



Tempo Trainer Workout Reference Card



Tempo Trainer: Your Personal Pace Coach

An electronic device that attaches to a goggle strap or is placed under a swim cap which transmits an audible beep to help develop consistency of stroke rate in all four strokes.

These charts are helpful in providing swimmers and coaches instant guidelines for stroke rates of every event. For additional information: www.finisinc.com and "Swimming Fastest" by Ernie Maglischo.

"One job of the coach is to help athletes find the optimum combination of stroke rate and stroke length that will allow them to swim at some desired speed with the least energy expenditure. Nevertheless, the range of differences is small enough to allow us to make generalizations concerning the best rates for each event."

- Ernie Maglischo & Spot,
Author of "Swimming Fastest"

CHART 1:

The Range of Stroke Rates for Male and Female World Class Swimmers in Each Competitive Event

(OLYMPIC GAMES, ATLANTA '96 AND WORLD CHAMPIONSHIPS, PERTH '98)

	Stroke Rates in Cycles/Min	Tempo Trainer Setting (Seconds/Stroke)
Women		
50 Free	60 - 65	.46 - .50
100 Free	53 - 56	.54 - .57
200 Free	48 - 54	.56 - .63
400/500 Free	42 - 55	.55 - .71
800/1000 Free	44 - 54	.56 - .68
100 Back	50 - 56	.54 - .60
200 Back	40 - 42	.71 - .75
100 Breast	47 - 53	1.13 - 1.28
200 Breast	34 - 45	1.33 - 1.76
100 Fly	52 - 56	1.07 - 1.15
200 Fly	45 - 54	1.11 - 1.33
Men		
50 Free	56 - 67	.45 - .54
100 Free	50 - 56	.60 - .54
200 Free	43 - 51	.59 - .70
400/500 Free	38 - 46	.65 - .79
1500/1650 Free	39 - 43	.70 - .77
100 Back	48 - 53	.63 - .57
200 Back	42 - 44	.68 - .71
100 Breast	52 - 55	1.08 - 1.15
200 Breast	38 - 42	1.43 - 1.58
100 Fly	52 - 56	1.07 - 1.15
200 Fly	48 - 54	1.11 - 1.25

CHART 2:

Standard Stroke Rates

Stroke Rate (Cycles per Minute)	Tempo Trainer Setting (Seconds / Cycle)	Tempo Trainer Setting (Seconds per Stroke)
20	3.00	1.50
21	2.86	1.43
22	2.73	1.36
23	2.61	1.30
24	2.50	1.25
25	2.40	1.20
26	2.31	1.15
27	2.22	1.11
28	2.14	1.07
29	2.07	1.03
30	2.00	1.00
31	1.94	0.97
32	1.88	0.94
33	1.82	0.91
34	1.76	0.88
35	1.71	0.86
36	1.67	0.83
37	1.62	0.81
38	1.58	0.79
39	1.54	0.77
40	1.50	0.75
41	1.46	0.73
42	1.43	0.71
43	1.40	0.70
44	1.36	0.68
45	1.33	0.67
46	1.30	0.65
47	1.28	0.64
48	1.25	0.63
49	1.22	0.61
50	1.20	0.60
51	1.18	0.59
52	1.15	0.58
53	1.13	0.57
54	1.11	0.56
55	1.09	0.55
56	1.07	0.54
57	1.05	0.53
58	1.03	0.52
59	1.02	0.51
60	1.00	0.50
61	0.98	0.49

Stroke Rate (Cycles per Minute)	Tempo Trainer Setting (Seconds / Cycle)	Tempo Trainer Setting (Seconds per Stroke)
62	0.97	0.48
63	0.95	0.48
64	0.94	0.47
65	0.92	0.46
66	0.91	0.45
67	0.90	0.45
68	0.88	0.44
69	0.87	0.43
70	0.86	0.43
71	0.85	0.42
72	0.83	0.42
73	0.82	0.41
74	0.81	0.41
75	0.80	0.40
76	0.79	0.39
77	0.78	0.39
78	0.77	0.38
79	0.76	0.38
80	0.75	0.38
81	0.74	0.37
82	0.73	0.37
83	0.72	0.36
84	0.71	0.36
85	0.71	0.35
86	0.70	0.35
87	0.69	0.34
88	0.68	0.34
89	0.67	0.34
90	0.67	0.33
91	0.66	0.33
92	0.65	0.33
93	0.65	0.32
94	0.64	0.32
95	0.63	0.32
96	0.63	0.31
97	0.62	0.31
98	0.61	0.31
99	0.61	0.30
100	0.60	0.30

* Seconds per stroke only applies to Freestyle and Backstroke.