

# CV

## Personal data

Born 6<sup>th</sup> of April 1975, Dublin, Ireland; Irish citizen.

Address: Olfert Fischers Gade 6, 3.tv. 1311 Copenhagen K.

## Education

2003: PhD “The effects of exercise on indices of intramuscular collagen remodelling”, Uni Limerick

1998: BSc in Sport and Exercise Science (first class honours), University of Limerick, Ireland

## Current Appointments

2011-: Associate professor, Dept of Biomedical Sciences, Uni Copenhagen

2018-: Formally affiliated to the Institute of Sports Medicine, Bispebjerg Hospital, through the Clinical Academic Group in Physical Activity and Sport in Clinical Medicine (imPAct).

## Past Appointments

2009-2010: Postdoc, Dept of Biomedical Sciences, Uni Copenhagen, and Institute of Sports Medicine, Bispebjerg Hospital

Sept 2004-2009: Postdoc, Institute of Sports Medicine, Bispebjerg Hospital

Sept 2003- June 2004: Experimental Officer (admin duties), Uni Limerick

## Leave

Maternity leave Oct 2011 – May 2012

## Publications

Web of Science calculated H-factor: 26; times cited: 2208.

69 peer-reviewed journal publications, 1 editorial and 3 book chapters.

Authorships: 20 first, 17 last, 21 corresponding

Full list of publications:

<https://publons.com/researcher/3082051/abigail-l-mackey/publications/>

<https://scholar.google.com/citations?user=C8XHioMAAAAJ&hl=en>

## Research Presentations

29 invited / keynote presentations at international scientific conferences.

## Funding

2020: 1 million DKK, Novo Nordisk Foundation, for the MTJ project (#1 in this application).

2020: 5 million DKK, Lundbeck Foundation Ascending Investigator, for motoneuron project (#3).

In addition, since 2005 approximately 5 million DKK has been obtained as main applicant from Lundbeck Foundation, Danish Agency for Culture, Danish Rheumatism Association, Novo Nordisk Foundation, Anti-doping Danmark, Team Danmark, A.P. Møller Foundation, and Bispebjerg Hospital.

## Positions of trust and reviewer activity

- Editorial board member of American Journal of Physiology – Cell Physiology (2020-)
- Editorial board member of Translational Sports Medicine Journal (2019-)
- Member of the Scientific Board of the European College of Sport Science (2014-2019)
- Regular evaluator for grant applications to AFM-Telethon, France; PSI Foundation, Canada; UK Medical Research Council, UK Dunhill Medical Trust.

## Supervision and mentoring

Principal supervisor/mentor for:

- 1 current PhD student: Casper Søndebro (enrolled 03/2019, funded by UCPH Center for Healthy Aging)
- Post-doc Anders Karlsen (3-year Lundbeck post-doc fellowship 2019-2022)
- Medical student Jasmin Garoussian (Lundbeck Danish-American Research Exchange (DARE) Fellowship, 10 months at Stanford University 2019-2020)

- 3 successfully defended PhD theses: Mette Heisterberg 2018, Anders Karlsen 2018, Cecilie Bechshøft 2019
- 6 Masters theses, and 13 medical student bachelor theses

Co-supervisor for 4 current PhD students, 3 successfully defended PhD theses.

### **University teaching and administration**

- Full associate professor teaching load at Dept of Biomedical Sciences to students of Medicine, Public Health and MedTek.
- Manager of UCPH PhD course “Skeletal muscle: size, signalling and satellite cells”, 2013-2019.
- Lectures on other postgraduate courses at UCPH and Southern Denmark.
- Opponent on PhD theses: Anna Strömberg, Karolinska Institute 2017; Thomas Bjørnsen, Uni Agder 2019.
- Chairperson of 2 UCPH PhD assessment committees

### **International collaborators**

The applicant has a strong international collaboration network. Currently active collaborations relevant for the proposed activities include:

- Professor Stefano Schiaffino (Uni Padova, Italy), guest professor in my group (August-October 2018), for development of human myotendinous junction research.
- Professor Helen Blau (Stanford, USA), through Lundbeck DARE fellowship 2019-2020, also with focus on the myotendinous junction, with the CODEX method.
- Dr. Bénédicte Chazaud (Uni Lyon, France), where PhD student Casper Søndenbroe spent 3 months to learn the cell culture method of isolating spinal cord neurons from rat embryos.

## 5-year Publications List (all peer-reviewed)

In the last 5 years: 5 first authorships and 14 last authorships.

1. Marker L, Schjerling P, **Mackey AL**, Hansen T, Jakobsen J, Kjær M, Krogsgaard M. Collagens in primary frozen shoulder expression of collagen mRNA isoforms in the different phases of the disease. *Rheumatology*, accepted 24th September **2020**.
2. Yeung CC, Schoof EM, Tamáš M, **Mackey AL**, Kjaer M. Proteomics Identifies Differences in Fibrotic Potential of Extracellular Vesicles from Human Tendon and Muscle Fibroblasts. *Cell Communication and Signaling*, **2020**, 18:177.
3. Jensen SM, Bechshøft CJL, Heisterberg MF, Schjerling P, Andersen JL, Kjaer M, **Mackey AL**. Macrophage subpopulations and the acute inflammatory response of elderly human skeletal muscle to physiological resistance exercise. *Front Physiol*. **2020**, 11:811.
4. Karlsen A, **Mackey AL**, Suetta C, Kjaer M, What is the impact of acute inflammation on muscle performance in geriatric patients? *Exp Gerontol* **2020**, 138:111008.
5. Soendenbroe C, Bechshøft CJL, Heisterberg MF, Jensen SM, Bomme E, Schjerling P, Karlsen A, Kjaer M, Andersen JL, **Mackey AL**. Key components of human myofibre denervation and neuromuscular junction stability are modulated by age and exercise. *Cells*. **2020**, 9(4): 893.
6. Bjerre-Bastos JJ, Nielsen HB, Andersen JR, He Y, Karsdal M, Bay-Jensen A-C, Boesen M, **Mackey AL**, Bihlet AR. Evaluation of serum ARGS neopeptide as an osteoarthritis biomarker using a standardized model for exercise-induced cartilage extra cellular matrix turnover. *Osteoarthritis and Cartilage Open* **2020**, 2(2):100060.
7. Nordsborg N, Kilen A, Bay J, Bejder J, Andersen A, Bonne T, Larsen P, Carlsen A, Egelund J, Nybo L, **Mackey A**, Olsen N, Aachmann-Andersen N, Andersen J. Impact of low-volume concurrent strength training distribution on muscular adaptation. *Journal of Science and Medicine in Sport*. **2020**, 23(10):999-1004.
8. Karlsen A, Soendenbroe C, Malmgaard-Clausen NM, Wagener F, Moeller C, Senhaji Z, Damberg K, Andersen JL, Schjerling P, Kjaer M and **Mackey AL**. Preserved capacity for satellite cell proliferation, regeneration and hypertrophy in the skeletal muscle of healthy elderly men. *FASEB J*. **2020**, 34:6418-6436.
9. Karlsen A, Cullum CK, Norheim KL, Scheel FU, Zinglensen AH, Vahlgren J, Schjerling P, Kjaer M and **Mackey AL**. Neuromuscular Electrical Stimulation Preserves Leg Lean Mass in Geriatric Patients. *Med Sci Sports Exerc*. **2020**, 52, 773-784.
10. Tran P, Skrba, T; Wondimu E, Galatioto J, Svensson R, Olesen A, **Mackey AL**, Magnusson P, Ramirez F, Kjaer M. The influence of fibrillin-1 and physical activity upon tendon tissue morphology and mechanical properties in mice. *Physiological Reports*. **2019**, 7(21), e14267. doi: 10.14814/phy2.14267.
11. Ziegler AK, Damgaard A, **Mackey AL**, Schjerling P, Magnusson P, Olesen AT, Kjaer M & Scheele C. An anti-inflammatory phenotype in visceral adipose tissue of old lean mice, augmented by exercise. *Scientific Reports*. **2019**, 9:12069.
12. Bayer ML, **Mackey A**, Magnusson SP, Krogsgaard MR, Kjær M. [Treatment of acute muscle injuries]. *Ugeskr Laeger*. **2019**, 181(8). pii: V11180753. Danish review.
13. Soendenbroe C, Heisterberg MF, Schjerling P, Karlsen A, Kjaer M, Andersen JL, **Mackey AL**. Molecular indicators of denervation in ageing human skeletal muscle. *Muscle Nerve*. **2019**, 60(4): 453-463.
14. Bechshøft CJL, Schjerling P, Kjaer M, **Mackey AL**. The influence of direct and indirect fibroblast cell contact on human myogenic cell behaviour and gene expression in vitro. *J Appl Physiol*. **2019**, 127(2): 342-355.
15. Bechshøft CJL, Jensen SM, Schjerling P, Andersen JL, Svensson RB, Eriksen CS, Mkumbuzi NS, Kjaer M & **Mackey AL**. Age and prior exercise in vivo determine the subsequent in vitro molecular profile of myoblasts and non-myogenic cells derived from human skeletal muscle. *Am J Physiol Cell Physiol*. **2019**, 316(6): C898-C912.

16. Karlsen A, Bechshøft RL, Malmgaard-Clausen NM, Andersen JL, Schjerling P, Kjaer M, **Mackey AL**. Lack of muscle fibre hypertrophy, myonuclear addition, and satellite cell pool expansion with resistance training in 83-94-year-old men and women. *Acta Physiol (Oxf)*. **2019**, 227(1): e13271.
17. Ziegler AK, Jensen SM, Schjerling P, **Mackey AL**, Andersen JL, Kjaer M. The effect of resistance exercise upon age-related systemic and local skeletal muscle inflammation. *Exp Gerontol*. **2019**, 121: 19-32.
18. Al-Shammari AA, Kissane RWP, Holbek S, **Mackey AL**, Andersen TR, Gaffney EA, Kjaer M, Egginton S. Integrated method for quantitative morphometry and oxygen transport modeling in striated muscle. *J Appl Physiol*. **2019**, 126(3): 544-557.
19. Heisterberg MF, Andersen JL, Schjerling P, Lund A, Dalskov S, Overgaard Jonsson A, Warming N, Fogelstrom M, Kjaer M & **Mackey AL**. Losartan has no additive effect on the response to heavy resistance exercise in human elderly skeletal muscle. *J Appl Physiol*, **2018**, 125(5): 1536-1554. *Selected for APS Select*.
20. Kristensen DM, Desdoits-Lethimonier C, **Mackey AL**, Dalgaard MD, De Masi F, Munkbol CH, Styrihave B, Antignac JP, Le Bizec B, Platel C, Hay-Schmidt A, Jensen TK, Lesne L, Mazaud-Guittot S, Kristiansen K, Brunak S, Kjaer M, Juul A & Jegou B. Ibuprofen alters human testicular physiology to produce a state of compensated hypogonadism. *Proc Natl Acad Sci U S A*, **2018**, 115(4): E715-E724.
21. Jakobsen JR, Jakonsen NR, **Mackey AL**, Koch M, Kjaer M, Krogsgaard MR. Remodeling of muscle fibres approaching the human myotendinous junction. *Scand J Med Sci Sports*. **2018**, 28(8): 1859-1865.
22. Heisterberg MF, Andersen JL, Schjerling P, Bülow J, Lauersen JB, Roeber HL, Kjaer M, **Mackey AL**. Effect of losartan on the acute response of human elderly skeletal muscle to exercise. *Medicine & Science in Sports & Exercise*, **2018**, 50(2): 225-235.
23. **Mackey AL**, Kjaer M. The breaking and making of healthy adult human skeletal muscle in vivo. *Skeletal Muscle*, **2017**, 7(1): 24.
24. Nygaard RH, Jensen JK, Voermans NC, Heinemeier KM, Schjerling P, Holm L, Agergaard J, **Mackey AL**, Andersen JL, Remvig L & Kjaer M. Skeletal muscle morphology, protein synthesis and gene expression in Ehlers Danlos Syndrome. *J Appl Physiol*, **2017**, 123(2): 482-488.
25. Mikkelsen UR, Agergaard J, Coupe C, Grosset JF, Karlsen A, Magnusson SP, Schjerling P, Kjaer M, **Mackey AL**. Skeletal muscle morphology and regulatory signalling in endurance-trained and sedentary individuals: The influence of ageing. *Exp Gerontol*, **2017**, 93: 54-67.
26. **Mackey AL**, Magnan M, Chazaud B, Kjaer M. Human skeletal muscle fibroblasts stimulate in vitro myogenesis and in vivo muscle regeneration. *J Physiol*, **2017**, 595(15): 5115-5127.
27. Bechshøft RL, Malmgaard-Clausen NM, Gliese B, Beyer N, **Mackey AL**, Andersen JL, Kjaer M, Holm L. Improved skeletal muscle mass and strength after heavy strength training in very old individuals. *Exp Gerontol*, **2017**, 92: 96-105.
28. **Mackey AL**, Kjaer M. Connective tissue regeneration in skeletal muscle after eccentric contraction-induced injury. *Journal of Applied Physiology*, **2017**, 122(3): 533-540. *Invited mini-review*.
29. Jakobsen JR, **Mackey AL**, Knudsen AB, Koch M, Kjaer M, Krogsgaard MR. Composition and adaptation of human myotendinous junction and neighboring muscle fibers to heavy resistance training. *Scand J Med Sci Sports*, **2017**, 27(12): 1547-1559. *(shared first authorship)*
30. Christensen JF, Schjerling P, Andersen JL, Daugaard G, Rørth M, **Mackey AL**. Muscle satellite cell content and mRNA signaling in germ cell cancer patients – effects of chemotherapy and resistance training. *Acta Oncologica*, **2016**, 55:1246-1250.
31. **Mackey AL**, Rasmussen L, Kadi F, Schjerling P, Helmark I, Ponsot E, Aagaard P, Durigan J, Kjaer M. Activation of satellite cells and the regeneration of human skeletal muscle are expedited by ingestion of non-steroidal anti-inflammatory medication. *FASEB J*. **2016**, 30:2266-2281.
32. Karlsen A, Couppé C, Andersen JL, Mikkelsen UR, Nielsen RH, Magnusson P, Kjaer M & **Mackey AL**. Matters of fiber size and myonuclear domain; does size matter more than age? *Muscle & Nerve*, **2015**, 52(6): 1040-6.

33. Molsted S, Andersen JL, Harrison AP, Eidemak I & **Mackey AL**. The fiber-type specific response of skeletal muscle satellite cells to high-intensity resistance training in dialysis patients. *Muscle & Nerve*. **2015**, 52(5): 736-45.
34. Knudsen AB, Larsen M, **Mackey AL**, Hjort M, Hansen KK, Qvortrup K, Kjaer M, Krosgaard MR. The human myotendinous junction: An ultrastructural and 3D analysis study. *Scand J Med Sci Sports*, **2015**, 25(1): e116-23.