Movement Science*, 39: 65-72 **(SCI)**

35. **Cheng CH**, Su HT, Yen LW, Liu WY, Cheng HYK* (2015) Long-term effects of therapeutic exercise on nonspecific chronic neck pain: a literature review. *Journal of Physical Therapy Science*, 27: 1271-1276 **(SCI)**

36. Chen CY, Chang CW, Lee ST, Chen YC, **Cheng CH**, Lin YH* (2015) Is rehabilitation intervention during hospitalization enough for functional improvements in patients undergoing lumbar decompression surgery: a prospective randomized controlled study? *Clinical Neurology and Neurosurgery*, 129(Supplement 1): S41–S46 (**SCI**)

37. Huang WP, Wang CC, Hung JH, Chien KC, Liu WY, **Cheng CH**, Ng HH, Lin YH* (2015) Joystick-controlled video console game practices for power wheelchairs indoor driving skills. *Journal of Physical Therapy Science*, 27(2): 495-498 (**SCI**)

38. **Cheng CH**, Ju YY, Chang HW, Chen CL, Pei YC, Tseng KC, Cheng HYK* (2014) Motor impairments screened by the Movement Assessment Battery for Children-2 are related to the visual-perceptual deficits in children with developmental coordination disorder. *Research in Developmental Disabilities*, 35(9): 2172-2179 (**SSCI**)

39. Chien A, Lai DM, **Cheng CH**, Wang SF, Hsu WL, Wang JL* (2014) Translation, cross-cultural adaptation, and validation of a Chinese version of the Japanese orthopaedic association cervical myelopathy evaluation questionnaire (JOACMEQ). *Spine (Phila Pa 1976)*, 39(12): 963-970 (**SCI**)

40. **Cheng CH**, Cheng HYK, Chen CPC, Lin KH, Liu WY, Wang SF, Hsu WL*, Chuang YF (2014) Altered co-contraction of cervical muscles in young adults with chronic neck pain during voluntary neck motions. *Journal of Physical Therapy Science*, 26(4): 587-590 (**SCI**)

41. Hsu WL*, Lin KH, Yang RS, **Cheng CH** (2014) Use of motor abundance in old adults in the regulation of a narrow-based stance. *European Journal of Applied Physiology*, 114(2): 261-71 (**SCI**)

42. **Cheng CH***, Su HT, Liu WY, Wang SF, Hsu WL, Chuan YF (2013) Exercise Training for non-operative and post-operative patient with cervical spondylotic myelopathy: systematic review. *Formosan Journal of Physical Therapy*, 38(4): 279-85.

43. Cheng HYK*, Lien YJ, Yu YC, Ju YY, Pei YC, **Cheng CH**, Wu DBC (2013) The effect of lower body stabilization and different writing tools on writing biomechanics in children with cerebral palsy. *Research in Developmental Disabilities*, 34(4): 1152-9 **(SSCI)**

44. Ju YY, Lin JK, Cheng HYK*, **Cheng CH**, Wong AMK (2013) Rapid repetitive passive movement promotes knee proprioception in the elderly. *European Review of Aging and Physical Activity*, 10(2): 133-9 (**SCI**)

45. Chu YH, **Cheng CH**, Tang PH*, Lin KH (2012) Effects of age and step direction on behavioral performances and center-of-pressure characteristics of volitional stepping in older and young adults, *Biomedical Engineering-Applications Basis Communications,* 24(3): 207-16

46. Chen HM, Lee CS, **Cheng CH*** (2012) The weight of computer mouse affects the wrist motion and forearm muscle activity during fast operation speed task, *European Journal of Applied Physiology*, 112(6): 2205–12 **(SCI)**

47. Liu WY, Chen FJ, Kuo CH, Lin YH*, **Cheng CH**, Chen TS, Yu YJ (2011) Preliminary comparisons of postural alignments of children with cerebral palsy using joystick and bimanual gliding access devices to drive the power wheelchair. *Formosan Journal of Physical Therapy*, 36(3): 216-24

48. **Cheng CH**, Chen PJ, Kuo YW, Wang JL* (2011) Effects of disc degeneration and muscle dysfunction on the cervical spine stability from a biomechanical study, *Proceedings of the Institution of Mechanical Engineers. Part H, Journal of engineering in medicine*, 225(2): 149-57 **(SCI)**

49. Liu WY, Liao CF, Lien HY, **Cheng CH**, Wong AMK, Lin YH* (2010) Using the international classification of functioning, disability and health (ICF) framework to determine the effectiveness of interactive computer play for children with cerebral palsy: systematic review. *Formosan Journal of Physical Therapy*, 35(3): 251-62

50. **Cheng CH**, Wang JL, Lin JJ, Wang SF, Lin KH* (2010) Position accuracy and electromyographic responses during head reposition in young adults with chronic neck pain, *Journal of Electromyography & Kinesiology*, 20(5): 1014-20 **(SCI)**

51. **Cheng CH**, Chang LW, Lin KH* (2010) Determination of Foot-Plate Spacing for Swivel Walkers by an Optimization Method, *Biomedical Engineering-Applications Basis Communications*, 22(3): 213-21

52. Chu YH, Tang PF*, Chen HY, **Cheng CH** (2009) Altered muscle activation characteristics associated with single volitional forward stepping in middle-aged adults, *Clinical Biomechanics*, 24(9): 735-43 **(SCI)**

53. Wang JL*, Wu TK, Lin TC, **Cheng CH**, Huang SC (2008) Rest cannot always recover the dynamic properties of fatigue-loaded intervertebral disc, *Spine (Phila Pa 1976)*, 33(17): 1863-9 **(SCI)**

54. **Cheng CH**, Lin KH, Wang JL* (2008) Co-contraction of cervical muscles during sagittal and coronal neck motions at different movement speeds, *European journal of applied physiology* 103(6): 647-54 **(SCI)**

55. **Cheng CH**, Chen PJ, Kuo YW, Wang JL* (2008) The compensation mechanism of cervical muscle dysfunction on spinal stability - An in vitro study using porcine model, *Journal of the Chinese Institute of Engineers* 31(4): 605-13 **(SCI)**

56. **Cheng CH**, Chen TY, Kuo YW, Wang JL* (2008) The mechanics of cervical muscle recruitment on cervical spine stability - A biomechanical in vitro study using porcine model, *Journal of Mechanics* 24: 63-8 **(SCI)**

57. **Cheng CH**, Chen TY, Kuo YW, Wang JL* (2007) The comparison of neutral zone, range of motion and resultant force and moment among different cervical muscle dysfunctions, *Journal of Biomechanics*, 40: S696 **(SCI)**

58. **Cheng CH**, Lin KH, Lin JJ, Wang JL* (2007) Effect of movement speed on cervical muscle activation pattern in healthy adults: voluntary response index analysis, *Journal of Biomechanics*, 40: S413 **(SCI)**

59. **Cheng CH**, Lin KH, Lin JJ, Wang JL* (2007) Cervical electromyographic activities during neck movements at different speeds in healthy subjects: voluntary response index analysis, *Biomedical Engineering-Applications Basis Communications,* 19(6): 349-57

Conference Papers

1. Kuo TA, Niek YY, Wu PF, **Cheng CH***. Biomechanical analysis of physiological requirement and benefits of the Asian squat. 10th Asian-Pacific Conference on Biomechanics (AP Biomech), 2019. **(Oral Presentation)**

2. Khalaf K, Nikkhoo M, Khoz Z, Niu CC, **Cheng CH**. Postoperative Effect of Lumbar Fusion Surgery on Adjacent Segment Biomechanics- Personalized Parametric Finite Element Analyses. International Symposium on Computer Methods in Biomechanics and Biomedical Engineering (CMBBE), 2019.

3. Liu XT, **Cheng CH***, Cheng HYK. Development of an integrated portable system for the clinical evaluation of the head and trunk control. International Conference on Biomedical and Health Informatics (ICBHI), 2019. **(Oral Presentation)**

4. Huang HW, Kuo TW, Lee CL, Lin YT, Ju YY, **Cheng CH***. Effects of Muscle Fatigue on the Kinect Control of Free Throw in the Wheelchair Basketball Sport. International Conference on Biomechanics and Medical Engineering (ICBME), 2019.

5. Liu XT, Wu PF, **Cheng CH***. Development of a Kinect-based health assessment system for the elderly. International Convention on Rehabilitation Engineering and Assistive Technology (i-CREATe), 2019.

6. Liu CH, Wu PF, **Cheng CH***. The efficacy of the portable neck training system for patients with chronic neck pain. World Congress on Bioengineering (WACBE), 2019.

7. Shih MC, Liu XT, **Cheng CH**, Chen CJ. The feasibility of motion-sensing technology for assessment of functional performance of elderly. Annual Conference, Progress in Rehabilitation Research (ACRM), 2019.

8. Khalaf K, Kinda K, Nikkhoo M, Khoz Z, Wang JL, El-Rich M, **Cheng CH**. Biomechanical Response of the Cervical Spine after Laminectomy - Parametric Finite Element Analysis. Congress of the European Society of Biomechanics (EORS), 2019. **(Oral Presentation)**

9. Nikkhoo M, Khoz Z, Niu CC, **Cheng CH***. Different Degrees of Disc Degeneration Alter the Multidirectional Motions and Load-Sharing of the Lumbar

Spine – Parametric Subject-Specific Finite Element Simulations. Annual Meeting of Orthopaedic Research Society (ORS), 2019.

10. Fu CJ, Lu ML, **Cheng CH**, Chen WC, Niu CC*. MRI Evaluation of Postoperative Fatty Infiltration in Paraspinal Muscle and Dural Sac Cross-Sectional Area after Posterior Lumbar Surgery: Comparison Between Conventional Open and Minimal Invasive Approaches. Annual Meeting of Orthopaedic Research Society (ORS), 2019.

11. Lu ML, **Cheng CH**, Chen WC, Fu CJ, Niu CC*. Comparisons of Lumbar Muscle Performance between the Minimally Invasive and Open Lumbar Fusion Surgery after One Year Follow-up. Annual Meeting of Orthopaedic Research Society (ORS), 2019.

12. **Cheng CH***, Lin CF, Cheng HYK. Comparisons of Different Resistance Training Effects on the Muscle Property of Triceps Brachii in Male and Female Young Subjects. World Confederation for Physical Therapy (WCPT), 2019.

13. Liu XT, Lin CF, **Cheng CH***. Comparison between the Force Plate and Nintendo Wii Balance Board for the Assessment of Lower Extremity Function. International Conference on Mechanics in Medicine and Biology (ICMMB), 2018.

14. Liu CH, Hsu WL, **Cheng CH***. Comparisons of the Muscle Contractile Properties and Jumping Performance after the Static and Dynamic Stretching Exercise. 11th Pan-Pacific Conference on Rehabilitation, 2018. **(Oral Presentation)**

15. **Cheng CH**, Lin CF, Tang WT. Differences in Performance of Athletic Vision and Postural Control between Skilled and Non-Skilled Badminton Players. World Congress of Biomechanics (WCB), 2018.

16. Lee YH, Niu CC, Chen WC, **Cheng CH***. The Adaptive Changes in Sit to Sit Movement Following Lumbar Spinal Fusion. World Congress of Biomechanics (WCB), 2018.

17. Nikkhoo M, Khoz Z, Ghobadiha E, Niu CC, **Cheng CH**, Khalaf K. Development of a Parametric Subject-Specific Finite Element Model to Investigate the Lumbar Spine Response before and after 1-Level Posterior Fusion. World Congress of Biomechanics (WCB), 2018.

18. Lin IS, **Cheng CH**, Wang SF, Chien A, Lai DM, Wang JL, Hsu WL*. Effect of Cervical Spinal Decompression Surgery on Postural Stability Control during Quiet Standing in Patients with Cervical Spondylotic Myelopathy. World Congress of Biomechanics (WCB), 2018.

19. Cheng YS, Wang SF, Lai DM, Wang JL, **Cheng CH**, Chien A, Hsu WL*. Effects of Perturbation Balance Training using a Custom-Made Treadmill on Gait and Functional Performance for Patients with Cervical Spondylotic Myelopathy after Decompression Surgery. World Congress of Biomechanics (WCB), 2018.

20. Khoz Z, Nikkhoo M, **Cheng CH**, "Parametric Finite Element Modeling of Lumbar Spine" (In Farsi), 3rd International Conference on Mechanical Engineering, Tehran, Iran, May 11, 2018.

21. Khalaf K, Nikkhoo M, El-Rich M, **Cheng CH**, "Evaluation of Cervical Laminectomy on Intervertebral Motions Using a Validated Parametric Subject-Specific Finite element Model", 15th International Symposium on Computer Methods in Biomechanics (CMBBE), Lisbon, Portugal, March 26-29, 2018. **(Oral Presentation)**

22. **Cheng CH***, Niu CC, Lu ML, Chen WC, Fu CJ, Nikkhoo M, Liu XT. One-Year Comparative Functional Outcomes of Open and Minimally Invasive Transforaminal Lumbar Interbody Fusion in Patients with Degenerative Lumbar Disease. Annual Meeting of Orthopaedic Research Society, 2018

23. Liu CH, Cheng HYK, **Cheng CH***. Test-retest reliability of the ultrasound-based and IMU-based devices in assessing the cervicocephalic kinesthetic sensibility. IEEE International Conference on System Science and Engineering, 2018

24. 張曼瑋、謝昀芷、方威皓、江宇智、**鄭智修***。比較不同的阻力訓練方式對於肱三頭肌肌肉性質的影響。全国生物力学大会, 2018

25. **Cheng CH***, Chiang YC, Hsu WL, Chien A, Wang SF, Wang JL, Lai DM, Lee YH. Cervicocephalic Kinesthetic Sensibility in Elderly with and without Cervical Spondylotic Myelopathy. World Congress of Geriatrics and Gerontology, 2017

26. Yu YS, **Cheng CH***. Effect of Pillow on the Subjective Feeling and Neck-Shoulder Muscle Activities of the Male and Female Young Adults during Supine-Lying. Annual Scientific Meeting of the Taiwanese Society of Biomechanics, 2017

27. **Cheng CH***, Niu CC, Lu ML, Chen WC, Nikkhoo M, Hwang YC. Functional Outcome Following Open Versus Minimally Invasive Transforaminal Lumbar Interbody Fusion in Patients with Degenerative Lumbar Disease. Annual Meeting of Orthopaedic Research Society, 2017

28. **Cheng CH***, Hsu WL, Chien A, Wang JL, Lai DM, Wang SF, Yu YS. Changes of the Head Control Ability in Patients with Cervical Spondylotic Myelopathy. Conference for Innovation in Biomedical Engineering and Life Sciences, 2017

29. Nikkhoo M, Arbabzadeh F, **Cheng CH**, Khalaf K. Development of a Parametric Subject-Specific Finite Element Model of the Lower Cervical Spine to Evaluate the Effect of Disease on the Motion Patterns. European Orthopaedic Research Society, 2017

30. 劉沛怡、徐瑋勵、王淑芬、鄭智修、簡溫原、賴達明、王兆麟。Effect of Perturbation Training Using Split-Belt Perturbation Treadmill on Postural Control of Patients with Cervical Decompression Surgery。2017 醫工年會學術研討會 (論文壁報獎-佳作)

31. 黃詠絜、李睿恒、鄭勻卉、劉慶美、鄭智修*。疲勞對於羽球選手高手擊球時上肢關節動作的影響。國際生物力學與復健工程暨輔具科技學術研討會, 2017 **(Outstanding Poster Presentation Award)**

32. 陳怡璇、林亞哲、楊欣栩、王翠苹、鄭智修*。比較不同的伸展方式對股四頭肌肌肉性質的影響。國際生物力學與復健工程暨輔具科技學術研討會, 2017

33. Lee YH, Lin YC, Niu CC, Chen WC, Lu ML, Chiang YC, **Cheng CH***. Differences of the Postural Control Ability in Elderly with and without Degenerative Lumbar Disorders. WACBE World Congress on Bioengineering, 2017.

34. **Cheng CH***, Ching CTS, Yang CY. Differences of Performance Related Characteristics between the Experienced and Inexperienced Badminton Players Performing the Overhead Stroke. International Society of Biomechanics, 2017

35. 劉沛怡、王淑芬、鄭智修、簡溫原、賴達明、王兆麟、徐瑋勵*。頸椎脊髓神經病變患者其站立平衡控制於手術後之恢復。中華民國物理治療學會第七十一次學術研討會，2016

36. 李秉儒、郭乃華、徐瑋勵、簡溫原、鄭智修、黃敏瑄、王兆麟、賴達明、王淑芬*。退化性頸椎脊髓病變病人行走功能相關因素之探討。中華民國物理治療學會第七十一次學術研討會，2016

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38. **Cheng CH***, Yang CY, Ching CTS. Test-Retest Reliability of a Prototype Head Trainer for Patients with Parkinson's Disease. International Convention on Rehabilitation Engineering and Assistive Technology, 2016

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43. Chien A, Lai DM, Wang SF, Hsu WL, **Cheng CH**, Wang JL. Comparison of Cervical Kinematics, Pain and Functional Disability between Single- And Two-level Anterior Cervical Discectomy and Fusion. Annual Meeting of Orthopaedic Research Society, 2016 **(Oral Presentation)**

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47. 鄭智修*、陳任偉、程欣儀等。羽球選手和一般人在運動視覺表現以及反應時間上的差異。第四次 TREATS 學會暨第五次 TSICF 學會聯合學術研討會，2015

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49. 李秉儒，王淑芬，鄭智修，徐瑋勵，賴達明，王兆麟。核磁共振影像確診退化性頸椎病變之功能性分類。中華民國物理治療學會第六十九次學術研討會，2015

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52. Chien A, Lai DM, Wang SF, **Cheng CH**, Hsu WL, Wang JL*. Characteristics of radiculomyelopathy patients after anterior cervical discectomy and fusion: a biopsychosocial model. WACBE World Congress on Bioengineering, 2015 **(Oral Presentation)**

53. Hsu WL*, **Cheng CH**, Wang SF, Lai DM, Wang JL, Su HT. Upright balance

stability after surgical management of cervical spondylotic myelopathy. International Scientific Meeting on Biomechanics, 2014 **(Oral Presentation)**

54. Chung HC, Cheng HYK, **Cheng CH***. Effect of knee brace on the loading of the lower extremity during sit-to-stand and stand-to-sit tasks. International Scientific Meeting on Biomechanics, 2014 **(Oral Presentation)**

55. Chen RW, Cheng HYK, **Cheng CH***. The muscle activation and postural control pattern of the skilled and non-skilled badminton players during overhead stroke. International Scientific Meeting on Biomechanics, 2014 **(Oral Presentation)**

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58. **Cheng CH**, Ju YY, Lin YC, Cheng HYK*. Effects of sloped surfaces on the postural control in standing workers after prolong standing. World Congress of Biomechanics, 2014

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70. Cheng HYK, Ju YY, Chen CL, Wong AMK, **Cheng CH**, Effects of an eight-week repetitive passive knee movement intervention on lower extremity muscle tone and function in children with cerebral palsy, Conference on Rehabilitation Engineering and Assistive Technology Society of Korea, 2012 **(Oral Presentation)**

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74. Lin JL, Yen LW, **Cheng CH***, The comparison of whole-body muscle fatigue between the anaerobic and aerobic specific tests in badminton players, Asia-Oceanian Conference of Physical Rehabilitation and Medicine, 2012 **(Oral Presentation)**

75. **Cheng CH**, Wang JL, Chen CPC, Chang YL, Comparisons of the in vivo flexibility characteristics of cervical spine in young subjects with/without chronic neck pain. Annual Meeting of Orthopaedic Research Society, 2012

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86. **Cheng CH**, Lin KH, Wang JL, The Effect of Head Movement Speeds on the Cervical Muscle Co-Contraction during Sagittal and Coronal Motions. Annual Scientific Meeting of the Taiwanese Society of Biomechanics, 2006 **(Oral Presentation Award)**

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88. **Cheng CH**, Chiou HC, Wang JL, The Load Transmission and Energy Absorption of Tibia during Impact Load. International Conference on Biomechanics combined with Annual Scientific Meeting of Taiwanese Society of Biomechanics, 2001

89. **Cheng CH**, Chang LW, A System Model of FES-Assisted Swivel Gait Orthosis System for Paraplegics. Biomedical Engineering Conference, 2001

專書

1. 林燕慧、鄭智修、魏鴻文 編譯。骨骼肌肉系統 – 基礎生物力學。第四版。台北：澳商沃特庫爾股份有限公司台灣分公司，2013；ISBN 978-986-89835-0-2。
2. 張曉昀、鄭智修、林彥瑋、羅楚玲、黃子涵 編譯。徒手治療指南: 關節鬆動術與矯治術 – 以實證為導向。初版。台北：禾楓書局有限公司，2020；ISBN 978-986-98527-7-7。

專利

1. 人體關節運動量管理系統及方法。**發明第 I562762 號**。發明人：鄭智修、陳鴻彬。
2. 頭頸姿勢監測之方法。**發明第 I643096 號**。發明人：鄭智修、程德勝、陳柏旭。
3. 回饋式頸部運動訓練之方法。**發明第 I653076 號**。發明人：鄭智修、林呈鳳、程德勝。
4. 上肢固定結構。**發明第 I664957 號**。發明人：鄭智修、陳柏旭、徐瑋勵。
5. 混合實境式動作功能評估系統。**發明第 I699669 號**。發明人：鄭智修。

技術移轉

1. 銀髮族智慧健康檢測系統。長庚大學技轉合約編號：107007。技轉廠商：龍骨王有限公司。
2. 人體關節運動管理系統。長庚大學技轉合約編號：108006。技轉廠商：聯興儀器股份有限公司。

研究計畫

執行中

執行期間	計畫名稱	經費來源	擔任工作
2018～2021	肌少症與脊椎疾病研究：從臨床與基礎、診斷與復健器材研發、到物理治療策略評估-子計畫四:肌少症功能篩檢指標建立與混合實境式動作功能評估系統之開發（107-2221-E-182-018-MY3）	科技部	主持人
2017～2020	銀髮族智慧健康檢測系統之開發與臨床測試（106-2218-E-182-007-MY3）	科技部	主持人

2019～2021	應用可攜式健康檢測系統於高齡衰弱症評估	長庚醫學研究計劃	主持人
2019～2019	女性穿著不同材質鞋款行走時之下肢生物力學分析	長庚大學產學合作計畫	主持人
2017～2019	慢性頸痛患者使用傳統頸部物理治療和可攜式頸部運動訓練系統之效益比較	長庚醫學研究計劃	主持人
2018～2020	整合型脊椎植入物之生物力學分析與新穎性解決方案之子計畫一：退化性腰椎疾病患者與健康人之功能性表現與姿勢控制能力之差異	長庚醫學研究計劃	共同主持人
2018～2021	肌少症與脊椎疾病研究:從臨床與基礎、診斷與復健器材研發、到物理治療策略評估-總計畫兼子計畫一:肌少症與退化性脊椎疾病之相關性及其臨床手術指引研究(107-2221-E-002-060-MY3)	科技部	共同主持人
2018～2021	肌少症與脊椎疾病研究：從臨床與基礎、診斷與復健器材研發、到物理治療策略評估-子計畫六:退化性脊椎狹窄合併肌少症減壓手術後運動策略之研究(107-2221-E-002-069-MY3)	科技部	共同主持人

已結案

執行期間	計畫名稱	經費來源	擔任工作
2015～2018	頸椎脊髓神經病變之手術選擇、心理諮詢介入、神經肌肉代償、復健運動療 效與生物力學之研究－子計畫三: 頸椎脊髓神經病變	科技部	主持人

	患者的居家運動訓練感測器之開發並應用於身體控制機制 與訓練療效之探討(104-2221-E-182-078-MY3)		
2015～2018	頸椎脊髓神經病變之手術選擇、心理諮詢介入、神經肌肉代償、復健運動療 效與生物力學之研究－子計畫一: 頸椎脊髓神經病變患者手術治療 、保守治療以及心理諮商介入對於臨床效果之分析(104-2221-E-182-078-MY3)	科技部	共同主持人
2015～2018	頸椎脊髓神經病變之手術選擇、心理諮詢介入、神經肌肉代償、復健運動療 效與生物力學之研究－子計畫二: 退化性頸椎脊髓病人影像及感覺疼痛評估分類與治療預後探討-與神經根病 變、同年齡中老年人追蹤比較研究(104-2221-E-182-078-MY3)	科技部	共同主持人
2015～2018	頸椎脊髓神經病變之手術選擇、心理諮詢介入、神經肌肉代償、復健運動療 效與生物力學之研究－子計畫四: 探討手術方式及復健運動對於頸椎脊髓神經病變患者術後頸椎穩定度之影響 -體外頸椎肌肉模型(104-2221-E-182-078-MY3)	科技部	共同主持人
2016～2017	新式運動訓練輔具對於改善帕金森氏症患者之頭部穩定和姿勢控制能力之療效分析	長庚醫學研究計劃	主持人

2014～2016	羽球現場運動測試與訓練平台之開發: 應用於探討疲勞對於羽球選手的動作控制及反應速度之生物力學分析	長庚醫學研究計劃	主持人
2015～2016	整合型腰椎固定之結果分析與新式骨釘設計－子計畫三:腰椎融合手術後併發鄰近節段病變患者的脊柱周邊肌群功能研究	長庚醫學研究計劃	共同主持人
2012～2015	頸椎脊髓神經病變之手術選擇與術後物理治療方式之評估方法研究－子計畫四:頸部肌肉功能對於頸椎脊髓神經病變手術及物理治療成效影響之生物力學分析(101-2221-E-182-020-MY3)	科技部	主持人
2012～2015	頸椎脊髓神經病變之手術選擇與術後物理治療方式之評估方法研究－子計畫一:頸椎脊髓神經病變之手術前後病人醫學影像變化、心理與生活功能影響(101-2221-E-002-094-MY3)	科技部	共同主持人
2012～2015	頸椎脊髓神經病變之手術選擇與術後物理治療方式之評估方法研究－子計畫二:退化性頸椎髓神經病變手術後之物理治療策略(101-2221-E-002-058-MY3)	科技部	共同主持人
2012～2015	頸椎脊髓神經病變之手術選擇與術後物理治療方式之評估方法研究－總計畫兼子計畫三:頸椎脊髓神經病變手術之體外屍骨生物力學研究(101-2221-E-002-060-MY3)	科技部	共同主持人

2014～2015	身心障礙者功能需求導向之輔具檢索系統設計開發 (103-2221-E-182 -048-)	科技部	共同主持人
2014～2015	探討以下顎髁突活動度與嚼肌硬度驗證顳顎關節障礙療效的研究 (103-2314-B-241-003-)	科技部	共同主持人
2013～2014	患者自控式下肢癱瘓者交替式助動步行矯具(1/3)（102-2218-E-002 -010 -）	科技部	共同主持人
2014～2016	帕金森氏病的步態異常:臨床量化分析、磁振刺激治療、神經影像診斷的系列研究(103-2314-B-182A-028-)	科技部	共同主持人
2013～2015	跌倒之於帕金森氏病 - 以姿勢不穩和冷凍步態為觀測指標的系列研究 : 臨床分析、追蹤比較、與病理生理機轉 (102-2314-B-182A-062 -)	科技部	共同主持人
2014～2014	正常人穿載不同膝護具由坐至站立時之下肢生物力學分析	長庚大學產學合作計畫	主持人
2013～2013	運動指導影片驗證設計與常模收集	工業研究院	共同主持人
2012～2013	慢性頸痛與頸部肌肉疲勞影響身體姿勢控制之機制	長庚醫學研究計劃	主持人
2011～2012	嬰幼兒第一年的壓力中心量測與神經動作評估之相關性	長庚醫學研究計劃	共同主持人

2011～2012	頸部肌肉疲勞對於慢性頸痛患者之頭部穩定與姿勢控制的影響:身體調節機制與復健運動訓練療效之探討(100-2314-B-182-030-)	科技部	主持人
2010～2012	中老年人步行運動時軀幹與肢體動態穩定度之偵測研究(99-2410-H-182-039-)	科技部	共同主持人
2010~2012	妥瑞症兒童在不同感覺情境下的姿勢穩定度與平衡訓練(99-2314-B-182-019-)	科技部	共同主持人
2010~2011	年輕健康人與慢性頸痛患者在頸部矢狀平面運動上之頸椎橈度性質	長庚醫學研究計劃	主持人
2010～2011	以新式肌電圖整合最佳化模型估算健康人與慢性頸痛患者之頸椎負載及穩定度(99-2218-E-182-004-)	科技部	主持人