HydroWorx and Running Study

Water Treadmill Parameters Needed to Obtain Land Treadmill Intensities in Runners

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Purpose:
This study was conducted to establish water treadmill running parameters with shoes and without shoes needed to obtain known land treadmill running cardiorespiratory responses.

Method:
Eighteen trained college-aged runners participated in three running conditions. Subjects performed workouts on a land treadmill, on a HydroWorx underwater treadmill with shoes, and a HydroWorx underwater treadmill without shoes.

Results:
All subjects were able to exercise on an underwater treadmill at intensities equivalent to 80% of oxygen consumption on land treadmills. This study reveals that participants can select a treadmill speed in underwater treadmills that elicits a heart rate of seven beats per minute less than their land treadmill rate. Participants took twenty-two fewer strides per minute during the underwater treadmill workout than during the land treadmill workout. Wearing shoes created more resistance for the underwater treadmill workouts, creating a slower stride and increasing oxygen consumption.

Conclusion:
The water treadmill provides athletes an alternative method of training to maintain cardiovascular fitness without the weight bearing demands of land running. Subjects should select water treadmill speeds that elicit a heart rate response that is seven beats per minute less than typical training heart rate during land based running.

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