

CARDIAC AUTONOMIC CONTROL (CODE: 2024062)

COURSE SYLLABUS:

The main goal of this course is that once it is over, it is expected that the postgraduate has acquired knowledge on the definition, acquisition and interpretation of measures of VFC; has developed skills for collecting and processing cardiac beats signals; has a critical view to analyze and discuss over the most indicates methods to obtain VFC, depending on the utilized study protocol.

GOALS:

- Cardiac autonomic modulation
- Definition of cardiac rate variability
- Linear methods for analysis of cardiac rate variability
- Non-linear methods for analysis of cardiac rate variability
- Interpretation of measures of cardiac rate variability
- Analysis of cardiac rate variability during the post-exercise healing
- Analysis of cardiac rate variability during the exercise.

BIBLIOGRAPHY:

- Billman G. E., Heart Rate Variability: a historical perspective. *Frontiers in Physiology*, 2011; 2: 1-13.
- Del Paso G. A. R. et. al., The utility of low frequency heart rate variability as an index of sympathetic cardiac tone: A review with emphasis on a reanalysis of previous studies. *Psychophysiology*, 2013; 50: 477–487.
- Kenneth, E. F. et. al., Power Spectrum Analysis of Heart Rate Variability in Human Cardiac Transplant Recipients. *Circulation*, 1989; 79(1):76-82.
- Nunan, D. et. al., A Quantitative Systematic Review of Normal Values for Short-Term Heart Rate Variability in Healthy Adults. *Pace*, 2010; 33:1407–1417.
- Pagani, M. et. al., Power Spectral Analysis of Heart Rate and Arterial Pressure Variabilities as a Marker of Sympatho-Vagal Interaction in Men and Conscious Dog. *Circulation Research*, 1986; 59: 781–193.

- Palma, J. A. et. al., Neural control of the heart: Recent concepts and clinical correlations. *Neurology*, 2014; 83: 261–271.
- Peçanha, T., et. al., Methods of Assessment of the Post-Exercise Cardiac Autonomic Recovery: A Methodological Review. *International Journal of Cardiology*, 2017; 227: 795-802.
- Sandercock & Brodie, The use of heart rate variability measures to assess autonomic control during exercise. *Scand. J. Med. Sci. Sports.*, 2006; 16:302-313
- Saul, J. P., Beat-To-Beat Variations of Heart Rate Reflect Modulation of Cardiac Autonomic Outflow. *Physiology*, 1990; 5:32-37
- Stauss, H. M., Heart Rate Variability. *Am. J. Physiol. Regul. Integr. Comp. Physiol.*, 2003; 285: R927–R931
- Task Force of The European Society of Cardiology and The North American Society of Pacing and Electrophysiology. Heart rate variability: Standards of measurement, physiological interpretation, and clinical use. *Eur. Heart J.*, 1996;17:354-81
- Vanderlei, L. C. M. et. al., Basic notions of heart rate variability and its clinical applicability. *Rev. Bras. Cir. Cardiovasc.*, 2009; 24(2): 205–217