

ABSTRACT

THESIS: Development of Reference Standards for Cardiorespiratory Fitness from the Ball State University Adult Physical Fitness Program Cohort

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PAGES: 86

To develop reference standards for cardiorespiratory fitness (CRF) from directly measured maximum oxygen consumption using the Ball State University Adult Physical Fitness Program (APFP) cohort. The APFP cohort is an open cohort of self-referred participants since 1971. From 3,212 individual participants, 2,642 male and 1,741 female (18-79 years) test files remained after exclusion criteria was met. Gender-specific age, physical activity (PA), body mass index (BMI), and smoking status CRF reference standards were developed. Men had greater mean CRF (35%) than women and consistently had greater mean CRF according to age, PA, BMI, and smoking status ($p < .05$). CRF was approximately 10% lower across each decade of age, and was greater with increasing PA compared to the sedentary group. Greater classes of BMI had lower CRF, and CRF was 5% greater in non-smokers compared to current smokers. A pooled CRF registry is recommended for a larger and more diverse cohort.