

Time	15m	20m	25m	30m	35m	40m	45m	50m (feet)	60m	65m	70m	75m	80m	85m	90m	95m	Turn (5in -10out)	1st 50m	2nd 50m	100m
45.0	5.40	7.64	9.88	12.20	14.52	16.84	19.16	21.70	25.71	28.09	30.46	32.84	35.31	37.77	40.24	42.71	6.55	21.70	23.30	45.0
46.0	5.54	7.83	10.12	12.49	14.86	17.22	19.59	22.19	26.29	28.72	31.15	33.58	36.10	38.62	41.14	43.66	6.70	22.19	23.81	46.0
47.0	5.68	8.02	10.36	12.77	15.19	17.60	20.02	22.68	26.87	29.36	31.84	34.32	36.90	39.47	42.04	44.61	6.85	22.68	24.33	47.0
48.0	5.83	8.21	10.59	13.06	15.52	17.99	20.45	23.16	27.46	29.99	32.53	35.06	37.69	40.31	42.94	45.57	7.00	23.16	24.84	48.0
49.0	5.97	8.40	10.83	13.34	15.86	18.37	20.89	23.65	28.04	30.63	33.21	35.80	38.48	41.16	43.84	46.52	7.15	23.65	25.35	49.0
50.0	6.11	8.59	11.07	13.63	16.19	18.75	21.32	24.13	28.62	31.26	33.90	36.54	39.28	42.00	44.73	47.47	7.31	24.13	25.87	50.0
51.0	6.25	8.78	11.30	13.91	16.53	19.14	21.75	24.62	29.21	31.90	34.59	37.28	40.07	42.85	45.63	48.42	7.46	24.62	26.38	51.0
52.0	6.40	8.97	11.54	14.20	16.86	19.52	22.18	25.10	29.79	32.54	35.28	38.02	40.86	43.69	46.53	49.37	7.61	25.10	26.90	52.0
53.0	6.54	9.16	11.78	14.48	17.20	19.90	22.61	25.59	30.37	33.17	35.97	38.76	41.65	44.54	47.43	50.32	7.76	25.59	27.41	53.0
54.0	6.68	9.35	12.01	14.77	17.53	20.29	23.05	26.08	30.96	33.81	36.65	39.51	42.45	45.38	48.33	51.27	7.91	26.08	27.92	54.0
55.0	6.83	9.54	12.25	15.05	17.86	20.67	23.48	26.56	31.54	34.44	37.34	40.25	43.24	46.23	49.22	52.22	8.06	26.56	28.44	55.0
56.0	6.97	9.73	12.49	15.34	18.20	21.05	23.91	27.05	32.12	35.08	38.03	40.99	44.03	47.08	50.12	53.17	8.21	27.05	28.95	56.0
57.0	7.11	9.92	12.72	15.63	18.53	21.44	24.34	27.53	32.71	35.71	38.72	41.73	44.83	47.92	51.02	54.12	8.36	27.53	29.47	57.0
58.0	7.25	10.11	12.96	15.91	18.87	21.82	24.78	28.02	33.29	36.35	39.41	42.47	45.62	48.77	51.92	55.07	8.51	28.02	29.98	58.0
59.0	7.40	10.29	13.20	16.20	19.20	22.20	25.21	28.51	33.87	36.99	40.09	43.21	46.41	49.61	52.82	56.02	8.66	28.51	30.49	59.0
60.0	7.54	10.48	13.43	16.48	19.54	22.59	25.64	28.99	34.46	37.62	40.78	43.95	47.21	50.46	53.71	56.97	8.81	28.99	31.01	60.0
61.0	7.68	10.67	13.67	16.77	19.87	22.97	26.07	29.48	35.04	38.26	41.47	44.69	48.00	51.30	54.61	57.92	8.97	29.48	31.52	61.0
62.0	7.82	10.86	13.91	17.05	20.21	23.35	26.51	29.96	35.62	38.89	42.16	45.43	48.79	52.15	55.51	58.87	9.12	29.96	32.04	62.0
63.0	7.97	11.05	14.14	17.34	20.54	23.74	26.94	30.45	36.20	39.53	42.85	46.17	49.59	52.99	56.41	59.82	9.27	30.45	32.55	63.0
64.0	8.11	11.24	14.38	17.62	20.87	24.12	27.37	30.94	36.79	40.16	43.53	46.91	50.38	53.84	57.31	60.77	9.42	30.94	33.06	64.0
65.0	8.25	11.43	14.61	17.91	21.21	24.50	27.80	31.42	37.37	40.80	44.22	47.65	51.17	54.68	58.20	61.72	9.57	31.42	33.58	65.0
66.0	8.39	11.62	14.85	18.19	21.54	24.89	28.23	31.91	37.95	41.44	44.91	48.39	51.96	55.53	59.10	62.67	9.72	31.91	34.09	66.0
67.0	8.54	11.81	15.09	18.48	21.88	25.27	28.67	32.39	38.54	42.07	45.60	49.13	52.76	56.38	60.00	63.62	9.87	32.39	34.61	67.0
68.0	8.68	12.00	15.32	18.76	22.21	25.65	29.10	32.88	39.12	42.71	46.29	49.87	53.55	57.22	60.90	64.58	10.02	32.88	35.12	68.0
69.0	8.82	12.19	15.56	19.05	22.55	26.04	29.53	33.36	39.70	43.34	46.98	50.61	54.34	58.07	61.80	65.53	10.17	33.36	35.64	69.0
70.0	8.96	12.38	15.80	19.34	22.88	26.42	29.96	33.85	40.29	43.98	47.66	51.36	55.14	58.91	62.69	66.48	10.32	33.85	36.15	70.0
71.0	9.11	12.57	16.03	19.62	23.22	26.80	30.40	34.34	40.87	44.61	48.35	52.10	55.93	59.76	63.59	67.43	10.47	34.34	36.66	71.0
72.0	9.25	12.76	16.27	19.91	23.55	27.19	30.83	34.82	41.45	45.25	49.04	52.84	56.72	60.60	64.49	68.38	10.63	34.82	37.18	72.0
73.0	9.39	12.95	16.51	20.19	23.88	27.57	31.26	35.31	42.04	45.89	49.73	53.58	57.52	61.45	65.39	69.33	10.78	35.31	37.69	73.0
74.0	9.53	13.14	16.74	20.48	24.22	27.95	31.69	35.79	42.62	46.52	50.42	54.32	58.31	62.29	66.29	70.28	10.93	35.79	38.21	74.0
75.0	9.68	13.33	16.98	20.76	24.55	28.34	32.13	36.28	43.20	47.16	51.10	55.06	59.10	63.14	67.18	71.23	11.08	36.28	38.72	75.0

### How to use the British Swimming 'SpeedCharts'

- Use an athlete's target 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 58.0 should be able to repeat 33.29 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

Time	Last x Metres*						2nd Lap Push Targets (feet off)**									
	Last 35m 65-100m	Last 30m 70-100m	Last 25m 75-100m	Last 20m 80-100m	Last 15m 85-100m	Last 10m 90-100m	15m 50-65m	20m 50-70m	25m 50-75m	30m 50-80m	35m 50-85m	40m 50-90m	45m 50-95m	50m 50-100m	100m	
45.0	16.91	14.54	12.16	9.69	7.23	4.76	6.08	8.46	10.84	13.31	15.77	18.24	20.71	23.00	45.0	
46.0	17.28	14.85	12.42	9.90	7.38	4.86	6.23	8.66	11.09	13.61	16.13	18.65	21.18	23.51	46.0	
47.0	17.64	15.16	12.68	10.10	7.53	4.96	6.38	8.86	11.35	13.92	16.49	19.07	21.64	24.03	47.0	
48.0	18.01	15.47	12.94	10.31	7.69	5.06	6.53	9.06	11.60	14.23	16.85	19.48	22.10	24.54	48.0	
49.0	18.37	15.79	13.20	10.52	7.84	5.16	6.68	9.27	11.86	14.54	17.21	19.89	22.57	25.05	49.0	
50.0	18.74	16.10	13.46	10.72	8.00	5.27	6.83	9.47	12.11	14.84	17.57	20.30	23.03	25.57	50.0	
51.0	19.10	16.41	13.72	10.93	8.15	5.37	6.98	9.67	12.37	15.15	17.93	20.71	23.50	26.08	51.0	
52.0	19.46	16.72	13.98	11.14	8.31	5.47	7.13	9.87	12.62	15.46	18.29	21.13	23.96	26.60	52.0	
53.0	19.83	17.03	14.24	11.35	8.46	5.57	7.28	10.08	12.87	15.76	18.65	21.54	24.43	27.11	53.0	
54.0	20.19	17.35	14.49	11.55	8.62	5.67	7.43	10.28	13.13	16.07	19.01	21.95	24.89	27.62	54.0	
55.0	20.56	17.66	14.75	11.76	8.77	5.78	7.58	10.48	13.38	16.38	19.37	22.36	25.36	28.14	55.0	
56.0	20.92	17.97	15.01	11.97	8.92	5.88	7.73	10.68	13.64	16.69	19.73	22.77	25.82	28.65	56.0	
57.0	21.29	18.28	15.27	12.17	9.08	5.98	7.88	10.88	13.89	16.99	20.09	23.19	26.29	29.17	57.0	
58.0	21.65	18.59	15.53	12.38	9.23	6.08	8.03	11.09	14.15	17.30	20.45	23.60	26.75	29.68	58.0	
59.0	22.01	18.91	15.79	12.59	9.39	6.18	8.18	11.29	14.40	17.61	20.81	24.01	27.22	30.19	59.0	
60.0	22.38	19.22	16.05	12.79	9.54	6.29	8.33	11.49	14.66	17.91	21.17	24.42	27.68	30.71	60.0	
61.0	22.74	19.53	16.31	13.00	9.70	6.39	8.48	11.69	14.91	18.22	21.53	24.83	28.14	31.22	61.0	
62.0	23.11	19.84	16.57	13.21	9.85	6.49	8.63	11.90	15.17	18.53	21.88	25.25	28.61	31.74	62.0	
63.0	23.47	20.15	16.83	13.41	10.01	6.59	8.78	12.10	15.42	18.84	22.24	25.66	29.07	32.25	63.0	
64.0	23.84	20.47	17.09	13.62	10.16	6.69	8.93	12.30	15.68	19.14	22.60	26.07	29.54	32.76	64.0	
65.0	24.20	20.78	17.35	13.83	10.32	6.80	9.08	12.50	15.93	19.45	22.96	26.48	30.00	33.28	65.0	
66.0	24.56	21.09	17.61	14.04	10.47	6.90	9.23	12.70	16.19	19.76	23.32	26.90	30.47	33.79	66.0	
67.0	24.93	21.40	17.87	14.24	10.62	7.00	9.38	12.91	16.44	20.06	23.68	27.31	30.93	34.31	67.0	
68.0	25.29	21.71	18.13	14.45	10.78	7.10	9.53	13.11	16.70	20.37	24.04	27.72	31.40	34.82	68.0	
69.0	25.66	22.02	18.39	14.66	10.93	7.20	9.68	13.31	16.95	20.68	24.40	28.13	31.86	35.34	69.0	
70.0	26.02	22.34	18.64	14.86	11.09	7.31	9.83	13.51	17.20	20.99	24.76	28.54	32.33	35.85	70.0	
71.0	26.39	22.65	18.90	15.07	11.24	7.41	9.98	13.71	17.46	21.29	25.12	28.96	32.79	36.36	71.0	
72.0	26.75	22.96	19.16	15.28	11.40	7.51	10.13	13.92	17.71	21.60	25.48	29.37	33.25	36.88	72.0	
73.0	27.11	23.27	19.42	15.48	11.55	7.61	10.28	14.12	17.97	21.91	25.84	29.78	33.72	37.39	73.0	
74.0	27.48	23.58	19.68	15.69	11.71	7.71	10.43	14.32	18.22	22.22	26.20	30.19	34.18	37.91	74.0	
75.0	27.84	23.90	19.94	15.90	11.86	7.82	10.58	14.52	18.48	22.52	26.56	30.60	34.65	38.42	75.0	

## 100M FREESTYLE FACTS

Men's LCM Records (Current at 1 September 2020)				
Record	Time	Split	Name	Date
World	46.91	(22.17)	Cesar CIELO	30 Jul 2009
European	47.12	(22.22)	Alain Bernard	30 Jul 2009
Commonwealth	47.04	(N/A)	Cameron MCEVOY	11 Apr 2016
British	47.87	(23.10)	Duncan SCOTT	18 Apr 2019
Fastest Start	5.06		Caeleb DRESSEL	
Fastest Turn	6.49		James MAGNUSSEN	
Men's LCM International Benchmarks				
Gold	46.96	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	47.82			2019
Final	48.23			2016
Semi	48.58			2016

Women's LCM Records (Current at 1 September 2020)				
Record	Time	Split	Name	Date
World	51.71	(24.83)	Sarah SJOESTROEM	29 Jul 2017
European	51.71	(24.83)	Sarah SJOESTROEM	29 Jul 2017
Commonwealth	52.03	(N/A)	Cate CAMPBELL	10 Aug 2018
British	52.87	(N/A)	Francesca HALSALL	31 Jul 2009
Fastest Start	6.10		Natalie COUGHLIN	
Fastest Turn	7.25		Cate CAMPBELL	
Women's LCM International Benchmarks				
Gold	52.04	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	52.46			2019
Final	53.20			2017
Semi	54.25			2019

### 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.

\*\* '2nd Lap Push Targets' are based on time from feet-off the wall to head at the specified distance, except for the 50m push target, which is from feet-off to hand-touch. (Calculated based on a foot contact time for a freestyle turn of 0.3s)

\*\*\*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.