



# BENCHMARK TARGET MODELS

## WORLD CLASS STARTS, TURNS & FINISHES

World Top 8 Averages (Sr) with CDN Age Group Progressions

### BUTTERFLY

#### STARTS

Stroke	FLY	<u>Top 8 Av</u> (sec)	<u>19U</u> (sec)	<u>18U</u> (sec)	<u>17U</u> (sec)	<u>16U</u> (sec)	<u>15U</u> (sec)	<u>14U</u> (sec)	<u>13U</u> (sec)	<u>12U</u> (sec)
Male	10M	<b>3.04</b>	<b>3.12</b>	<b>3.19</b>	<b>3.27</b>	<b>3.34</b>	<b>3.42</b>	<b>3.50</b>	<b>3.57</b>	<b>3.65</b>
	15M	<b>5.25</b>	<b>5.38</b>	<b>5.51</b>	<b>5.64</b>	<b>5.78</b>	<b>5.91</b>	<b>6.04</b>	<b>6.17</b>	<b>6.3</b>
Female	10M	<b>3.60</b>	<b>3.69</b>	<b>3.78</b>	<b>3.87</b>	<b>3.96</b>	<b>4.05</b>	<b>4.14</b>	<b>4.23</b>	<b>4.32</b>
	15M	<b>5.98</b>	<b>6.13</b>	<b>6.28</b>	<b>6.43</b>	<b>6.58</b>	<b>6.73</b>	<b>6.88</b>	<b>7.03</b>	<b>7.18</b>

#### URNS

Stroke	FLY	<u>Top 8 Av</u> (sec)	<u>19U</u> (sec)	<u>18U</u> (sec)	<u>17U</u> (sec)	<u>16U</u> (sec)	<u>15U</u> (sec)	<u>14U</u> (sec)	<u>13U</u> (sec)	<u>12U</u> (sec)
Male	5M IN	2.59	2.65	2.72	2.78	2.85	2.91	2.98	3.04	3.11
	10M OUT	4.66	4.78	4.89	5.01	5.13	5.24	5.36	5.48	5.59
	<b>Total</b>	<b>7.25</b>	<b>7.43</b>	<b>7.61</b>	<b>7.79</b>	<b>7.98</b>	<b>8.16</b>	<b>8.34</b>	<b>8.52</b>	<b>8.70</b>
	15M OUT	7.31	7.49	7.68	7.86	8.04	8.22	8.41	8.59	8.77
	<b>Total</b>	<b>9.90</b>	<b>10.15</b>	<b>10.40</b>	<b>10.64</b>	<b>10.89</b>	<b>11.14</b>	<b>11.39</b>	<b>11.63</b>	<b>11.88</b>
Female	5M IN	2.78	2.85	2.92	2.99	3.06	3.13	3.20	3.27	3.34
	10M OUT	5.12	5.25	5.38	5.50	5.63	5.76	5.89	6.02	6.14
	<b>Total</b>	<b>7.90</b>	<b>8.10</b>	<b>8.30</b>	<b>8.49</b>	<b>8.69</b>	<b>8.89</b>	<b>9.09</b>	<b>9.28</b>	<b>9.48</b>
	15M OUT	8.31	8.52	8.73	8.93	9.14	9.35	9.56	9.76	9.97
	<b>Total</b>	<b>11.09</b>	<b>11.37</b>	<b>11.64</b>	<b>11.92</b>	<b>12.20</b>	<b>12.48</b>	<b>12.75</b>	<b>13.03</b>	<b>13.31</b>

#### FINISHES

Stroke	FLY	<u>Top 8 Av</u> (sec)	<u>19U</u> (sec)	<u>18U</u> (sec)	<u>17U</u> (sec)	<u>16U</u> (sec)	<u>15U</u> (sec)	<u>14U</u> (sec)	<u>13U</u> (sec)	<u>12U</u> (sec)
Male	5M	<b>2.60</b>	<b>2.67</b>	<b>2.73</b>	<b>2.80</b>	<b>2.86</b>	<b>2.93</b>	<b>2.99</b>	<b>3.06</b>	<b>3.12</b>
Female	5M	<b>2.99</b>	<b>3.06</b>	<b>3.14</b>	<b>3.21</b>	<b>3.29</b>	<b>3.36</b>	<b>3.44</b>	<b>3.51</b>	<b>3.59</b>



# BENCHMARK TARGET MODELS

## WORLD CLASS STARTS, TURNS & FINISHES

World Top 8 Averages (Sr) with CDN Age Group Progressions

### BACKSTROKE

#### STARTS

Stroke	BACK	Top 8 Av (sec)	19U (sec)	18U (sec)	17U (sec)	16U (sec)	15U (sec)	14U (sec)	13U (sec)	12U (sec)
Male	10M	3.46	3.55	3.63	3.72	3.81	3.89	3.98	4.07	4.15
	15M	6.01	6.16	6.31	6.46	6.61	6.76	6.91	7.06	7.21
Female	10M	3.97	4.07	4.17	4.27	4.37	4.47	4.57	4.66	4.76
	15M	6.79	6.96	7.13	7.30	7.47	7.64	7.81	7.98	8.15

#### TURNS

Stroke	BACK	Top 8 Av (sec)	19U (sec)	18U (sec)	17U (sec)	16U (sec)	15U (sec)	14U (sec)	13U (sec)	12U (sec)
Male	5M IN	2.95	3.02	3.10	3.17	3.25	3.32	3.39	3.47	3.54
	10M OUT	3.83	3.93	4.02	4.12	4.21	4.31	4.40	4.50	4.60
	<b>Total</b>	<b>6.78</b>	<b>6.95</b>	<b>7.12</b>	<b>7.29</b>	<b>7.46</b>	<b>7.63</b>	<b>7.80</b>	<b>7.97</b>	<b>8.14</b>
	15M OUT	6.85	7.02	7.19	7.36	7.54	7.71	7.88	8.05	8.22
	<b>Total</b>	<b>9.8</b>	<b>10.05</b>	<b>10.29</b>	<b>10.54</b>	<b>10.78</b>	<b>11.03</b>	<b>11.27</b>	<b>11.52</b>	<b>11.76</b>
Female	5M IN	3.42	3.51	3.59	3.68	3.76	3.85	3.93	4.02	4.10
	10M OUT	5.05	5.18	5.30	5.43	5.56	5.68	5.81	5.93	6.06
	<b>Total</b>	<b>8.47</b>	<b>8.68</b>	<b>8.89</b>	<b>9.11</b>	<b>9.32</b>	<b>9.53</b>	<b>9.74</b>	<b>9.95</b>	<b>10.16</b>
	15M OUT	7.72	7.91	8.11	8.30	8.49	8.69	8.88	9.07	9.26
	<b>Total</b>	<b>11.14</b>	<b>11.42</b>	<b>11.70</b>	<b>11.98</b>	<b>12.25</b>	<b>12.53</b>	<b>12.81</b>	<b>13.09</b>	<b>13.37</b>

#### FINISHES

Stroke	BACK	Top 8 Av (sec)	19U (sec)	18U (sec)	17U (sec)	16U (sec)	15U (sec)	14U (sec)	13U (sec)	12U (sec)
Male	5M	2.54	2.60	2.67	2.73	2.79	2.86	2.92	2.98	3.05
Female	5M	3.01	3.09	3.16	3.24	3.31	3.39	3.46	3.54	3.61



# BENCHMARK TARGET MODELS

## WORLD CLASS STARTS, TURNS & FINISHES World Top 8 Averages (Sr) with CDN Age Group Progressions

### BREASTSTROKE

#### STARTS

Stroke	BREAST	<u>Top 8 Av</u> (sec)	<u>19U</u> (sec)	<u>18U</u> (sec)	<u>17U</u> (sec)	<u>16U</u> (sec)	<u>15U</u> (sec)	<u>14U</u> (sec)	<u>13U</u> (sec)	<u>12U</u> (sec)
Male	10M	<b>3.27</b>	<b>3.35</b>	<b>3.43</b>	<b>3.52</b>	<b>3.60</b>	<b>3.68</b>	<b>3.76</b>	<b>3.84</b>	<b>3.92</b>
	15M	<b>6.23</b>	<b>6.39</b>	<b>6.54</b>	<b>6.70</b>	<b>6.85</b>	<b>7.01</b>	<b>7.16</b>	<b>7.32</b>	<b>7.48</b>
Female	10M	<b>4.36</b>	<b>4.47</b>	<b>4.58</b>	<b>4.69</b>	<b>4.80</b>	<b>4.91</b>	<b>5.01</b>	<b>5.12</b>	<b>5.23</b>
	15M	<b>7.65</b>	<b>7.84</b>	<b>8.03</b>	<b>8.22</b>	<b>8.42</b>	<b>8.61</b>	<b>8.80</b>	<b>8.99</b>	<b>9.18</b>

#### URNS

Stroke	BREAST	<u>Top 8 Av</u> (sec)	<u>19U</u> (sec)	<u>18U</u> (sec)	<u>17U</u> (sec)	<u>16U</u> (sec)	<u>15U</u> (sec)	<u>14U</u> (sec)	<u>13U</u> (sec)	<u>12U</u> (sec)
Male	5M IN	3.15	3.23	3.31	3.39	3.47	3.54	3.62	3.70	3.78
	10M OUT	5.26	5.39	5.52	5.65	5.79	5.92	6.05	6.18	6.31
	<b>Total</b>	<b>8.41</b>	<b>8.62</b>	<b>8.83</b>	<b>9.04</b>	<b>9.25</b>	<b>9.46</b>	<b>9.67</b>	<b>9.88</b>	<b>10.09</b>
	15M OUT	8.49	8.70	8.91	9.13	9.34	9.55	9.76	9.98	10.19
	<b>Total</b>	<b>11.64</b>	<b>11.93</b>	<b>12.22</b>	<b>12.51</b>	<b>12.80</b>	<b>13.10</b>	<b>13.39</b>	<b>13.68</b>	<b>13.97</b>
Female	5M IN	3.35	3.43	3.52	3.60	3.69	3.77	3.85	3.94	4.02
	10M OUT	5.99	6.14	6.29	6.44	6.59	6.74	6.89	7.04	7.19
	<b>Total</b>	<b>9.34</b>	<b>9.57</b>	<b>9.81</b>	<b>10.04</b>	<b>10.27</b>	<b>10.51</b>	<b>10.74</b>	<b>10.97</b>	<b>11.21</b>
	15M OUT	9.73	9.97	10.22	10.46	10.70	10.95	11.19	11.43	11.68
	<b>Total</b>	<b>13.08</b>	<b>13.41</b>	<b>13.73</b>	<b>14.06</b>	<b>14.39</b>	<b>14.72</b>	<b>15.04</b>	<b>15.37</b>	<b>15.70</b>

#### FINISHES

Stroke	BREAST	<u>Top 8 Av</u> (sec)	<u>19U</u> (sec)	<u>18U</u> (sec)	<u>17U</u> (sec)	<u>16U</u> (sec)	<u>15U</u> (sec)	<u>14U</u> (sec)	<u>13U</u> (sec)	<u>12U</u> (sec)
Male	5M	<b>3.21</b>	<b>3.29</b>	<b>3.37</b>	<b>3.45</b>	<b>3.53</b>	<b>3.61</b>	<b>3.69</b>	<b>3.77</b>	<b>3.85</b>
Female	5M	<b>3.42</b>	<b>3.51</b>	<b>3.59</b>	<b>3.68</b>	<b>3.76</b>	<b>3.85</b>	<b>3.93</b>	<b>4.02</b>	<b>4.10</b>



# BENCHMARK TARGET MODELS

## WORLD CLASS STARTS, TURNS & FINISHES

World Top 8 Averages (Sr) with CDN Age Group Progressions

### FREESTYLE

#### STARTS

Stroke	FREE	Top 8 Av (sec)	19U (sec)	18U (sec)	17U (sec)	16U (sec)	15U (sec)	14U (sec)	13U (sec)	12U (sec)
Male	10M	3.32	3.40	3.49	3.57	3.65	3.74	3.82	3.90	3.98
	15M	5.43	5.57	5.70	5.84	5.97	6.11	6.24	6.38	6.52
Female	10M	3.53	3.62	3.71	3.79	3.88	3.97	4.06	4.15	4.24
	15M	6.12	6.27	6.43	6.58	6.73	6.89	7.04	7.19	7.34

#### TURNS

Stroke	FREE	Top 8 Av (sec)	19U (sec)	18U (sec)	17U (sec)	16U (sec)	15U (sec)	14U (sec)	13U (sec)	12U (sec)
Male	5M IN	2.82	2.89	2.96	3.03	3.10	3.17	3.24	3.31	3.38
	10M OUT	3.82	3.92	4.01	4.11	4.20	4.30	4.39	4.49	4.58
	<b>Total</b>	<b>6.64</b>	<b>6.81</b>	<b>6.97</b>	<b>7.14</b>	<b>7.30</b>	<b>7.47</b>	<b>7.64</b>	<b>7.80</b>	<b>7.97</b>
	15M OUT	6.37	6.53	6.69	6.85	7.01	7.17	7.33	7.48	7.64
	<b>Total</b>	<b>9.19</b>	<b>9.42</b>	<b>9.65</b>	<b>9.88</b>	<b>10.11</b>	<b>10.34</b>	<b>10.57</b>	<b>10.80</b>	<b>11.03</b>
Female	5M IN	3.26	3.34	3.42	3.50	3.59	3.67	3.75	3.83	3.91
	10M OUT	4.42	4.53	4.64	4.75	4.86	4.97	5.08	5.19	5.30
	<b>Total</b>	<b>7.68</b>	<b>7.87</b>	<b>8.06</b>	<b>8.26</b>	<b>8.45</b>	<b>8.64</b>	<b>8.83</b>	<b>9.02</b>	<b>9.22</b>
	15M OUT	7.16	7.34	7.52	7.70	7.88	8.06	8.23	8.41	8.59
	<b>Total</b>	<b>10.42</b>	<b>10.68</b>	<b>10.94</b>	<b>11.20</b>	<b>11.46</b>	<b>11.72</b>	<b>11.98</b>	<b>12.24</b>	<b>12.50</b>

#### FINISHES

Stroke	FREE	Top 8 Av (sec)	19U (sec)	18U (sec)	17U (sec)	16U (sec)	15U (sec)	14U (sec)	13U (sec)	12U (sec)
Male	5M	2.60	2.67	2.73	2.80	2.86	2.93	2.99	3.06	3.12
Female	5M	2.95	3.02	3.10	3.17	3.25	3.32	3.39	3.47	3.54



# BENCHMARK TARGET MODELS

## WORLD CLASS IM TURNS (with CDN Age Group Progressions)

### BUTTERFLY to BACKSTROKE TURN

Stroke	FLY/BK	Top 8 Av	19U	18U	17U	16U	15U	14U	13U	12U
Male	5M IN	2.65	2.72	2.78	2.85	2.92	2.98	3.05	3.11	3.18
	10M OUT	5.39	5.52	5.66	5.79	5.93	6.06	6.20	6.33	6.47
	<b>Total</b>	<b>8.04</b>	<b>8.24</b>	<b>8.44</b>	<b>8.64</b>	<b>8.84</b>	<b>9.05</b>	<b>9.25</b>	<b>9.45</b>	<b>9.65</b>
	15M OUT	7.71	7.90	8.10	8.29	8.48	8.67	8.87	9.06	9.25
<b>Total</b>	<b>10.36</b>	<b>10.62</b>	<b>10.88</b>	<b>11.14</b>	<b>11.40</b>	<b>11.66</b>	<b>11.91</b>	<b>12.17</b>	<b>12.43</b>	
Female	5M IN	3.2	3.28	3.36	3.44	3.52	3.60	3.68	3.76	3.84
	10M OUT	6.27	6.43	6.58	6.74	6.90	7.05	7.21	7.37	7.52
	<b>Total</b>	<b>9.47</b>	<b>9.71</b>	<b>9.94</b>	<b>10.18</b>	<b>10.42</b>	<b>10.65</b>	<b>10.89</b>	<b>11.13</b>	<b>11.36</b>
	15M OUT	8.49	8.70	8.91	9.13	9.34	9.55	9.76	9.98	10.19
<b>Total</b>	<b>11.69</b>	<b>11.98</b>	<b>12.27</b>	<b>12.57</b>	<b>12.86</b>	<b>13.15</b>	<b>13.44</b>	<b>13.74</b>	<b>14.03</b>	



# BENCHMARK TARGET MODELS

## BACKSTROKE TO BREASTSTROKE TURN

Stroke	FLY/BK	<u>Top 8 Av</u>	<u>19U</u>	<u>18U</u>	<u>17U</u>	<u>16U</u>	<u>15U</u>	<u>14U</u>	<u>13U</u>	<u>12U</u>
<b>Male</b>	5M IN	3.12	3.20	3.28	3.35	3.43	3.51	3.59	3.67	3.74
	10M OUT	6.3	6.46	6.62	6.77	6.93	7.09	7.25	7.40	7.56
	<b>Total</b>	<b>9.42</b>	<b>9.66</b>	<b>9.89</b>	<b>10.13</b>	<b>10.36</b>	<b>10.60</b>	<b>10.83</b>	<b>11.07</b>	<b>11.30</b>
	15M OUT	9.01	9.24	9.46	9.69	9.91	10.14	10.36	10.59	10.81
<b>Total</b>	<b>12.13</b>	<b>12.43</b>	<b>12.74</b>	<b>13.04</b>	<b>13.34</b>	<b>13.65</b>	<b>13.95</b>	<b>14.25</b>	<b>14.56</b>	
<b>Female</b>	5M IN	3.5	3.59	3.68	3.76	3.85	3.94	4.03	4.11	4.20
	10M OUT	6.7	6.87	7.04	7.20	7.37	7.54	7.71	7.87	8.04
	<b>Total</b>	<b>10.2</b>	<b>10.46</b>	<b>10.71</b>	<b>10.97</b>	<b>11.22</b>	<b>11.48</b>	<b>11.73</b>	<b>11.99</b>	<b>12.24</b>
	15M OUT	9.9	10.15	10.40	10.64	10.89	11.14	11.39	11.63	11.88
<b>Total</b>	<b>13.4</b>	<b>13.74</b>	<b>14.07</b>	<b>14.41</b>	<b>14.74</b>	<b>15.08</b>	<b>15.41</b>	<b>15.75</b>	<b>16.08</b>	



# BENCHMARK TARGET MODELS

## BREASTSTROKE TO FREESTYLE TURN

Stroke	FLY/BK	Top 8 Av	19U	18U	17U	16U	15U	14U	13U	12U
<b>Male</b>	5M IN	3.63	3.72	3.81	3.90	3.99	4.08	4.17	4.27	4.36
	10M OUT	5.26	5.39	5.52	5.65	5.79	5.92	6.05	6.18	6.31
	<b>Total</b>	<b>8.89</b>	<b>9.11</b>	<b>9.33</b>	<b>9.56</b>	<b>9.78</b>	<b>10.00</b>	<b>10.22</b>	<b>10.45</b>	<b>10.67</b>
	15M OUT	7.93	8.13	8.33	8.52	8.72	8.92	9.12	9.32	9.52
<b>Total</b>	<b>11.56</b>	<b>11.85</b>	<b>12.14</b>	<b>12.43</b>	<b>12.72</b>	<b>13.01</b>	<b>13.29</b>	<b>13.58</b>	<b>13.87</b>	
<b>Female</b>	5M IN	3.92	4.02	4.12	4.21	4.31	4.41	4.51	4.61	4.70
	10M OUT	6.09	6.24	6.39	6.55	6.70	6.85	7.00	7.16	7.31
	<b>Total</b>	<b>10.01</b>	<b>10.26</b>	<b>10.51</b>	<b>10.76</b>	<b>11.01</b>	<b>11.26</b>	<b>11.51</b>	<b>11.76</b>	<b>12.01</b>
	15M OUT	8.52	8.73	8.95	9.16	9.37	9.59	9.80	10.01	10.22
<b>Total</b>	<b>12.44</b>	<b>12.75</b>	<b>13.06</b>	<b>13.37</b>	<b>13.68</b>	<b>14.00</b>	<b>14.31</b>	<b>14.62</b>	<b>14.93</b>	