

HydroWorx and Walking Study

The Effect of Water Depth on Energy Expenditure and Perception of Effort in Female Subjects While Walking



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Purpose:

This study was conducted in order to **compare energy expenditures, heart rate, and perceived effort during walking in water at several depths versus land in female participants.**

Method:

Eighteen females participated in this study. Participants on three separate days in one week on a land treadmill, walking **six, five minute bouts at different speeds** with a three minute rest period between each bout. Participants walked followed the same procedures at **different depths** on a HydroWorx underwater treadmill on a different week. During each walking bout heart rate, oxygen consumption, and carbon dioxide production were recorded continuously.

Results:

Minor changes in water depth significantly influenced cardiorespiratory variables and the subject's perception of effort during walking on an aquatic treadmill. **Heart rate, energy expenditure, and rate of perceived effort increased significantly as water depth was lowered** by twenty centimeters.



Conclusion:

These results suggest **water depth can be used to selectively adjust exercise intensity during water walking.** Therefore, substituting aquatic treadmill walking for land walking might be beneficial for overweight individuals as they strive to incorporate physical activity into their lifestyle.



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