

Stanford



Malene Lindholm

Instructor, Medicine - Cardiovascular Medicine

Bio

ACADEMIC APPOINTMENTS

- Instructor, Medicine - Cardiovascular Medicine
- Member, Wu Tsai Human Performance Alliance

HONORS AND AWARDS

- Early Career Investigator Award, American Heart Association Genomic and Precision Medicine Council (11/15/2020)
- Young Investigator Award, Swedish foundation for promoting exercise (Sveriges Centralförening för Idrottens Främjande) (10/2019)
- Young Investigator Award, Research Group on the Biochemistry of Exercise (10/2018)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Member, Council on Genomic and Precision Medicine Early Career Committee (2022 - present)

PROFESSIONAL EDUCATION

- M.Sc., Karolinska Institute , Biomedicine (2007)
- PhD, Karolinska Institute , Medicine (2015)

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Interested in the genetics of human performance and the multi-omic response to exercise and training for optimizing human health.

CLINICAL TRIALS

- Gender Dysphoria Treatment in Sweden, Recruiting
- HIIT vs. MICT Training Study, Recruiting
- Molecular Transducers of Physical Activity Consortium, Not Recruiting

Publications

PUBLICATIONS

- **Exercise is associated with younger methylome and transcriptome profiles in human skeletal muscle.** *Aging cell*
Voisin, S., Seale, K., Jacques, M., Landen, S., Harvey, N. R., Haupt, L. M., Griffiths, L. R., Ashton, K. J., Coffey, V. G., Thompson, J. M., Doering, T. M., Lindholm, M. E., Walsh, et al
2023: e13859

- **Multioomic identification of key transcriptional regulatory programs during endurance exercise training.** *bioRxiv : the preprint server for biology*
Smith, G. R., Zhao, B., Lindholm, M. E., Raja, A., Viggars, M., Pincas, H., Gay, N. R., Sun, Y., Ge, Y., Nair, V. D., Sanford, J. A., S Amper, M. A., Vasoya, et al
2023
- **Mono- and Biallelic Protein-Truncating Variants in Alpha-Actinin 2 Cause Cardiomyopathy Through Distinct Mechanisms.** *Circulation. Genomic and precision medicine*
Lindholm, M. E., Jimenez-Morales, D., Zhu, H., Seo, K., Amar, D., Zhao, C., Raja, A., Madhvani, R., Abramowitz, S., Espenel, C., Sutton, S., Caleshu, C., Berry, et al
2021: CIRCGEN121003419
- **Time trajectories in the transcriptomic response to exercise - a meta-analysis.** *Nature communications*
Amar, D., Lindholm, M. E., Norrbom, J., Wheeler, M. T., Rivas, M. A., Ashley, E. A.
2021; 12 (1): 3471
- **Molecular Transducers of Physical Activity Consortium (MoTrPAC): Mapping the Dynamic Responses to Exercise.** *Cell*
Sanford, J. A., Nogiec, C. D., Lindholm, M. E., Adkins, J. N., Amar, D., Dasari, S., Drugan, J. K., Fernandez, F. M., Radom-Aizik, S., Schenk, S., Snyder, M. P., Tracy, R. P., Vanderboom, et al
2020; 181 (7): 1464–74
- **Exercise Induces Different Molecular Responses in Trained and Untrained Human Muscle.** *Medicine and science in sports and exercise*
Moberg, M., Lindholm, M. E., Reitzner, S. M., Ekblom, B., Sundberg, C., Psilander, N.
2020
- **An epigenetic clock for human skeletal muscle.** *Journal of cachexia, sarcopenia and muscle*
Voisin, S., Harvey, N. R., Haupt, L. M., Griffiths, L. R., Ashton, K. J., Coffey, V. G., Doering, T. M., Thompson, J. M., Benedict, C., Cedernaes, J., Lindholm, M. E., Craig, J. M., Rowlands, et al
2020
- **Skeletal Muscle Transcriptomic Comparison between Long-Term Trained and Untrained Men and Women.** *Cell reports*
Chapman, M. A., Arif, M. n., Emanuelsson, E. B., Reitzner, S. M., Lindholm, M. E., Mardinoglu, A. n., Sundberg, C. J.
2020; 31 (12): 107808
- **NOVEL ALPHA-ACTININ 2 MUTATIONS ARE ASSOCIATED WITH CARDIOMYOPATHY AND HYPERTROPHY IN HUMAN CARDIAC TISSUE AND IPSC-DERIVED CARDIOMYOCYTES**
Lindholm, M., Zhu, H., Huang, Y., Ashley, E. A., Wheeler, M.
ELSEVIER SCIENCE INC.2019: 1027
- **Metabolic and functional changes in transgender individuals following cross-sex hormone treatment: Design and methods of the Gender Dysphoria Treatment in Sweden (GETS) study** *CONTEMPORARY CLINICAL TRIALS COMMUNICATIONS*
Wiik, A., Andersson, D. P., Brismar, T. B., Chanpen, S., Dhejne, C., Ekstrom, T. J., Flanagan, J. N., Holmberg, M., Kere, J., Lilja, M., Lindholm, M. E., Lundberg, T. R., Maret, et al
2018; 10: 148–53
- **Medical relevance of protein-truncating variants across 337,205 individuals in the UK Biobank study** *NATURE COMMUNICATIONS*
DeBoever, C., Tanigawa, Y., Lindholm, M. E., McInnes, G., Lavertu, A., Ingelsson, E., Chang, C., Ashley, E. A., Bustamante, C. D., Daly, M. J., Rivas, M. A.
2018; 9: 1612
- **The Impact of Endurance Training on Human Skeletal Muscle Memory, Global Isoform Expression and Novel Transcripts.** *PLoS genetics*
Lindholm, M. E., Giacomello, S., Werne Solnestam, B., Fischer, H., Huss, M., Kjellqvist, S., Sundberg, C. J.
2016; 12 (9)
- **Skeletal muscle hypoxia-inducible factor-1 and exercise** *EXPERIMENTAL PHYSIOLOGY*
Lindholm, M. E., Rundqvist, H.
2016; 101 (1): 28-32
- **The human cardiac and skeletal muscle proteomes defined by transcriptomics and antibody-based profiling** *BMC GENOMICS*
Lindskog, C., Linne, J., Fagerberg, L., Hallstrom, B. M., Sundberg, C. J., Lindholm, M., Huss, M., Kampf, C., Choi, H., Liem, D. A., Ping, P., Varemo, L., Mardinoglu, et al
2015; 16

- **An integrative analysis reveals coordinated reprogramming of the epigenome and the transcriptome in human skeletal muscle after training** *EPIGENETICS*
Lindholm, M. E., Marabita, F., Gomez-Cabrero, D., Rundqvist, H., Ekstrom, T. J., Tegner, J., Sundberg, C. J.
2014; 9 (12): 1557-1569
- **The human skeletal muscle transcriptome: sex differences, alternative splicing, and tissue homogeneity assessed with RNA sequencing** *FASEB JOURNAL*
Lindholm, M. E., Huss, M., Solnestam, B. W., Kjellqvist, S., Lundeberg, J., Sundberg, C. J.
2014; 28 (10): 4571-4581
- **Negative regulation of HIF in skeletal muscle of elite endurance athletes: a tentative mechanism promoting oxidative metabolism** *AMERICAN JOURNAL OF PHYSIOLOGY-REGULATORY INTEGRATIVE AND COMPARATIVE PHYSIOLOGY*
Lindholm, M. E., Fischer, H., Poellinger, L., Johnson, R. S., Gustafsson, T., Sundberg, C. J., Rundqvist, H.
2014; 307 (3): R248-R255
- **An evaluation of analysis pipelines for DNA methylation profiling using the Illumina HumanMethylation450 BeadChip platform** *EPIGENETICS*
Marabita, F., Almgren, M., Lindholm, M. E., Ruhrmann, S., Fagerstrom-Billai, F., Jagodic, M., Sundberg, C. J., Ekstrom, T. J., Teschendorff, A. E., Tegner, J., Gomez-Cabrero, D.
2013; 8 (3): 333-346