

# Cardiopulmonary exercise testing in cardiology: more than simple exercise testing

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Exercise tests are frequently used in clinical cardiology practice, as diagnostic and functional evaluation tools. Many exercise tests are designed to produce a single measurement which is relevant to a specific clinical setting (presence of ECG changes consistent with myocardial ischemia in a patient with chest pain and dyspnea; duration of the test to estimate the functional capacity of patients in cardiac rehabilitation programme). Cardiopulmonary exercise testing provides an insight into the numerous variables related to cardiorespiratory function including expiratory ventilation,

pulmonary gas exchange (oxygen uptake and carbon dioxide output), along with a continuous ECG monitoring and blood pressure measurement quantifies and links metabolic, cardiovascular and pulmonary responses to exercise. Unlike standard exercise tests, data obtained from cardiopulmonary exercise testing are individualized, which allows us an accurate insight of the patient cardiorespiratory function. Today, with an increased availability of instruments for the facile measurement of exercise gas exchange, cardiopulmonary exercise testing has expanded from clinical research application to a method frequently used in diagnostic estimation of cardiac patients and in therapeutic purpose, for individualised cardiac rehabilitation programme planning.

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