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## Determining Zones and Pace

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Source: **Mike Ricci**  
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Bike and run training efforts are based on heart rate zones and perceived exertion. For swimming we will use pacing, as it is difficult to determine heart rate zones in a pool.

### Determining Swimming Pace

In swimming we want to find out what our 'average pace per 100 (meter or yards)' is. In order to determine this number we can do a number of tests. The simplest test, in my opinion, is the 1,000 yard (or meter) Time Trial (TT). In the TT your goal is to swim a fairly hard effort for the entire distance. The key is to not slow down in the second half of the swim. It's best to start out at an effort that you can maintain by the end, but you must also be able to push yourself the whole way. You should finish knowing you gave it everything you had.

#### Swim test protocol:

- 300-500 yd warm up.
- 6-8 x 50 yds on 10 seconds rest.
- 1,000 yd TT.**
- 300 easy cool down.

#### Example:

Johnny swims 17:45 for his 1,000 yd TT. This tells me Johnny's swim pace is 1:46 per 100/yds. His 1:46 is called his **T-pace**. Now that we have the T-pace of 1:46 we can create swim workouts adjusted to this pace. For example - a very hard set for Johnny might be 10x100 @T-5 seconds on 20 seconds rest. This would mean Johnny's goal is to swim the 100s at 1:41 pace. An easier set might be 10x100 @T+10 seconds on 30 seconds rest. Johnny's goal for the 100 is 1:56. Another set might be 10x100 T-pace on 10 seconds rest. This means Johnny's goal is to swim the 100 in 1:41.

As you can see there are many of variables and many workouts we can derive from that TT. It is recommended that you re-test your TT every 4-6 weeks.

### Determining Bike Training Zones



In biking we want to know our heart rate training zones. To make this as easy as possible, we will use a standard 30 minute TT. From this TT we will be able to determine the correct training zones. I do advocate doing both an inside and outside LT tests.

#### **Bike test protocol for inside testing:**

The warm-up is 15 minutes of cycling, moving through the different gears, always keeping the cadence above 90 RPMS. Do a few short sprints to get your heart rate up and ready for the test!

You should start out in a gear that you can maintain 90 RPMS in. Make sure you remember what gear you started in.

- The 30 minute TT begins.
- At 10 minutes into the test, hit the 'Lap' button on your heart rate monitor, to get the average heart rate over the final 20 minutes of the test.
- The average for the final 20 minutes is your Lactate Threshold or LT.
- You should finish knowing you gave it everything you had.

15 minutes easy cool down.

#### **Example:**

Johnny has an average of 156 heart rate for his 30 minute bike TT. If I calculate Johnny's zones using his LT and the Training Bible zones, this is what I come up with:

Zone 1 - 102-125  
 Zone 2 - 136-139  
 Zone 3 - 140-145  
 Zone 4 - 146- 155  
 Zone 5a - 156-159  
 Zone 5b - 160-164  
 Zone 5c - 165-170

#### **Determining Run Training Zones**

In running we want to know our heart rate training zones as well. To make this as easy as possible, we will use a standard 30 minute TT. From this TT we will be able to determine the correct training zones. This is best if done on a flat uninterrupted path or trail.

#### **Run test protocol:**

After a 15 minute warm-up of easy running, finish with a few quick 20 seconds bursts to get your heart rate in the correct training zone.

- The 30 minute TT begins.
- At 10 minutes into the test, hit the 'Lap' button on your heart rate monitor, to get the average heart rate over the final 20 minutes of the test.
- The average for the final 20 minutes is your Lactate Threshold or LT.
- You should finish knowing you gave it everything you had.

15 minutes easy cool down.

#### **Example:**

Johnny has an average of 156 heart rate for his 30 minute run TT. If I calculate Johnny's zones using his LT and the Training Bible zones, this is what I come up with:

Zone 1 - 102-125  
 Zone 2 - 136-139

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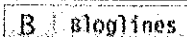
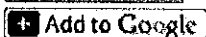
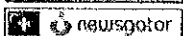
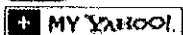
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- Zone 5a - 156-159
- Zone 5b - 160-164
- Zone 5c - 165-170

**Mike Ricci**  
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Mike Ricci is a USA Triathlon and USA Cycling certified Coach and has been coaching endurance athletes since 1980. Mike has coached multi-sport athletes, swimmers, and runners of all abilities from all over the world. [D3 Multisport](#)

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