

CURRICULUM VITAE

Lars Hvid
PhD, Senior Researcher / Associate Professor



Work address #1

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Work address #2

Aarhus University, Dept. of Public Health, Exercise Biology
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Private address

Hasselvang 73, 7080 Børkop, Denmark

Personal information

Birth date: 11-12-1978

Family status: Wife, 2 Children

Citizenship: Danish

Personal interests: Family, Sports, Outdoor, Wine

Languages: Danish, English

Academic Degrees/Positions

- 2002-2008 Master of Science, Physical Education and Health
Dept. of Sports Science and Clinical Biomechanics, University of Southern Denmark
- 2007 Research Scholar (3 months Scholarship, development of human single muscle fiber analysis method)
Institute of Sports Medicine, Bispebjerg Hospital, Copenhagen, Denmark
- 2008-2011 PhD
Dept. of Sports Science and Clinical Biomechanics, University of Southern Denmark
- 2011-2012 Research Assistant
Dept. of Sports Science and Clinical Biomechanics, University of Southern Denmark
- 2012-2014 Postdoc (EU InterReg Project: Healthy Ageing Network of Competence – HANC)
Dept. of Sports Science and Clinical Biomechanics, University of Southern Denmark
- 2015-2017 Assistant Professor
Dept. of Sports Science and Clinical Biomechanics, University of Southern Denmark
- 2017-2020 Postdoc (*clinical exercise physiologist*)
Exercise Biology, Dept. Public Health, Aarhus University
- 2020- Associate Professor (*clinical exercise physiologist*)
Exercise Biology, Dept. Public Health, Aarhus University
- 2021- Senior Researcher
The Danish MS Hospitals, Ry and Haslev

Awards

- 2010 Young Scientist Award, on occasion of the 39th European Muscle Conference – Padua, Italy.
- 2018 Best Oral Presentation, on occasion of the 23rd Research in Multiple Sclerosis (RIMS) Conference – Amsterdam, The Netherlands.

Professional affiliations

- 2020-2023 Executive Board member of the *European network for best practice and research in Multiple Sclerosis Rehabilitation (RIMS)*. Main role: communication officer. Responsible for the launch of the 'RIMS Webinar' series, aiming to provide a platform for knowledge sharing (~facilitate interaction), involving RIMS/MS researchers and practitioners.

Research stays abroad

- 2011 Research stay at Prof. Roberto Bottinellis muscle lab (Dept. of Physiology, University of Pavia) from January 17th to March 4th 2011. A collaborative study was carried out in that period, and a research paper involving these data has been published (Myosin content of single muscle fibers following short-term disuse and active recovery in young and old healthy men, *see below*).
- 2018 Research stay at Prof. Lorna Pauls lab (Dept. of Physiotherapy and Paramedicine, Glasgow Caledonian University) from September 26th to October 2nd 2018. A collaborative study (Falls in older persons with MS) has been initiated, which is currently ongoing.
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Teacher training programme

Section for Sports Science, Dept. Public Health, Aarhus University

- 2018 Completed the **Teacher Training Programme** course (150 hours) for assistant professors and postdocs

Teaching experience

Dept. of Sports Science and Clinical Biomechanics, University of Southern Denmark

- 2004-2006 *Biomechanics* - Teaching Assistant (Undergraduate level)
2005-2007 *Exercise Physiology and Nutrition* – Instructor (Undergraduate level)
2006-2008 *Human Physiology and Nutrition* - Teaching Assistant (Undergraduate level)
2009-2013 *Biomechanical Methods, Master of Fitness and Exercise* (Graduate level)
2011-2012 *Physiology and Statistics* (Undergraduate level)
2012-2020 *Biomechanical Methods in Physiotherapy Research, Master of Science in Physiotherapy* (Graduate level)
2012-2016 *Elderly in motion* (Graduate level)
2013-2015 *Physical training and rehabilitation, Master of Rehabilitation* (Graduate level, Course leader)
2015-2017 *Scientific Research Methods* (Graduate level, Course leader)
2015-2017 *Applied Scientific Research Methods* (Graduate level, Course leader)
2016-2017 *Cardiovascular Exercise* (Undergraduate level, Course leader)
2016-2017 *Fitness and training I* (Undergraduate level, Course leader)

During the period of 2009-2017 I have supervised 10 undergraduate students (including physiotherapy students) and 15 graduate students (including physiotherapy and master of rehabilitation students).

Section for Sports Science, Dept. Public Health, Aarhus University

- 2016- *Resistance Training* (Graduate level)
2017- *Muscle Physiology* (Graduate level)
2017- *Human Physiology* (Undergraduate level)

During 2017-2023 I have supervised 18 undergraduate students and 23 graduate students, and I am currently supervising 1 PhD student and co-supervising 2 PhD students.

Other relevant jobs

- 2006-2008 Physical Trainer – Fortuna Odense Elite Female Volleyball Team, Denmark
2012 Lecturer - The Sports Confederation of Denmark – DIF
2018- Lecturer – “Examination and treatment of multiple sclerosis – current evidence on physical activity and exercise”. Course held by The Association of Danish Physiotherapists.
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Management and administrative experience

- 2012-2017 Responsible for the daily management of the EU-supported InterReg 4 clinical research project “*Healthy Ageing Network of Competence (HANC)*” (n=552) as well as the research project “*Early rehabilitation of physical function in elderly*” (n=82) supported by Odense Municipality, Denmark’s 3rd largest Municipality. While the first study focused on implementing a physical and active lifestyle for older citizens living in the southern region of Denmark and northern region of Germany, the second study focused on an optimized recovery of physical function for older individuals following hospitalization. For both projects, my work areas comprised (1) planning and coordination of tests and training, carried out in collaboration with personnel at the local

municipality and at the university hospital, (2) data analysis, and (3) dissemination of information/results, which are targeted towards scientific journals as well as national and local reports (laymen terminology).

- 2014-2016 Involved in developing the Master's Degree program "Master of Rehabilitation", with specific responsibility for the 'Physical training' track at the University of Southern Denmark (SDU).
- 2017 Involved in developing courses to be included in the new study program (curriculum) for the "Bachelor in Sports and Health" at the University of Southern Denmark (SDU), starting medio 2017.
- 2019 I am currently part of the "Moving eXercise FORward (MoXFo) in Multiple Sclerosis" steering committee, and are involved in the management of this initiative. MoXFo is a joint initiative comprising numerous MS experts/researchers, with the overall aim of addressing the 'knowledge gaps' in MS exercise/rehabilitation and subsequently how to target these gaps through future research projects. The MoXFo initiative has so far published one scientific paper, in which the overall aims and 'knowledge gaps' are emphasized.

Affiliation to previous and current national/international research projects

- 2006-2007 Clinical research study (Univ. of Southern Denmark): *Mitochondrial dysfunction in skeletal muscle of type 2 diabetics* (Collaborator PhD Martin Hey-Mogensen). [Responsible for assessment of aerobic power \(oxygen uptake\) and supervision of aerobic training.](#)
- 2007- Clinical research study (Univ. of Southern Denmark): *Effects of aging on human skeletal muscle after disuse and retraining.* [Responsible for overall project, including study design, participant recruitment, assessment of physical function, muscle mechanical function \(isokinetic dynamometry, interpolated twitch technique, power rig, etc.\), muscle thickness \(ultrasonography\) and single fiber contractile function, as well as supervision of resistance training.](#)
- 2009-2010 Clinical research study (Univ. of Southern Denmark): *Effects of resistance training with vascular occlusion on knee extensor muscle mechanical function* (Collaborator PhD Jakob Nielsen). [Responsible for assessment of muscle thickness \(ultrasonography\) and statistics.](#)
- 2011-2012 Clinical research study (Univ. of Southern Denmark / Odense University Hospital - Denmark): *Effects of resistance training on muscle mechanical function in ALS patients* (Collaborator PhD Line Jensen). [Responsible for assessment of muscle mechanical function \(isokinetic dynamometry, interpolated twitch technique\).](#)
- 2012-2017 Clinical research study (Odense University Hospital - Denmark): *Testosterone treatment in diabetic middle-aged men* (Collaborators MD/PhD Line Velling Magnussen and Professor/MD Marianne Andersen). [Responsible for assessment of physical function and muscle mechanical function \(isokinetic dynamometry, power rig\).](#)
- 2013-2014 Experimental research study (Univ. of Southern Denmark): *Effects of short- and long-term exercise on arm and leg single muscle fiber contractile function in elite triathletes and cross-country skiers* (Collaborators PhD Kasper Gejl and Professor Niels Ørtenblad). [Responsible for assessment of single muscle fiber contractile function.](#)
- 2012-2017 EU-supported clinical research study (Univ. of Southern Denmark): *Prevention and rehabilitation of physical function in elderly – implementing efficient intervention strategies for active and healthy aging* (Healthy Ageing Network of Competence (HANC), (Collaborator PhD/Assoc. Professor Paolo Caserotti). [Responsible for overall project, including study design, collaboration with the local municipality, participant recruitment, assessment of physical activity \(accelerometry\), physical function, muscle mechanical function \(isokinetic dynamometry, interpolated twitch technique, power rig, etc.\), muscle thickness \(ultrasonography\), quality of life, and supervision of power training.](#)
- 2014-2015 Experimental research study (Odense University Hospital - Denmark): *Effects of secreted protein acidic and rich in cysteine (SPARC) on contractile function in skeletal muscle* (Collaborator PhD/Assoc. Professor Louise Helskov Jørgensen). [Responsible for assessment of whole muscle contractile function.](#)
- 2014-2015 Clinical research study (Odense University Hospital - Denmark): *Bone health in sedentary and lifelong active older individuals* (Collaborators MD Kathrine Korsholm and Prof./MD Kim Brixen). [Responsible for overall project, including study design, participant recruitment, assessment of physical activity \(accelerometry\), physical function, muscle mechanical function \(isokinetic dynamometry, interpolated twitch technique, power rig, etc.\), muscle thickness \(ultrasonography\), and quality of life.](#)
- 2015-2016 Pilot research study (Univ. of Southern Denmark / Faaborg-Midtfyn Municipality – Denmark / tmsuk (robot company) – Japan / NTT DOCOMO (telecommunications company) - Japan): *Use of the RODEM wheelchair robot for transfer and transport in nursing homes and rehabilitation centers* (Collaborator Faaborg-Midtfyn Municipality). [Responsible for overall project, including study design, collaboration with the local municipality, assessment of product usability \(including biomechanical/physical requirements\) for residents](#)

and personnel at nursing homes and rehabilitation centers.

- 2015-2017 Clinical research study (Univ. of Southern Denmark / Odense Municipality – Denmark): *Early rehabilitation of physical function in elderly following hospitalization – a randomized controlled trial* (Collaborator Odense Municipality). Responsible for overall project, including study design, collaboration with the local municipality, assessment of physical activity (accelerometry), physical function, and quality of life.
- 2016-2021 Clinical research study (Aarhus University – Denmark): *Effects of aerobic exercise on brain health in multiple sclerosis patients* (Collaborators PhD Martin Langeskov Christensen and PhD/Assoc. Professor Ulrik Dalgas). Responsible for aerobic training (Odense) and data analysis.
- 2017- Clinical research study (Aarhus University – Denmark): *Physical and cognitive performance during the two first years of Lemtrada treatment in multiple sclerosis patients – a prospective observational study (IMPROVE)* (Collaborator PhD/Prof. Ulrik Dalgas). Responsible for overall project, including study design, collaboration with the neurology clinics in Denmark, participant recruitment, assessment of physical activity (accelerometry), physical function, muscle mechanical function (isokinetic dynamometry, interpolated twitch technique, etc.), maximal oxygen uptake, and quality of life.
- 2017-2021 Clinical research study (MS Hospitals Denmark): *The Danish MS Hospitals Rehabilitation Study* (Collaborator PT/ Lead researcher Anders Skjerbaek). Responsible for data analyses and dissemination of results (physical function).
- 2017- Clinical research study (Aarhus University – Denmark): *Effects of aerobic exercise on brain health in early diagnosed multiple sclerosis patients* (Collaborators PhD student Morten Riemenschneider and PhD/Prof. Ulrik Dalgas). Responsible for assessment of physical activity/function and data analysis.
- 2017- Clinical research study (Aarhus University – Denmark): *Lower limb neuromuscular function across the adult life span in persons with multiple sclerosis – Implications for physical function*. Responsible for overall project, including study design, participant recruitment, assessment of physical function, muscle mechanical function (isokinetic dynamometry, interpolated twitch technique, etc.), and physical activity.
- 2018- Research study (Aarhus University – Denmark / Copenhagen University - Denmark): *OPTIMILK - effects of milk protein and vitamin D on children's growth and health* (Collaborators PhD/Assoc. Prof. Mette Hansen and PhD student Line Thams / Prof. Christian Mølgaard and Prof. Camilla Damsgaard). Co-supervisor for PhD student Line Thams, responsible for assessment of physical performance and muscle mechanical function, and data analyses.
- 2018- Clinical research study (Aarhus University – Denmark / Glasgow Caledonian University - UK): *Aging in multiple sclerosis – Implications for health across multiple body domains* (Collaborators Prof. Lorna Paul and Prof. Dawn Skelton). Responsible for overall project, including study design, participant recruitment, assessments etc.
- 2018- Clinical research study (Aarhus University – Denmark / University of Brasilia – Brazil): *Implications of fatigue on muscle power, postural stability, and gait pattern in multiple sclerosis* (Collaborators PhD student Cintia Ramari). Responsible for study design, assessments, and data analyses.
- 2019-2021 Clinical research study (Aarhus University – Denmark / Hasselt University - Belgium): *Fatigability in multiple sclerosis – effects on lower limb muscle strength and neural activation* (Collaborators PhD/Prof. Peter Feys and PhD student Fanny van Geel). Responsible for assessment of muscle strength, interpolated twitch technique, and data analyses.
- 2019- Clinical research study (Aarhus University – Denmark / Aarhus University Hospital - Denmark): *Exploring the pathophysiology of immobility using novel electrophysiological methods* (Collaborators MD/PhD/Prof. Hatice Tankisi and MD graduate student Zennia Zeppelin). Co-supervisor for MD graduate student Zennia Zeppelin, responsible for assessment of physical performance and muscle mechanical function, and data analyses.
- 2019- Clinical research study (Aarhus University – Denmark / Spinal Cord Injury Center of Western Denmark, Regional Hospital Viborg, Denmark): *Exploring reliability and validity of lower extremity muscle strength and physical function in individuals with incomplete spinal cord injury* (Collaborators PhD student Søren Krogh Tankisi and MD/PhD/Assoc. Prof. Helge Kasch). Responsible for assessment of physical performance and muscle mechanical function, and data analyses.
- 2020- Clinical research study (Aarhus University – Denmark / Aarhus University Hospital - Denmark): *Exploring the association between lower extremity peripheral nerve structure/function (using novel electrophysiological methods) and neuromuscular/physical function in multiple sclerosis* (Collaborators MD/PhD/Prof. Hatice Tankisi and Honours MSc student Mette D Dichmann). Main supervisor for Honours MSc student Mette D Dichmann, responsible for overall project, and specifically assessment of neuromuscular/physical function (isokinetic dynamometry, interpolated twitch technique, etc.), and physical activity.
- 2020- Clinical research study (Aarhus University – Denmark): *Effects of long-term power training on brain health in older persons with multiple sclerosis* (Collaborators PhD student Tobias Gæmelke and PhD/Prof. Ulrik Dalgas). Main supervisor for PhD student Tobias Gæmelke, Responsible for overall project, including study design, participant recruitment, assessments, data analyses etc.

- 2020- Clinical research study (Aarhus University – Denmark / The Danish MS Hospitals - DK): *Physical function in patients with multiple sclerosis – impact of disease phenotype and age* (Collaborators PhD/Prof. Ulrik Dalgas and PhD student Anders Skjerbæk / PhD/MD Egon Stenager / MD Finn Boesen). [Co-supervisor for PhD student Anders Skjerbæk, responsible for assessment of physical performance and muscle mechanical function, and data analyses as well as the aspects related to aging.](#)
- 2021- Clinical research study (Aarhus University – Denmark / Danish MS Society): *“Outwalk MS” - benefits of outdoor walking exercise therapy on walking capacity and well-being in multiple sclerosis* (Collaborators Head of Research and Development Lasse Skovgaard). [Responsible for overall project, including study design, participant recruitment, intervention, assessments etc.](#)
- 2021- Clinical research study (Aarhus University – Denmark / Oxford Brookes University - UK): *Sustainability of exercise therapy in persons with multiple sclerosis – effects of Exercise Booster Sessions* (Collaborators PhD/Prof. Ulrik Dalgas and PhD student Laurits Taul-Madsen / PhD/Prof. Helen Dawes). [Co-supervisor for PhD student Laurits Taul-Madsen, responsible for assessment of physical performance and muscle mechanical function, and data analyses.](#)
- 2022- Clinical research study (Aarhus University – Denmark / Danish MS Society): *“MS Ballroom Fitness – effects on balance, walking capacity and well-being in multiple sclerosis* (Collaborators Head of Research and Development Lasse Skovgaard). [Responsible for overall project, including study design, participant recruitment, intervention, assessments etc.](#)

Reviewer jobs

Used as a reviewer of scientific manuscripts submitted to several journals, including:

Acta Physiologica (IF 7.523), British Journal of Sports Medicine (IF 18.479), Multiple Sclerosis Journal (IF 5.855), Archives of Physical Medicine and Rehabilitation (IF 4.060), Medicine and Science in Sports and Exercise (Impact Factor6.289), Experimental Gerontology (IF 4.253), Multiple Sclerosis and Related Disorders (IF 4.808), Neurorehabilitation and Neural Repair (IF 4.895), Journal of Applied Physiology (IF 3.881), Brain Research (IF 3.610), Journal of Neural Transmission (IF 3.850), Journal of the Neurological Sciences (IF 4.553), Journal of Cachexia Sarcopenia and Muscle (IF 12.063), Neurology (IF 12.258), Sports Science (IF 11.928), and Brain (IF 15.255).

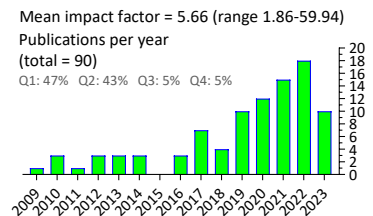
Publications

Scientific scores

Web of Science: citations = 2173, avg. citation/paper = 24.98, H-Index = 23.

SCOPUS: citations = 2290, avg. citation/paper = 25.44, H-Index = 23.

Google Scholar: citations = 3499 avg. citation/paper = 37.22, H-Index = 27.



Scientific papers

A total of 82 peer-reviewed original publications, 2 editorials, 1 perspectives, 1 commentary, 1 non-peer-reviewed publication, 1 study protocol, 1 correspondence, along with 1 correction have been produced.

Number of publications with indication of role as author (publications within last 3 years):

	1 st (lead) author	2 nd author	Last author	Co-author	Total
Total number of peer-reviewed publications (within last 5 years)	15 (6)	22 (17)	16 (10)	30 (14)	83 (47)
Danish original articles (within last 5 years)					
International original articles (within last 5 years)	13 (7)	17 (15)	10 (10)	25 (18)	65 (50)
Reviews (within last 5 years)	1 (1)	4 (4)	4 (4)	2 (2)	11 (11)
Editorials (within last 5 years)	2 (1)				2 (1)
Perspectives (within last 5 years)		1 (1)			1 (1)
Commentary (within last 5 years)			1 (1)		1 (1)
Other (please specify): <i>Study protocol,</i>				2	2

Correction (within last 5 years)				(2)	(2)
Correspondence (within last 5 years)	1 (1)				1 (1)
Non-peer-reviewed publication (within last 5 years)				1 (0)	1 (0)
Books					
Chapters in textbooks (within last 5 years)				2 (2)	2 (2)

- [1] 2009 *Effects of aging on human skeletal muscle after immobilization and retraining*, Suetta C, Hvid LG, Justesen L, Christensen U, Neergaard K, Simonsen L, Ortenblad N, Magnusson SP, Kjaer M, Aagaard P. *Journal of Applied Physiology* 107:1172-1180, 2009.
IF: 3.889 (Ranked 27 of 81 in Sport Sciences, Q2, 2021).
- [2] 2010 *Subcellular localization dependent decrements in skeletal muscle glycogen and mitochondria content following short-term disuse in young and old men*, Nielsen J, Suetta C, Hvid LG, Schrøder HD, Aagaard P, Ortenblad N. *American Journal of Physiology - Endocrinology and Metabolism* 299:E1053-E1060, 2010.
IF: 5.960 (Ranked 13 of 81 in Physiology, Q1, 2021).
- [3] 2010 *Effects of aging on muscle mechanical function and muscle fiber morphology during short-term immobilization and subsequent retraining*, Hvid L, Aagaard P, Justesen L, Bayer ML, Andersen JL, Ortenblad N, Kjaer M, Suetta C. *Journal of Applied Physiology* 109:1628-1634, 2010.
IF: 3.889 (Ranked 27 of 81 in Sport Sciences, Q2, 2021).
- [4] 2010 *Human skeletal muscle intramyofibrillar glycogen is decreased after 14 days of immobilisation in young and old men*, Nielsen J, Suetta C, Hvid L, Schroder HD, Ortenblad N. *Jap J Phys Fit Sports Med* 59(1):72, 2010.
Non-peer-reviewed publication.
IF: not available
- [5] 2011 *Effects of ageing on single muscle fibre contractile function following short-term immobilisation*. Hvid LG, Ortenblad N, Aagaard P, Kjaer M, Suetta C. *Journal of Physiology* 589:4745-4757, 2011. [Highlighted in Editorial](#).
IF: 6.228 (Ranked1 of 81 in Physiology, Q1, 2021).
- [6] 2012 *The effects of immobilization on the mechanical properties of the patellar tendon in younger and older men*. Coupe C, Suetta C, Kongsgaard M, Justesen L, Hvid LG, Aagaard P, Kjær M, Magnusson SP. *Clinical Biomechanics* 27(9):949-954, 2012.
IF: 2.034 (Ranked 68 of 87 in Sport Sciences, Q4, 2021).
- [7] 2012 *Proliferation of myogenic stem cells in human skeletal muscle in response to low-load resistance training with blood-flow restriction*. Nielsen JL, Aagaard P, Bech RD, Nygaard T, Hvid LG, Wernbom M, Suetta C, Frandsen U. *Journal of Physiology* 590:4351-4361, 2012. [Highlighted in Editorial](#).
IF: 6.228 (Ranked1 of 81 in Physiology, Q1, 2021).
- [8] 2012 *Aging affects the transcriptional regulation of human skeletal muscle disuse atrophy*. Suetta C, Frandsen U, Jensen L, Munk Jensen M, Jespersen JG, Hvid LG, Bayer M, Petersson SJ, Schrøder HD, Andersen JL, Heinemeier KM, Aagaard P, Schjerling P, Kjaer M. *PLoS One* 7(12): e51238, 2012.
IF: 3.752 (Ranked 29 of 73 in Multidisciplinary Sciences, Q1, 2021).
- [9] 2013 *Four days of muscle disuse impairs single fiber contractile function in young and old healthy men*. Hvid LG, Suetta C, Aagaard P, Kjaer M, Frandsen U, Ortenblad N. *Experimental Gerontology* 48: 154-161, 2013.
IF: 4.253 (Ranked 26 of 54 in Geriatrics and Gerontology, Q2, 2021).
- [10] 2013 *Transient impairments in single muscle fibre contractile function after prolonged cycling in elite endurance athletes*. Hvid LG, Gejl K, Bech RD, Nygaard T, Jensen K, Frandsen U, Ortenblad N. *Acta Physiologica* 208(3): 265-273, 2013. [Highlighted in Editorial](#).
IF: 7.523 (Ranked 7 of 81 in Physiology, Q1, 2021).
- [11] 2013 *Aging is associated with diminished muscle re-growth and myogenic precursor cell expansion in the early recovery phase after immobility-induced atrophy in human skeletal muscle*. Suetta C, Frandsen U, Mackey AL, Jensen L, Hvid LG, Beyer ML, Petersson SJ, Schrøder HD, Andersen JL, Aagaard P, Schjerling P, Kjaer M. *Journal of Physiology* 591.15:3789-3804, 2013. [Highlighted in Editorial](#).
IF: 6.228 (Ranked1 of 81 in Physiology, Q1, 2021).

- [12] 2014 *Muscle glycogen content modifies SR Ca²⁺ release rate in elite endurance athletes.* Gejl K, Hvid LG, Frandsen U, Sahlin K, Ørtenblad N. *Medicine & Science in Sports & Exercise* 46(3): 496-505, 2014.
IF: 6.289 (Ranked 9 of 87 in Sport Sciences, Q1, 2021).
- [13] 2014 *Early plasticity of human skeletal muscle in response to disuse.* Hvid LG. *Acta Physiologica Scandinavica* 210(3): 460-461, 2014. [Editorial](#).
IF: 7.523 (Ranked 7 of 81 in Physiology, Q1, 2021).
- [14] 2014 *Aging impairs the recovery in mechanical muscle function following 4 days of disuse.* Hvid LG, Suetta C, Nielsen JH, Jensen MM, Frandsen U, Ørtenblad N, Kjaer M, Aagaard P. *Experimental Gerontology* 52:1-8, 2014.
IF: 4.253 (Ranked 26 of 54 in Geriatrics and Gerontology, Q2, 2021).
- [15] 2016 *Repeated high-intensity exercise modulates Ca²⁺ sensitivity of human skeletal muscle fibres.* Gejl K, Hvid LG, Willis SJ, Andersson E, Holmberg HC, Jensen R, Frandsen U, Hansen J, Plomgaard P, Ørtenblad N. *Scandinavian Journal of Medicine & Science in Sports* 26(5):488-97, 2016.
IF: 4.645 (Ranked 14 of 87 in Sport Sciences, Q1, 2021).
- [16] 2016 *Voluntary muscle activation improves with power training and is associated with changes in gait speed in mobility-limited older adults – a randomized controlled trial.* Hvid LG, Strotmeyer ES, Skjødt M, Magnussen LV, Andersen M, Caserotti P. *Experimental Gerontology* 80:51-56, 2016.
IF: 4.253 (Ranked 26 of 54 in Geriatrics and Gerontology, Q2, 2021).
- [17] 2016 *Neck pain, concerns of falling and physical performance in community dwelling Danish citizens over 75 years of age: A cross-sectional study.* Kendall JC, Boyle E, Hartvigsen J, Hvid LG, Azari MF, Skjødt M, Caserotti P. *Scandinavian Journal of Public Health* 44(7):695-701, 2016.
IF: 3.199 (Ranked 81 of 182 in Public, Environmental and Occupational Health, Q2, 2021).
- [18] 2017 *SPARC interacts with actin in skeletal muscle in vitro and in vivo.* Jørgensen LH, Jepsen PL, Boysen A, Dalgaard LB, Hvid LG, Ørtenblad N, Ravn D, Sellathurai J, Møller-Jensen J, Lochmüller H, Schrøder HD. *American Journal of Pathology* 187(2):457-474, 2017.
IF: 5.770 (Ranked 12 of 77 in Pathology, Q1, 2021).
- [19] 2017 *Myosin content of single muscle fibers following short-term disuse and active recovery in young and old healthy men.* Hvid LG, Brocca L, Ørtenblad N, Aagaard P, Kjaer M, Suetta C, Bottinelli R, Pellegrino MA. *Experimental Gerontology* 87:100-107, 2017.
IF: 4.253 (Ranked 26 of 54 in Geriatrics and Gerontology, Q2, 2021).
- [20] 2017 *Influence of Resistance Training on Neuromuscular Function and Physical Capacity in ALS Patients.* Jensen L, Djurtoft JB, Bech RD, Nielsen JL, Jørgensen LH, Schrøder HD, Frandsen U, Aagaard P, Hvid LG. *Journal of Neurodegenerative Diseases* ID 1436519, 2017.
IF: not available
- [21] 2017 *Physical function and muscle strength in sporadic inclusion body myositis.* Jørgensen AN, Aagaard P, Nielsen JL, Christiansen M, Hvid LG, Frandsen U, Diederichsen LP. *Muscle & Nerve* 56(6):50-58, 2017.
IF: 3.852 (Ranked 97 of 212 in Clinical Neurology, Q2, 2021).
- [22] 2017 *Muscle strength and power in persons with multiple sclerosis – a systematic review and meta-analysis.* Jørgensen MLK, Dalgas U, Wens I, Hvid LG. *Journal of the Neurological Sciences* 376:225–241, 2017.
IF: 4.553 (Ranked 71 of 212 in Clinical Neurology, Q2, 2021).
- [23] 2017 *Brain-derived neurotrophic factor (BDNF) serum basal levels is not affected by power training in mobility-limited older adults - A randomized controlled trial.* Hvid LG*, Nielsen MKF*, Simonsen C*, Andersen M, Caserotti P. *Experimental Gerontology* 93:29–35, 2017. *Joint first authorship.
IF: 4.253 (Ranked 26 of 54 in Geriatrics and Gerontology, Q2, 2021).
- [24] 2017 *Testosterone therapy preserves muscle strength and power in aging men with type 2 diabetes – a randomized controlled trial.* Magnussen LV*, Hvid LG*, Hermann AP, Hougaard DM, Gram B, Caserotti P, Andersen M. *Andrology* 5(5):946-953, 2017. *Joint first authorship.
IF: 4.456 (Ranked 2 of 8 in Andrology, Q2, 2021).
- [25] 2018 *Impact of musculoskeletal pain on balance and concerns of falling in mobility-limited, community-dwelling Danes over 75 years of age: a cross-sectional study.* Kendall J, Hvid LG, Hartvigsen J, Fazalbhoy A, Azari MF, Skjødt M, Robinson SR, Caserotti P. *Aging Clinical and Experimental Research* 30(8):969-975, 2018.
IF: 4.481 (Ranked 23 of 54 in Geriatrics and Gerontology, Q2, 2021).
- [26] 2018 *Plasticity in central neural drive with short-term disuse and recovery - effects on muscle strength and influence of aging.* Hvid LG, Aagaard P, Nielsen J, Ørtenblad N, Kjaer M, Suetta C. *Experimental Gerontology* 106:145-153, 2018.

IF: 4.253 (Ranked 26 of 54 in Geriatrics and Gerontology, Q2, 2021).

- [27] 2018 *Is there an overlooked “window of opportunity” in MS exercise therapy? Perspectives for early MS rehabilitation.* Riemenschneider M, Hvid LG, Stenager E, Dalgas U. *Multiple Sclerosis Journal* 24(7):886-894, 2018.
IF: 5.855 (Ranked 40 of 212 in Clinical Neurology, Q1, 2021).
- [28] 2018 *Aerobic capacity is NOT associated with most cognitive domains in persons with multiple sclerosis - A cross-sectional investigation.* Langeskov-Christensen M, Eskildsen S, Stenager E, Jensen HB, Nielsen HH, Petersen T, Hvid LG, Hämläinen P, Marstrand L, Dalgas U. *Journal of Clinical Medicine* 11:7(9), 2018.
IF: 4.964 (Ranked 54 of 172 in Medicine, General and Internal, Q2, 2021).
- [29] 2019 *Can we trust self-reported walking distance when determining EDSS scores in patients with multiple sclerosis? The Danish MS Hospitals Rehabilitation Study.* Skjerbæk AG, Boesen F, Petersen T, Rasmussen PV, Stenager E, Nørgaard M, Feys P, Kjeldgaard-Jørgensen ML, Hvid LG, Dalgas U. *Multiple Sclerosis Journal* 25(12):1653-1660, 2019.
IF: 5.855 (Ranked 40 of 212 in Clinical Neurology, Q1, 2021).
- [30] 2019 *A cross-sectional study on the relationship between cardiorespiratory fitness, disease severity and walking speed in persons with Multiple Sclerosis.* Madsen LT, Dalgas U, Hvid L, Bansi J. *Multiple Sclerosis and Related Disorders* 29:35-40, 2019.
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Scientific papers in review

- [89] 2023 *Patterns of lower extremity muscle weakness and relationships with ambulatory function in individuals with incomplete spinal cord injury: a cross-sectional study.* Krogh S, Jønsson AB, Hvid LG, Aagaard P, Kasch H. Manuscript submitted to Muscle & Nerve, 2023.
- [91] 2023 *Postural stability is affected by short-term disuse and subsequent reloading in old but not young adults.* Hvid LG, Aagaard P, Nielsen J, Ørtenblad N, Kjær M, Suetta C. Manuscript submitted to Experimental Gerontology, 2023.

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- [94] 2023 *Effects of walking interventions in persons with multiple sclerosis – a systematic review.* Boková I, Gæmelke T, Novotná K, Hvid LG, Dalgas U. Manuscript submitted to *Multiple Sclerosis and Related Disorders*, 2023.
- [96] 2023 *Early phase multiple sclerosis patients display substantial deficits in physical, cognitive, and patient-reported outcomes compared to matched healthy controls.* Thruø C, Hvid LG, Diechmann M, Gaemelke T, Stenager E, Dalgas U, Riemenschneider M. Manuscript submitted to *Journal of Neurologic Physical Therapy*, 2023.
- [97] 2023 *Benefits of moderate-to-high intensity outdoor walking exercise on walking capacity and well-being in multiple sclerosis - a randomized controlled trial.* Hvid LG, Steenberg JL, Jeppesen FKH, Skovgaard L. Manuscript submitted to *Multiple Sclerosis Journal*, 2023.
- [98] 2023 *Stepping into an era of personalized exercise – how muscle strength and aerobic capacity affects the performance on the five time sit to stand and the six-minute walk test.* Taul-Madsen L, Dalgas U, Hvid LG. Manuscript submitted to *Multiple Sclerosis and Related Disorders*, 2023.
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Conference abstracts

- 2007- More than 50 abstracts have been accepted for conferences, of which I have presented more than half (see Below under 'Research Communication').

PhD thesis

- 2011 *Effects of Aging and Short-term Disuse on Contractile Function of Skeletal Muscle - From Whole Muscle to the Single Fiber Level*, Hvid LG. Supervisors Per Aagaard, Charlotte Suetta, and Niels Ørtenblad.

Other publications

- 2011 *Akut fysisk inaktivitet – konsekvenser for ældres muskelfunktion (Danish)*, Hvid LG. *Geronto Geriatrisk Fagforums medlemsblad*, nr. 1 - 2011.
- 2015 *Repeated spring exercise impairs force of isolated single human muscle fibres.* Ørtenblad N, Hvid LG, Jensen R, Andersson E, Willis S, Holmberg H-C, Gejl KD. In *Science and Skiing VI*, pages 446-452, Publisher: Meyer and Meyer Sport (UK) Ltd 2015. [Book chapter](#).
- 2016 *Use of the RODEM wheelchair robot for transfer and transport in nursing homes and rehabilitation centers.* Hvid LG, Caserotti P. Internal report for NTT DOCOMO (telecommunications company) – Japan and Faaborg-Midtfyn Municipality - Denmark.
- 2017 *Early rehabilitation of physical function in elderly following hospitalization – a randomized controlled trial.* Hvid LG, Caserotti P. Internal report for Odense Municipality – Denmark.
- 2019 *Fysisk træning som supplerende behandlingsstrategi tidligt i MS-forløb.* Riemenschneider M, Stenager E, Hvid LG, Dalgas U. *Best Practice Nordic – Neurology fagblad*, Jan 2019.

Research Communication

Scientific Presentations at Conferences and Seminars

- 2007-2021 A total of 14 Oral and 12 Poster Presentations have been made at Scientific Conferences (see above), as exemplified below:
- 2013+15 *Contractility of isolated single myofibers – influence of training and disuse in young and old adults.* Hvid LG. International PhD Course: Assessment and evaluation of human muscle, nervous system and tendon-aponeurosis function in sports science, clinical science and aging, 2013 and 2015. Dept. of Sports Science and Clinical Biomechanics, SDU. [Oral Presentation, Invited Speaker](#).
- 2014 *Functional implications of disuse and retraining in older individuals.* Hvid LG. European Intensive Program (IP), Elderly in motion – biological and humanist study of ageing 2014. Dept. of Sports Science and Clinical Biomechanics, SDU. [Oral Presentation, Invited Speaker](#).

- 2014+15 *Effects of Aging and Short-term Disuse on Contractile Function of Skeletal Muscle -From the Whole Muscle to the Single Fiber Level.* Hvid LG. European Intensive Program (IP), Elderly in motion – biological and humanist study of ageing, 2014 and 2015. Dept. of Sports Science and Clinical Biomechanics, SDU. [Oral Presentation.](#)
- 2015 *Strength and power training designed for mobility-limited older adults - Evidence for improvements in physical function.* Hvid LG. HANC (Healthy Ageing Network of Competence) Conference - Guidelines for physical activity for mobility-limited older adults, 2015. Dept. of Sports Science and Clinical Biomechanics, SDU. [Oral Presentation.](#)
- 2016 *The effect of physical activity/training on cardiovascular function.* Hvid LG. European Intensive Program (IP), Moving in old age – biological and humanist study of ageing 2016. Dept. of Sports Science and Clinical Biomechanics, SDU. [Oral Presentation.](#)
- 2017 *Testosterone therapy preserves muscle mechanical function in aging men with type 2 diabetes - a randomized controlled trial.* Magnussen LV, Hvid LG, Hermann AP, Hougaard DM, Gram B, Caserotti P, Andersen M. Danish Endocrine Society Annual Meeting 2017, Esbjerg, Denmark. [Oral Presentation.](#)
- 2017 *Is the effect of personalized multidisciplinary rehabilitation blunted by advanced age in multiple sclerosis patients? The Danish MS Hospitals Rehabilitation Study.* Hvid LG, Skjerbaek AG, Boesen F, Noergaard M, Stenager E, Slipsager MK, Dalgas U. Rehabilitation in Multiple Sclerosis (RIMS) SIG Mobility meeting 2017, Hasselt, Belgium. [Oral Presentation.](#)
- 2017 *Is the effect of personalized multidisciplinary rehabilitation on physical function dependent on multiple sclerosis phenotype? The Danish MS Hospitals Rehabilitation Study.* Hvid LG, Skjerbaek AG, Boesen F, Noergaard M, Stenager E, Slipsager MK, Dalgas U. 7th Joint ECTRIMS-ACRIMS Meeting, Paris, France 2017. [Poster Presentation.](#)
- 2018 *Alterations in lower limb neuromuscular function across the adult life span in persons with multiple sclerosis.* Hvid LG, Michelsen AS, Riemenschneider M, Jørgensen MLK, Dalgas U. 23rd RIMS Conference, Amsterdam, The Netherlands 2018. [Oral Presentation.](#)
- 2018 *Aging and MS – two processes causing synergistic deleterious effects on physical function.* RIMS SIG Mobility Conference, Glasgow, Scotland 2018. [Oral Presentation, Invited Speaker.](#)
- 2019 *Identification of disability progression in pwMS by neuromuscular rate of force development (RFD).* Hvid LG, Michelsen AS, Jørgensen MLK, Riemenschneider M, Dalgas U. 24th RIMS Conference, Ljubljana, Slovenia 2019. [Oral Presentation.](#)
- 2019 *Aging and MS – Implications for physical function.* MS Fonden (Swedish Society focusing on MS), 2019 Meeting, Malmö, Sweden. [Oral Presentation, Invited Speaker.](#)
- 2019 *Does multiple sclerosis accelerate age-related deterioration of physical function?* 3rd International Congress on Neurorehabilitation and Neural Repair, 2019, Maastricht, Belgium. [Oral Presentation, Invited Speaker.](#)
- 2020 *Neurobiological effects of exercise therapy in multiple sclerosis.* 11th World Congress for NeuroRehabilitation & 35th Congress of the French Society of Physical and Rehabilitation Medicine (Virtual conference), 2020, Lyon, France. [Oral Presentation, Invited Speaker.](#)
- 2021 *Neurobiological Effects of Lifestyle Changes (Exercise) in Multiple Sclerosis.* 26th RIMS Conference, virtual conference 2021. [Oral Presentation, Invited Speaker.](#)
- 2022 *Aging and Multiple Sclerosis - two processes causing synergistic deleterious effects on neuromuscular function?* Ohio Musculoskeletal & Neurological Institute (OMNI), virtual seminar 2022. [Oral Presentation, Invited Speaker.](#)
- 2022 *Neurobiological effects of exercise therapy in multiple sclerosis.* Symposium: Physical exercise in neurological disorders - European Neuroscience Center (CEN), virtual seminar 2022. [Oral Presentation, Invited Speaker.](#)
- 2022 *Are symptoms exacerbated by aging in MS.* MS Fonden (Swedish Society focusing on MS), 2022 Meeting, Stockholm, Sweden. [Oral Presentation, Invited Speaker.](#)

Popular Science Presentations (2018-)

- 2011 *Neuromuskulær funktion hos ældre – effekt af akut fysisk inaktivitet og styrketræning (Danish).* Rehabilitation Department, Odense University Hospital, 2011. [Oral Presentation, Invited Speaker.](#)

- 2013 *Hold kroppen i gang (Danish)*. Hvid LG. Folkeuniversitetet Herning, 2013. [Oral Presentation](#).
- 2014 *Hold kroppen i gang (Danish)*. Hvid LG. Folkeuniversitetet Emdrup, 2014. [Oral Presentation](#).
- 2014 *Aldring, fysisk funktion og fysisk aktivitet/inaktivitet (Danish)*. Kerteminde Kommune, 2014. [Oral Presentation, Invited Speaker](#).
- 2014 *Aldring, fysisk funktion og fysisk aktivitet/inaktivitet (Danish)*. Faaborg-Midtfyn Kommune, 2014. [Oral Presentation, Invited Speaker](#).
- 2014 *When the robot assist with the training - HONDA walking assist device*. Hvid LG, Caserotti P. The Euroscience Open Forum – ESOF Copenhagen, 2014. [Oral Presentation](#).
- 2014 *Neuromuskulær funktion hos ældre – implikationer af akut fysisk inaktivitet (Danish)*. Dansk Selskab for Fysioterapi i Gerontologi og Geriateri, 2014. [Oral Presentation, Invited Speaker](#).
- 2015 *Hold kroppen i gang (Danish)*. Hvid LG. Folkeuniversitetet Holstebro, 2014. [Oral Presentation](#).
- 2015 *Forebyggende hjemmebesøg – erfaringer og resultater fra Healthy Ageing Network of Competences (HANC) projektet (Danish)*. Hvid LG. Landsforeningen for ansatte i Sundhedsfremmende Forebyggende hjemmebesøg, 2015. [Oral Presentation, Invited Speaker](#).
- 2015 *Styrketræning for ældre – definitioner og praktiske overvejelser: øvelser, intensitet, volumen, frekvens, test, progression*. Hvid LG. Afdelingen for Fysioterapi og Ergoterapi, Tønder Kommune, Danmark, 2015. [Oral Presentation, Invited Speaker](#).

Research Funding

Since 2012, I have been responsible (or part of the applications) for research projects being funded by a total amount of 13.62 mill DKK.

International Research Grants (5.887.877 DKK)

- 2012-2015 3.000.000 DKK (co-primary investigator, co-applicant)
Active part of outlining and finishing the project description of the research project “Healthy Ageing Network of Competence (HANC)” (Primary Investigator: Associate Professor Paolo Caserotti), as well as the main application to the European Union Interreg 4A program (Germany-Denmark). In addition to the specific work-package, the HANC project was funded by a total amount of ~11 million DKK.
- 2017-2021 2.887.877 DKK (co-primary investigator, co-applicant)
Co-primary investigator and co-applicant of the clinical research project “Physical and Cognitive Performance During the Two First Years of Lemtrada Treatment”.
Sanofi Genzyme (medical company) funded the project.

Danish Research Grants (7.727.029 DKK)

- 2014-2016 300.000 DKK (co-primary investigator, main applicant)
Active part of outlining and finishing the project description of the research project *Early rehabilitation of physical function in elderly* (Primary Investigators: Associate Professor Paolo Caserotti and Assistant Professor Lars G Hvid). Odense Municipality (Denmark) funded the project.
- 2018 100.000 DKK (co-applicant)
Active part of outlining and finishing the project description of the collaboration between The Danish Multiple Sclerosis Hospitals (Anders Skjerbaek, Research Leader, The Danish Multiple Sclerosis Hospitals, Primary Applicant) and Section for Sport Science, Aarhus University (Lars G Hvid, co-applicant). The aim was to acquire new equipment to optimize assessment of lower extremity neuromuscular function in multiple sclerosis patients.
The Toyota Foundation (Denmark) funded the Purchase of equipment (Nottingham power rig).
- 2019-2023 150.000 DKK (primary investigator, main applicant)
Primary investigator and applicant for the clinical research project “Exercise and neuroprotection in older multiple sclerosis patients”.
The Danish Multiple Sclerosis Society (Scleroseforeningen) funded the project.
- 2019-2023 677.306 DKK (primary investigator, main applicant)
Primary investigator and applicant for the clinical research project “Exercise and neuroprotection in older multiple sclerosis patients”.

The Danish Multiple Sclerosis Society (Scleroseforeningen) funded the project.

- 2019-2023 986.379 DKK (primary investigator, co-applicant)
Primary investigator and co-applicant for the clinical research project "Exercise and neuroprotection in older multiple sclerosis patients".
The Danish foundation TRYGfonden funded the project.
- 2019-2023 300.000 DKK (primary investigator, co-applicant)
Primary investigator and co-applicant for the clinical research project "Exercise and neuroprotection in older multiple sclerosis patients".
Jascha Fonden (Danish foundation) funded the project.
- 2019-2022 2.999.061 DKK (co-investigator, co-applicant)
Active part of outlining and finishing the project description of the clinical research project "Effects of aerobic exercise on brain health in people with Parkinson's disease" (Primary Investigators: Postdoc Martin Langeskov-Christensen and Associate Professor Ulrik Dalgas).
Fabrikant Vilhelm Pedersen og Hustrus Mindelegat (Danish foundation) funded the project.
- 2020-2022 350.000 DKK (primary investigator, main applicant)
Primary investigator and applicant for the clinical research project "Exercise and neuroprotection in older multiple sclerosis patients".
Helsefonden (Danish foundation) funded the project.
- 2021 35.000 DKK (primary investigator, main applicant)
Primary investigator and applicant for the clinical research project "Neurophysiological impairments in multiple sclerosis – associations and implications for neuromuscular function and physical function".
A.P. Møller Fonden (Danish foundation) funded the project.
- 2021 21.000 DKK (primary investigator, main applicant)
Primary investigator and applicant for the clinical research project "Neurophysiological impairments in multiple sclerosis – associations and implications for neuromuscular function and physical function".
Grosserer L.F. Foghts Fond (Danish foundation) funded the project.
- 2020-2023 400.000 DKK (co-investigator, co-applicant)
Co-investigator and -applicant for the clinical research project "Sustainability of exercise therapy in persons with multiple sclerosis – effects of Exercise Booster Sessions".
Helsefonden (Danish foundation) funded the project.
- 2021 224.000 DKK (primary investigator, main applicant)
Primary investigator and applicant for the clinical research project ""Outwalk MS" - benefits of outdoor walking exercise therapy on walking capacity and well-being in multiple sclerosis".
The Danish Multiple Sclerosis Society (Scleroseforeningen) funded the project.
- 2021 974.773 DKK (co-investigator, co-applicant)
Co-investigator and -applicant for the clinical research project "Sustainability of exercise therapy in persons with multiple sclerosis – effects of Exercise Booster Sessions".
The Danish foundation TRYGfonden funded the project.
- 2022 208.710 DKK (primary investigator, main applicant)
Primary investigator and applicant for the clinical research project "Using resistance training to restore corticospinal excitability in multiple sclerosis".
Riisfort Fonden (Danish foundation) funded the project.
- 2023 584.400 DKK (primary investigator, main applicant)
Primary investigator and applicant for the clinical research project "Early rehabilitation following a motor relapse in persons with multiple sclerosis".
The Danish Multiple Sclerosis Society (Scleroseforeningen) funded the project.