

庆祝建院三十周年

科学论文选

上

北京体育学院科研处

一九八三年

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北京体育学院
科学论文选

SELECTION OF SCIENTIFIC
PAPERS BEIJING INSTITUTE OF
PHYSICAL EDUCATION

1978—1981

科学论文选

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前 言

为了庆祝我院建院三十周年、检阅我院科学研究队伍和工作，以达我院各单位彼此交流、互相促进、取长补短、提高我院学术水平和教学质量的目的，将我院1978年以来至1981年所研究的成果选出一部分汇编“北京体育学院科学论文选集”。

从“论文选集”的内容来看，既有基础科学的研究，又有教学、训练方法的探讨；既有提高运动水平方法的研究，又有学校体育和民族体育的剖析；并有某些科研仪器制作的论文。这些成果对提高我院科学研究水平、教学、训练质量都起了不同程度的作用。

虽然我们做了一些工作，但是我们以党的十二大精神来衡量差距相当大。全院教师，一定要发愤图强，自力更生，努力开展科学研究工作，为提高我院的教学质量、训练和学术水平，坚持不懈地努力，力争打开新的局面，做出新的成绩，放出新的光彩。

北京体育学院科研处

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利用转动跑台对体院男生 呼吸—循环机能的研究

王义润 高强(执笔) 尹吟青、周懿芬、张问礼

柏晓玲、杨锡让、宋成忠

利用转动跑台在实验室条件下进行呼吸—循环机能的测定,已是现代运动生理学普遍采用的研究手段。

用这种办法收集到的生理指标,如:最大吸氧量、最大心率、最大心输出量和最大氧债等,是判断运动员训练程度的可靠指标,并可被用来推测运动成绩。

我国在这方面的研究工作较少,仅北京体委科研所(1976、1977)做过一些工作,解放军89921部队也曾收集了正常男子及运动员的材料。

本文的材料是我院生理教研室与解放军89921部队共同协作收集的。是我们对这类实验的初次摸索。现将部分材料的整理结果报告如下:

一、研究方法

组织了北京体育学院74、75级男生47人作为实验对象(田径16人,足球16人,篮球15人)。

负荷是用转动跑台给予的。运动员负荷程序由自动控制台操纵,所以每一受试者的负荷控制十分严格,避免了人为的误差。负荷共分6个台阶,一级比一级的强度大,如:第一台阶转速为64米/小时,坡度为0,以后每3'增加坡度为2.5度及速度24米/小时。每个台阶保持3分钟,3分钟后自动擢升下一台阶。

受试者按上述程序运动,一旦心率达到理论上的最大心率的95%时,再持续运动半分钟,以测定最大吸氧量,然后终止运动。

测定的主要指标有肺通气量、心率、心输出量(电阻抗法)、心电图、呼吸商和吸氧量等。除心电图及心输出量在运动时不测外,各项指标都在运动前(测3分钟)、运动时(根据每人运动时间而有不同)、直至运动后(测10分钟)的全部过程进行了连续测定。对部分受试者还进行了运动前、后血乳酸的测定。

二、结果及讨论

(1) 体院男生的最大吸氧量和最大心输出量。

所有受试者的身体都是健康的,而且经过2—3年的体院学习和训练。其身体的一