



LITHUANIAN SPORTS UNIVERSITY

INSTITUTE OF SPORT SCIENCE AND INNOVATIONS

2022-03-08

www.lsu.lt

Tomas Venckūnas

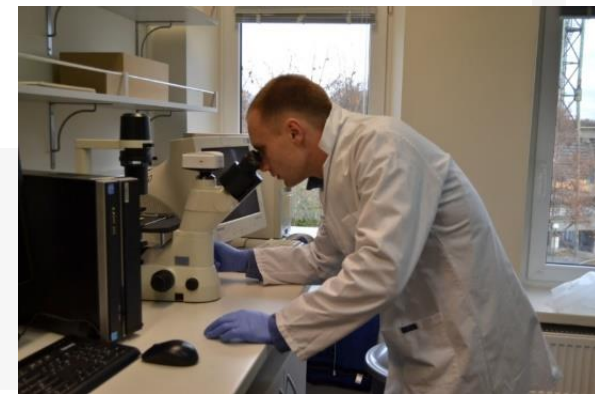
Research staff:

26 full-time positions

~25 PhD students (Biomedical Sciences, Biology)
with University of Tartu (Estonia)

Working groups (areas of research):

1. Muscle fatigue, damage, recovery, adaptation and rehabilitation
2. Hyperthermia, hypothermia \leftrightarrow muscle and cognitive function
3. Motor control, biomechanics, and neurorehabilitation
4. Sports genetics and molecular mechanisms of adaptation
5. Kinesiology, coaching science and adapted physical activity
6. Health and physical activity



„Physiology and adaptation“



*Acute and Long-term adaptation studies:
Heat, Cold, Training, Diet, Altitude, ...
Metabolism, blood composites, microbiota,
muscle function, cognition,
VO₂max, EMG, EEG, ultrasound, ergometry,
cognitive tests, fNIRS, muscle contractile
function,*

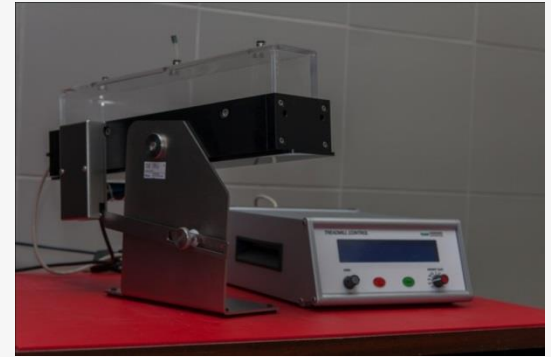


„SPORTS GENETICS“

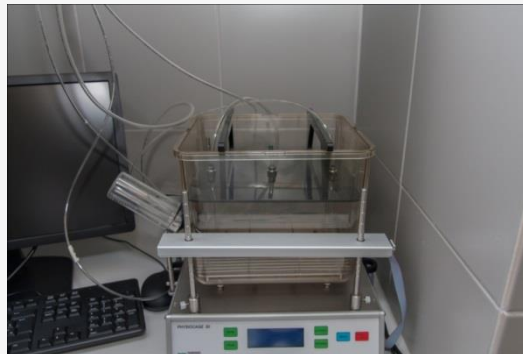
(molecular physiology and genetics)

Mouse model / methods

- ✓ Metabolism during rest and exercise(expired gas analysis)
- ✓ Muscle function *in vitro* and *in vivo*
- ✓ Activity (cage wheels, free ranging, etc.)
- ✓ Diet experiments
- ✓ Cognitive function (mazes, etc.)
- ✓



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- ✓ Protein analysis (*Western blot*)
 - ✓ Histology
 - ✓ ELISA
 - ✓ Real-time PCR
 - ✓ Cell cultures
 - ✓



GRANTS

- Research Council of Lithuania
- National Olympic Committee
- Department of Physical Education and Sports of Lithuania
- European Foundation for the Study of Diabetes
- European Union Structural Funds

INTERNATIONAL COLLABORATION

- Westerblad H, Ruas J, Erhardt S (Karolinska institute, Sweden)
- Chaillou Th, Edholm P (Orebro University, Sweden)
- Levin O (KU Leuven, Belgium)
- Simon P (Johannes Gutenberg-Universität Mainz, Germany)
- Wackerhage H (Technische Universität München, Germany)
- Seynnes OR (Oslo Sports School, Norway)
- Paasuke M (Tartu University, Estonia)
- Aagaard P (University of Southern Denmark, Denmark)
- Degens H, Narici M (Manchester Metropolitan University, UK)
- Lionikas A (Aberdeen University, Scotland, UK)
- Gray S, Malkova D (University of Glasgow, Scotland, UK)
- Moran CN (University of Stirling, UK)