

Speed is not that fleeting

Studies show that slowing down is not as fast as you may think

By Ray C. Fair

The United Nations recently projected that one in 20 U.S. baby boomers — those born between 1946 and 1964 — will live to be 100. In 2030 people over 65 will account for 19 percent of the U.S. population, compared with 12 percent in 2000. The numbers are even higher for Europe and Japan. People over 80 will make up 5 percent of the U.S. population in 2030 compared with 3 percent in 2000.

Much has been written about the implications of aging populations. On the one hand, this is good news since people are living longer. On the other hand, it means that younger people may have to pay more to support the aged. They may pay more taxes to support government programs for the aged, and they may spend more time and money personally caring for Mom and Dad and perhaps Grandma and Grandpa.

Regarding the potential costs of an aging population, I have some good news: People don't slow down with age as much as you might think. I have used records by age in various running and swimming events to estimate slowdown rates. While there are differences in slowdown rates across distance and sex, the big picture shows a modest overall slowing down.

For male sprinters, the loss is 19 percent from 35 to 65, 27 percent from 35 to 75, and 47 percent from 35 to 85. For the longer running events, the respective losses are 27, 38, and 76 percent. The losses are very similar for male swimmers. For female swimmers the respective losses at the short distances are 19, 39, and 79 percent and at the long distances are 29, 54, and 91 percent. (I have no results for female runners.)

The age at which the time taken for the event doubles from the age-35 time varies from 93 for male sprinters to 87 for female swimmers in the longer events. In other words, it is not until your late 80s or early 90s that people are half as slow as they were at 35.

Since these estimated slowdown rates are based on age records, they strictly speaking pertain only to elite athletes. Although the evidence is mixed, it is probably the case that non-elite athletes (most of us) who stay in shape and are not sick or injured slow down at about the same rate as elite athletes. For a given age, most of us are, of course, much slower than elite athletes, but our percentage loss over time may be about the same.

On the Web site <http://fairmodel.econ.yale.edu> you can enter your best time in a swimming or running event along with your age at your best time and you will get back your predicted minimum



Predicted Minimum Times by Age

According to Ray Fair's model, if you run or swim the times listed at age 35, you can expect your best times as you age to follow the patterns in the table. Visit <http://fairmodel.econ.yale.edu/aging/index.htm> to calculate your own predicted minimum times.

Age	Men's 100m dash	Men's 100m freestyle	Women's 100m freestyle
35	11.0	50.0	53.0
40	11.3	51.2	52.9
45	11.7	52.5	53.5
50	12.0	53.8	55.0
55	12.4	55.2	57.3
60	12.7	56.6	01:00.7
65	13.1	58.1	01:05.2
70	13.5	59.5	01:11.0
75	13.9	01:02.9	01:18.5
80	14.5	01:10.3	01:28.1
85	16.1	01:23.3	01:40.3

times at other ages. These times give you something to shoot for as you age, where again the assumption is that you slow down at about the same percentage rate as elite athletes.

The overall results are thus encouraging about the capabilities of older people. If it is the case for vigorous activities like running and swimming that times increase from age 35 to age 75 by only between 27 and 54 percent and that times don't double until your late 80s or early 90s, things are not too bad.

These numbers suggest that older people have the capacity to make important contributions to society and to do most things for themselves, albeit a little more slowly.

A big if, of course, is if people stay in shape, which the government should encourage. Perhaps there could be tax breaks for people who finish the marathon in an age-adjusted respectable time?

Ray C. Fair is Professor of Economics, Cowles Foundation and International Center for Finance, Yale University, New Haven, Conn. He can be reached at ray.fair@yale.edu; his Web site is <http://fairmodel.econ.yale.edu>.