

## **Residual Effect of Training Specific Motor Abilities**

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Over the years, I have repeatedly expressed the importance of following a well-planned, progressive, evidence based, scientifically sound performance enhancement program. I have also expressed the importance of following the program on an annual basis. That means that training must be continued during the competitive season, in the off-season, and during the pre-season.

While all of that is important, in this article, I would like to focus on the residual effects of sports performance training. In a moment, you will see why this is important and how it ties into a well-planned annual training program.

### **Residual Training Effects: Defined**

First, let's define residual training effects. According to Vladimir Issurin in his book "Block Periodization: Breakthrough in Sport Training," residual training effect is "...the duration of the positive effect of the given training after its cessation and how fast you will lose the obtained ability level when you stop training it." (p. 24, 2008) In other words, if you are specifically training for maximum strength, the residual training effect is how long you will maintain that level of strength after you stop training specifically for maximum strength. This is very important for certain methods of program design.

Also in his book, Vladimir Issurin drafted a table that listed the duration (in days) of residual training effects for different motor abilities. I would like to share them with you.

**\*Aerobic Endurance has a residual duration of 30± days.**

**\*Maximum Strength has a residual duration of 30±5 days.**

**\*Anaerobic Glycolytic Endurance has a residual duration of 18±4 days.**

**\*Strength Endurance has a residual duration of 15±5 days.**

**\*Maximum Speed (alactic) has a residual duration of 5±3 days.**

*\*(Taken from Table 1.6, page 25, "Block Periodization: Breakthrough in Sport Training," 2008, Vladimir B. Issurin)*

### **Why is this important?**

There are many reasons, especially for the performance scientist when he/she is designing effective programs for his/her athletes. To simply illustrate one reason, take, for example, an athlete who has been focusing on maximum speed for the last 2 weeks. How long can she go without addressing this motor ability again before beginning to lose the desired training effect? The answer is anywhere from 2 to 8 days.

This is also important because training specific motor abilities can now be consecutively planned for maximum output at specific events/competitions. An athlete can stop training for max speed and still reap the benefits from the training for an additional 2 to 8 days.

The benefits of understanding residual training effects are endless. Planning an annualized, periodized program must take these residual effects into account to help maximize the athlete's specific motor abilities for peak performance. It is great that the field of strength and conditioning is evolving quickly, and in the right direction. Expect Finish First to stay informed about the latest research about performance training enhancement.

In future articles, expect to see more specific details about Block Periodization training and sample implementation strategies for high school athletes. For questions or comments please call 866.468.2231 or email me at [jhoy@finishfirstsports.com](mailto:jhoy@finishfirstsports.com).