

Greg D. Wells Ph.D., Director of Sport Performance & Senior Scientist, Canadian Sport Centre Ontario did lactate testing prior to and after the Canada Cup with the SNC Prospects and Youth and Junior teams. He shared with the swimmers and coaches in attendance some information about warm downs.

The attached document shows mean post-race lactate concentrations of different strokes and distances. This comes from the collection of post race lactates at senior National Championship meets. Though not specific to your swimmer it does give the ranges of lactate accumulation which can be used to plan warm-down distances.

Assign a value of 100 meters to each mmol of post race blood lactate. For example a 100 back or freestyle is about 14 mmol, 1400 meters. A post-warm-down lactate should be 4 mmol if the swimmer has an additional event that day in the meet. If the swimmer is done for the day the value should be less than 2 mmol. Subtract the post-warm down values from the post-race value to get the warm-down distance. For example, a swimmer who has finished 100 Freestyle and has another event needs to warm down 1000m. If that swimmer is done for the day they should do 1200 meters.

Warm down should be a combination of swimming and kicking. Swimmers need to kick to remove the lactate from their legs. They can also do some limited breath control work to keep their heart rate up and allow for the clearance of the blood lactate. Swimming should be done as fast as possible without creating more lactate. This value can be generated from a 7 x 200 step test with accompanying lactates. Since this is not available to everyone a simpler rule of thumb is best 100 time plus 20 seconds divided by 2. A 1:00.0 100 Freestyle would be 1:20 divided by 2 to give a 40 second warm-down pace.

An example would be 200 easy, 4 x 50 at warm-down pace, 200 easy, 4 x 50 kick, repeated until the required distance is done.

Most swimmers will be surprised at how fast they should swim during warm down. It is not just slow easy swimming (and talking). It needs to be done as fast as possible without generating anymore lactate.

Greg has started a web-site of information at:

www.swimscience.ca