

# A Proposal for Boston Marathon Qualifying Times

**Ray C. Fair\***

**November 2023**

In choosing qualifying times by age for races, a goal should be to have the increase in times per age group be consistent with biology. When thinking about the biological age frontier for a given race, one tenet is that nothing gets better with age after about age 30 or 35. The current BAA Boston Marathon qualifying times are not consistent with this restriction. The table below shows the present increase in qualifying time by age intervals for both men and women. The percent increase from interval to interval is erratic. The percent increases should be either the same across age intervals or increasing. For example, it is not sensible for the percent increase in the 50-54 interval for men at 2.5 percent to be smaller than the percent increase in the 45-49 interval at 5.3 percent.

I have a paper that estimates a biological frontier for the marathon for men and women.<sup>1</sup> The estimated percent decline rates per year between 30 and 73 are the same at each age, namely 5.5 percent for men and 6.3 percent for women for any five-year interval. After age 73 the percent decline rates get larger with age for both genders. These numbers are presented in the table below. Also presented are the qualifying times that would be the case for each five-year age interval beginning with 3:00 for the first interval for men and 3:30 for the first interval for women.

---

\*Cowles Foundation, Department of Economics, Yale University, New Haven, CT 06520-8281.  
e-mail: ray.fair@yale.edu; website: *fairmodel.econ.yale.edu*.

<sup>1</sup>Ray C. Fair, "Physical Decline Rates: Men versus Women," November 2023.

The BAA in setting qualifying times might want to use different initial times from those used in the table below and different percents for men and women, but the constraint should be that the percents are either constant or increasing with age.

The table also shows that aside from not getting the biology right, the current qualifying times are harsher for women than for men. For example for age interval 60-64 the BAA time is 3:50 versus 4:08 for men, yet a much larger difference for women at 4:20 versus 5:02. The BAA percent decline times are always smaller than the 6.3 percent decline, but for men there is no pattern. On the other hand, using 3:00 for men and 3:30 for women as initial times favors women since women at their peak are not that much slower than men. For example, one might want to start women at 3:15.

### Marathon Qualifying Times

Age	BAA Time	BAA %	Fair %	Fair Time
Men				
18-34	3:00			3:00
35-39	3:05	2.8	5.5	3:10
40-44	3:10	2.7	5.5	3:20
45-49	3:30	5.3	5.5	3:31
50-54	3:25	2.5	5.5	3:43
55-59	3:35	4.9	5.5	3:55
60-64	3:50	7.0	5.5	4:08
65-69	4:05	6.5	5.5	4:22
70-74	4:20	6.1	5.5	4:36
75-79	4:35	5.8	5.9	4:52
Women				
18-34	3:30			3:30
35-39	3:35	2.4	6.3	3:43
40-44	3:40	2.3	6.3	3:57
45-49	3:50	4.5	6.3	4:12
50-54	3:55	2.2	6.3	4:28
55-59	4:05	4.3	6.3	4:45
60-64	4:20	6.1	6.3	5:02
65-69	4:35	5.8	6.3	5:21
70-74	4:50	5.5	6.3	5:41
75-79	5:05	5.2	7.2	6:06