

2011 Ontario Swimming Coaches Conference

Aerobic Training

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Benefits of Aerobic Endurance Exercise

- **Strengthens the muscles involved in respiration**
- **Strengthens and enlarges the heart muscle**
(Increasing Fitness Lowers resting HR but Max HR is genetically determined.)
- **Improves Circulation efficiency**
- **Increases Red Blood cell count which facilitates transport of Oxygen.**
- **Increases storage of energy molecules such as fats and carbohydrates within the muscles allowing for increased endurance.**
- **Enhances the speed at which muscles recover from high intensity exercises.**
- *****Increases speed at which aerobic metabolism is activated within muscles, allowing a greater portion of energy for intense exercises to be generated aerobically.**
- **Increases powers of RECOVERY .**

“Other Uses and Purposes”

Swimming at Low Intensity's Levels

- Helps to teach relaxation while swimming
- Helps Develop Technique
- Used during Drill Work
- Warm-ups, Warm downs
- Bridges between sets (Injury Prevention)

		EXERCISE ZONES										
		AGE										
		20	25	30	35	40	45	50	55	65	70	
BEATS PER MINUTE	100%	200	195	190	185	180	175	170	165	155	150	VO2 Max (Maximum effort)
	90%	180	176	171	167	162	158	153	149	140	135	
	80%	160	156	152	148	144	140	136	132	124	120	Aerobic (Cardio training / Endurance)
	70%	140	137	133	130	126	123	119	116	109	105	
	60%	120	117	114	111	108	105	102	99	93	90	Moderate activity (Maintenance / Warm up)
	50%	100	98	95	93	90	88	85	83	78	75	

Ave HR Minus MAX

200 Max

180 -20

160 -40

140 -60

120 -80

100 -100

My Program Description

Philosophy

- “Speed within an Aerobic Context”
- “Concurrent Training Model”
- Free/IM Aerobic Development Program

3 Objectives

1. Character Development
 2. Ongoing IM Development including into specialization period
 3. General Physical Development
- 9 Sessions Per Week (More at Camps)
 - Mid/Dis Typical Weekly Yardage
60 – 65KM (High End)
65 – 75 KM (Some Camps)

Weekly Cycle

Aerobic	OFF	Power Circuit	OFF	EZ Aerobic	Longer Aerobic
Aerobic/ Max VO2	Higher Rest Race Pace	Aerobic/ Max VO2	Higher Rest Race Pace	Aerobic/ Max VO2	

Sample Sets

1.) ____ x 400 Free Alt (1 Swim EZ @ 6:00
(1 Pull Dec - ____) Pull = 5:30, 5:20, 5:104:30 or 4:20

****Objective: Descend Pull 400s to goal interval**

Rule: If swimmer fails to beat any pull interval, they must swim the remaining pull 400s. If they fail to meet the pull intervals while swimming, they put on fins to complete the set.

Equipment changes are done after EZ Swim 400s

2) “EL Supremo” (an Inch Worm Set)

6 x 200 Free Swim @ 2:40 EZ

3 x 200 Free Swim @ 2:30 Tempo

3 x 200 Free Swim @ 2:20 (Swim at fastest Interval at the end of the set)

3 x 200 Free Swim @ 3:00 EZ

3 -6 x 200 Free Swim @ Fastest Interval possible.

****Reduce Interval when repeating more than :05 sec faster than Interval**

****Does not have to be :05 sec increments**

Ex: FZ 6 x 1:59 @ 2:07.5

Sample Sets

3.) "Flying Wedge"

	(2:00)	(1:30)	(1:20)	(1:15)	(1:12)	(1:10)	(1:08.9)	(1:07.5)	
Interval	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	
	100								
	100	200							
	100	200	300						
	100	200	300	400					
	100	200	300	400	500				
	100	200	300	400	500	600			
	100	200	300	400	500	600	700		(8.4k)
	100	200	300	400	500	600	700	800	(12k)

Test Sets

16 x 400 Free Swim @ Best Interval + Best Ave
SC – MS Interval 4:40 AVE 4:32

30 x 100 Free Swim @ 1:20 Best Ave(SC)
SE 1:04 HR 190 150 110
Bmac 1:04 HR 180 130 120

2Km IM (5 x 400 IM back to back) (SC) Full Stroke Fly
SE 25.21 (5:04) Ave

15 x 100 Free Swim @ 1:30 Best Ave (SC) HAK 58.00

10 x 150 Free 'Pull' @ 2:20 Best Ave (Buoy/Band) (LC – Bmac 1:41.7 Ave)

15 x 100 Free @ 1:25 +:06 RP
:45 Rest

10 x 100 Free @ 1:20 +:04 RP
1:40 Rest

5 x 100 Free @ 1:15 Best Ave (Slightly under RP)

6 x 100 Free Swim @ 1:30 Best Ave (Dive #1)
LC – Bmac 1:00.8

“RECOVERY CHECK”

3 Heart Rates : 1 Immediate

1 + 1 Min

1 + 2 Min

Ex.

185

135-140

105-120

