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ABSTRACTA

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NON-STEADY-STATE EXERCISE IN EVALUATING LIMITING FACTORS OF PHYSICAL PERFORMANCE

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Maximal stress limited by symptoms of exertional intolerance is the concept of standardized 2 min increment test designed in 1973,now generally applied in Austria /Reiterer 1975/.Simple and easily obtainable parameters such as work load related to predicted max load /FAI%/, heart rate,ECG,blood pressure,perceived exertion rate /PER/and subjective rate of chest pain/score/have been proven useful in assessing unaware reactions to physical stress.The relation between variables such as increments of heart rate and systolic blood pressure,respiratory minute volume,expiratory flow,oxygen uptake,anaerobic power and influence of factors as work rate and output has been studied to derive standard values.Nevertheless interpretation of data obtained must be based on patients history and clinical findings and on basic knowledge in exercise physiology.Computer assisted evaluation of ergospirometric parameters has contributed considerably in quantifying physical performance with respect to functional capacity of the cardiopulmonary system.Cardio-circulatory adjustment to work is assessed by rating oxygen uptake in the 1st min per load.The on-line calculated index of anaerobic power is indicating anaerobic energy release in working muscles.By means of computer plot of paired VO2 and VE data the anaerobic threshold-criteria of endurance performance-is determined noninvasively in terms of l/min VO2,%VO2max.Thus the analysis of ergospirometric parameters provides important access to metabolic aspects of exercise tolerance By rating expiratory flow in comparison to data from detailed lung function analysis it will be more likely to discover and interpret factors of physical performance with respect to abnormal breathing mechaniams.The efficacy of breathing will be quantified by on-line calculation of alveolar ventilation and functional dead space ventilation ratio.