

CURRICULUM VITAE

JAY KIM, PhD

Oregon State University

College of Public Health and Human Sciences

Environmental and Occupational Health Program

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Updated on February 1, 2022

A. EDUCATION AND EMPLOYMENT INFORMATION

EDUCATION

- 2008 - 2012 Ph.D in Industrial and Systems Engineering**
University of Washington – Seattle
Dissertation Advisor: Peter W Johnson, Ph.D
Dissertation: *Non-invasive real-time assessment of muscle fatigue during computer use: using mouse button-click and keystroke duration*
Research Emphasis: **Occupational Ergonomics, biomechanics**
- 2005 - 2007 M.S. in Industrial and Systems Engineering**
University of Wisconsin - Madison
(Focus on Applied Statistics)
- 1995 - 2003 B.S. in Industrial and Systems Engineering**
Dankook University, South Korea
(Minor in Economics)

ACADEMIC APPOINTMENTS AND PROFESSIONAL POSITIONS

- 2021 – present Associate Professor**
School of Biological and Population Health Sciences, Oregon State University
- 2021 – 2022 Invited Visiting Professor**
Department of System Management Engineering, SungKyunKwan University
- 2015 – 2021 Assistant Professor**
School of Biological and Population Health Sciences, Oregon State University
- 2016 – present Courtesy Assistant Professor**
School of Mechanical, Industrial, and Manufacturing Engineering, Oregon State University
- 2016 – present Graduate Faculty**
Bioengineering, College of Engineering, Oregon State University
- 2013 – 2015 Assistant Professor**
Department of Industrial and Systems Engineering, Northern Illinois University
- 2012 – 2013 Research Scientist**
Department of Environmental and Occupational Health Sciences, University of Washington
- 2009 – 2012 Predoctoral Research Associate**
Department of Environmental and Occupational Health Sciences, University of Washington

2008 – 2009	Graduate Teaching Assistant Department of Industrial and Systems Engineering, University of Washington
2003 – 2004	Engineer Quality Management Division, Molex Korea

B. SCHOLARSHIP

*** Student or mentee.**

Note: Each contribution indicates my specific role within the research, scholarship and/or creative activity. The following descriptions accompany the role indicated in the contribution:

Lead author: Conceptualized research idea, designed the study, collected/analyzed data, interpreted the results, and developed the manuscript.

Major contributor: Took a major role in **all** of the following activities: conceptualization, study design, data collection/analysis, result interpretation, and manuscript development/revision.

Contributing author: Took a major role in **any** of the following activities: conceptualization, study design, data collection/analysis, result interpretation, and manuscript development/revision.

Senior author: This role typically consists of mentoring post-doc, graduate and/ or undergraduate students through all aspects of the contribution.

C.1. Peer Reviewed Journal Articles

- Dennerlein JT, Cavallari JM, **Kim JH**, Green NH (2022) The effects of a new seat suspension system on whole body vibration exposure and driver low back pain and disability: results from a randomized controlled trial in truck drivers, *Applied Ergonomics*, vol. 98, 103588
Major contributor
- Kia K*, Hwang J, Kim IS, Ishak H*, **Kim JH** (2021) The Effects of Target Size and Error Rate on the cognitive Demand and Stress during Augmented Reality Interactions, *Applied Ergonomics*, vol. 97, 103502
Senior author
- Kia K*, Johnson PW, **Kim JH** (2021) The effects of different seat suspension types on occupants' physiologic responses and task performance: implications for autonomous and conventional vehicles, *Applied Ergonomics*, vol. 93, 103380
- Hwang J, Yerriboina V, Ari H, **Kim JH** (2021) Effects of passive back-support exoskeletons on physical demands and usability during patient transfer tasks, *Applied Ergonomics*, vol. 93. 103370
Senior author
- Park JH, Kia K*, Fitch SM*, Srinivasan D, **Kim JH** (2021) Postural balance effects from exposure to multi-axial whole-body vibration in mining vehicle operation, *Applied Ergonomics*, vol. 91. 103307
Senior author.
- Kim JH**, Ari H, Madasu C, Hwang J (2020) Evaluation of Biomechanical Stress in Neck and Shoulder during Augmented Reality Interactions, *Applied Ergonomics*, vol. 88, 103175
Lead author
- Hwang J, Ari H, Matoo M, Chen J, **Kim JH** (2020) Air-assisted Devices Reduce Biomechanical Loading in the Low back and Upper Extremities during Patient Turning Tasks, *Applied Ergonomics*, vol. 87, 103121
Senior author
- Kia K*, Fitch, SM*, Newsom, SA, **Kim, JH** (2020) Effect of whole-body vibration exposures on physiological stresses: Mining heavy equipment applications, *Applied Ergonomics*, vol. 85, 103065
Senior author.

9. Akhil S, Kuppam VA, **Kim JH**, Hwang J (2020) The effects of target location on musculoskeletal load, task performance, and subjective discomfort during virtual reality interactions. *Applied Ergonomics*, 84: 103010. **Featured in U.S. News, E&T (Institute of Engineering and Technology), and many other international and local media**
Major contributor.
10. Thansuwan O, Galvin K, Tchong-French M, **Kim JH**, Johnson PW. (2019) A feasibility study comparing objective and subjective field-based physical exposure measurements during apple harvesting with ladders and mobile platforms. *Journal of Agromedicine*. 24(3). 268-278
Contributing author.
11. Konda RR, Ryu JC, **Kim JH** (2019) Three-Dimensional Global Acceleration Estimation in the Presence of Rotation Using an Inertial Measurement Unit for Whole Body Vibration Research. *International Journal of Occupational Safety and Ergonomics*. 1-22
Major contributor.
12. Hwang J, Kuppam VA, Raju Chodraju SS, Chen J, **Kim JH**. (2019) Commercially-Available Friction-Reducing Patient Transfer Devices Reduced Biomechanical Stresses on Caregivers' Upper Extremities and Low Back. *Human Factors*. 1-16.
Senior author.
13. Kia K*, Sisley J*, Johnson PW, **Kim JH**. (2019) Differences in typing force, muscle activity, wrist posture, typing performance, and self-reported comfort among conventional and ultra-low travel keyboards. *Applied Ergonomics*. 74. 10-16.
Senior author.
14. Syamala KR, Ailneni RC, **Kim JH**, Hwang, J (2018) Armrest and Back Support Reduced Biomechanical Loading in the Neck and Upper Extremities during Mobile Phone Use. *Applied Ergonomics*. 73. 48-54.
Major contributor.
15. **Kim JH**, Marine L, Dennerlein JT (2018) Evaluation of different engineering control to reduce whole body vibration exposures among mining heavy equipment operators. *Applied Ergonomics*. 71. 78-86.
Lead author.
16. **Kim JH**, Zigman M, Dennerlein JT, Johnson PW. (2018) A randomized controlled trial of a truck seat intervention: Part 2 – Associations between whole body vibration exposures and health outcomes. *Annals of Work Exposures and Health*. 62(8) 1000-1011. **Featured as Editor's Choice**.
Lead author.
17. Johnson PW, Zigman M, Dennerlein JT, **Kim JH** (2018) A randomized controlled trial of a truck seat intervention: Part 1 – Assessment of whole body vibration exposures. *Annals of Work Exposures and Health*. 62(8) 990-999.
Lead author.
18. **Kim JH**, Dennerlein JT, Johnson PW (2018) The effect of a multi-axis suspension on whole body vibration exposures and physical stress in the neck and low back in agricultural tractor applications. *Applied Ergonomics*. 68. 80-89.
Lead author.
19. **Kim JH**, Zigman M, Aulck L, Ibbotson J, Dennerlein JT, Johnson PW (2016) Whole body vibration exposures and health status among professional truck drivers: a cross-sectional analysis. *Annals of Occupational Hygiene*. 60(8) 936-948
Lead author.
20. **Kim JH**, Aulck L, Trippany D, Johnson PW (2015) The effect of work surface hardness on mechanical stress, muscle activity, and wrist postures. *Work* 52(2): 231-244.
Lead author.

21. **Kim JH**, Aulck L, Thamsuwan O, Bartha M, Johnson PW (2014) The Effects of Key Sizes of Touch Screen Virtual Keyboard on Productivity, Usability, Wrist Posture and Typing forces. *Human Factors* 56(7):1235-48. **Mentioned in the Wall Street Journal on March 26th, 2014**
Lead author.
22. **Kim JH**, Aulck L, Bartha M, Harper CA, Johnson PW (2014) Differences in Typing Forces, Muscle Activity, Discomfort, and Typing Performance between a Virtual, Notebook, and Desktop Keyboard. *Applied Ergonomics* 45(6) 1406-1413. **Featured in the Wall Street Journal, ABC, Fox news, and many other international media on October 13th, 2014**
Lead author.
23. **Kim JH**, Johnson PW (2014) Fatigue development in the figure flexor muscle differs between keyboard and mouse use. *European Journal of Applied Physiology* 114(12):2469-82.
Lead author.
24. **Kim, JH**, Johnson PW (2012) Viability of Using Digital Signals from the keyboard to Capture Typing Force Exposures. *Ergonomics* 55(11): 1395-1403
Lead author.
25. **Kim JH**, Johnson PW (2012) Can Digital Signals from the Keyboard Capture Force Exposures during Typing? *Work* 4(2012): 2588-2590.
Lead author.

B.2. Peer Reviewed Papers under review

1. **Kim JH**, Vaughan A, Kincl L (Under review) A field-based feasibility study characterizing objective physical risk measures of harvesting crab with commercial fishermen, *Journal of Agromedicine*
Lead author
2. Kia K*, Johnson PW, Dennerlein JT, **Kim JH** (Under review) Evaluation of Vertical and Multi-axial Suspension Seats for Reducing Vertical-dominant and Multi-axial Whole Body Vibration and Associated Neck and Low Back Joint Torque and Muscle Activity. *Ergonomics*
Senior author.

B.3. Peer Reviewed Papers in Preparation

1. Kia K*, Ishak H*, Hwang J, **Kim JH** (In Preparation) Evaluation of Biomechanical Exposures in the Neck and Upper Extremities during Augmented Reality Interactions. *Ergonomics*
Senior author
2. Kia K*, Hwang J, Kim IS, Ishak H*, **Kim JH** (In preparation) The effects of Target Sizes and Error Rates on Cognitive Stress during Virtual Reality. *Ergonomics*.
Senior author
3. Kia K*, Hwang J, **Kim JH** (In preparation) Musculoskeletal Stress in the Neck and Upper Extremities during Virtual Reality. *Human Factors*.
Senior author
4. Ryou HF, Johnson PW, **Kim JH**, Seto E (In Preparation) A Comparison of Forklift Operator Whole-body Vibration Exposures when Operating Forklifts with and without a Mast-based Vibration Damping System, *International Journal of Industrial Ergonomics*.
Contributing author
5. Ryou HF, Johnson PW, **Kim JH**, Seto E (In Preparation) Differences in whole-body vibration exposures between forklifts with pneumatic and solid tires, *International Journal of Industrial Ergonomics*.
Contributing author

6. Ryou HF, Johnson PW, **Kim JH**, Seto E (In Preparation) Contributions of the seat top and seat suspension in mitigating forklift operators' exposure to whole-body vibration, *International Journal of Industrial Ergonomics*.
Contributing author

B.4. Peer Reviewed Conference Proceedings/Presentations

1. Kia K*, Hwang J, Kim I, Ishak H*, **Kim JH** (2021) Different System Error Rates in Augmented Reality Interface Affected Cognitive Stress. 2021 International Meeting of the Human Factors & Ergonomics Society. Baltimore, MD
Senior author
2. Hwang, J, Yerriboina V, Ari H, **Kim JH** (2021) Biomechanical Evaluation of Back-Support Exoskeletons during Patient Transfers. 2021 International Meeting of the Human Factors & Ergonomics Society. Baltimore, MD
Senior author
3. Pan-Zagorski W, **Kim JH**, Pereny MA, Collins JG, Johnson PW (2021) Dynamic Comfort Testing of Automotive Seats in a Laboratory Setting. Comfort Congress 2021. Virtual (Online), United Kingdom.
Major contributor
4. Pan-Zagorski W, **Kim JH**, Kiana K*, Pereny MA, Johnson PW (2021) Seat Dynamic comfort and vibration performance in laboratory testing. The 8th American Conference on Human Vibration organized by West Virginia University School of Medicine and Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, Morgantown, WV.
Major contributor
5. Kia K*, Hwang J, Kim I, Ishak H*, **Kim JH** (2021) Cognitive Demand Was Affected by Error Rate during Augmented Reality Interactions. The 21th International Ergonomic Association Conference. Vancouver, BC, Canada
Senior author
6. **Kim JH**, Ari H, Madasu C, Hwang J (2021) Influences of Target Distance and Size on Shoulder Stress and Task Performance during Augmented Reality Interactions. The 21th International Ergonomic Association Conference. Vancouver, BC, Canada
Lead author
7. Johnson PW, **Kim JH** (2021) Evaluation of a prototype suspension to reduce neonate whole body vibration exposure during ambulance transport. The 21th International Ergonomic Association Conference. Vancouver, BC, Canada
Major contributor
8. Ryou HF, Johnson PW, **Kim JH**, Seto E (2021) A Comparison of Forklift Operator Whole-body Vibration Exposures When Operating Forklifts With And Without A Mast-based Vibration Damping System. The 21th International Ergonomic Association Conference. Vancouver, BC, Canada
Contributing author
9. Kia K*, Hwang J, Kim I, Ishak H*, **Kim JH** (2021) Cognitive Demand Was Affected by Error Rate during Augmented Reality Interactions. The 21th International Ergonomic Association Conference. Vancouver, BC, Canada
Senior author.
10. Kia K*, Ishak H*, Hwang J, **Kim JH** (2020) The Effects of Target Sizes on Biomechanical Exposures and Perceived Workload during Virtual and Augment Reality Interaction. 2020 International Meeting of the Human Factors & Ergonomics Society. Chicago, IL.
Senior author.

11. **Kim JH**, Kia K*, Pan-Zagorski W, Pereny M, Johnson PW (2020) The Evaluation of Seat - Comfort, Body Discomfort and Seat Vibration Performance in a Dynamic Testing Environment. 2020 International Meeting of the Human Factors & Ergonomics Society. Chicago, IL.
Senior author.
12. **Kim JH**, Ari H, Madasu C, Hwang J (2020) Evaluation of Hologram Distances in Reducing Shoulder Stress during Augmented Reality Interactions. 2020 International Meeting of the Human Factors & Ergonomics Society. Chicago, IL.
Lead author
13. **Kim JH**, Ari H, Madasu C, Hwang J (2020) The Effect of Hologram Distance/Size on Shoulder Stress During Augmented Reality Interactions. The XXXIInd Annual International Occupational Ergonomics and Safety Conference, Newark, NJ.
Lead author
14. Kia K*, Fitch SM*, Johnson PW, Dennerlein JT, **Kim JH** (2019) Comparisons of Single-axial and Multi-axial Suspension Seats in Reducing Whole Body Vibration and Related Biomechanical Stress: Mining Vehicle Application. 31st Annual International Occupational Ergonomics and Safety Conference. New Orleans, LA.
Senior author.
15. Penumudi SA, Kuppam VA, **Kim JH**, Hwang J (2019) Biomechanical Exposures in the Neck and Shoulders during Virtual Reality Interaction. 31st Annual International Occupational Ergonomics and Safety Conference. New Orleans, LA.
Major contributor.
16. Hwang JJ, Ari H, Matoo M, Chen J, **Kim JH** (2019) Systematic Evaluation of Engineering Controls to Reduce Muscular Loading during Patient Handling Tasks. 10th International Scientific Conference on the Prevention of Work-Related Musculoskeletal Disorders. Bologna, Italy.
Senior author.
17. Kia K*, Johnson PW, Fitch SM*, Dennerlein JT, **Kim JH** (2019) Comparisons of whole body vibration exposures and related musculoskeletal stress between single-axial passive and multi-axial active suspension in a mining vehicle application. 10th International Scientific Conference on the Prevention of Work-Related Musculoskeletal Disorders. Bologna, Italy.
Senior author.
18. Dennerlein JT, Cavallari JM, **Kim JH**, Johnson PW (2019) The effects of an electro-mechanical seat suspension to reduce whole body vibration and low back pain in long haul truck drivers: Results from a randomized controlled trial. 10th International Scientific Conference on the Prevention of Work-Related Musculoskeletal Disorders. Bologna, Italy.
Major contributor.
19. Penumudi SA, Kuppam VA, **Kim JH**, Hwang J (2019) Biomechanical Exposures in the Neck and Shoulders during Virtual Reality Interaction. 21st International Conference on Human-Computer Interaction. Orlando, FL.
Major contributor.
20. Hwang J, Ari H, Matoo M, Chen J, **Kim JH** (2019) Effects of Patient Turning Device on Muscular Demands of Caregivers. International Meeting of the Human Factors & Ergonomics Society. Seattle, WA.
Senior author.
21. Kia K*, Fitch SM*, Newsom S, **Kim JH** (2019) Physiological and Muscular Stress Associated with Multi-axial Whole-Body Vibration Exposure in Mining Heavy Equipment Vehicle Environment. 2019 International Meeting of the Human Factors & Ergonomics Society. Seattle, WA.
Senior author.

22. Park JH, Kia K*, Fitch SM*, Srinivasan D, **Kim JH** (2019) Effects of Multi-axial Whole Body Vibration Exposures on Postural Stability. 2019 International Meeting of the Human Factors & Ergonomics Society. Seattle, WA.
Senior author.
23. Hwang JJ, Ari H, Matoo M, Chen J, **Kim JH** (2019) Evaluation of Patient Turning Device to Reduce Muscular Demands among Caregivers. 2019 International Symposium on Human Factors and Ergonomics in Health Care. Chicago, IL.
Senior author.
24. Kia K*, Johnson PW, Fitch SM*, Dennerlein JT, **Kim JH** (2019) Evaluation of Multi-axial Active Suspension to Reduce Whole Body Vibration Exposures and Associated Biomechanical Loading in Mining Heavy Equipment Vehicle Operators. 2019 International Meeting of the Human Factors & Ergonomics Society. Seattle, WA.
Senior author.
25. Kia K*, Johnson PW, **Kim JH** (2018) The effects of whole body vibration on biomechanical loading and non-driving task performance in a self-driving car environment. American Conference of Human Vibration 2018, Seattle, WA.
Senior author.
26. Kia K*, Johnson PW, **Kim JH** (2018) Comparisons of whole body vibration, muscle activity and non-driving task performance between different seat suspensions in Autonomous Passenger Car Application. 2018 International Meeting of Human Factors & Ergonomics Society. Philadelphia, PA.
Senior author.
27. Syamala KR, Ailneni RC, **Kim JH**, Hwang, J (2018) Effects of chair support on biomechanical exposures on the neck during mobile phone use. 2018 International Meeting of the Human Factors & Ergonomics Society. Philadelphia, PA.
Senior author.
28. Hwang JJ, Chen J, **Kim JH** (2018) Evaluation of different patient transfer devices in reducing biomechanical exposures among professional caregivers. 2018 International Meeting of the Human Factors & Ergonomics Society. Philadelphia, PA.
Senior author.
29. **Kim JH** (2018) Seating Interventions and the Influence of Whole Body Vibration Exposures on Health Outcomes in Truck Drivers. The 20th International Ergonomic Association Conference. Florence, Italy.
Lead author
30. Sisley J*, Kia K*, Johnson PW, **Kim JH**. (2017) Effects of Key Travel Distances on Biomechanical Exposures and Typing Performance During Ultra-Low Key Travel Keyboards. 2017 International Meeting of the Human Factors and Ergonomics Society. Austin, TX.
Senior author.
31. Sisley J*, Kia K*, Johnson PW, **Kim JH**. (2017) Effects of Ultra-Low Key Travel Keyboards on Biomechanical Exposures and Typing Performance. The XXIXth Annual Occupational Ergonomics and Safety. Seattle, WA.
Senior author.
32. **Kim JH**, Zigman M, Ibbotson-Brown J, Aulck L, Dennerlein J, Johnson PW. (2016) Whole body vibration exposures and professional truck driver's health status in the United States. 2016 Industrial and Systems Engineering Research Conference. Anaheim, CA.
Lead author.
33. **Kim JH**, Zigman M, Ibbotson-Brown J, Aulck L, Dennerlein J, Johnson PW. (2016) Whole body vibration exposures and truck driver's health status in the United States. 9th International Scientific Conference on the Prevention of Work-Related Musculoskeletal Disorders. Toronto, Canada.
Lead author.

34. Johnson PW, Zigman M, Ibbotson-Brown J, Aulck L, Dennerlein J, **Kim JH**. (2016) A randomized controlled trial evaluating the ability of truck seats to reduce WBV exposures and self-reported adverse health outcomes. 9th International Scientific Conference on the Prevention of Work-Related Musculoskeletal Disorders. Toronto, Canada.
Major contributor.
35. **Kim JH**, Johnson PW. (2016) Typing biomechanics on the touchscreen virtual keyboard on mobile devices. 9th International Scientific Conference on the Prevention of Work-Related Musculoskeletal Disorders. Toronto, Canada. (*Invited symposium*)
Lead author.
36. **Kim JH**, Zigman M, Dennerlein JT, Johnson PW. (2016) Cross-sectional Analysis of Whole Body Vibration Exposures and Health Status among Long-haul Truck Drivers. The 2016 International Meeting of the Human Factors and Ergonomics Society. Washington DC.
Lead author.
37. **Kim JH**, Dennerlein JT, Johnson PW. (2016) The Comparisons of Whole Body Vibration Exposures and Supporting Musculature Loading between Single- and Multi-axial Suspension Seats during Agricultural Tractor Operation. The 2016 International Meeting of the Human Factors and Ergonomics Society. Washington DC.
Lead author.
38. **Kim JH**, Zigman M, Dennerlein JT, Johnson PW. (2016) Cross-sectional analysis of whole body vibration exposures and health status among long-haul truck drivers. American Conference of Human Vibration 2016, Milwaukee, WI.
Lead author.
39. **Kim JH**, Dennerlein JT, Johnson PW. (2016) Evaluation of a multi-axial suspension seat in reducing whole body vibration among agricultural tractor drivers. American Conference of Human Vibration 2016, Milwaukee, WI.
Lead author.
40. **Kim JH**, Johnson PW, Hughes M, Cavallari J, Sheldon A, Meglio D, Dennerlein JT. (2016) Truck driver's exposures to whole body vibration and musculoskeletal health outcomes. American Conference of Human Vibration 2016, Milwaukee, WI.
Senior author.
41. **Kim JH**, Lovenoor A, Zigman M, Dennerlein JT, Johnson PW. (2015) The Effects of an Engineering Intervention to Reduce Whole Body Vibration on Self-reported Low Back Pain: A Randomized Controlled Trial Study. 19th Triennial Congress of the International Ergonomics Association. Melbourne, Australia.
Lead author.
42. **Kim JH**, Lovenoor A, Zigman M, Dennerlein JT, Johnson PW. (2015) The Effects of an Engineering Intervention to Reduce Whole Body Vibration on Self-reported Low Back Pain: A Randomized Controlled Trial Study. 31st International Congress on Occupational Health. Seoul, South Korea.
Lead author.
43. **Kim JH**, Lovenoor A, Hughes M, Cavallari J, Zigman M, Dennerlein JT, Johnson PW. (2015) Whole Body Vibration Exposures in Long-haul Truck Drivers. The 2015 International Meeting of the Human Factors and Ergonomics Society. Los Angeles, CA.
Lead author.
44. Johnson PW, Lovenoor A, Hughes M, Cavallari J, Zigman M, Dennerlein JT, **Kim JH**. (2015) A Randomized Controlled Trail of New Truck Seats to Reduce Whole Body Vibration Exposures and Low Back Pain. International Meeting of the Human Factors & Ergonomics Society. Los Angeles, CA.
Major contributor.
45. **Kim JH**, Zigman M, Lovenoor A, Ibbotson J, Dennerlein JT, Johnson PW. (2014) Determinants of Whole Body Vibration Exposures in Long-haul Truck Drivers. 2014 American Conference on Human Vibration, Guelph, Ontario.
Lead author.

46. **Kim JH**, Aulck L, Trippany D, Johnson PW. (2014) Evaluation of Contact Pressure and Biomechanical Exposures on Different Work Surface Hardness. 2014 International Annual Meeting of the Human Factors and Ergonomics Society, Chicago, IL.
Lead author.
47. **Kim JH**, Aulck L, Thamsuwan O, Bartha M, Harper CA, Johnson PW. (2013) The Effects of Key Sizes of Touch Screen Virtual Keyboard on Productivity, Usability, and Typing forces. 15th International Conference on Human-Computer Interaction, Las Vegas, NV.
Lead author.
48. **Kim JH**, Johnson PW. (2013) Temporal Physiological Changes in a Finger Flexor Muscle Paralleled Changes in Keystroke Durations. 8th International Conference on Prevention of Work-related Musculoskeletal Disorders, Pusan, South Korea.
Lead author.
49. **Kim JH**, Aulck L, Thamsuwan O, Bartha M, Johnson PW. (2013) The Effects of Virtual Keyboard Key Sizes on Typing Productivity and Physical Exposures. 2013 International Annual Meeting of the Human Factors and Ergonomics Society, San Diego, CA.
Lead author.
50. Johnson PW, **Kim JH**, Zigman M, Ibbotson J. (2013) Preliminary Whole Body Vibration Exposure Measurements from a Randomized Controlled Trial (RCT) Evaluating Truck Seats. Association of Canadian Ergonomists 44th Annual Conference, Whistler, BC., CA.
Major contributor.
51. **Kim JH**, Johnson PW. (2012) Can Digital Signals from the Keyboard Capture Force Exposures during Typing? 18th World Congress on Ergonomics, Recife, Brazil.
Lead author.
52. **Kim JH**, Aulck L, Johnson PW. (accepted) Typing Force and Performance Variability between Conventional and Virtual Keyboards. 62nd Industrial Engineering Research Conference, Orlando, FL.
Lead author.
53. **Kim JH**, Aulck L, Bartha MC, Harper CA, Johnson PW. (2012) Are there Differences in Force Exposures and Typing Productivity between touchscreen and conventional keyboard? Human Factors and Ergonomics Society 56th Annual Meeting, Boston, MA.
Lead author.
54. **Kim JH**, Aulck L, Johnson PW. (2012) Are there Differences in Muscle Activity, Subjective Discomfort, and Typing Performance between Virtual and Conventional Keyboards? 34th Annual International Conference of the Engineering in Medicine and Biology Society, San Diego, CA.
Lead author.
55. **Kim JH**, Johnson PW. (2011) Validation of Software-based Measures of Keystroke Durations with External USB-based Logger. 61st Annual Industrial Engineering Research Conference, Reno, NV.
Lead author.
56. **Kim JH**, Johnson PW. (2011) Validation of a Software Program for Measuring Fatigue-Related Changes in Keystroke Durations. 33rd Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Boston, MA.
Lead author.

B.5. Other Invited Presentations

1. **Kim JH** (2021) Occupational Ergonomics and Biomechanics (OEB) Laboratory at Oregon State University. OSU's University Wide Ignite Research Colloquium -Interdisciplinary Health Sciences.
2. **Kim JH** (2020) Occupational Exposure to Whole Body Vibration and Related Health Outcomes. 2020 Cascade Occupational Safety & Health Conference. Eugene, OR.
3. **Kim JH** (2020) AR/VR Biomechanical Exposures in the Neck and Upper Extremities during Augmented Reality Interaction. Office Ergonomics Research Committee Marconi 2020

4. Choi SD, Borchardt JG, Lin JH, **Kim JH**, Malone G, Fox R, McMullin D (2017) Research to Practice to Research – Bridging the Gap between the Practitioners and Academics. The XXIXth Annual Occupational Ergonomics and Safety. Seattle, WA.
 5. Sisley J*, Kia K*, Johnson PW, **Kim JH** (2017) Effects of Key Travel Distances on Biomechanical Exposures and Typing Performance During Ultra-Low Key Travel Keyboards. 2017 Northwest Biomechanics Symposium. Eugene, OR.
 6. Sisley J*, Kia K*, Johnson PW, **Kim JH** (2017) Effects of Ultra-Low Key Travel Keyboards on Biomechanical Exposures and Typing Performance. Puget Sound Human Factors and Ergonomics Society, Seattle, WA.
 7. Hughes M, **Kim, JH**, Aulck, L, Johnson, PW (2014) Effects of Computer Keyboard Characteristics on Three-Dimensional Applied Forces. Annual Occupational, Environmental, and Public Health Conference, Blain, WA.
 8. **Kim JH** (2014) Typing on Touchscreen Virtual Keyboards: Usability and Biomechanics. Office Ergonomics Research Committee 2014 Marconi Conference, Austin, TX.
 9. **Kim JH**, Johnson PW (2012) Non-invasive Force Exposure Assessment during Typing: Using Digital Signals from a Keyboard. Annual US-Korea Conference on Science & Engineering, Log Angeles, CA.
 10. **Kim JH** (2012) Occupational Ergonomics: a Contemporary Issue and Innovative Approach. Puget Sound Human Factors and Ergonomics Society, Seattle, WA.
 11. **Kim JH** (2012) Non-invasive Assessment of Muscle Fatigue during Computer Use. Korean-American Engineers and Scientists Association Northwest Regional Conference 2012, Sacramento, CA.
 12. **Kim JH**, Johnson PW. (2011) Validation of UW/Harvard Computer Interaction Monitoring Software for Measuring Fatigue-Related Changes in Keystroke Durations. 23rd Annual Occupational, Environmental, and Public Health Conference, Blaine, WA.
 13. **Kim JH**, Johnson PW. (2011) Can Digital Signals from the Keyboard Capture Force Exposures during Typing? Northwest Biomechanics Symposium 2011, Vancouver, BC, Canada.
 14. **Kim JH**, Johnson PW. (2011) Computer Input Devices as a surrogate exposure assessment tool. Korean-American Engineers and Scientists Association Northwest Regional Conference 2011, San Jose, CA.
 15. **Kim JH**, Johnson PW. (2011) Validation of a Software Program for Measuring Fatigue-Related Changes in Keystroke Durations. Annual US-Korea Conference on Science and Engineering 2011, Park City, UT.
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C. Contracts, Grants, and Sponsored Research Projects

Current Grants

1. Title: Improving Dungeness crab vessel equipment: an ergonomic intervention to reduce risk for musculoskeletal injuries and falls overboard (U01)
Total Amount: \$895,286
Dates: September 2021 – August 2024
Role: Principal Investigator (with Co-PI: Laurel Kincl at OSU)
2. Title: Improving vessel equipment: evaluating fishermen-led safety design ideas in the Dungeness crab fleet.
Sponsor: National Institute for Occupational Safety and Health (U01)
Total Amount: \$531,811
Dates: September 2019 – August 2021
Role: Principal Investigator (with Co-PI: Laurel Kincl at OSU)

3. Title: Effects of Multi-axial Whole Body Vibration on Postural Stability.
Sponsor: National Institute for Occupational Safety and Health (R21)
Total Amount: \$330,000
Dates: September 2019 – August 2021
Role: Principal Investigator (with Co-PI: Divya Srinivasan at Virginia Tech)
4. Title: Exoskeletons as an Innovative Approach to Prevent Musculoskeletal Disorders in Surface Stone Mining
Total Amount: \$483,470 (OSU: \$49,482)
Dates: January 2021 – December 2021
Role: OSU PI (PI: Maury Nussbaum at Virginia Tech.)
5. Title: Physical and Cognitive Impact of Virtual and Augmented Reality Interactions.
Sponsor: Office Ergonomics Research Committee
Total Amount: \$25,000
Dates: January 2019 – December 2021
Role: Principal Investigator
6. Title: Systematic evaluation of exoskeletons in reducing musculoskeletal disorders in manual timber felling.
Sponsor: Pacific Northwest Agricultural Safety and Health Center through National Institute for Occupational Safety and Health
Total Amount: \$5,500
Dates: September 2019 – September 2021
Role: Principal Investigator
7. Title: Systematic evaluation of industrial exoskeletons in reducing work-related musculoskeletal disorders.
Sponsor: National Research Foundation of Korea
Total Amount: \$121,600
Dates: August 2021 – July 2022
Role: Principal Investigator

Grants pending (under review)

1. Title: Effects of Off-road Multi-axial Whole Body Vibration on Biomechanical and Physiological Stress
Sponsor: National Institute for Occupational Safety and Health (R01) **Scored (resubmission in progress)**
Total Amount: \$2,030,491
Dates: January 2021 – December 2026
Role: Principal Investigator
2. Title: The development and evaluation of an Internet-of-Things (IoT) based wireless exposure monitoring system for integration with exoskeletons **Scored (resubmission in progress)**
Sponsor: National Institute for Occupational Safety and Health (R21)
Total Amount: \$349,219
Dates: September 2021 – August 2023
Role: Principal Investigator (with Co-PI: Ji-Chul Ryu at Northern Illinois University)
3. Title: Evaluation of Biomechanical and Cognitive Load: Commercial Truck Pilots in Autonomous Trucks
Sponsor: National Institute for Occupational Safety and Health (R21)
Total Amount: \$341,898
Dates: April 2022 – March 2024
Role: Principal Investigator

4. Title: The Game's Not Over - Investigating and Combating Musculoskeletal Injuries among eSports Athletes
Sponsor: National Institute of Health (R01)
Total Amount: \$2,117,645
Dates: April 2022 – March 2024
Role: Co-Investigator (PI: Joseph Agor at OSU)
5. Title: Development and Evaluation of a Wheelchair Add-on to Reduce Injury Risks during Assisting Toileting Tasks in Healthcare Facilities—Altering Physical Job Needs for Nursing Assistants
Sponsor: National Institute for Occupational Safety and Health (R21)
Total Amount: \$340,000
Dates: July 2022 – June 2024
Role: Co-PI (Contact PI: Dr. Jong Yoon at University of Washington – Bothell)
6. Title: Improving Healthcare Worker Safety: Development of a Novel Wheelchair Add-on System to Reduce Injury Risks during Assisting Toileting Tasks in Healthcare Facilities
Sponsor: Washington State Department of Labor & Industries
Total Amount: \$174,872
Dates: April 2022 – March 2024
Role: Co-PI (Contact PI: Dr. Jong Yoon at University of Washington – Bothell)

Completed Grants

1. Title: Systematic evaluation of Multi-axial Suspension to Reduce Whole Body Vibration Exposures in Heavy Equipment Mining Vehicle Operators.
Sponsor: Alpha Foundation
Total Amount: \$361,407
Dates: January 2017 – June 2021
Role: Principal Investigator
2. Title: Automobile Seat Vibration Study
Sponsor: Lear Corporation
Total Amount: \$31,000
Dates: January 2019 – December 2019
Role: Principal Investigator
3. Title: Evaluation of Biomechanical Exposures in the Neck and Upper Extremities During Augmented Reality Interactions.
Sponsor: Office Ergonomics Research Committee
Total Amount: \$25,000
Dates: January 2018 – December 2019
Role: Principal Investigator (with Co-PI: Jaejin Hwang at Northern Illinois)
4. Title: Assessment of Whole Body Vibration and Work-Related Interventions within a Public Works Department
Sponsor: National Institute for Occupational Safety and Health's Education and Research Center (ERC) at University of Washington
Total Amount: \$10,000
Dates: January 2019 – December 2019
Role: Principal Investigator (Student PI: Stephanie Fitch)
5. Title: Effects of Whole Body Vibration Exposure on Physiological Stresses in Mining Heavy Equipment Vehicle Operators.
Sponsor: Alpha Foundation
Total Amount: \$150,000
Dates: August 2017 – October 2019
Role: Principal Investigator (with Co-PI: Sean Newsom at OSU)

6. Title: Evaluating the Effects of Multi-axial Whole Body Vibration Exposure on Postural Stability in Mining Equipment Vehicle Operators.
Sponsor: Alpha Foundation
Total Amount: \$148,270
Dates: August 2017 – October 2019
Role: Principal Investigator (with Co-PI: Divya Srinivasan at Virginia Tech.)
7. Title: Randomized Controlled Trial of Whole Body Vibration Intervention in Truck Drivers.
Sponsor: National Institute for Occupational Safety and Health R01
Total Amount: \$2,100,000
Dates: August 2013 – May 2019
Role: Co-Investigator (PIs: Jack Dennerlein and Peter Johnson)
8. Title: Systematic Evaluation of Patient Transfer Devices to Improve Musculoskeletal Health among Caregivers and Patients.
Sponsor: NIOSH Pilot Project Research Training Program
Total Amount: \$15,000
Dates: January 2018 – January 2019
Role: Co- Investigator (PI: Jaejin Hwang at Northern Illinois)
9. Title: Effects of Whole Body Vibration on Non-driving Activity Performance.
Sponsor: Bose Corporation
Total Amount: \$46,600
Dates: January 2017 – December 2017
Role: Principal Investigator
10. Title: Evaluating Biomechanical Exposures and Usability on Ultra-low Travel Keyboards.
Sponsor: Office Ergonomics Research Committee
Total Amount: \$25,000
Dates: January 2016 – December 2017
Role: Principal Investigator
11. Title: Evaluating biomechanical stresses during nasal spray use.
Sponsor: InsightsNow Inc.
Total Amount: \$37,000
Dates: December 2016 – December 2017
Role: Principal Investigator
12. Title: Characterizing lateral Whole Body Vibration for Agricultural Tractor Drivers.
Sponsor: Northern Illinois University Great Journeys Program
Total Amount: \$13,000 (given up due to resignation from NIU)
Dates: August 2015 – July 2016
Role: Principal Investigator
13. Title: Systematic evaluation of an engineering control to reduce whole-body vibration in agricultural equipment.
Sponsor: Bose Corporation
Total Amount: \$28,280
Dates: August 2014 – August 2015
Role: Principal Investigator
14. Title: Evaluating Automotive Seat Using Objective and Subject Biomechanics Measures.
Sponsor: Faurecia
Total Amount: \$10,000
Dates: January 2014 – December 2014
Role: Principal Investigator

15. Title: Characterizing and Reducing Whole Body Vibration for Agricultural Tractor Drivers.
Sponsor: Northern Illinois University Great Journeys Program
Total Amount: \$13,000
Dates: August 2014 – August 2015
Role: Principal Investigator
 16. Title: Designing and Constructing the Actuator Final Assembly Station.
Sponsor: National Science Foundation
Total Amount: \$5,000
Dates: January 2014 – August 2014
Role: Faculty Expert
 17. Title: Ergonomic Evaluation of Emerging Technologies in the TreeFruit Industry.
Sponsor: National Institute for Occupational Safety and Health
Total Amount: \$
Dates: January 2012 – August 2016
Role: Co-Investigator (PI: Peter Johnson at UW)
 18. Title: Whole Body Vibration Exposure Assessment on Off-road Vehicles.
Sponsor: University of Washington
Total Amount: \$140,000
Dates: January 2012 – August 2013
Role: Co-Investigator (PI: Peter Johnson at UW)
 19. Title: Computer Work Surface Comparative Study.
Sponsor: Steelcase Inc.
Total Amount: \$50,000
Dates: January 2012 – August 2016
Role: Co-Investigator (PI: Peter Johnson at UW)
 20. Title: Randomized Controlled Trial of Whole Body Vibration Intervention in WA Truck Drivers.
Sponsor: Washington State Department of Labor and Industries.
Total Amount: \$250,000
Dates: January 2012 – December 2015
Role: Co-Investigator (PI: Peter Johnson at UW)
 21. Title: Ergonomic and human factors analysis of low travel keyboards.
Sponsor: Hewlett Packard Co.
Total Amount: \$50,000
Dates: January 2011 – December 2012
Role: Co-Investigator (PI: Peter Johnson at UW)
 22. Title: Evaluation of computer mouse and keyboard as exposure assessment tools.
Sponsor: National Institute for Occupational Safety and Health
Total Amount: \$275,000
Dates: January 2009 – June 2012
Role: Co-Investigator (PI: Peter Johnson at UW)
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D. SERVICE

D.1. Services to the Profession

Invited Presentations

“Occupational Whole-Body Vibration and Related Health Outcomes”, Invited speaker, 2020 Cascade Occupational Safety & Health Conference. Eugene, OR, March 2020.

“Addressing occupational exposure to Whole Body Vibration and associated injury risks using multi-axial electromagnetic active suspension system”, Invited Speaker, Korean-American Scientists and Engineers Association West Regional Conference. Seattle, WA, November 2019.

“Research to Practice to Research – Bridging the Gap between the Practitioners and Academics”, Invited Panelist, 29th Annual Occupational Ergonomics and Safety. Seattle, WA, June 2017.

Organizing/leading professional meetings

Session chair, 31st International Occupational Ergonomics and Safety Meeting in New Orleans, LA (2019)

Co-conference organizer/chair, American Conference on Human Vibration (ACHV) in Seattle, WA (2018)

Co-symposium chair, Puget Sound HFES annual symposium, Seattle, WA (2017)

Session chair, American Conference on Human Vibration (ACHV) in Milwaukee, WI, (2016)

Session chair, Industrial and Systems Engineering Research Conference (ISERC) in Anaheim, CA, (2016)

Session chair, International Conference on Prevention of Work-related Musculoskeletal Disorders (2013)

Track chair, Ergonomics Track, 62nd IIE Annual Applied Solution Conference (2012)

Grant review

1. National Institute for Occupational Safety and Health (NIOSH), Center for Disease Control and Prevention, Intramural Project Proposal review on September 24, 2020.
2. National Institute for Occupational Safety and Health (NIOSH), Center for Disease Control and Prevention, Study section meeting: ZOH1 EHG (05) 2 on May 12, 2020.
3. Discovery grant program in Mechanical Engineering (EG 1512), Natural Sciences and Engineering Research Council of Canada, 2019.
4. “Development of a comprehensive toolkit for evaluating workplace musculoskeletal injury interventions: swine injection technologies as a test case” Workers Compensation Board of Manitoba, Canada. 2014.

Federal Agency Document review

1. National Institute for Occupational Safety and Health (NIOSH), Center for Disease Control and Prevention, “Simple Solutions for Dusty Mining Environments: Reducing Dust Exposures while Improving Ergonomics”, December 2020.

Professional Membership

2008 - 2012	Institute of Industrial Engineers
2010 - present	Human Factors and Ergonomic Society
2011- 2016	Korean-American Scientists and Engineers Association
2009 - present	Alpha Pi Mu, the National Industrial Engineering Honor Society

Editorial service:

Senior editor: *Ergonomics in Design*

Editorial board member: *Applied Ergonomics*

Editorial board member: *International Journal of Industrial Ergonomics*

Review activities for:

Applied Ergonomics
Ergonomics in Design
Ergonomics
Clinical Biomechanics

Human Factors
 Journal of Occupational & Environmental Hygiene
 Annals of Work Exposures and Health (old: Annals of Occupational Hygiene)
 Journal of Agromedicine
 IIE transactions on Occupational Ergonomics and Human Factors
 Safety and Health at Work
 Behaviour & Information Technology
 European Journal of Applied Physiology
 PLOS ONE
 International Journal of Industrial Ergonomics
 International Journal of Environmental Research and Public Health
 Human Factors and Ergonomics Society meetings
 International Ergonomics Association meetings

D.2. Services to the School, College, and University

Oregon State University

Timeframe	Service	Level
2015	Judge, Oregon Public Health Association Student Poster Competition	College
2016 - 2017	Member, Faculty Search Committee	School/Program
2017	Member, CPHHS Head Advisor Search Committee	College
2016 - present	Founding Faculty Advisor, OSU's HFES student chapter	University
2017 - 2020	Member, CPHHS Web-Communication Committee	College
2017	Panelist, CPHHS Undergraduate Research Program	College
2017	Guest speaker, URSA Engage Program	University
2019	Moderator, Oregon Public Health Association (OE session)	College
2020	Member, EOH Instructor Search Committee	School/Program
2020 - present	Member, OSU Innovation & Entrepreneurship Fellow	University
2019 - present	Campus Security Authority (CSA), Oregon State University	University
2019 - present	Ergonomics Graduate Minor Advisor	School/Program
2020	Organizer/Judge, CPHHS Next Great Startup Competition	College
2020- 2021	Member, CPHHS Curriculum Committee	College

Northern Illinois University

2013 - 2015	Faculty Advisor, Alpha Pi Mu, National Honor Society	University
2013 - 2015	Faculty Marshal at NIU Commencement ceremonies	University
2014	Member, University Scholarship Committee	University
2014	Judge, Undergraduate Research and Artistry Day Poster Competition	University
2014	Judge, Engineering Senior Design Day	College

E. HONORS AND AWARDS

2020	Innovation & Entrepreneurship fellow, Oregon State University
2019	ASPPH Early Career Public Health Research Award nominee, Association of Schools and Programs of Public Health
2015	Faculty of the year nominee, Northern Illinois University

2015	Excellence in Innovation award nominee, Northern Illinois University
2013	Principal Investigator Academy, 2013-2014, Northern Illinois University
2012	Outstanding Graduate Student Award, Industrial & Systems Engineering, U of Washington
2012	GPSS Travel Award, University of Washington
2011	International Ergonomics Association KU Smith Award finalist (best paper award)
2011	Community of Innovators Awards nominee, College of Engineering, University of Washington, (best student researcher)
2011	Two Graduate student travel awards, College of Engineering, University of Washington
2009	Alpha Pi Mu, the National Industrial Engineering Honor Society
2008	Clairmont L. Egtvedt Fellowship, University of Washington

F. HONORS AND AWARDS (Students, Advisees, and Mentees)

2021	2021-2022 OSU Provost's Distinguished Graduate Fellowship (Allen Chan, PhD advisee)
2021	CPHHS Outstanding graduate student nominee (Natalie Wenzlick, MPH advisee)
2020	ASSP scholarship, American Society of Safety Professionals (Laurence Miller, MPH advisee)
2020	Undergraduate Research, Scholarship, and the Arts (URSA) award (Catherine Petersen, Undergraduate research assistant)
2019	PTOP research grant through NIOSH ERC center at University of Washington (Stephanie Fitch, Graduate research assistant)
2018	PNS-AIHA scholarship, Pacific Northwest Section of the American Industrial Hygiene Association (Jillian Cote, MPH advisee)
2018	Graduate School Travel Award (Kiana Kia, PhD advisee)
2018	PechaKucha Showcase Excellence Award (Kiana Kia, PhD advisee)
2017	PTOP research grant through NIOSH ERC center at University of Washington with Dr. Kincl (Hayley Strenke, MHP advisee)
2017	Human Factors and Ergonomics Society Student Author Presentation Support Award (Kiana Kia, PhD advisee)
2017	Undergraduate Research Awards Program (URAP) Scholarship (Ashley Chen)

G. MEDIA COVERAGE

VR to the ER: Metaverse Early Adopters Prove Accident-Prone. *The Wall Street Journal*. February 1, 2022

OSU researchers to study how to make 'deadliest catch' safer. *OPB.org*. October 10, 2021

OSU researchers to help make the 'deadliest catch' less deadly. *KLCC.org*. October 8, 2021

Grant will help find ways to prevent injury in crab industry. *Newportnewstimes.com*. September 1, 2021

New grant will help OSU researchers find ways to prevent injury in Dungeness crab industry. *OSU Synergies* and *OSU Newsroom*. August 10, 2021

Grant: Researchers to find ways to prevent injury in the Dungeness crab fishery. *Fishery Nation*. August 10, 2021

Reduce ergonomic hazards of VR during design and development, researchers say. *Safety and Health* by **National Safety Council** March 3, 2020

Too much virtual reality can strain on your body, OSU researchers say. *Fox 12 Oregon*. January 7, 2020

Virtual Reality Can Bring Real-Life Pain. *U.S.News*. January 16, 2020

Virtual reality, real injuries: OSU study shows how to reduce physical risk in VR. *OSU Newsroom*. January 7, 2020

This Study Explores the Health Risks of VR. *Engineering.com*. January 31, 2020

Virtual reality and safety training: The benefits – and potential concerns. *Safety and Health* by **National Safety Council**. February 23, 2020

Better design can stop virtual reality causing real injury. *IET E&T*. January 9, 2020

Researchers Are Looking For Ways To Make VR Less Painful. *DesignNews*. January 15, 2020

Uncovering clues to alleviate bodily stress from heavy equipment vehicles. *OSU Synergies*. September 18, 2017

Rock ‘n’ Roll: Improve health for drivers and equipment operators. *OSU Terra*. August 3, 2017

Find the Best Phone-Screen Size for You. *The Wall Street Journal* March 26, 2014.

Buckle Up: Test Driving Comfort Technology Of Vehicle Seats. *National Public Radio* (Northern Public Radio) June 5, 2014

Typing on a Tablet Can Put a Strain on Your Shoulders. *The Wall Street Journal* October 13, 2014

Typing on a tablet linked to chronic shoulder problems. *Fox News* October 14, 2014

Typing on Tablet Keyboards Can Be Murder on the Shoulders. *ABC News Radio* October 15, 2014

Typing on a tablet can be a pain *MarketWatch* October 15, 2014

Prolonged use of touch-screen keyboards leads to chronic shoulder problems *Big News Network* October 15, 2014

Problemi alla spalla con il touch screen *italiasalute* October 15, 2014

Nuove sindromi: ecco quella da touchscreen *LA STAMPA* October 16, 2014
