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## Publications

### **Effect of high-altitude exposure on skeletal muscle mitochondrial subcellular distribution, ultrastructure and respiration in sea-level residents**

Schytz, C. T., Nielsen, J., Ørtenblad, N., Lundby, A.-K. M., Jacobs, R. A. & Lundby, C., 14. Oct 2024, bioRxiv.

### **Need to revise classification of physical activity intensity in older adults? The use of estimated METs, measured METs and VO<sub>2</sub>Reserve**

Skjødt, M., Tully, M. A., Tsai, L.-T., Gejl, K. D., Ørtenblad, N., Jensen, K., Koster, A., Visser, M., Andersen, M. S. & Caserotti, P., Aug 2024, In: The journals of gerontology. Series A, Biological sciences and medical sciences. 79, 7, glae120.

### **Accuracy of a continuous glucose monitoring system applied before, during, and after an intense leg-squat session with low- and high-carbohydrate availability in young adults without diabetes**

Matzka, M., Ørtenblad, N., Lenk, M. & Sperlich, B., 22. Jul 2024, (E-pub ahead of print) In: European Journal of Applied Physiology.

### **Correction: Substrate utilization and durability during prolonged intermittent exercise in elite road cyclists**

Ørtenblad, N., Zachariassen, M., Nielsen, J. & Gejl, K. D., Jul 2024, In: European Journal of Applied Physiology. 124, 7, p. 2207-2208

### **Substrate utilization and durability during prolonged intermittent exercise in elite road cyclists**

Ørtenblad, N., Zachariassen, M., Nielsen, J. & Gejl, K. D., Jul 2024, In: European Journal of Applied Physiology. 124, 7, p. 2193-2205

### **Piperine enhances contractile force in slow- and fast-twitch muscle**

Herskind, J., Ørtenblad, N., Cheng, A. J., Pedersen, P. & Overgaard, K., 15. Jun 2024, In: The Journal of Physiology. 602, 12, p. 2807-2822

### **Low Energy Availability Followed by Optimal Energy Availability Does Not Benefit Performance in Trained Females**

Oxfeldt, M., Marsi, D., Christensen, P. M., Andersen, O. E., Johansen, F. T., Bangshaab, M., Risikesan, J., Jeppesen, J. S., Hellsten, Y., Phillips, S. M., Melin, A. K., Ørtenblad, N. & Hansen, M., 1. May 2024, In: Medicine and Science in Sports and Exercise. 56, 5, p. 902-916

### **Differential utilisation of subcellular skeletal muscle glycogen pools: a comparative analysis between 1 and 15 min of maximal exercise**

Schytz, C. T., Ørtenblad, N., Gejl, K. D. & Nielsen, J., 15. Apr 2024, In: The Journal of Physiology. 602, 8, p. 1681-1702

### **High-intensity interval training combining rowing and cycling improves but does not restore beta-cell function in type 2 diabetes**

Houborg Petersen, M., Stidsen, J. V., Eisemann de Almeida, M., Kleis Wentorf, E., Jensen, K., Ørtenblad, N. & Højlund, K., 12. Apr 2024, In: Endocrine Connections. 13, 5, e230558.

### **A century of exercise physiology: effects of muscle contraction and exercise on skeletal muscle Na<sup>+</sup>,K<sup>+</sup>-ATPase, Na<sup>+</sup> and K<sup>+</sup> ions, and on plasma K<sup>+</sup> concentration—historical developments: effects of muscle contraction and exercise on skeletal muscle Na<sup>+</sup>,K<sup>+</sup>-ATPase, Na<sup>+</sup> and K<sup>+</sup> ions, and on plasma K<sup>+</sup> concentration—historical developments**

McKenna, M. J., Renaud, J. M., Ørtenblad, N. & Overgaard, K., Mar 2024, In: European Journal of Applied Physiology. 124, 3, p. 681-751

**Assessments of individual fiber glycogen and mitochondrial volume percentages reveal a graded reduction in muscle oxidative power during prolonged exhaustive exercise**

Nielsen, J., Jensen, R. & Ørtenblad, N., Feb 2024, In: Scandinavian Journal of Medicine & Science in Sports. 34, 2, 6 p., e14571.

**Eight weeks of heavy strength training increases hemoglobin mass and VO<sub>2</sub> peak in well-trained to elite female and male rowers**

Lundby, C., Mazza, O., Nielsen, J., Haubro, M., Kvorning, T., Ørtenblad, N. & Gejl, K. D., 1. Jan 2024, In: Journal of Applied Physiology. 136, 1, p. 1-12

**Skeletal muscle mitochondria demonstrate similar respiration per cristae surface area independent of training status and sex in healthy humans**

Schytz, C. T., Ørtenblad, N., Lundby, A. K. M., Jacobs, R. A., Nielsen, J. & Lundby, C., Jan 2024, In: Journal of Physiology. 602, 1, p. 129-151

**Optimizing recovery strategies for winter athletes: insights for Milano-Cortina 2026 Olympic Games**

Edholm, P., Ørtenblad, N., Holmberg, H. C. & Sperlich, B., 2024, In: Sport Sciences for Health. 20, p. 1169–1182

**No Net-Utilization of Intramuscular Lipid Droplets during Repeated High-Intensity Intermittent Exercise**

Knudsen, C. B., Nielsen, J., Ørtenblad, N., Mohr, M., Overgaard, K. & Vigh-Larsen, J. F., 1. Dec 2023, In: American Journal of Physiology: Endocrinology and Metabolism. 325, 6, p. E700-E710

**High-throughput proteomics uncovers exercise training and type 2 diabetes-induced changes in human white adipose tissue**

Larsen, J. K., Kruse, R., Sahebkhari, N., Moreno-Justicia, R., Gomez Jorba, G., Petersen, M. H., de Almeida, M. E., Ørtenblad, N., Deshmukh, A. S. & Højlund, K., 29. Nov 2023, In: Science Advances. 9, 48, 15 p., eadi7548.

**Exercise and fatigue: integrating the role of K<sup>+</sup>, Na<sup>+</sup> and Cl<sup>-</sup> in the regulation of sarcolemmal excitability of skeletal muscle**

Renaud, J.-M., Ørtenblad, N., McKenna, M. J. & Overgaard, K., Nov 2023, In: European Journal of Applied Physiology. 123, 11, p. 2345-2378

**Short-term lowering of carbohydrate intake reduces skeletal muscle glycogen and body weight, but has no effect on short-term exercise capacity or maximal power-output in recreational active men**

Schytz, C. T., Nielsen, J., Ørtenblad, N., Lundby, C., Birkholm, T., Plomgaard, P., Kolnes, K. J. & Gejl, K. D., 30. Aug 2023

**Skeletal muscle HSP70 expression is not associated with glycogen availability during recovery in elite endurance athletes**

Gejl, K. D., Barner Dalgaard, L., Hvid, L. G. & Ørtenblad, N., 30. Aug 2023.

**Increased mitochondrial surface area and cristae density in the skeletal muscle of strength athletes**

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**High-volume strength training decreases mitochondrial respiratory capacity in skeletal muscle of young well-trained rowers**

Petersen, E., Mazza, O. B., Ørtenblad, N., Nielsen, J., Lundby, C., Gejl, K. D. & Larsen, S., 6. Jul 2023.

**Lowered muscle glycogen reduces body mass with no effect on short-term exercise performance in men**

Schytz, C. T., Ørtenblad, N., Birkholm, T. A., Plomgaard, P., Nybo, L., Kolnes, K. J., Andersen, O. E., Lundby, C., Nielsen, J. & Gejl, K. D., Jul 2023, In: Scandinavian Journal of Medicine & Science in Sports. 33, 7, p. 1054-1071

**Acute exercise increases the contact between lipid droplets and mitochondria independently of obesity and type 2 diabetes**

de Almeida, M. E., Ørtenblad, N., Petersen, M. H., Schjerning, A. S. N., Wentorf, E. K., Jensen, K., Højlund, K. & Nielsen, J., 15. May 2023, In: The Journal of Physiology. 601, 10, p. 1797-1815

### **Altered intramuscular network of lipid droplets and mitochondria in type 2 diabetes**

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### **Prolonged loss of force and power following fatiguing contractions in rat soleus muscles: Is low frequency fatigue an issue during dynamic contractions?**

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### **The Role of Muscle Glycogen Content and Localization in High-Intensity Exercise Performance: A Placebo-Controlled Trial**

Vigh-Larsen, J. F., Ørtenblad, N., Nielsen, J., Andersen, O. E., Overgaard, K. & Mohr, M., Dec 2022, In: Medicine and Science in Sports and Exercise. 54, 12, p. 2073-2086

### **Fibre type and localisation-specific muscle glycogen utilisation during repeated high-intensity intermittent exercise**

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### **High-intensity interval training combining rowing and cycling efficiently improves insulin sensitivity, body composition and VO<sub>2</sub>max in men with obesity and type 2 diabetes**

Petersen, M. H., de Almeida, M. E., Wentorf, E. K., Jensen, K., Ørtenblad, N. & Højlund, K., 1. Nov 2022, In: Frontiers in Endocrinology. 13, 1032235.

### **Specific ATPases drive compartmentalized glycogen utilization in rat skeletal muscle**

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### **The expression of HSP70 in skeletal muscle is not associated with glycogen availability during recovery following prolonged exercise in elite endurance athletes**

Dalgaard, L. B., Ørtenblad, N., Hvid, L. G. & Gejl, K. D., Aug 2022, In: European Journal of Applied Physiology. 122, 8, p. 1831-1842

### **Muscle metabolism and impaired sprint performance in an elite women's football game**

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### **Quantification of Subcellular Glycogen Distribution in Skeletal Muscle Fibers using Transmission Electron Microscopy**

Jensen, R., Ørtenblad, N., Di Benedetto, C., Qvortrup, K. & Nielsen, J., Feb 2022, In: Journal of Visualized Experiments. 2022, 180, e63347.

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### **Relative maximum oxygen uptake during activities of daily living in very old community-dwelling adults**

Skjødt, M., Tully, M. A., Ørtenblad, N., Tsai, L.-T. & Caserotti, P., 2022, p. 291.

### **Nampt controls skeletal muscle development by maintaining Ca<sup>2+</sup> homeostasis and mitochondrial integrity**

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**Specific ATPases drive compartmentalized glycogen utilization in rat skeletal muscle**

Nielsen, J., Dubillot, P., Stausholm, M.-L. H. & Ørtenblad, N., 28. Oct 2021, bioRxiv.

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**Methodological Guidelines Designed to Improve the Quality of Research on Cross-Country Skiing**

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**Short-term intensified training temporarily impairs mitochondrial respiratory capacity in elite endurance athletes**

Cardinale, D. A., Gejl, K. D., Petersen, K. G., Nielsen, J., Ørtenblad, N. & Larsen, F. J., 1. Jul 2021, In: Journal of Applied Physiology. 131, 1, p. 388-400

**Contractile Properties of MHC I and II Fibers From Highly Trained Arm and Leg Muscles of Cross-Country Skiers**

Gejl, K. D., Hvid, L. G., Andersson, E. P., Jensen, R., Holmberg, H.-C. & Ørtenblad, N., 16. Jun 2021, In: Frontiers in Physiology. 12, 10 p., 682943.

**Glycogen supercompensation is due to increased number, not size, of glycogen particles in human skeletal muscle**

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**$\beta_2$ -Adrenergic agonist salbutamol augments hypertrophy in MHCIIa fibers and sprint mean power output but not muscle force during 11 weeks of resistance training in young men**

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**Myocardial subcellular glycogen distribution and sarcoplasmic reticulum  $Ca^{2+}$  handling: effects of ischaemia, reperfusion and ischaemic preconditioning**

Nielsen, J., Johnsen, J., Pryds, K., Ørtenblad, N. & Bøtker, H. E., Mar 2021, In: Journal of Muscle Research and Cell Motility. 42, 1, p. 17-31

**Pharmacological but not physiological GDF15 suppresses feeding and the motivation to exercise**

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**Subcellular localization- and fibre type-dependent utilization of muscle glycogen during heavy resistance exercise in elite power and Olympic weightlifters**

Hokken, R., Laugesen, S., Aagaard, P., Suetta, C., Frandsen, U., Ørtenblad, N. & Nielsen, J., Feb 2021, In: Acta Physiologica. 231, 2, e13561.

**Transdermal Estrogen Therapy Improves Gains in Skeletal Muscle Mass After 12 Weeks of Resistance Training in Early Postmenopausal Women**

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**Molecular markers of skeletal muscle hypertrophy following 10 wk of resistance training in oral contraceptive users and nonusers**

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**Effect of long-term testosterone therapy on molecular regulators of skeletal muscle mass and fibre-type distribution in aging men with subnormal testosterone**

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**Heterogeneity in subcellular muscle glycogen utilisation during exercise impacts endurance capacity in men**

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**Supplement with whey protein hydrolysate in contrast to carbohydrate supports mitochondrial adaptations in trained runners**

Hansen, M., Oxfeldt, M., Larsen, A. E., Thomsen, L. S., Rokkedal-Lausch, T., Christensen, B., Rittig, N., De Paoli, F. V., Bangsbo, J., Ørtenblad, N. & Madsen, K., 7. Sept 2020, In: *Journal of the International Society of Sports Nutrition*. 17, 1, p. 46-13 p., 46.

**High-intensity interval training combining biking and rowing markedly improves insulin sensitivity, body composition and VO(2)max in obesity and type 2 diabetes**

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**Comment on: "changes in skeletal muscle glycogen content in professional soccer players before and after a match by a noninvasive muscledsound® technology. a cross sectional pilot study nutrients 2020, 12(4), 971"**

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**Effects of Acute Exercise and Training on the Sarcoplasmic Reticulum Ca<sup>2+</sup> Release and Uptake Rates in Highly Trained Endurance Athletes**

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**Relationship Between Content Of Mitochondria And Z-disk Or Fiber Types**

Geng, G., Jensen, R., Liang, Y., Qiu, J., Niels, O. & Joachim, N., 1. Jul 2020, In: *Medicine and Science in Sports and Exercise*. 52, 7S, p. 921-1 p.

**The Associations Of Mitochondrial Content And Maximal Oxygen Uptake**

Liang, Y., Jensen, R., Geng, G., Qiu, J., Ortenblad, N. & Nielsen, J., 1. Jul 2020, In: *Medicine and Science in Sports and Exercise*. 52, 7S, p. 156-157

**Skeletal muscle lipid droplets are resynthesized before being coated with perilipin proteins following prolonged exercise in elite male triathletes**

Jevons, E. F. P., Gejl, K. D., Strauss, J. A., Ørtenblad, N. & Shepherd, S. O., 1. Mar 2020, In: *American Journal of Physiology: Endocrinology and Metabolism*. 318, 3, p. E357-E370

**Inhibition of glycogenolysis prolongs action potential repriming period and impairs muscle function in rat skeletal muscle**

Jensen, R., Nielsen, J. & Ørtenblad, N., Feb 2020, In: *The Journal of Physiology*. 598, 4, p. 789-803

**Subcellular localization- and fibre type-dependent utilization of muscle glycogen during heavy resistance training in elite weight lifters**

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**Skeletal muscle sarcoplasmic reticulum Ca<sup>2+</sup> uptake preferentially use glycogenolytic derived ATP**

Kristiansen, M. R., Jensen, R., Nielsen, J. & Ortenblad, N., Nov 2019, In: *Acta Physiologica*. 227, S721, p. 77-1 p., e13414.

**The inhibitory effects of two distinct inhibitors on glycogen phosphorylase activity and contractile function in chemically skinned single fibers**

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**The time-course of intramuscular lipid droplet utilization at different subcellular localizations and fiber types during endurance exercise in lean males**

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**Calcium Fluxes in Work-Related Muscle Disorder: Implications from a Rat Model**

Hadrevi, J., Barbe, M. F., Ortenblad, N., Frandsen, U., Boyle, E., Lazar, S., Sjøgaard, G. & Søgaard, K., 30. Sept 2019, In: BioMed Research International. 2019, 14 p., 5040818.

**Muscle Fibertype Composition Affects Contractile Rate of Force Development (RFD) in vivo**

Aagaard, P., Smedegaard, S., Madsen, T. & Ortenblad, N., Jun 2019, In: Medicine and Science in Sports and Exercise. 51, 6, p. 3200

**Acute Carbohydrate Restriction During Recovery From Prolonged Exercise Enhances Intramuscular Triglyceride Resynthesis**

Shepherd, S., Jevons, E., Strauss, J., Gejl, K. D., Jensen, K., Hvid, L. G., Frandsen, U., Sahlin, K. & Ortenblad, N., 30. May 2019.

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**Calcium Fluxes in Work-Related Muscle Disorder**

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**Skeletal muscle sarcoplasmic reticulum Ca<sup>2+</sup> uptake preferentially use glycogenolytic derived ATP**

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**The inhibitory effects of two distinct inhibitors on glycogen phosphorylase activity and contractile function in chemically skinned single fibers**

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**The inhibitory effects of two distinct inhibitors on glycogen phosphorylase activity and contractile function in chemically skinned single fibers**

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**The time-course of muscle glycogen utilization at different subcellular localizations and fiber types during endurance exercise in lean males**

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**High-intensity interval, but not endurance training induces muscle fiber type-specific subsarcolemmal lipid droplet size reduction in type 2 diabetic patients**

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**Changes in metabolism but not myocellular signaling by training with CHO-restriction in endurance athletes**

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**The Muscle Fiber Profiles, Mitochondrial Content, and Enzyme Activities of the Exceptionally Well-Trained Arm and Leg Muscles of Elite Cross-Country Skiers**

Ørtenblad, N., Nielsen, J., Boushel, R., Söderlund, K., Saltin, B. & Holmberg, H. C., 2. Aug 2018, In: Frontiers in Physiology. 9, August, p. 1031 11 p., 1031.

**Restricting carbohydrate during recovery from prolonged exercise does not effect intramuscular triglyceride resynthesis**

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Hvid, L. G., Aagaard, P., Ørtenblad, N., Kjaer, M. & Suetta, C., Jun 2018, In: Experimental Gerontology. 106, p. 145-153

**Mitochondrial increase in volume density with exercise training: More, larger or better?**

Ørtenblad, N., Jan 2018, In: Acta Physiologica. 222, 1, e12976.

**ACUTE AND CHRONIC EFFECTS OF ENDURANCE TRAINING ON SR CA<sup>2+</sup> HANDLING IN HIGHLY-TRAINED ENDURANCE ATHLETES**

Gejl, K. D., Holmberg, H.-C. & Ørtenblad, N., 2018.

**High intensity interval training, but not endurance training, in type 2 diabetic patients lowers subsarcolemmal lipid droplet volumetric content by reducing droplet size in type 2 muscle fibers**

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**Post-exercise recovery of contractile function and endurance in humans and mice is accelerated by heating and slowed by cooling skeletal muscle**

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**Transient impairments in single muscle fibre contractile function after prolonged cycling in elite endurance athletes**

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de Paoli, F. V., Ørtenblad, N., Pedersen, T. H., Jørgensen, R. & Nielsen, O. B., Oct 2010, In: Journal of Physiology. 588, 23, p. 4785-4794

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**Effects of ageing on human skeletal muscle after immobilisation and re-training**

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Nielsen, J. S., Sahlin, K. & Ørtenblad, N., 1. Nov 2007, In: Acta Physiologica. 191, 3, p. 217-228 11 p.

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Macdonald, W. A., Ørtenblad, N. & Nielsen, O. B., 1. Mar 2007, In: American Journal of Physiology: Endocrinology and Metabolism. 292, 3, p. E771-E778

**Reduced insulin-mediated citrate synthase activity in cultured skeletal muscle cells from patients with type 2 diabetes: Evidence for an intrinsic oxidative enzyme defect**

Ørtenblad, N., Mogensen, M., Petersen, I., Højlund, K., Levin, K., Sahlin, K., Beck-Nielsen, H. & Gaster, M., 2005, In: BBA General Subjects. 1741, 1-2, p. 206-214

**Excitability of the T-tubular system in rat skeletal muscle: roles of K<sup>+</sup> and Na<sup>+</sup> gradients and Na<sup>+</sup>-K<sup>+</sup> pump activity**

Nielsen, O. B., Ørtenblad, N., Lamb, G. D. & Stephenson, D. G., 2004, In: Journal of Physiology. 557, Pt 1, p. 133-46 14 p.

**The exciting mitochondrion**

Stephenson, G. D. & Ørtenblad, N., 2004, In: Physiol News. 54, 14-15, p. 181-182

**A novel signalling pathway originating in mitochondria modulates rat skeletal muscle membrane excitability**

Ørtenblad, N. & Stephenson, D. G., 2003, In: Journal of Physiology. 548, Pt 1, p. 139-45 7 p.

Reactive oxygen species are important mediators of taurine release from skeletal muscle cells

Ørtenblad, N., Young, J. F., Oksbjerg, N., Nielsen, J. & Lambert, I. H., 2003, In: American Journal of Physiology: Cell Physiology. 284, 6, p. C1362-73

Cellular model for induction of drip loss in meat

Lambert, I. H., Nielsen, J. H., Andersen, H. J. & Ørtenblad, N., 2001, In: Journal of Agricultural and Food Chemistry. 49, 10, p. 4876-83 8 p.

#### **Enhanced sarcoplasmic reticulum Ca(2+) release following intermittent sprint training**

Ørtenblad, N., Lunde, P., Levin, K., Andersen, J. L. & Pedersen, P. K., Jul 2000, In: American Journal of Physiology: Regulatory, Integrative and Comparative Physiology. 279, 1, p. R152-60

#### **Impaired sarcoplasmic reticulum Ca(2+) release rate after fatiguing stimulation in rat skeletal muscle**

Ørtenblad, N., Sjøgaard, G. & Madsen, K., 2000, In: Journal of Applied Physiology. 89, 1, p. 210-217

#### **Antioxidant status and lipid peroxidation after short-term maximal exercise in trained and untrained humans**

Ørtenblad, N., Madsen, K. & Djurhuus, M. S., Apr 1997, In: American Journal of Physiology: Regulatory, Integrative and Comparative Physiology. 272, 4 Pt 2, p. R1258-R1263

Xanthine oxidase in human skeletal muscle following eccentric exercise: a role in inflammation

Hellsten, Y., Frandsen, U., Ørtenblad, N., Sjødin, B. & Richter, E. A., Jan 1997, In: Journal of Physiology. 498 ( Pt 1), p. 239-48 10 p.

## **Activities**

#### **Can aerobic exercise elicit neuroprotective effects in multiple sclerosis?**

Langeskov-Christensen, M. (Lecturer), Hvid, L. G. (Other), Nygaard, M. K. E. (Other), Jensen, H. (Other), Nielsen, H. H. (Other), Petersen, T. (Other), Ørtenblad, N. (Other), Stenager, E. (Other), Eskildsen, S. F. (Other) & Dalgas, U. (Other)  
21. Jun 2019

#### **Can aerobic exercise elicit neuroprotective effects in multiple sclerosis?**

Christensen, M. L. (Guest lecturer), Hvid, L. G. (Guest lecturer), Nygaard, M. K. E. (Guest lecturer), Jensen, H. B. (Guest lecturer), Nielsen, H. H. (Guest lecturer), Petersen, T. (Guest lecturer), Ørtenblad, N. (Guest lecturer), Stenager, E. (Guest lecturer), Eskildsen, S. F. (Guest lecturer) & Dalgas, U. (Guest lecturer)  
3. May 2019

#### **Can aerobic exercise elicit neuroprotective effects in multiple sclerosis?**

Langeskov-Christensen, M. (Lecturer), Hvid, L. G. (Other), Nygaard, M. K. E. (Other), Jensen, H. (Other), Nielsen, H. H. (Other), Petersen, T. (Other), Ørtenblad, N. (Other), Stenager, E. (Other), Eskildsen, S. F. (Other) & Dalgas, U. (Other)  
5. Mar 2019

#### **Repeated sprint exercise affects contractile apparatus and force production of isolated human muscle fibres.**

Ørtenblad, N. (Lecturer)  
13. Sept 2014

#### **Role of glycogen in skeletal muscle Ca<sup>2+</sup> regulation.**

Ørtenblad, N. (Lecturer)  
23. Aug 2014

#### **Cykeltræning - tips og tricks fra forskerverdenen**

Ørtenblad, N. (Lecturer)  
22. Jan 2013

#### **European Journal of Applied Physiology (Journal)**

Ørtenblad, N. (Peer reviewer)



13. Jul 2012 → 30. Jul 2012

**Role of Glycogen in Muscle Function**

Ørtenblad, N. (Lecturer)  
17. Jun 2012

**Americam College of Sports Medicine**

Ørtenblad, N. (Organizer)  
1. Jun 2012

**Role of Glycogen in Skeletal Muscle Function**

Ørtenblad, N. (Lecturer)  
1. Jun 2012

**Americam College of Sports Medicine**

Ørtenblad, N. (Organizer)  
29. May 2012 → 2. Jun 2012

**Fatigue with Prolonged Exercise: Tretthetsmekanismer och uthållighet**

Ørtenblad, N. (Lecturer)  
28. Apr 2012

**Carbohydrate and Performance: Kolhydrater och prestation**

Ørtenblad, N. (Lecturer)  
27. Apr 2012

**Role of Muscle Glycogen for Sport Performance**

Ørtenblad, N. (Lecturer)  
15. Mar 2012

**Cykling; præstation og træning**

Ørtenblad, N. (Lecturer)  
16. Feb 2012

**Exercise Physiology**

Ørtenblad, N. (Participant)  
19. Jan 2012 → 21. Jan 2012

**Exercise Physiology**

Ørtenblad, N. (Participant)  
19. Jan 2012 → 21. Jan 2012

**Technology and Biomechanics in Sport, Ramundberget**

Ørtenblad, N. (Participant)  
17. Jan 2012 → 19. Jan 2012

**Muscle and Nerve (Journal)**

Ørtenblad, N. (Peer reviewer)  
2. Jan 2012 → 12. Feb 2012

**Censor: censor på speciale**

Ørtenblad, N. (Censor)  
19. Dec 2011

**Frontiers in Physiology (Journal)**

Ørtenblad, N. (Peer reviewer)  
15. Dec 2011 → 12. Feb 2012

**GLYCOGEN RESYSNTHESIS RATE FOLLOWING CROSS COUNTRY SKIING IS CLOSELY CORRELATED TO SKELETAL MUSCLE CONTENT**

Ørtenblad, N. (Lecturer)  
1. Dec 2011

**Journal of Physiology (Journal)**

Ørtenblad, N. (Peer reviewer)  
10. Nov 2011 → 25. Nov 2011

**Skeletal muscle fatigue: role of glycogen availability and subcellular localization within fibre types**

Ørtenblad, N. (Lecturer)  
10. Nov 2011

**Mid Sweden University**

Ørtenblad, N. (Visiting researcher)  
6. Nov 2011 → 11. Nov 2011

**Københavns Universitet (External organisation)**

Ørtenblad, N. (Member)  
1. Nov 2011 → 30. Nov 2011

**Muscle Metabolism and E-C Coupling**

Ørtenblad, N. (Guest lecturer)  
3. Jun 2011

**Seminar: Role of Muscle Glycogen on Skeletal Muscle Function**

Ørtenblad, N. (Lecturer)  
1. Jun 2011

**Inviteret foredrag: Role of Structure on the Skeletal Muscle Function**

Ørtenblad, N. (Lecturer)  
7. Apr 2011

**What I am talking about, When Im talking about Glycogen: The role of glycogen localization on skeletal muscle E-C coupling**

Ørtenblad, N. (Lecturer)  
28. Mar 2011

**The Scientific Research Process**

Ørtenblad, N. (Lecturer)  
16. Mar 2011

**Censor**

Ørtenblad, N. (Censor)  
1. Mar 2011 → 1. Apr 2011

**Department of Physiotherapy, Faculty of Medicine, Nursing and Health Sciences, Victori**

Ørtenblad, N. (Visiting researcher)  
1. Mar 2011 → 15. Jul 2011

**Advanced Exercise Physiology**

Ørtenblad, N. (Other)

11. Feb 2011 → 1. Apr 2011

**Australian Catholic University**

Ørtenblad, N. (Visiting researcher)

28. Jan 2011 → 28. Feb 2011

**Aarhus Universitet (External organisation)**

Ørtenblad, N. (Member)

15. Jan 2011 → 31. Jan 2011

**Journal of Physiology (Journal)**

Ørtenblad, N. (Peer reviewer)

10. Jan 2011 → 15. Sept 2011

**American Journal of Physical Medicine & Rehabilitation (Journal)**

Ørtenblad, N. (Peer reviewer)

5. Jan 2011 → 19. Jan 2011

**Københavns Universitet (External organisation)**

Ørtenblad, N. (Member)

4. Nov 2010 → 3. Dec 2010

**National Research Foundation of South Africa (External organisation)**

Ørtenblad, N. (Member)

1. Oct 2010 → 1. Nov 2010

**Human Performance and Fatigue**

Ørtenblad, N. (Censor)

28. Jun 2010 → 19. Jul 2010

**Glykogen og præstation**

Ørtenblad, N. (Lecturer)

5. Jun 2010

**Homage to August Krogh : Celebrating the 90th anniversary of his Nobel prize in physiology and medicine**

Ørtenblad, N. (Participant)

1. Jun 2010 → 4. Jun 2010

**Københavns Universitet (External organisation)**

Ørtenblad, N. (Member)

1. Jun 2010 → 5. Jul 2010

**Ministerium (External organisation)**

Ørtenblad, N. (Member)

15. May 2010 → 15. Jun 2010

**Anaerob Træning: Censor ved kurset Anaerob Træning, Institut for Idræt, KU**

Ørtenblad, N. (Censor)

28. Apr 2010 → ...

## **University of Southern Denmark (External organisation)**

Ørtenblad, N. (Member)

21. Apr 2010

## **Glycogen-protein association in human skeletal muscle; effects of exercise: Opponent på PhD- afhandling af Cand Scient Jace Drain**

Ørtenblad, N. (Other)

1. Mar 2010 → 30. Apr 2010

## **Mid Sweden University**

Ørtenblad, N. (Visiting researcher)

19. Jan 2010 → 21. Apr 2010

## **Muskelfysiologi- og biomekanik seminar : Seminar med deltagere fra Fysiologisk Institut, AU og Institut for Idræt, AU, samt Forskningsen for Muskelfysiologi og Biomekanik, Institut for idræt og Biomekanik, SDU**

Ørtenblad, N. (Organizer)

11. Jan 2010 → ...

## **Journal of Physiology (Journal)**

Ørtenblad, N. (Editor)

1. Jan 2010

## **Betydningen af KATP kanaler for hjerte- og muskelfunktion**

Ørtenblad, N. (Lecturer)

28. Aug 2009

## **The lactate ion protects excitability and force in depolarized muscle fibres by inhibiting chloride conductance.**

Ørtenblad, N. (Lecturer)

26. Aug 2009

## **Publications Abstracts**

### **High-intensity interval training combining biking and rowing markedly improves insulin sensitivity, body composition and VO(2)max in obesity and type 2 diabetes**

Petersen, M. H., de Almeida, M. E., Wentorf, E. K., Ortenblad, N. & Hojlund, K., Sept 2020, In: Diabetologia. 63, Suppl. 1, p. S98-S99 195.

### **Relationship Between Content Of Mitochondria And Z-disk Or Fiber Types**

Geng, G., Jensen, R., Liang, Y., Qiu, J., Niels, O. & Joachim, N., 1. Jul 2020, In: Medicine and Science in Sports and Exercise. 52, 7S, p. 921 1 p.

### **The Associations Of Mitochondrial Content And Maximal Oxygen Uptake**

Liang, Y., Jensen, R., Geng, G., Qiu, J., Ortenblad, N. & Nielsen, J., 1. Jul 2020, In: Medicine and Science in Sports and Exercise. 52, 7S, p. 156-157

### **Subcellular localization- and fibre type-dependent utilization of muscle glycogen during heavy resistance training in elite weight lifters**

Hokken, R., Laugesen, S., Aagaard, P., Suetta, C., Frandsen, U., Ørtenblad, N. & Nielsen, J., 16. Nov 2019, In: Acta Physiologica. 227, S721

### **Skeletal muscle sarcoplasmic reticulum Ca2 uptake preferentially use glycogenolytic derived ATP**

Kristiansen, M. R., Jensen, R., Nielsen, J. & Ortenblad, N., Nov 2019, In: Acta Physiologica. 227, S721, p. 77 1 p., e13414.

**The inhibitory effects of two distinct inhibitors on glycogen phosphorylase activity and contractile function in chemically skinned single fibers**

Jensen, R., Nielsen, J., Kristiansen, M. R. & Ortenblad, N., Nov 2019, In: Acta Physiologica. 227, S721, p. 74 1 p., e13414.

**The time-course of intramuscular lipid droplet utilization at different subcellular localizations and fiber types during endurance exercise in lean males**

Kristensen, D., Jensen, R., Plomgaard, P., Ortenblad, N. & Nielsen, J., Nov 2019, In: Acta Physiologica. 227, S721, p. 14 1 p., e13414.

**The time-course of muscle glycogen utilization at different subcellular localizations and fiber types during endurance exercise in lean males**

Holleufer, M.-L., Jensen, R., Skjaerbaek, M., Nykvist Larsen, D., Plomgaard, P., Ortenblad, N. & Nielsen, J., Nov 2019, In: Acta Physiologica. 227, S721, p. 13 1 p., e13414.

**Muscle Fibertype Composition Affects Contractile Rate of Force Development (RFD) in vivo**

Aagaard, P., Smedegaard, S., Madsen, T. & Ortenblad, N., Jun 2019, In: Medicine and Science in Sports and Exercise. 51, 6, p. 3200

**Vascular endothelial growth factor in skeletal muscle following glycogen-depleting exercise in humans**

Jensen, L., Gejl, K. D., Ortenblad, N. & Frandsen, U., 26. May 2015, In: Medicine and Science in Sports and Exercise. 47, Suppl. 5, p. 448-449

**Effects of aging on changes in postural balance with short-term disuse and active reloading**

Aagaard, P., Nielsen, J. H., Hvid, L. G., Frandsen, U., Ortenblad, N., Kjær, M. & Suetta, C., 2015, In: Medicine and Science in Sports and Exercise. 47, 1. Supplement 5S, p. 25 1 p., 155.

**Aging impairs the recovery in mechanical muscle function following 4 days of disuse**

Hvid, L. G., Suetta, C., Nielsen, J. H., Jensen, M. M., Frandsen, U., Ortenblad, N., Kjær, M. & Aagaard, P., 2014, In: Medicine and Science in Sports and Exercise. 46, Supplement, p. S453

**Myosin content in single muscle fibers from young and old men following disuse and recovery**

Hvid, L. G., Brocca, L., Ortenblad, N., Suetta, C., Aagaard, P., Kjaer, M., Bottinelli, R. & Pellegrino, M., 2012, In: Journal of Muscle Research and Cell Motility. 33, p. 245

## Publications other

**Short-term lowering of carbohydrate intake reduces skeletal muscle glycogen and body weight, but has no effect on short-term exercise capacity or maximal power-output in recreational active men**

Schytz, C. T., Nielsen, J., Ortenblad, N., Lundby, C., Birkholm, T., Plomgaard, P., Kolnes, K. J. & Gejl, K. D., 30. Aug 2023

**Skeletal muscle HSP70 expression is not associated with glycogen availability during recovery in elite endurance athletes**

Gejl, K. D., Barner Dalgaard, L., Hvid, L. G. & Ortenblad, N., 30. Aug 2023.

**Intramuscular triglyceride utilization and resynthesis: the effect of acute calorie restriction during recovery in elite male triathletes**

Jevons, E., Gejl, K. D., Ortenblad, N., Strauss, J. & Shepherd, S., 7. May 2019.

**Skeletal muscle sarcoplasmic reticulum Ca<sup>2+</sup> uptake preferentially use glycogenolytic derived ATP**

Kristiansen, M. R., Jensen, R., Nielsen, J. & Ortenblad, N., 2019.

**The inhibitory effects of two distinct inhibitors on glycogen phosphorylase activity and contractile function in chemically skinned single fibers**

Jensen, R., Kristiansen, M. R., Nielsen, J. & Ortenblad, N., 2019.

**The time-course of intramuscular lipid droplet utilization at different subcellular localizations and fiber types during endurance exercise in lean males**

Kristensen, D., Jensen, R., Plomgaard, P., Ørtenblad, N. & Nielsen, J., 2019.

**The time-course of muscle glycogen utilization at different subcellular localizations and fiber types during endurance exercise in lean males**

Holleufer, M.-L., Jensen, R., Skjærbæk, M. C., Nykvist Larsen, D., Plomgaard, P., Ørtenblad, N. & Nielsen, J., 2019.

**ACUTE AND CHRONIC EFFECTS OF ENDURANCE TRAINING ON SR CA<sup>2+</sup> HANDLING IN HIGHLY-TRAINED ENDURANCE ATHLETES**

Gejl, K. D., Holmberg, H.-C. & Ørtenblad, N., 2018.

**Sarcoplasmic reticulum Ca<sup>2+</sup> uptake rate and endogenous content in MHC I and MHC II fibres of human skeletal muscle following prolonged exercise in highly trained**

Ørtenblad, N. & Nielsen, J. S., 2016.

**Contractile apparatus uses glycogen from specific subcellular locations: Evidence of cytosolic compartmentalization between glycogen metabolism and energy consumption in skeletal muscle**

Nielsen, J., Christensen, P. & Ørtenblad, N., 2014.

**Effect of whey protein hydrolysate on adaptation to endurance training in well-trained runners**

Søndergaard Thomsen, L., Ørtenblad, N. & Hansen, M., 2014, *Book of Abstracts: 19th Annual Congress of the European College of Sport Science*. de Haan, A., de Ruiter, C. J. & Tsolakidis, E. (eds.). European College of Sport Science, p. 334  
1 p.

**Energy system contribution and determinants of performance in classical sprint cross-country skiing**

Andersson, E., Willis, S. J., Holmberg, H.-C. & Ørtenblad, N., 2014, *Book of Abstracts: 19th Annual Congress of the European College of Sport Science*. de Haan, A., de Ruiter, C. J. & Tsolaskidis, E. (eds.). European College of Sport Science, p. 420-421

**Glycolytically derived ATP is essential for muscle fiber excitability and Na,K-ATPase activity in the transverse tubular system of skeletal muscle fibers**

Jensen, R., Nielsen, J. & Ørtenblad, N., 2014.

**Na,K-ATPases of rat soleus muscles require energy from the breakdown of glycogen**

Nielsen, J. & Ørtenblad, N., 2014.

**The Intramyocellular Lipid Content In The Arms Of Elite Cross Country Skiers Is Lower Than In Their Legs**

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**Short-term disuse and subsequent recovery induce age-specific alterations in neuromuscular activation**

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**Human skeletal muscle intramyofibrillar glycogen is decreased after 14 days of immobilisation in young and old men**

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**Changes in muscle mechanical function with 2 weeks of limb immobilization in young and old healthy men**

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**Depletion and resynthesis of glycogen in arm and leg muscles after a classical 15-K cross-country ski race**

Holmberg, H.-C., Bonne, T. & Ørtenblad, N., 2008, *Book of abstracts of the 13th Annual Congress of the European College of Sports Science*. European College of Sports Science

**Effects of 2 weeks of immobilization on strength and neuromuscular activation in young and old healthy men**

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**Skeletal muscle glycogen localisation - fibre type dependency and interfibre heterogeneity**

Nielsen, J., Schrøder, H. D. & Ørtenblad, N., 2007, *Proceedings. 12<sup>th</sup> Annual Congress of the European College of Sport Science*. European College of Sports Science, p. 172

## Teaching Portfolio

### 1. Formal educational education

- “Adjunkt pædagogikum”, SDU, 2004-05.
- Pedagogic and didactic course during Sport Science Studies, including “practical pedagogic course.”

### 2. Educational administration tasks

- Member of the Study board for the “Sports and Health” studies, IOB-SDU, January 2005 through end of 2009.
- Shorter periods head of studies.
- In the study board period we planned, organized and implemented a new curriculum for the bachelor level of the sports science program a number of times and curriculum for the master studies.

### 3. Experience with teaching, guidance and exam

- Teaching and being responsible for a number of courses within physiology and health, at “Sport and Health” and “Medicine” at SDU, and at La Trobe university, Melbourne.
- Supervisor for a number of successful and current PhD-students.
- Supervisor for Master, and bachelor students as well as post docs.
- Assigned as censor/examiner for “censor board for sports science”, the “censor board for biology” and the “censor board for health sciences” and function herein as censor at University of Copenhagen, Aarhus University and Aalborg University.

### 4. Methods, materials and tools

- Lectures, classes, practical exercises, case based education, laboratory courses and supervision.

### 5. Educational development and university pedagogical tasks

- I have been in the research board for the inter-university PhD-program for sport studies (AU, KU and SDU), PhD-program “Research Education Program for Sport (REPS)” with the board being the driving and administrative source for the PhD-course at REPS.
- I have been in the committee developing a introducing course for professions-bachelors starting at the master level at the Faculty of Health Science, SDU.