

LCM Time	SCM Time	15m	20m	25m (hand)	35m	40m	45m	50m (hand)	60m	65m	70m	75m (hand)	85m	90m	95m	1st 50m	2nd 50m	100m SCM	100m LCM
49.0	47.9	5.42	7.90	10.28	15.13	17.57	20.02	22.44	27.37	30.30	32.56	35.05	40.11	42.69	45.28	22.44	25.42	47.9	49.0
50.0	48.9	5.57	8.09	10.52	15.46	17.95	20.43	22.91	27.95	30.92	33.24	35.79	40.97	43.60	46.24	22.91	25.96	48.9	50.0
51.0	49.9	5.72	8.29	10.77	15.79	18.32	20.85	23.39	28.52	31.54	33.92	36.53	41.82	44.51	47.21	23.39	26.51	49.9	51.0
52.0	50.9	5.88	8.48	11.01	16.12	18.70	21.27	23.86	29.10	32.16	34.60	37.27	42.67	45.42	48.17	23.86	27.05	50.9	52.0
53.0	51.9	6.03	8.67	11.25	16.45	19.07	21.69	24.33	29.67	32.78	35.29	38.02	43.53	46.33	49.14	24.33	27.59	51.9	53.0
54.0	52.9	6.18	8.87	11.49	16.78	19.45	22.11	24.81	30.24	33.40	35.97	38.76	44.38	47.24	50.10	24.81	28.13	52.9	54.0
55.0	54.0	6.33	9.06	11.73	17.11	19.82	22.53	25.28	30.82	34.02	36.65	39.50	45.24	48.15	51.07	25.28	28.68	54.0	55.0
56.0	55.0	6.48	9.25	11.98	17.45	20.20	22.95	25.75	31.39	34.64	37.33	40.24	46.09	49.06	52.03	25.75	29.22	55.0	56.0
57.0	56.0	6.63	9.45	12.22	17.78	20.57	23.37	26.23	31.96	35.26	38.01	40.99	46.94	49.97	53.00	26.23	29.76	56.0	57.0
58.0	57.0	6.78	9.64	12.46	18.11	20.95	23.78	26.70	32.54	35.88	38.70	41.73	47.80	50.88	53.96	26.70	30.30	57.0	58.0
59.0	58.0	6.93	9.83	12.70	18.44	21.32	24.20	27.17	33.11	36.50	39.38	42.47	48.65	51.79	54.93	27.17	30.85	58.0	59.0
60.0	59.0	7.09	10.03	12.95	18.77	21.70	24.62	27.65	33.68	37.12	40.06	43.21	49.51	52.70	55.89	27.65	31.39	59.0	60.0
61.0	60.1	7.24	10.22	13.19	19.10	22.07	25.04	28.12	34.26	37.74	40.74	43.96	50.36	53.61	56.86	28.12	31.93	60.1	61.0
62.0	61.1	7.39	10.41	13.43	19.43	22.45	25.46	28.59	34.83	38.36	41.42	44.70	51.22	54.52	57.82	28.59	32.47	61.1	62.0
63.0	62.1	7.54	10.61	13.67	19.76	22.82	25.88	29.07	35.41	38.98	42.11	45.44	52.07	55.43	58.79	29.07	33.02	62.1	63.0
64.0	63.1	7.69	10.80	13.91	20.09	23.19	26.30	29.54	35.98	39.60	42.79	46.18	52.92	56.34	59.75	29.54	33.56	63.1	64.0
65.0	64.1	7.84	10.99	14.16	20.42	23.57	26.71	30.01	36.55	40.22	43.47	46.93	53.78	57.25	60.71	30.01	34.10	64.1	65.0
66.0	65.1	7.99	11.19	14.40	20.75	23.94	27.13	30.49	37.13	40.84	44.15	47.67	54.63	58.16	61.68	30.49	34.64	65.1	66.0
67.0	66.1	8.14	11.38	14.64	21.09	24.32	27.55	30.96	37.70	41.46	44.83	48.41	55.49	59.07	62.64	30.96	35.19	66.1	67.0
68.0	67.2	8.30	11.57	14.88	21.42	24.69	27.97	31.43	38.27	42.08	45.51	49.15	56.34	59.97	63.61	31.43	35.73	67.2	68.0
69.0	68.2	8.45	11.77	15.12	21.75	25.07	28.39	31.90	38.85	42.69	46.20	49.90	57.19	60.88	64.57	31.90	36.27	68.2	69.0
70.0	69.2	8.60	11.96	15.37	22.08	25.44	28.81	32.38	39.42	43.31	46.88	50.64	58.05	61.79	65.54	32.38	36.82	69.2	70.0
71.0	70.2	8.75	12.15	15.61	22.41	25.82	29.22	32.85	39.99	43.93	47.56	51.38	58.90	62.70	66.50	32.85	37.36	70.2	71.0
72.0	71.2	8.90	12.35	15.85	22.74	26.19	29.64	33.32	40.57	44.55	48.24	52.12	59.76	63.61	67.47	33.32	37.90	71.2	72.0
73.0	72.2	9.05	12.54	16.09	23.07	26.57	30.06	33.80	41.14	45.17	48.92	52.86	60.61	64.52	68.43	33.80	38.44	72.2	73.0
74.0	73.3	9.20	12.73	16.33	23.40	26.94	30.48	34.27	41.71	45.79	49.60	53.61	61.47	65.43	69.40	34.27	38.99	73.3	74.0
75.0	74.3	9.36	12.93	16.57	23.73	27.31	30.90	34.74	42.29	46.41	50.29	54.35	62.32	66.34	70.36	34.74	39.53	74.3	75.0
76.0	75.3	9.51	13.12	16.82	24.06	27.69	31.32	35.21	42.86	47.03	50.97	55.09	63.17	67.25	71.33	35.21	40.07	75.3	76.0
77.0	76.3	9.66	13.31	17.06	24.39	28.06	31.73	35.69	43.43	47.65	51.65	55.83	64.03	68.16	72.29	35.69	40.62	76.3	77.0
78.0	77.3	9.81	13.51	17.30	24.72	28.44	32.15	36.16	44.00	48.27	52.33	56.58	64.88	69.07	73.26	36.16	41.16	77.3	78.0
79.0	78.3	9.96	13.70	17.54	25.05	28.81	32.57	36.63	44.58	48.89	53.01	57.32	65.74	69.98	74.22	36.63	41.70	78.3	79.0

How to use the British Swimming 'SpeedCharts'

- Use an athlete's target longcourse race time to set training times for short sprints – athletes should aim to achieve actual race speed in training for up to 60% of race distance***. E.g., An athlete aiming to swim 60.0 longcourse should be able to repeat 33.68 for 60m efforts.
- Determine projected 100m times, based on training times over shorter distances. Use the charts in this way to ensure that your training is speed specific. This is not a tool to predict race times, but merely a means of ensuring that sufficient speed is achieved in training.

Always use the 'SpeedCharts' in conjunction with other race analysis information – e.g. Stroke Rates, Stroke Counts, Underwater Parameters (distance, no. of kicks) and Breathing Patterns – to further improve the specificity of training, and always ensure that speed is achieved through technically excellent swimming!

All Times are based on the time from GUN to HEAD

If any other timing method is used then the appropriate adjustment must be made!

Timing Method Adjustments:	
Feet Off Blocks	+0.75
Time to Hand	+0.25
Feet Off Wall	-0.20

- If calculating training times for short intervals – look up chart for time, then subtract the adjustment
- If determining projected 100m time – add adjustment then look up chart with adjusted time

* Adjustments are approximate

LCM Time	SCM Time	Last x Metres*					2nd 50m Push Targets (feet off)**								SCM 100m	LCM 100m
		Last 35m 65-100m	Last 30m 70-100m	Last 25m 75-100m	Last 15m 85-100m	Last 10m 90-100m	15m 50-65m	20m 50-70m	25m 50-75m	35m 50-85m	40m 50-90m	45m 50-95m	50m 50-100m			
49.0	47.9	17.56	15.31	11.52	7.75	5.17	6.56	8.82	11.31	16.37	18.95	21.54	24.12	47.9	49.0	
50.0	48.9	17.95	15.64	11.79	7.91	5.27	6.71	9.02	11.57	16.75	19.39	22.03	24.66	48.9	50.0	
51.0	49.9	18.35	15.97	12.06	8.07	5.38	6.86	9.23	11.84	17.13	19.83	22.52	25.21	49.9	51.0	
52.0	50.9	18.75	16.31	12.34	8.24	5.49	7.00	9.44	12.11	17.51	20.26	23.01	25.75	50.9	52.0	
53.0	51.9	19.14	16.64	12.61	8.40	5.59	7.15	9.65	12.38	17.89	20.70	23.50	26.29	51.9	53.0	
54.0	52.9	19.54	16.97	12.88	8.56	5.70	7.29	9.86	12.65	18.27	21.13	23.99	26.83	52.9	54.0	
55.0	54.0	19.94	17.31	13.16	8.72	5.81	7.44	10.07	12.92	18.66	21.57	24.49	27.38	54.0	55.0	
56.0	55.0	20.33	17.64	13.43	8.88	5.91	7.59	10.28	13.19	19.04	22.01	24.98	27.92	55.0	56.0	
57.0	56.0	20.73	17.97	13.70	9.04	6.02	7.73	10.49	13.46	19.42	22.44	25.47	28.46	56.0	57.0	
58.0	57.0	21.12	18.31	13.98	9.21	6.12	7.88	10.69	13.73	19.80	22.88	25.96	29.00	57.0	58.0	
59.0	58.0	21.52	18.64	14.25	9.37	6.23	8.03	10.90	14.00	20.18	23.32	26.45	29.55	58.0	59.0	
60.0	59.0	21.92	18.98	14.52	9.53	6.34	8.17	11.11	14.27	20.56	23.75	26.94	30.09	59.0	60.0	
61.0	60.1	22.31	19.31	14.80	9.69	6.44	8.32	11.32	14.54	20.94	24.19	27.44	30.63	60.1	61.0	
62.0	61.1	22.71	19.64	15.07	9.85	6.55	8.46	11.53	14.80	21.32	24.62	27.93	31.17	61.1	62.0	
63.0	62.1	23.11	19.98	15.34	10.01	6.66	8.61	11.74	15.07	21.70	25.06	28.42	31.72	62.1	63.0	
64.0	63.1	23.50	20.31	15.62	10.17	6.76	8.76	11.95	15.34	22.08	25.50	28.91	32.26	63.1	64.0	
65.0	64.1	23.90	20.65	15.89	10.34	6.87	8.90	12.16	15.61	22.47	25.93	29.40	32.80	64.1	65.0	
66.0	65.1	24.29	20.98	16.16	10.50	6.97	9.05	12.37	15.88	22.85	26.37	29.89	33.34	65.1	66.0	
67.0	66.1	24.69	21.31	16.44	10.66	7.08	9.20	12.57	16.15	23.23	26.81	30.39	33.89	66.1	67.0	
68.0	67.2	25.09	21.65	16.71	10.82	7.19	9.34	12.78	16.42	23.61	27.24	30.88	34.43	67.2	68.0	
69.0	68.2	25.48	21.98	16.98	10.98	7.29	9.49	12.99	16.69	23.99	27.68	31.37	34.97	68.2	69.0	
70.0	69.2	25.88	22.32	17.26	11.14	7.40	9.64	13.20	16.96	24.37	28.12	31.86	35.52	69.2	70.0	
71.0	70.2	26.28	22.65	17.53	11.31	7.51	9.78	13.41	17.23	24.75	28.55	32.35	36.06	70.2	71.0	
72.0	71.2	26.67	22.98	17.80	11.47	7.61	9.93	13.62	17.50	25.13	28.99	32.84	36.60	71.2	72.0	
73.0	72.2	27.07	23.32	18.08	11.63	7.72	10.08	13.83	17.77	25.52	29.43	33.34	37.14	72.2	73.0	
74.0	73.3	27.46	23.65	18.35	11.79	7.82	10.22	14.04	18.04	25.90	29.86	33.83	37.69	73.3	74.0	
75.0	74.3	27.86	23.99	18.62	11.95	7.93	10.37	14.24	18.31	26.28	30.30	34.32	38.23	74.3	75.0	
76.0	75.3	28.26	24.32	18.90	12.11	8.04	10.52	14.45	18.58	26.66	30.74	34.81	38.77	75.3	76.0	
77.0	76.3	28.65	24.65	19.17	12.28	8.14	10.66	14.66	18.85	27.04	31.17	35.30	39.32	76.3	77.0	
78.0	77.3	29.05	24.99	19.44	12.44	8.25	10.81	14.87	19.12	27.42	31.61	35.80	39.86	77.3	78.0	
79.0	78.3	29.45	25.32	19.72	12.60	8.36	10.96	15.08	19.38	27.80	32.05	36.29	40.40	78.3	79.0	

100M BUTTERFLY FACTS

Men's LCM Records (Current at 1 September 2020)				
Record	Time	Split	Name	Date
World	49.50	(22.83)	Caeleb DRESSEL	26 Jul 2019
European	49.95	(22.69)	Milorad CAVIC	1 Aug 2009
Commonwealth	50.39	(23.64)	Joseph SCHOOLING	12 Aug 2016
British	50.67	(23.70)	James Guy	28 Jul 2017
Fastest Start	5.08		Caeleb DRESSEL	
Fastest Turn	7.33		Thomas Shields	
Men's LCM International Benchmarks				
Gold	49.66	These represent the fastest time it has taken to Win, Medal, make a final or semi-final at World Championships or Olympics between 2015 and 2020.		2019
Medal	50.83			2017
Final	51.31			2017
Semi	51.96			2017

Women's LCM Records (Current at 1 September 2020)				
Record	Time	Split	Name	Date
World	55.58	(26.01)	Sarah SJOESTROEM	5 Jul 2014
European	55.68	(26.01)	Sarah SJOESTROEM	5 Jul 2014
Commonwealth	55.83	(26.77)	Margeret MACNEIL	22 Jul 2019
British	57.25	(NA)	Ellen GANDY	4 Mar 2012
Fastest Start	6.00		Jeanette Ottesen	
Fastest Turn	7.87		Margaret MACNEIL	
Women's LCM International Benchmarks				
Gold	55.48	These represent the fastest time it has taken to Win, Medal, make a final or semi-final at World Championships or Olympics between 2015 and 2020.		2016
Medal	56.37			2017
Final	57.10			2019
Semi	58.15			2016

Using the British Swimming 'SpeedCharts' to develop specific training sets

- Use short intervals of 15m-35m, from a dive, to develop alactic power and maximum swimming speed. Ensure enough recovery to repeat fast swimming.
- Use medium distance intervals (35m-75m), also from a dive, to develop the lactate production systems. The efforts must be performed maximally on long rest (preferably with some active recovery), to ensure adequate recovery and repeatable high quality efforts.
- Use the 'Last x Metres' and '2nd Lap Push Targets' to create lactate tolerance sets incorporating repeats of varying distances that are specific to the 2nd 50m of a 100m race. Rest intervals for these sets should be short enough to allow accumulation of lactate, but not so short that race specific speeds are no longer attainable.

Always use the 'SpeedCharts' in conjunction with other race analysis information – e.g. Stroke Rates, Stroke Counts, Underwater Parameters (distance, no. of kicks) and Breathing Patterns – to further improve the specificity of training, and always ensure that speed is achieved through technically excellent swimming!

* 'Last x Metres' times are timed from head to hand, except for 'last 25m', which is timed from feet-off to hand.

** '2nd Lap Push Targets' are based on time from feet-off the wall to head at the specified distance, except for the 25m and 50m push targets, which are to hand-touch. (Calculated based on a hands-to-feet-off time for a butterfly turn of 1.3s)

***The physiological effect of different distance intervals, and the ability to achieve race-specific speeds, is dependent upon gender, training background, fatigue and the physiology of the individual athlete. Conversion of Shortcourse to Longcourse times is also individual, depending particularly on an athlete's turn ability.