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Minsoo Kang, Brian G. Ragan, Jae-Hyeon Park (2008) Issues in Outcomes Research: An Overview of Randomization Techniques for Clinical Trials. *Journal of Athletic Training*: March/April 2008, Vol. 43, No. 2, pp. 215-221.

doi: 10.4085/1062-6050-43.2.215

Communications

Issues in Outcomes Research: An Overview of Randomization Techniques for Clinical Trials

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Abstract

Objective: To review and describe randomization techniques used in clinical trials, including simple, block, stratified, and covariate adaptive techniques.

Background: Clinical trials are required to establish treatment efficacy of many athletic training procedures. In the past, we have relied on evidence of questionable scientific merit to aid the determination of treatment choices. Interest in evidence-based practice is growing rapidly within the athletic training profession, placing greater emphasis on the importance of well-conducted clinical trials. One critical component of clinical trials that strengthens results is random assignment of participants to control and treatment groups. Although randomization appears to be a simple concept, issues of balancing sample sizes and controlling the influence of covariates a priori are important. Various techniques have been developed to account for these issues, including block, stratified randomization, and covariate adaptive techniques.

Advantages: Athletic training researchers and scholarly clinicians can use the information presented in this article to better conduct and interpret the results of clinical trials. Implementing these techniques will increase the power and validity of findings of athletic medicine clinical trials, which will ultimately improve the quality of care provided.

Keywords: [minimization](#), [simple randomization](#), [block randomization](#), [stratified randomization](#), [covariate adaptive randomization](#)

Minsoo Kang, PhD; Brian G. Ragan, PhD, ATC; and Jae-Hyeon Park, PhD, contributed to conception and design; acquisition and analysis and interpretation of the data; and drafting, critical revision, and final approval of the article.

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Volume 43, Issue 2
(March/April 2008)

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Journal Information

Print ISSN 1062-6050

eISSN 1938-162X

Frequency Bimonthly:

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