

### 1) Peer-reviewed journal papers

Submitted manuscripts:

1. (\*) **Grönlund C**, Claesson K, Öhberg F, d'Hooge J, Henein YM, Lindqvist P, "Simultaneous quantification of myocardial velocity and blood flow velocity using conventional ultrasound Duplex mode imaging", *J Biomedical engineering Online*, *Submitted*
2. Lindkvist M, Bäcklund T, Granåsen G, **Grönlund C**, "High speed near-infrared imaging", *Biomedical Optics Express*, *revised version submitted*
3. Lindberg F, Hedman M, Holtermann A, Brodin LÅ, **Grönlund C**, "Biceps brachii activation pattern during stretch shortening cycles using ultrasound strain – effects of fatigue", *submitted to*
4. (\*) Henein M, Tossavainen E, Söderberg S, **Grönlund C**, Gonzalez M, Henein YM, Lindqvist P, "Left Atrial Systolic Strain Rate Predicts Pulmonary Capillary Wedge Pressure: A Simultaneous Echocardiography and Cardiac Catheterization Study", *revised submission European Heart journal*

Published papers:

5. \* **Grönlund C**, Claesson K, Holtermann A, "Imaging 2-D mechanical waves of skeletal muscle contraction", *J Ultrasound in Medicine and Biology*, 39, 360-369, 2013
6. Lindberg F, Mårtensson M, **Grönlund C**, Brodin LÅ, "Evaluation of ultrasound Tissue Velocity Imaging: a phantom study of velocity estimation in skeletal muscle low-level contractions", *accepted BMC Medical Imaging*
7. \* Tossavainen E, Söderberg S, **Grönlund C**, Gonzalez M, Henein YM, Lindqvist P, "Pulmonary artery acceleration time in identifying pulmonary hypertension patients with raised pulmonary vascular resistance", *European Heart Journal – Cardiovasc Imaging*, doi:10.1093/ehjci/jes309, 2013
8. \* Lindberg F, Mårtensson M, **Grönlund C**, Brodin LÅ, "Evaluation of ultrasound Tissue Velocity Imaging: a phantom study of velocity estimation in skeletal muscle low-level contractions", *accepted BMC Medical Imaging*
9. Lindberg F, Öhberg F, Brodin LÅ, **Grönlund C**, "Assessment of intramuscular activation patterns using ultrasound M-mode strain", *accepted J Electromyograph Kinesiol*, doi:10.1016/j.jelekin.2013.02.011
10. Lindkvist M, Granåsen G, **Grönlund C**, "Coherent Derivation of Equations for Differential Spectroscopy and Spatially Resolved Spectroscopy: An Undergraduate Tutorial", *Spectroscopic Letters*, 46, 1-7, 2013
11. \* Lindberg F, Öhberg F, Granåsen G, Brodin LA, **Grönlund C**, "Pennation angle dependency in skeletal muscle tissue Doppler strain in dynamic contractions", *J Ultrasound in Medicine and Biology*, 37, 1151-1160, 2011
12. \* Holtermann A, **Grönlund C**, Roeleveld K, Gerdle B, "The relation between neuromuscular control and pain intensity in fibromyalgia", *J Electromyogr Kinesiol*, 21, 519-524, 2011
13. Holtermann A, **Grönlund C**, Karlsson JS, Roeleveld K, "Duration of differential activations is functionally related to fatigue prevention during low-level contractions", *J Electromyogr kinesiol*, 20, 241-245, 2010
14. Gerdle B, **Grönlund C**, Karlsson JS, Holtermann A, Roeleveld K, "Altered neuromuscular control mechanisms of the trapezius muscle in fibromyalgia", *BMC Musculoskeletal Disorders*, 11, 2010

15. Karlsson JS, Roeleveld K, **Grönlund C**, Holtermann A, Östlund N, “Signal processing of the surface electromyogram to gain insight into the neuromuscular physiology”, *Philos Transact A Math Phys Eng Sci*, 367, 337-356, 2009
16. Holtermann A, Roeleveld K, Mork PJ, **Grönlund C**, Karlsson JS, Andersen LL, Olsen HB, Zebis MK, Sjøgaard G, Sjøgaard K, “Selective activation of neuromuscular compartments within the human trapezius muscle”, *J Electromyogr Kinesiol*, 19, 896-902, 2009
17. **Grönlund C**, Holtermann A, Roeleveld K, Karlsson JS: “Motor unit synchronization during fatigue: A novel quantification method”, *J Electromyogr kinesiol.*, 19, 242-251, 2009
18. Holtermann A, **Grönlund C**, Karlsson JS, Roeleveld K: “Motor unit synchronization during fatigue: Described with a novel sEMG method based on large motor unit samples”, *J Electromyogr kinesiol.*, 19, 232-241, 2009
19. Holtermann A, **Grönlund C**, Karlsson JS, Roeleveld K: “Spatial distribution of active muscle fibre characteristics in the upper trapezius muscle and its dependency on contraction level and duration, *J Electromyogr kinesiol.*, 18, 372-381, 2008
20. Gerdle B, Östlund N, **Grönlund C**, Roeleveld K, Karlsson S: ”Firing rate and conduction velocity of single motor units in the trapezius muscle in fibromyalgia patients and healthy controls”, *J Electromyogr kinesiol.*, 18, 707-716, 2008
21. Holtermann A, **Grönlund C**, Karlsson JS, Roeleveld K: “Differential activation of regions within the biceps brachii muscle during fatigue”, *Acta phys. Scand*, 192, 559-567, 2008
22. **Grönlund C**, Östlund N, Lind J, Bergström P, Karlsson JS: “Spatio-temporal processing of surface EMG signals from the sternocleidomastoideus muscle to assess effects of radiotherapy on motor unit conduction velocity and firing rate – A pilot study”, *Biomed signal proc and control*, 3, 163-168, 2008
23. Brändström H, Grip H, **Grönlund C**, Angquist KA, Giesbrecht GG, “Hand cold recovery responses before and after 15 months of military training in a cold climate”, *Aviat Space Environ Med*, 79, 904-908, 2008
24. **Grönlund C**, Östlund N, Roeleveld K, Karlsson JS: ”Simultaneous estimation of muscle fibre conduction velocity and muscle fibre orientation using 2D multichannel surface-electromyogram”. *Med. Biol. Eng. Comput.* 43, 63-70, 2005.
25. **Grönlund C**, Roeleveld K, Holtermann A, Karlsson JS: ”On-line signal quality estimation of multichannel surface electromyograms”, *Med Biol Eng Comp*, 357-364, 2005

## 2) Peer-reviewed conference papers

1. Ibrahim P, Jashari F, Johansson E, **Grönlund C**, Wester P, Henein M, “Symptomatic carotid disease has more vulnerable contralateral plaques than asymptomatic”, Accepted EAS – Atherosclerosis Society Congress, Lyon France, 2013
2. Ibrahim P, Jashari F, Johansson E, **Grönlund C**, Wester P, Henein M, “Morphologic carotid plaque features suggest potential contralateral artery vulnerability in symptomatic but not asymptomatic patients”, Accepted EAS – Atherosclerosis Society Congress, Lyon France, 2013
3. Gustafsson S, Mörner S, **Grönlund C**, Suhr O, Lindqvist P, ”The use of cyclic variation from integrated backscatter to differentiate cardiac amyloidosis from hypertrophic cardiomyopathy”, *EuroEcho*, Athens, Greece, 2012

4. **Grönlund C**, Gustavsson S, Mörner S, Suhr O, Lindqvist P, "Imaging and quantification of septum B-mode texture differentiates patients with ATTR and HCM", EuroEcho, Athens, Greece, 2012
5. Granåsen G, Lindqvist M, Lindberg F, Claesson K, Wiklund U, Holtermann A, **Grönlund C**, "High speed multimodal imaging and analysis of skeletal muscle contraction", Medicinteknikdagarna, Lund, 2012
6. **Grönlund C**, Claesson K, Öhberg F, Wiklund U, d'Hooge J, Henein YM, Lindqvist P, "Simultaneous ultrasonic quantification of cardiac hemodynamics and mechanics", Medicinteknikdagarna, Lund, 2012
7. Claesson K, Öhberg F, **Grönlund C**, "Electrostimulation-gated mechanical wave imaging for ultrahigh frame rate imaging of skeletal muscle and conventional ultrasound system", Proc. Medicinteknik dagarna, Umeå, 2010
8. Lindberg F, Öhberg F, Granåsen G, Brodin LÅ, **Grönlund C**, "Pennation angle dependency in skeletal muscle tissue Doppler strain in dynamic contractions", Proc. Medicinteknik dagarna, Umeå, 2010
9. **Grönlund C**, Lindqvist P, Henein M, "Cardiac blood flow and wall motion indices as function of resting heart rate", Proc. Medicinteknik dagarna, Umeå, 2010
10. Lindqvist M, Bäcklund T, Granåsen G, **Grönlund C**, "Development of an in-vivo near-infrared spectroscopy (NIRS) system for analysis of spatio-temporal dynamics in skeletal muscle applications", Proc. Medicinteknik dagarna, Umeå, 2010
11. Granåsen G, Öhberg F, Lindberg F, **Grönlund C**, Proc. Medicinteknik dagarna, Umeå, 2010
12. **Grönlund C**, Lindqvist P, Henein M, "Sensitivity of left ventricular early diastolic filling indices to normal resting heart rate variations", Proc. EuroEcho, Madrid, Spain, 2009
13. Holtermann A, **Grönlund C**, Karlsson JS, Roeleveld K: Motor unit synchronization is positively correlated with time to exhaustion in sustained contractions. 12th Annual Congress of the European College of Sport Science (ECSS), Jyväskylä, Finland, July 11-14, 2007.
14. Roeleveld K, Holtermann A, **Grönlund C**, Karlsson JS: The association between motor unit synchronization and fatigue induced force tremor and its dependency on recording location. European Workshop on Movement Science (EWOMS 2007), Amsterdam, The Netherlands, May 31 - June 2, 2007.
15. **Grönlund C**, Östlund N, Lind J, Bergström P, Karlsson JS: "Radiation induced changes in the motor unit conduction velocity of the sternocleidomastoideus muscle – A pilot study", IFMBE WC, Seoul, Sydkorea, 2006
16. **Grönlund C**, Roeleveld K, Karlsson S: "Muscle architecture and fibre types using spatiotemporal information of propagating motor unit action potentials recorded by 2-D multichannel surface EMG", Proceedings of the IFMBE 13<sup>th</sup> Nordic Baltic Conference, Umeå, Sweden, 227-228, June 2005
17. **Grönlund C**, Roeleveld K, Karlsson JS: "Signal quality evaluation in multichannel surface-EMG" 15<sup>th</sup> Congress of the International Society of Electrophysiology and Kinesiology, Boston, USA, June 2004.
18. **Grönlund C**, Östlund N, Karlsson S J, Roeleveld K: "Detection of motor unit action potentials in multi.channel surface EMG data using 2-D spatial and temporal information". Proceedings of the 14<sup>th</sup> Congress of the International Society of Electrophysiology and Kinesiology, Vienna, Austria, 40-41, June 2002.

19. **Grönlund C**, Karlsson S, Östlund N: "Detektion av motoriska enheter med multielektrod yt-EMG". Program för Svenska läkaresällskapets riksstämma 2002 Göteborg.
20. Östlund N, **Grönlund C**, Karlsson S: "Skattning av muskelfiberriktning med multielektrod yt-EMG". Program för Svenska läkaresällskapets riksstämma 2002 Göteborg.

### **3) Review papers, book chapters, books**

- 1) Karlsson JS, Roeleveld K, **Grönlund C**, Holtermann A, Östlund N, Signal processing of the surface electromyogram to gain insight into the neuromuscular physiology, Philos Transact A Math Phys Eng Sci, 367, 337-356, 2009

### **4) Patents**

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### **5) Own developed and available software**

#### 1. OutprobMyo.m (MATLAB):

Fast signal quality assessment in multichannel (surface EMG) recordings (reference: Grönlund C, Roeleveld K, Holtermann A, Karlsson JS: "On-line signal quality estimation of multichannel surface electromyograms", Med Biol Eng Comp, 357-364, 2005).

#### 2. Subbandskewness.m (MATLAB)

Quantification of motor unit synchronization in monopolar surface EMG recordings (reference: Grönlund C, Holtermann A, Roeleveld K, Karlsson JS: "Motor unit synchronization during fatigue: A novel quantification method", J Electromyogr kinesiol., 19, 242-251, 2009)

Software available for download at:

[www.vll.se/mt/fou](http://www.vll.se/mt/fou)

### **6. Popular scientific presentations**

1. "Ultrasonic tracking skeletal muscle dynamics - A glimpse on velocity and deformation" Invited speaker at workshop in "Myocardial Velocity and Deformation Imaging, Leuven, Belgium, 2009
2. "Analysis of muscular and vascular dynamics - From EMG to new multimodal approaches", Invited speaker at workshop on Cold exposure at Winternet, Boden, Sweden, 2008