



Curriculum Vitae

Personal information **Jacob Hendrik van Dieen**

Work experience

1. Employer: Vrije Universiteit Amsterdam
 - Start date: 122002
 - End date:
 - Position: professor of biomechanics
 - Activities: head of the department of Human Movement Sciences (from Sept 2016, approx. 40 faculty members), head of the department of Kinesiology (until 2015, approx. 20 faculty members), chairman of the board of examiners (2002_2013) member of the faculty board (2014_2015) program director of MSc program in Human Movement Sciences (2015_2016), director of the Erasmus Mundus joint doctorate program MOVE_AGE (www.move_age.eu, 2011_2018), to teach courses on biomechanics at undergraduate and graduate levels, to develop and coordinate the biomechanics courses in the faculty's programs, to lead a research group on mechanics and control of human movement
 - Country: Netherlands
2. Employer: Vrije Universiteit Amsterdam
 - Start date: 012000
 - End date: 112002
 - Position: associate professor
 - Activities: to teach courses on musculoskeletal disorders and tissue mechanics at undergraduate and graduate levels, to develop and coordinate the graduate and post_graduate programs in ergonomics, to lead a research group on mechanics and control of human movement
 - Country: Netherlands
3. Employer: Vrije Universiteit Amsterdam
 - Start date: 061996
 - End date: 121999
 - Position: assisitant professor
 - Activities: to teach courses on musculoskeletal disorders and tissue mechanics at undergraduate and graduate levels, to perform research on mechanics and control of the spine and trunk.
 - Country: Netherlands
4. Employer: Institute of Agricultural Engineering (IMAG_DLO)
 - Start date: 061993
 - End date: 051996
 - Position: senior researcher
 - Activities: project leader for applied and strategic research into occupational loads on the musculoskeletal system, ergonomics, and safety
 - Country: Netherlands
5. Employer: Institute of Agricultural Engineering (IMAG_DLO)
 - Start date: 051988
 - End date: 051993
 - Position: researcher
 - Activities: to initiate and perform applied and strategic research into occupational loads on the musculoskeletal system
 - Country: Netherlands
6. Employer: Institute of Agricultural Engineering (IMAG_DLO)
 - Start date: 041988
 - End date: 041989
 - Position: junior reseacrher
 - Activities: to perform and report a study on priorities for occupational health care in agriculture
 - Country: Netherlands
7. Employer: Institute of Agricultural Engineering (IMAG_DLO)
 - Start date: 101986
 - End date: 041988
 - Position: research assistant
 - Activities: to develop a method for evaluation of working postures with respect to health risks.
 - Country: Netherlands

Education and training

1. Subject: vrije Universiteit Amsterdam
 - Start date: 011990
 - End date: 051993
 - Qualification: PhD
 - Organisation: biomechanics muscle physiology
 - Country: Netherlands
2. Subject: Stichting Utrechtse Paramedische Academie (now Utrecht University of Applied Sciences)
 - Start date: 091982
 - End date: 051986
 - Qualification: BSc Physiotherapy

- Organisation: physiotherapy
- Country: Netherlands

Additional information

Publications

Publications Jaap H. van Dieën _International (refereed) journals n=546; Hirsch index: 67, 18011 citations (Febr, 2022, www.scopus.com) 2022 and in press 1. Alizadehsaravi L, Koster R, Muijres W, Maas H, Bruijn SM, van Dieën JH (2022), The underlying mechanisms of improved balance after one and ten sessions of balance training in older adults. *Hum Mov Sci* 81:102910. 2. Alizadehsaravi, L., Bruijn, S.M., Koster, R., Muijres, W., van Dieën, J.H., in press. Improvement in gait stability in older adults after ten sessions of standing balance training. *PLoS one*. 3. Beelen PE, van Dieën JH, Prins MR, Nolte PA, Kingma I. (2022) The effect of cryotherapy on postural stabilization assessed by standardized horizontal perturbations of a movable platform. *Gait Posture* 94, 32_38. 4. Bolton R, Hulshof H, Daanen HAM, van Dieën JH (in press), Effects of mattress support on sleeping position and low_back pain. *Sleep Science and Practice*. 5. Brouwer, N.P., Tabasi, A., Kingma, I., Stegeman, D.F., van Dijk, W., Moya_Esteban, A., Sartori, M., van Dieën, J.H., in press. Low back muscle action potential conduction velocity estimated using high_density electromyography. *J Electromyogr Kinesiol*. 6. de Ruiter CJ, Wilmes E, van Ardenne PS, Houtkamp N, Prince RA, Wooldrink M, van Dieën JH (2022), Stride lengths during maximal linear sprint acceleration obtained with foot_mounted inertial measurement units. *Sensors* 22:376. 7. De Ruiter CJ, Wilmes E, Brouwers SAJ, Jagers EC, van Dieën JH (in press), Concurrent validity of an easy_to_use inertial measurement unit_system to evaluate sagittal plane segment kinematics during overground sprinting at different speeds. *Sports Biomech*. 8. el Hadouchi, M., Kiers, H., de Vries, R., Veenhof, C., van Dieën, J.H., in press. Effectiveness of Power Training Compared to Strength Training in Older Adults: A Systematic Review and Meta-analysis. *European Review of Aging and Physical Activity*. 9. Felius RAW, Geerars M, Bruijn SM, van Dieën JH, Wouda NC, Punt M (2022), Reliability of IMU_Based Gait Assessment in Clinical Stroke Rehabilitation. *Sensors* 22:908. 10. Felius, R.A.W., Geerars, M., Bruijn, S.M., van Dieën, J.H., Wouda, N.C., Punt, M., in press. Reliability of IMU_Based Balance Assessment in Clinical Stroke Rehabilitation. *Gait & Posture*. 11. Franssen BL, Pijnappels M, Butter IK, Burger BJ, van Dieën JH, Hoozemans MJM (in press), Patients' perceived walking abilities, daily_life gait behavior and gait quality before and three months after total knee arthroplasty. *Arch Orthop Traumat Surg*. 12. Gallina A, Düsselhorst Klug C, Farina D, Merletti R, Besomi M, Holobar A, Enoka RM, Hug F, Falla D, Søgaard K, McGill K, Clancy EA, Carson RG, van Dieën JH, Gandevia S, Lowery M, Besier T, Kiernan MC, Rothwell JC, Tucker K, Hodges PW, (in press), Consensus for experimental design in electromyography (CEDE) project: High_density surface electromyography matrix. *J Electromyogr Kinesiol*. 13. Hoogstad LA, van Leeuwen AM, van Dieën JH, Bruijn SM (in press), Can foot placement during gait be trained? Adaptations in stability control when ankle moments are constrained. *J Biomech*. 14. Ibrahim, R., de Boode, V.A., Kingma, I., van Dieën, J.H., in press. Data_Driven Strength and Conditioning, and Technical Training Programs for Goalkeeper's Diving Save in Football. *Sports Biomech*. 15. Jin J, Kistemaker DA, van Dieën JH, Daffertshofer A, Bruijn SM (in press), The validation of new phase_dependent gait stability measures: a modeling approach. *Royal Soc Open Sci*. 16. Lin XB, Wu WH, Weijer RHA, Prins MR, van Dieën JH, Bruijn SM, Meijer OG (in press), Strong relationship of muscle force and fall efficacy, but not of gait kinematics, with number of falls in the year after Total Hip Arthroplasty for osteoarthritis: An exploratory study. *Clin Biomech*. 17. Magnani, R., van Dieën, J.H., Bruijn, S.M., in press. Effects of vestibular stimulation on gait stability when walking at different step widths. *Exp Brain Res*. 18. Mourits, B.M.P., Vos, L.A., Bruijn, S.M., van Dieën, J.H., Prins, M.R., in press. Sensor_Based Intervention to Enhance Movement Control of the Spine in Low_Back Pain: protocol for a randomized controlled trial. *Front Sports Act Living*. 19. Tabasi A, Lazzaroni M, Brouwer NP, Kingma I, van Dijk W, de Looze MP, Toxiri S, Ortiz J, et al. (2022), Optimizing calibration procedure to train a regression_based prediction model of actively generated lumbar muscle moments for exoskeleton control. *Sensors* 22:87. 20. van den Bogaart M, Bruijn SM, Spildooren J, van Dieën JH, Meyns P (2022), Effects of age and surface instability on the control of the center of mass. *Hum Mov Sci* 82:102930. 21. van den Bogaart M, Bruijn SM, Spildooren J, van Dieën JH, Meyns P (in press), The effect of constraining mediolateral ankle moments and foot placement on the use of the counter_rotation mechanism during walking. *J Biomech*. 22. van Leeuwen, A.M., van Dieën, J.H., Bruijn, S.M., in press. The effect of external lateral stabilization on ankle moment control during steady_state walking. *J Biomech*. 23. van Oeveren B, de Ruiter CJ, Beek PJ, van Dieën JH (in press), The biomechanics of running and running styles: a synthesis. *Sports Biomech*. 24. Voglar M, Kozinc Z, Kingma I, van Dieën JH, Sarabon N (in press), The effects of intermittent trunk flexion with and without support on sitting balance in young adults. *Front Hum Neurosci*. 25. Wildenbeest MH, Kiers H, Tuijt M, van Dieën JH (2022), Associations of low_back pain and pain_related cognitions with lumbar movement patterns during repetitive seated reaching. *Gait & Posture* 91:216_222. 26. Xiao, F., Maas, H., van Dieën, J.H., Pranata, A., Rogers, A., Han, J., in press. Chronic Non_Specific Low Back Pain and Ankle Proprioceptive Acuity in Community_Dwelling Older Adults. *Neurosci Lett*. 2021 27. Beelen P, Ockhuijsen R, Prins MR, Huurnink A, Hordijk T, Kruiswijk C, Goedhart EA, van der Wurff P, et al. (2021), Reliability of a novel dynamic test of postural stability in high_level soccer players. *Heliyon* 7:e06647. 28. Blokland IJ, Kan T, van Bennekom CAM, van Dieën JH, de Koning JJ, Houdijk H (2021), Estimation of Metabolic Energy Expenditure during Short Walking Bouts. *Int J Sports Med* 42:1098_1104. 29. Blokland I, Gravesteijn A, Busse M, Groot F, van Bennekom C, van Dienen J, de Koning J, Houdijk H (2021), The relationship between relative aerobic load, energy cost, and speed of walking in individuals post_stroke. *Gait Posture* 89:193_199. 30. Docter H, van den Hout JD, Noort W, van Dieën JH, Maas H (2021), No changes in muscle fibre type composition in rat multifidus muscle following lesion of the lumbar intervertebral disc. *Eur J Anat* 25:447_454. 31. Lazzaroni M, Tabasi A, Toxiri S, Caldwell DG, De Momi E, van Dijk W, de Looze MP, Kingma I, van Dieën JH, Ortiz J. (2021), Evaluation of an acceleration_based assistive strategy to control a back_support exoskeleton for manual material handling. *Wearable Technologies* 1:e9. 32. Magnani RM, Bruijn SM, van Dieën JH, Forbes PA (2021), Stabilization demands of walking modulate the vestibular contributions to gait. *Sci Rep* 11:13736. 33. Mahmood MN, Tabasi A, Kingma I, van Dieën JH (2021), A Novel Passive Neck Orthosis for Patients with Degenerative Muscle Diseases: Development & Evaluation. *J Electromyogr Kinesiol* 57:120515. 34. McManus L, Lowery M, Merletti R, Søgaard K, Besomi M, Clancy E, van Dieën JH, Hug F, et al. (2021), Consensus for experimental design in electromyography (CEDE) project: Terminology matrix. *J Electromyogr Kinesiol* 59:102565. 35. Rieger M, Papegaaij S, Steenbrink F, Pijnappels M, van Dieën JH (2021), Development of a balance recovery performance measure for gait perturbation training based on the center of pressure. *Frontiers in Sports and Active Living* 3:617430. 36. Ryman VFM, van der Esch M, Dekker J, Roorda LD, van Dieën JH, R. TJW, Huijbrechts E, Lems WF, et al. (2021), Determinants of pain and activity limitations in foot osteoarthritis: a cross_sectional study in the Amsterdam_foot cohort. *Osteoarthritis & Cartilage* Open 3:100134. 37. Tompra N, van Dieën JH, Coppieters M (2021), Left/right discrimination is not impaired in people with unilateral chronic Achilles tendinopathy. *Musculoskelet Sci Pract* 54:102388. 38. van den Bogaart M, Bruijn SM, Spildooren J, van Dieën JH, Meyns P (2022), Effects of age and surface instability on the control of the center of mass. *Hum Mov Sci* 82:102930. 39. van Dieën JH, Prins MR, Bruijn SM, Wu W, Liang BW, Lamoth CJC, Meijer OG (2021), Coordination of Axial Trunk Rotations During Gait in Low Back Pain. *A Narrative Review*. *J Hum Kinetics* 76:35_50. 40. van Leeuwen AM, van Dieën JH, Daffertshofer A, Bruijn SM (2021), Ankle muscles drive mediolateral center of pressure control to ensure stable steady state gait. *Sci Rep* 11:21481. 41. Weijer RHA, Hoozemans MJM, Meijer OG, van Dieën JH, Pijnappels M (2021), The short_and long_term temporal relation between falls and concern about falling in older adults without a recent history of falling. *PLoS one* 16:e0253374. 42. Wildenbeest MH, Kiers H, Tuijt M, van Dieën JH (2021), Reliability of measures to characterize lumbar movement patterns, in repeated seated reaching, in a mixed group of participants with and without low_back pain: a test_retest, within_and between sessions. *J Biomech* 121:110435. 2020 43. Alizadehsaravi, L., Bruijn, S.M., Maas, H., van Dieën, J.H., 2020a. Modulation of soleus muscle H_reflexes and ankle muscles co_contraction with surface compliance during unipedal balancing in young and older adults. *Exp Brain Res* 238, 1371_1383. 44. Baggen, R.J., van Dieën, J.H., Van Roie, E., Verschuere, S.M., Giartmatzis, G., Delecluse, C., Dominici, N., 2020. Age_related differences in muscle synergy organization during step ascent across step heights and directions. *Appl Sci* 10, 1987. 45. Baltrusch, S., Houdijk, H., van Dieën, J.H., de Kruijff, J.T.C.M., 2020a. Passive trunk exoskeleton acceptability and effects on self_efficacy in employees with low_back pain: a mixed method approach. *J Occup Rehab* https://doi.org/10.1007/s10926_020_09891_1. 46. Baltrusch, S., Houdijk, H., van Dieën, J.H., van Bennekom, C.A.M., de Kruijff, J.T.C.M., 2020b. Perspectives of end_users on the potential use of trunk exoskeletons for people with low_back pain: a focus group study. *Hum Factors* 62, 365_376. 47. Baltrusch, S., van Dieën, J.H., Koopman, A.S., Näf, M.B., Rodriguez_Guerrero, C., Babic, J., Houdijk, H., 2020c.

SPEXOR passive spinal exoskeleton decreases metabolic cost during symmetric repetitive lifting. *Eur J Appl Physiol* 120, 401_412. 48. Baltrusch, S., van Dieën, J.H., van Bennekom, C., Houdijk, H., 2020d. Functional performance and user satisfaction of workers with and without a history of low back pain wearing the passive SPEXOR trunk exoskeleton. *IEEE Robotics & Automation Magazine* 27, 66_76. 49. Beelen, P.E., Kingma, I., Nolte, P.A., van Dieën, J.H., 2020. The effect of foot type, body length and mass on postural stability. *Gait & Posture* 81, 241_246. 50. Besomi, M., Hodges, P., Clancy, E.A., van Dieën, J.H., Hug, F., Lowery, M., Merletti, R., Sogaard, K., Wrigley, T., Besier, T., Carson, R.G., Disselhorst-Klug, C., Enoka, R.M., Falla, D., Farina, D., Gandevia, S., Holobar, A., Kiernan, M.C., McGill, K., Perreault, E., Rothwell, J.C., Tucker, K., 2020. Consensus for Experimental Design in Electromyography (CEDE) project: Amplitude normalization matrix. *J Electromyogr Kinesiol* 53, 102438. 51. De Martino, E., Salomoni, S., Winnard, A., McCarty, K., Kirsty Lindsay, Riazati, S., Weber, T., Scott, J.J.A., Green, D., Hides, J., Debuse, D., Hodges, P., van Dieën, J., Caplan, N., 2020. Hypogravity reduces trunk admittance and lumbar muscle activation in response to external perturbations. *J Appl Physiol* 128, 1044_1055. 52. de Ruyter, C.J., van Daal, S., van Dieën, J.H., 2020. Individual optimal step frequency during outdoor running. *Eur J Sport Sci* 20, 182_190. 53. de Vries AW, Willaert J, Jonkers I, van Dieën JH, Verschueren SM (2020), Virtual Reality Balance Games Provide Little Muscular Challenge to Prevent Muscle Weakness in healthy older adults. *Games for Health J* 9:227_236. 54. Faber, G.S., Kingma, I., Chang, C.C., Dennerlein, J.T., van Dieën, J.H., 2020. Validation of a wearable system for ambulatory 3D L5/S1 moment assessment during manual lifting using instrumented shoes and an inertial sensor suit. *J Biomech* 102, 109671. 55. Graham RB, Dupeyron A, van Dieën JH (2020), Between day reliability of IMU derived spine control metrics in patients with low back pain. *J Biomech* 113:110080. 56. Griffioen, M., van Dieën, J.H., 2020. Effects of age and sex on trunk motor control. *J Biomech* 102, 109607. 57. Griffioen, M., van Drunen, P., Maaswinkel, E., Perez, R.S.G.M., Happee, R., van Dieën, J.H., 2020. Identification of intrinsic and reflexive contributions to trunk stabilization in patients with low back pain: a case control study. *Eur Spine J* 29, 1900_1908. 58. Hortobágyi, T., Teixeira, L.A., Duysens, J., Granacher, U., van Dieën, J.H., Moraes, R., 2020. Is standing sway an accurate measure of fall risk and predictor of future falls in older adults? *Brazilian Journal of Motor Behavior* 14, 1_3. 59. Huurnink A, Fransz DP, de Boode VA, Kingma I, van Dieën JH (2020), Age_Matched Z_Scores for Longitudinal Monitoring of Center of Pressure Speed in Single_Leg Stance Performance in Elite Male Youth Soccer Players. *J Strength Cond Res* 34:495_505. 60. Ibrahim, R., Kingma, I., de Boode, V., Faber, G.S., van Dieën, J.H., 2020. Angular velocity, moment, and power analysis of the ankle, knee, and hip joints in the goalkeeper's diving save in football. *Frontiers in Sports and Active Living* 2, 13. 61. Klufft N, Bruijn SM, Luu MJ, van Dieën JH, Carpenter MG, Pijnappels M (2020), The influence of postural threat on strategy selection in a stepping down paradigm. *Sci Rep* 10:10815. 62. Koopman, A.S., Kingma, I., de Looze, M.P., van Dieën, J.H., 2020a. Effects of a passive back exoskeleton on the mechanical loading of the low back during symmetric lifting. *J Biomech* 102, 109486. 63. Koopman, A.S., Näf, M., Baltrusch, S., Kingma, I., Rodriguez_Guerrero, C., Babic, J., de Looze, M.P., van Dieën, J.H., 2020b. Biomechanical evaluation of a new passive back support exoskeleton. *J Biomech* 105, 109795. 64. Magnani R, Bruijn SM, van Dieën JH, Vieira MF (2020), Head orientation and gait stability in young adults, dancers and older adults. *Gait & Posture* 80:68_73. 65. Punt M, Nemathimoez M, van Dieën JH, Kingma I (2020), Real_time feedback to reduce low_back load in lifting and lowering. *J Biomech* 102:109513. 66. Ravi, D.K., Gwerder, M., Ignasiak, N., Baumann, C.R., Uhl, M., van Dieën, J.H., Taylor, W.R., Singh, N.B., 2020. Revealing the optimal thresholds for movement performance: A systematic review and meta analysis to benchmark pathological walking behaviour. *Neurosci Biobehav Rev* 108, 24_33. 67. Rieger, M.M., Papegaaij, S., Steenbrink, F., van Dieën, J.H., Pijnappels, M., 2020. Perturbation based gait training to improve daily life gait stability in older adults at risk of falling: Protocol for the REACT randomized controlled trial. *BMC Geriatr* 20, 167. 68. Rieger M, Papegaaij S, Pijnappels M, Steenbrink F, van Dieën JH (2020), Transfer and retention effects of gait training with anterior_posterior perturbations to postural responses after medio_lateral gait perturbations in older adults *Clin Biomech* 75:104988. 69. Tabasi, A., Kingma, I., de Looze, M.P., van Dijk, W., Koopman, A.S., van Dieën, J.H., 2020. Selecting the appropriate input variables in a regression approach to estimate actively generated muscle moments around L5/S1 for exoskeleton controls. *J Biomech* 102, 109650. 70. van den Boogaart, M., Bruijn, S.M., van Dieën, J.H., Meyns, P., 2020. The effect of anteroposterior perturbations on the control of the center of mass during treadmill walking. *J Biomech* 103, 109660. 71. van den Hoorn, W., Hodges, P.W., van Dieën, J.H., Kerr, G., 2020. Reliability of recurrence quantification analysis of postural sway data. A comparison of two methods to determine recurrence thresholds. *J Biomech* 107, 109793. 72. van Dieën, J.H., 2020. Lessons Learned, editorial. *J Appl Biomech* 36, 369. 73. van Leeuwen, A.M., van Dieën, J.H., Daffertshofer, A., Bruijn, S.M., 2020. Active foot placement control ensures stable gait: Effect of constraints on foot placement and ankle moments. *PLoS one* 15, e0242215. 74. Veeger TJ, van Trigt B, Hu H, Bruijn SM, van Dieën JH (2020), Fear of movement is not associated with trunk movement variability during gait in patients with low_back pain. *Spine J* 20:1986_1994. 75. Weijer, R.H.A., Hoozemans, M.J.M., van Dieën, J.H., Pijnappels, M., 2020. Construct validity and reliability of the modified Gait Efficacy Scale for older adults. *Disability and Rehabilitation*. 76. Willaert J, de Vries AW, Tavernier J, van Dieën JH, Jonkers I, Verschueren SM (2020), Does a novel exergame challenge balance and activate muscles more than existing off_the_shelf exergames? *J Neuroeng Rehabil* 17:6. 2019 77. Baggen, R.J., Van Roie, E., Verschueren, S.M., Van Driessche, S., van Dieën, J.H., Delecluse, C. (2019) Bench stepping with incremental heights improves muscle mass, strength and functional performance in older women. *Exp Gerontol* 120:6_14. 78. Baggen RJ, van Dieën JH, Verschueren S, Van Roie E, Delecluse C. (2019) Differences in maximum voluntary excitation between isometric and dynamic exertions are age dependent". *J Appl Biomech* 35:196_201. 79. Baltrusch, S., van Dieën, J.H., Bruijn, S.M., Koopman, A.S., van Bennekom, C.A., Houdijk, H (2019) The effect of a passive trunk exoskeleton on metabolic costs during lifting and walking. *Ergonomics* 62:903_916. 80. Barbieri, F.A., Penedo, T., Simieli, L., Barbieri, R.A., Zagatto, A.T.M., van Dieën, J.H., Pijnappels, M., Rodrigues, S.T., Polastri, P.F. (2019) Effects of ankle muscle fatigue and visual behavior on postural sway in young adults. *Front Physiol* 10:643. 81. Besomi, M., W., H.P., van Dieën, J.H., Carson, R., Clancy, E., Disselhorst-Klug, C., Holobar, A., Hug, F., Kiernan, M.C., Lowery, M., McGill, K., Merletti, R., Perreault, E., Sogaard, K., Tucker, K., Besier, T., Enoka, R., Falla, D., Farina, D., Gandevia, S., Rothwell, J.C., Vicenzino, B., Wrigley, T., (2019) Consensus for Experimental Design in Electromyography (CEDE) project: Electrode selection matrix. *J Electromyogr Kinesiol* 48:128_144. 82. Bourdon, E., Graham, R. B., & van Dieën, J. H. (2019). A comparison of methods to quantify control of the spine. *J Biomech* 96:109344. 83. Cofre Lizama, L.E., Arvin, M., Verschueren, S., van Dieën, J.H. (2019) Assessing age_related balance deterioration: visual or mechanical tasks? *Clin Biomech* 65:116_122. 84. de Ruyter, C. J., & van Dieën, J. H. (2019). Stride and step length obtained with inertial measurement units during maximal sprint acceleration. *Sports* 7:e202. 85. Franssen, B., Mathijssen, N., Slot, K., de Esch, N., Verburg, H., Temmerman, O., Hoozemans, M., van Dieën, J.H. (2019) Gait quality assessed by trunk accelerometry after total knee arthroplasty and its association with patient reported outcome measures. *Clin Biomech* 70_192_196. 86. Hodges, P.W., van Dieën, J.H., Cholewicki, J. (2019) Time to reflect on the role of motor control in low back pain. *The Journal of orthopaedic and sports physical therapy* 49, 367_369. 87. Huurnink, A., Fransz, D.P., Kingma, I., de Boode, V.A., van Dieën, J.H. (2019) The assessment of single leg drop jump landing performance by means of ground reaction forces: a methodological study. *Gait & Posture* 73:780_85. 88. Ibrahim, R., de Boode, V.A., Faber, G.S., Kingma, I., van Dieën, J.H. (2019) Kinematic and Kinetic analysis of the Goalkeeper's Diving Save in Football. *J Sports Sci* 37:313_321. 89. Ibrahim, R., Kingma, I., de Boode, V., Faber, G. S., & van Dieën, J. H. (2019). The Effect of Preparatory Posture on Goalkeeper's Diving Save Performance in Football. *Frontiers in Sports and Active Living*, 1, 15. doi: 10.3389/fspor.2019.00015. 90. Klufft, N., Bruijn, S.M., Weijer, R.H.A., van Dieën, J.H., Pijnappels, M., (2019) Does misjudgment in a stepping down paradigm predict falls in an older population? *Royal Society Open Science* 6:190786. 91. Koopman, A.S., Kingma, I., Faber, G.S., de Looze, M.P., van Dieën, J.H. (2019) Effects of a passive exoskeleton on the mechanical loading of the low back in static holding tasks. *J Biomech* 83, 97_103. 92. Koopman, A.S., Toxiri, S., Power, V., Kingma, I., van Dieën, J.H., de Looze, M.P. 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International Society for Occupational Ergonomics and Safety, Cincinnati, OH, pp 534_539 50. Dieën JHv, Top Mvd (1996) *Werkmethoden evalueren: veld_ of laboratoriumonderzoek*. In: Pikaar RN (ed) *Ergonomie in uitvoering*. Nederlands Instituut voor Arbeidsomstandigheden, Nederlandse Vereniging voor Ergonomie, Amsterdam, pp 196_203 51. Oude Vrielink HHE, Dieën JHv (1996) *Differential fatigue development during low_level static and repetitive contractions of human calf muscle*. In: Mital A, Krueger H, Kumar S, Menozzi M, Fernandez J (eds) *Advances in Occupational Ergonomics and Safety I*, vol 2. International Society for Occupational Ergonomics and Safety, Cincinnati, pp 111_116 52. Dieën JHv, Hoozemans M, Commissaris DACM (1996) *Licht tillen is soms zwaarder*. In: Koning Jd, Savelsbergh G (eds) *Stilstaan bij bewegen*. Natuur & Techniek, Beek, pp 112_113 1994 53. Hildebrandt VH, Dieën JHv, Schilden Mvd (1994) *Land_ en tuinbouw: knelpunten in de branche*. In: Vink P, Dul J (eds) *Lichamelijke belasting tijdens arbeid*. Wetgeving en oplossingen. Kerkebosch, Zeist, pp 106_111 54. Oude Vrielink HHE, Cloosterman SGM, Bunt JAVd, Krijnen RMA, Dieën JHv (1994) *Is a sit_stand seat an appropriate alternative in standing work situations*. In: Aghazadeh F (ed) *Advances in Industrial Ergonomics and Safety VI*. Taylor & Francis, London, pp 223_228 55. Toussaint HM, Dieën JHv, Looze MPd (1994) *Meten is weten, gissen is missen?* In: Frings_Dresen MHW, Kuijer PPFM (eds) *Fysieke en mentale belasting in arbeidssituaties: methoden en technieken in wetenschap en praktijk*. Studiecentrum Arbeid & Gezondheid en ERGOcare, Amsterdam, pp 15_38 1993 56. Dieën JHv, Oude Vrielink HHE (1993) *Mechanical load and recovery of the spinal motion segment. Implications for job_rotation and job_enlargement*. In: Nielsen R, Jorgensen K (eds) *Advances in Industrial Ergonomics and Safety V*. Taylor & Francis, pp 71_77 57. Oude Vrielink HHE, Dieën JHv (1993) *Evaluation of fatigue in a heterogeneous muscle group during low_level repetitive activity*. In: Nielsen R, Jorgensen K (eds) *Advances in Industrial Ergonomics and Safety V*. Taylor & Francis, pp 7_13 1992 58. Dieën JHv (1992) *Fysieke belasting en herstel, een wankel evenwicht II*. *De belasting van passieve structuren in de lage rug*. Pudoc, Wageningen 59. Oude Vrielink HHE, Dieën JHv (eds) (1992) *Arbeidsomstandigheden in de agrarische sector. Onderzoek naar fysieke belasting als gezondheidsrisico*. Pudoc, Wageningen

Projects

phD project successfully completed: 1. Paul PFM Kuijer: Effectiveness of interventions to reduce workload in refuse collectors. March 13th 2002, University of Amsterdam 2. JCE Petra van der Burg: Lifting objects: surprised by the mass. April 3th 2003, VU Amsterdam 3. Wu Wenhua: Pregnancy related pelvic girdle pain (PPP): An emphasis on transverse pelvis_thorax coordination during walking. January 28th 2004, VU Amsterdam 4. Mirjam Pijnappels: Recovery from a trip in young and older adults. Mechanics and control of the support limb. June 30th, 2004, VU Amsterdam 5. Bart Visser: Upper extremity load in low_intensity tasks. October 27th 2004, VU Amsterdam 6. K Peter Gil: The analysis of multi_joint coordination in lifting. May 31st 2006, Manchester Metropolitan University, UK 7. Sieske Aalbersberg: Knees in need: Neuromuscular control of the ACL deficient knee. June 9th 2006, VU Amsterdam 8. Didier Staudenmann: EMG_based force estimation. Implications of measurement and analysis techniques. January 11th 2007, VU Amsterdam 9. Luc Selen: Impedance modulation: a means to cope with neuromuscular noise. February 16th 2007, VU Amsterdam 10. Marcel Spanjaard: Gastrocnemius muscle fascicle behaviour during stair negotiation. July 3rd 2008, VU University Amsterdam and Manchester Metropolitan University, UK 11. Maaik Huysmans: From precision work to neck and upper extremity pain. October 1st 2008, VU Amsterdam 12. Albert J van der Veen: Mechanical behaviour of the intervertebral disc under sustained mechanical loading. October 16th 2009, VU Amsterdam 13. Martijn Niessen: Shoulder pain after stroke. February 5th 2010, VU Amsterdam 14. Sjoerd M Bruijn: Is stability an unstable concept. Quantifying stability of human gait. May 27th 2010, VU Amsterdam 15. Gert S Faber: Towards ambulatory assessment of spinal loading in the field. June 25th 2010, VU Amsterdam 16. Iris Busscher: Development of a non_fusion scoliosis correction device. Biomechanical and clinical aspects. Dec. 1st 2010, Groningen University 17. Tim Bosch: Fatigue and performance in repetitive industrial work June 17th 2011, VU Amsterdam 18. Hai Hu: Motor control and lumbopelvic stability in young healthy women.. Sept 26th 2011, VU Amsterdam 19. Erwin Speklé: Effectiveness of an intervention programme on arm, shoulder and neck symptoms in computer workers. Nov. 3rd 2011, VU Amsterdam 20. Yun_Ju Lee: Control of trunk movement. Perturbations in cart pushing. Dec. 12th 2011, VU Amsterdam 21. Hamid R Fallah Yakhani: Gait characteristics in knee osteoarthritis patients before and after knee replacement. Dec. 20th 2011, VU Amsterdam 22. Hamid Abbasi Bafghi: Walking with knee osteoarthritis. July 2nd 2012, VU Amsterdam 23. Nienke Willigenburg: Trunk control in low_back pain. Sept 20th 2012, VU Amsterdam 24. Susanne van Engelen: Structural vibration testing of the lumbar spine. Development of a diagnostic tool for assessment of segment stiffness. May 28th 2013, VU Amsterdam 25. Fabio Barbieri: Impact of muscle fatigue on mechanics and motor control of walking. September 24th 2013, VU University Amsterdam and UNESP, RIO Claro Brazil 26. Pieter Coenen: On the origin of back pain. November 29th, 2013, VU Amsterdam 27. Laura Hak: Step by step. Stepping strategies to prevent falling while walking. May 8th 2014, VU Amsterdam 28. Kim van Schooten: Predicting falls. Amount and quality of daily_life gait as risk factors. June 5th 2014, VU Amsterdam 29. L Eduardo Cofré Lizama: Mediolateral balance assessment in older adults. October 21st 2014, VU Amsterdam and KU Leuven Belgium 30. Henri Kiers: Proprioception. Associations with

low_back pain and physical activity. November 21st 2014, KU Leuven Belgium 31. Arno Bisschop: Spinal stability following single level lumbar laminectomy. A biomechanical study of the human spine. Jan 13th 2015, VU Amsterdam 32. Paul van Drunen: Low_back stabilization. Contributions of co_contraction and proprioceptive, vestibular and visual feedback. May 11th 2015, Technical University Delft 33. Linda Eijkelhof: Work_related stressors and neck and upper extremity symptoms a matter of mechanics? May 13th 2015, VU Amsterdam 34. Sietse Rispens: A walk on the wild side. Fall risk assessment rom daly life gait. May 27th 2015, VU Amsterdam 35. Zrinka Potocanac: Quick adjustments of ongoing gait. Perturbation in young and older adults. June 23rd 2015, KU Leuven Belgium and VU Amsterdam 36. Chris Tijs: Mechanical relevance of linkages that interconnect skeletal muscles. Jan 12th 2016, VU Amsterdam 37. Erwin Maaswinkel: Identifying low_back stabilization in low_back pain and the influence of tactile information. Jan 26th 2016, VU Amsterdam 38. Armaghan Mahmoudian: Identification of risk factors associated with the progression of knee_osteoarthritis: a longitudinal prospective study. June 2nd 2016, KU Leuven and VU Amsterdam 39. Mina Arvin: Hip muscle function and mediolateral balance control in older adults. September 14th 2016, VU Amsterdam 40. Michel Bernabei: Neuromechanical consequences of epimuscular myofascial force transmission. January 18th 2017, VU Amsterdam 41. Rob van Lummel: Assessing sit_to_stand for clinical use. March 30th 2017, VU Amsterdam 42. Michiel Punt: Gait stability in stroke survivors. The assessment and training of gait stability in chronic stroke survivors. October 31st 2017, VU Amsterdam 43. Aijse de Vries: Towards optimized virtual reality interventions for improving balance and muscle strength in healthy elderly. March 16th 2018, KU Leuven and VU Amsterdam 44. Wolbert van den Hoorn: Evaluation of the Dynamical Structures of Postural Control: New Insights into Motor Adaptation in Ageing and Pain. November 8th 2018, U. Queensland 45. Encarna Mico_Amigo: Time in Parkinson's disease: clinical and preclinical markers. December 14th 2018, VU Amsterdam 46. Rony Ibrahim: Biomechanics of explosive sports skills. February 7th 2019, VU Amsterdam 47. Remco Baggen: Designing functional training programs to improve muscle characteristics in older adults using electromyography. March 18th 2019, KU Leuven and VU Amsterdam 48. Arnold Huurnink: Single_leg balance performance in sports. From laboratory testing to practical applications? June 14th 2019, VU Amsterdam 49. Duncan Fransz: Jump landing performance in footballers. June 14th 2019, VU Amsterdam 50. Laura Peeters: The trunk in neuromuscular disorders. A neglected part of the chain. Oct 23rd 2019, Radboud University Nijmegen 51. Maarten Prins: Motor control of the trunk during gait in low back pain. Nov 11th 2019, VU Amsterdam 52. Bas Fransen: Improving functional outcome and outcome measures in total knee arthroplasty. Dec 9th 2019, VU Amsterdam 53. Mohammad Nausef Mahmood: Dynamic support for trunk and neck with progressive muscle weakness arelated disorders. Dec 11th 2019, VU Amsterdam 54. Nick Klufft: The art of selecting adequate movement. Jan 10th 2020, VU Amsterdam 55. Axel Koopman: Biomechanical evaluation of exoskeletons for the prevention of low_back pain. June 26th 2020, VU Amsterdam 56. Saskia Baltrusch: Lifting success of trunk exoskeletons. Bridging the gap between biomechanical solutions and end_users' perceptions. Sept 25th 2020, VU Amsterdam 57. Ben van Oeveren: Running deciphered: the interpretation of running technique from wearable data. Jan 11th 2021, VU Amsterdam 58. Mariette Griffioen: Trunk stabilization in chronic low_back pain. Jan 13th 2021, VU Amsterdam 59. Markus Rieger: To fall or not to fall. A question of perturbation training. Febr 5th 2021, VU Amsterdam 60. Leila Alizadehsaravi: Which factors drive training of standing balance in older adults? May 10th 2021, VU Amsterdam 61. Roel Weijer: Safely remaining active. Dec 15th 2021, VU Amsterdam 62. Maud van den Bogaart: Biomechanical fundamentals of balance control across the life span. Sept. 8th 2022, VU Amsterdam 63. Eva Sierra Silverstre: Towards a better understanding of diabetich neuropathies in hands. A comprehensive assesment of nerve function, structure and mechanical properties. Sept 12th 2022, VU Amsterdam Research funding: Grants Ongoing • k€ 280 from TNO for PhD project on effects of impact loading on the spine. 2022 • k€ 250 "Heljnestichting": Foundation for rehabilitation technology, Research on contracture treatment. 2020 • k€ 200 from TNO for PhD project on trunk exoskeletons. 2018 • k€ 164 from NWO funding PhD project of Meta Wildenbeest: Motor learning and low_back pain. 2018 • k€ 164 from NWO funding PhD project of Florian Abu Bakar: Movement variability in low_back pain. 2018 • k€ 1000 from STW as project leader in 'Perspectief programma' Wearable robotics. 2018 • k€ 164 from NWO funding PhD project of Mohamed el Hadouchi: Power training in the elderly. 2017 finished • k€ 25 ZonMW: Serious_gaming in rehabilitation of post_Covid_19 patients. 2020 k€ 40 NWO_TTW: Run event guide. Take_off grant for start_up. 2020 • k€ 35 ILE/ECCO: validation of in_shoe sensors and testing of shoe midsoles. 2019 • k€ 100 EU/Eurobench: benchmarking gait stability. 2019 • k€ 300 from EU as project leader in Marie Curie Skolodowska ITN, Keep Control. 2017 • k€ 7 from Mainstay medical: Reliability and responsivity of parameters quantifying changes in trunk control with low_back pain. 2018 • k€ 650 from EU as co_applicant in Spexor consortium. 2015 • k€ 265 from STW Symbionics: trunk support for paresis patients. 2014 • k€ 164 from NWO funding PhD project of Michiel Punt: Fall risk in stroke survivors. 2014 • k€ 6 ambulatory monitoring of knee loading in OA patients. 2013 • k€245 Commit: Sensor driven coaching for healthy living. 2013 • k€6500 for MOVE_AGE a joint doctorate program on mobility in ageing (PI), granted by the European Commission as part of the Erasmus Mundus program. 2010 • k€1080 v Dieën, Happee, Zuurmond: QDisc, Quantitative diagnosis of spine control. STW Neurosipe program awarded in 2009 (25% financed by industry) • k€650 Pijnappels, v Dieën, Lips, Beek: Farao, fall risk assessment in older adults. ZONMW, TOP program. 2009 • k€45 Hoozemans, Visser, vDieën: Back load in team lifting. Sichtung Arbouw. 2009 • k€200 vDieën, Kingma, Savelsberg, vdKamp: Body@work: (50% matching 2 PhD students) in 2009 • k€100 vDieën, Beek, Houdijk: Motek Medical bv: Development of a protocol to test gait function in rehabilitation (50% matching 1 PhD student). 2009 • k€8 vDieën Visser: Effects of chair design on muscle activity during keyboard work BMA. 2009 • k€860 for Development of a Scoliosis correction device (co_PI) with prof.dr. B. Verkerke UT and prof.dr. A. Veldhuizen UMG (FBW share Euro 47,865) granted by NWO_STW. 2006 • 582,500 AUS Dollar for Trunk muscle control in low back pain granted by NHMRC (co_PI). 2006 • k€30 for research on the effects of ship accelerations on low back load granted by TNO_Human Factors. 2005 • k€35 for research on the effects of building block mass on low back load in construction workers granted by Arbouw. 2005 • k€100 as sub_contractor in Freemotion (clinical movement analysis based on inertial sensors) granted by Senter. 2005 • k€4 for a review on pathophysiology of repetitive strain injuries commissioned by the Ministry of Social Affairs and Employment. 2003 • k€5 for research on the effects of ship accelerations on low back load granted by TNO_Human Factors. 2001 • k€3 for research on effects of shoulder load on arm blood flow granted by the "Anna Fonds". 2001 • k€3.5 for research on effects of ladder design on knee loads granted by TNO_Work and Employment. 2001 • k€125 granted by the "Universitair Stimulerings Fonds (USF)" funding a PhD project on limitations to balance recovery after a trip in the elderly. 2000 • k€30 as subcontractor to RRD in a project aimed at developing an ambulatory method for estimation of low back loads subsidized by BTS 2001 • In competitive internal funding of PhD positions within the Faculty of Human Movement Sciences, 3 projects were awarded in between 1996 and 2002 (succes rate 100%) • k€2.5 for research on effects of chair design on back load granted by TNO_Work and Employment. 1999 • k€50 for research on Repetitive Strain Injuries, granted by TNO_Work and Employment. 1999 • k€40 as subcontractor to RRD in a project aimed at testing a method for estimation of low back loads subsidized by Senter. 1997 • k€100 granted by the "Universitair Stimulerings Fonds (USF)" for research on low back load. 1995 • k€350 Euros granted by the Ministry of Social Affairs, the Ministry of Agriculture, the "Landbouwschap" and "Stigas". 1989 • k€50 granted by the "Landbouwschap". 1988

Memberships

• Editor PeerJ 2021 _ present • Editorial board member Biomechanics, 2020 _ present • Editorial board member Sensors, 2020 _ present • Editor special issue Wearable sensors for movement analysis, Sensors 2020 • Specialty Chief Editor of Frontiers section 'Biomechanics and Control of Human Movement', 2019 _ present • Editorial board member Human Movement Sciences 2014 _ 2018 • Section editor Biomechanics Human Movement Sciences 2006 _ 2014 • Editor European Journal of Applied Physiology 2004 _ 2010 • Editorial board member IIE Transactions Occupational Ergonomics and Human Factors 2011 _ 2019 • Editorial board member Manual Therapy / Musculoskeletal Science and Practice 2010 _ present • Editorial board member Journal of Back and Musculoskeletal Rehabilitation 2006 _ present • Editorial advisory board member Journal of Electromyography & Kinesiology 2004 _ present • Editorial board member Clinical Biomechanics 2004 _ present • Editorial board member Human Movement Sciences 2000 _ 2006 • Editorial board member the Journal of Electromyography & Kinesiology 1999 _ 2003 • Editor of the Tijdschrift voor Ergonomie (Journal of Ergonomics in Dutch) 1998 – 2002 • Editor special issue Biomechanics of falls, Journal of Electromyography and Kinesiology 2007 • Editor special issue Trunk muscle function and dysfunction, Journal of Electromyography and Kinesiology 2003 • Member of the council (treasurer) of the International Society for Electrophysiology and Kinesiology (ISEK), 2006 – 2012 • Chairman of the board of the Institute for Fundamental and Clinical Human Movement Sciences (IFKB), 2007 – 2010 • Member of the council of the Dutch Society for Human Movement Sciences ('Vereniging voor Bewegingswetenschappen Nederland', VvBN), 2005 – 2009 (chairman 2007_2009). • Member of the Quality Review Panel of the Health Research Institute at the

University of Limerick, Ireland, 2021 • Expert advisor digital medicine. European Medicines Agency, 2020 • Member of the FWO Life Sciences Working Group for panel structure reform, 2020 • Member of the advisory board for Science Network in Musculoskeletal Physiotherapy Science ('MSG science netwerk'), 2019 – present • Member of the advisory board of Heliomare Research and Development (rehabilitation research), 2017-present • Member of the review panel for the Sports Science program, Ghent University, Ghent, Belgium, 2016 • Member of the review panel for the Health Research program, Amsterdam University of Applied Sciences, Amsterdam, 2015 • Member of the European Space Agency's topical team to advise on intervertebral disc injuries in astronauts, 2014 • Member of the scientific advisory board for the strategic plan of the Department of Rehabilitation Sciences, KU Leuven, 2012 • Member of the senior member jury of the Institute Universitaire de France, 2012 • Chair of the review panel for biomedical engineering. Danish Agency for Science, Technology and Innovation, 2011 • Member of external scientific advisory panel for the Libery Mutual Center for Physical Ergonomics, Boston MA USA, 2010 • Member of the working group on physical work-related health risks for the Health Council of the Netherlands 2009 – 2013 • Member of the ad_hoc committee 'Risk assessment of manual lifting' of the Health Council of the Netherlands 1994 • Member of the ad_hoc committee 'Repetitive Strain Injury' of the Health Council of the Netherlands 1999-2000 • Member of expert group "Work related low back disorders" European Agency for Safety and Health at Work 2000 • Member of Delphi panel organized by the Institute of Occupational Medicine, Edinburgh UK: "Principles of good manual handling" 2001 • Member of the advisory committee on scientific research for the Dutch Society of Exercise Therapy "Mensendieck", 2002 – 2009 • Technical advisor to Anybody Technology A/S, Aalborg Denmark, 2004-2009 • Member of the advisory board for the programme Physiotherapy, University of Applied Sciences Utrecht, 2010-present • Member of the advisory board for the Master programme Physiotherapy Sciences, University of Utrecht, 2006-2009

Other Relevant Information