

TOWARD PERSONALIZED EXERCISE PROGRAMS FOR ENHANCING HEALTH AND PERFORMANCE

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Abstract: *Exercise interventions, such as aerobic training, resistance training, and high-intensity interval training, have proven effective both in reducing the risk of developing non-communicable diseases and in improving health outcomes in those already affected. However, despite high-quality evidence from randomized controlled trials, a research gap remains because there is large individual variability in responses to exercise interventions. In both studies and practice, a subgroup of people is often found who do not respond to physical activity in the same way as the general population. These individuals are typically called “non-responders” or “low responders,” since they do not achieve the expected improvements in fitness, body composition, or other health-related parameters after a period of structured training. This phenomenon also appears in athletes, for whom various training protocols are tested to enhance performance. The lecture will delve into factors that contribute to a lack of response to exercise in certain individuals and will present a methodological framework to address this research question. Such knowledge will enable researchers and clinicians to prescribe more individualized exercise programs and thereby improve their effectiveness.*

Key words: Exercise prescription, aerobic training, resistance training, responders, non-responders

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