

5. Overview of Results

(1) Changes in physical fitness and motor abilities with increased age (Fig. 1-1 to 1-8)

Three assessed items—Grip Strength (muscle strength), Sit Up (muscle strength and muscle endurance) and Sit & Reach (flexibility)—are carried out with subjects between the ages of 6 and 79, while other three items—Side Step (agility), 20m Shuttle Run (whole-body endurance) and Standing Long Jump (muscle power) are tested with subjects aged 6 to 64.

Figures 1-1 to 1-8 show changes with increasing age in the categories of Grip Strength, Sit Up, Sit & Reach, Side Step, 20m Shuttle Run, Standing Long Jump and New Physical Fitness Test Total Scores.

- Although there are differences among the assessed items, the overall tendency for both males and females is for increased fitness levels from the age of 6, with male peaking at 17 years old and female peaking at 14 years old. After age of 20, a tendency of decline in fitness levels in both males and females can be seen. Grip Strength (muscle strength) peaks with males aged 35-39 and females aged 40-44.

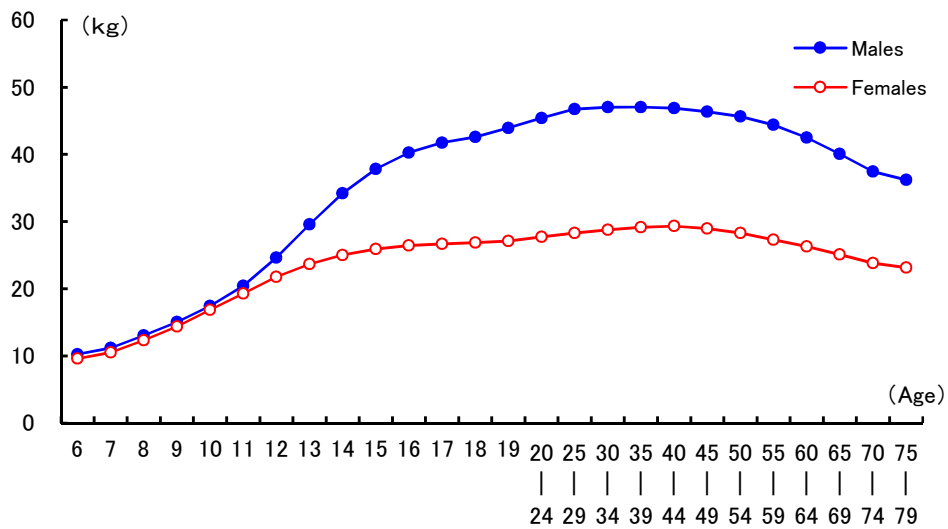


Fig. 1-1 Changes in Grip Strength with increased age

Note: The graph has been smoothed using a three-point moving average.

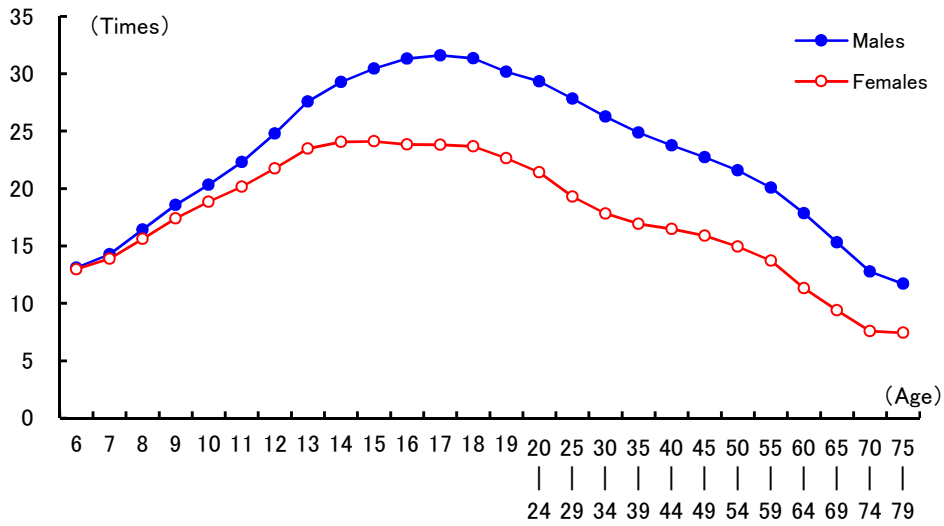


Fig. 1-2 Changes in Sit Up with increased age

Note: Same note as for Fig. 1-1.

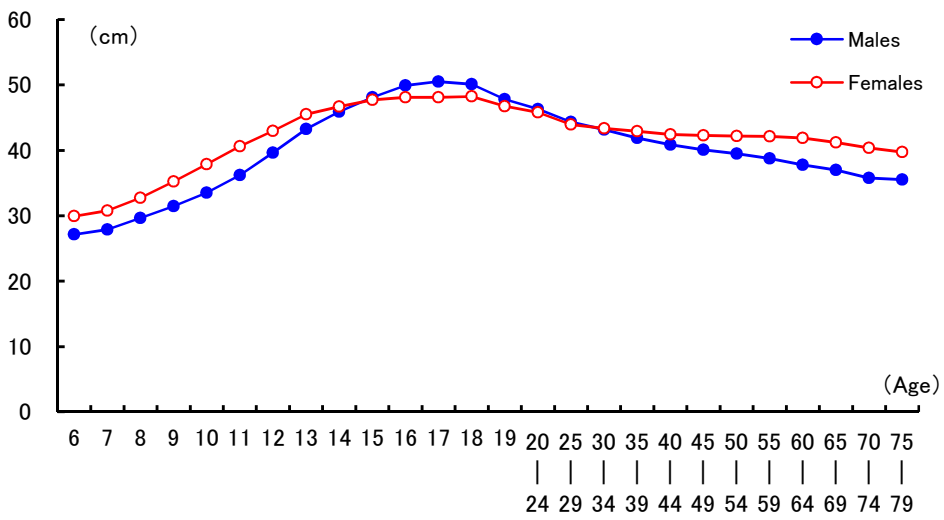


Fig. 1-3 Changes in Sit & Reach with increased age

Note: Same note as for Fig. 1-1.

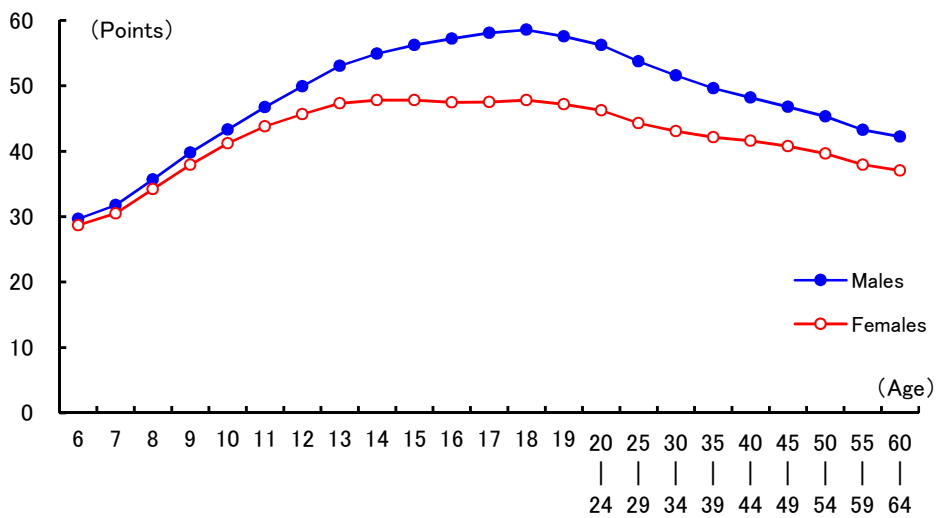


Fig. 1-4 Changes in Side Step with increased age

Note: Same note as for Fig. 1-1.

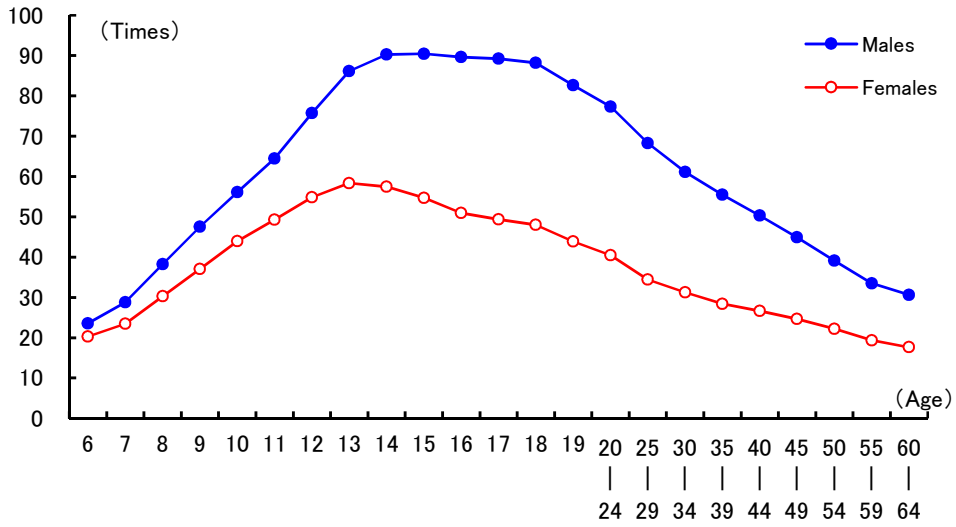


Fig. 1-5 Changes in 20m Shuttle Run with increased age

Note: Same note as for Fig. 1-1.

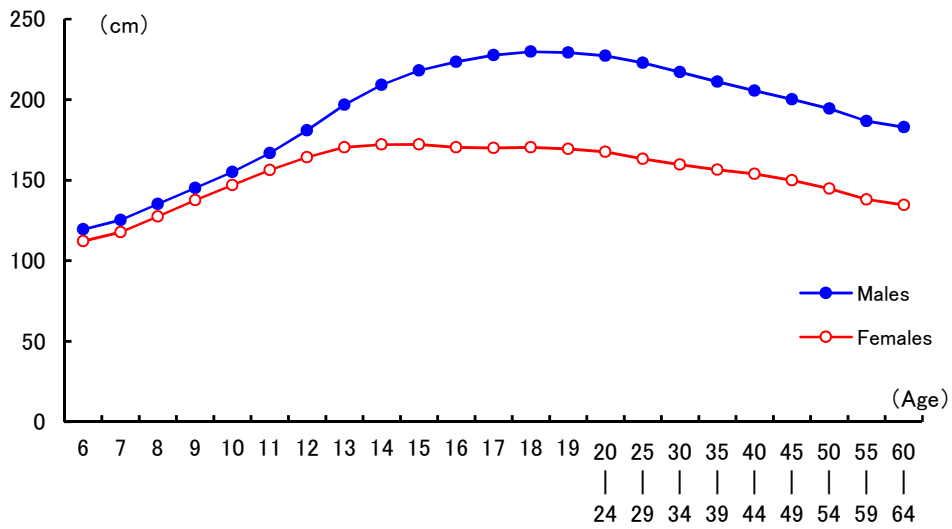


Fig. 1-6 Changes in Standing Long Jump with increased age

Note: Same note as for Fig. 1-1.

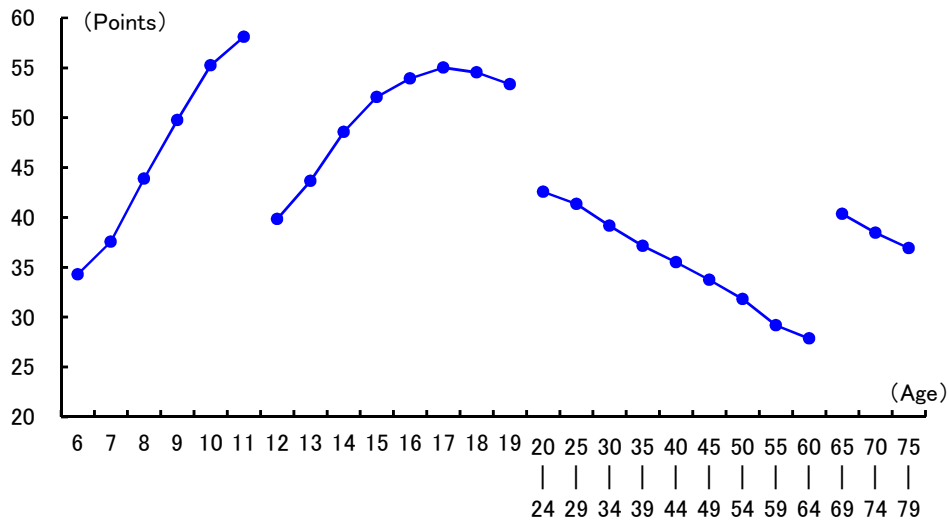


Fig. 1-7 Changes in the New Physical Fitness Test Total Scores with increased age (males)

- Note 1. The graph has been smoothed using a three-point moving average.
 2. Total scores are based on the Test Scoring Table of New Physical Fitness Test Implementation Requirements.
 3. Scoring criteria are differentiated by age range (6-11, 12-19, 20-64, 65-79).

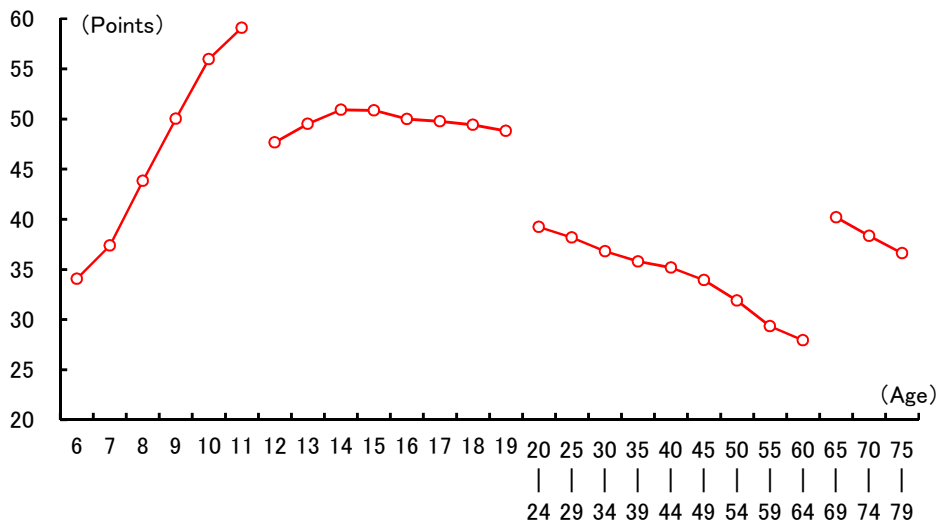


Fig. 1-8 Changes in the New Physical Fitness Test Total Scores with increased age (females)

Note: Same note as for Fig. 1-7.

(2) Change over time in physical fitness and motor abilities

① Youth (6-19 years old) (Fig. 2-1 to 2-20)

Figures 2.1 to 2.20 show basic motor abilities for which long-term annual changes can be compared, such as Grip Strength and running abilities (50m Run, Endurance Run), jumping abilities (Standing Long Jump) and throwing abilities (Softball Throw, Handball Throw). Changes over time for Sit Up, Sit & Reach, Side Step, 20m Shuttle Run and the New Physical Fitness Test Total Scores are shown in figures 2-11 to 2-20.

○ Over the long term, Grip Strength and assessed items for running, jumping and throwing abilities remain at a low level when compared with the high levels of fitness seen around the late 1980s, with the exception of 50m Run for both male junior high school students and male high school students.

○ Looking at the 18 years following the start of the New Physical Fitness Test, a decline in Grip Strength and Softball Throw in males can be seen. However, results for Endurance Run, Standing Long Jump and Handball Throw remained flat or increased with the exception of some age groups.

Additionally, almost all age groups showed an increase in the performance of Sit Up, Sit & Reach, Side Step, 20m Shuttle Run and 50m Run.

○ Looking at the 18 years following the start of the New Physical Fitness Test in terms of the change over time in the total scores, almost all age groups showed a gradual improvement.

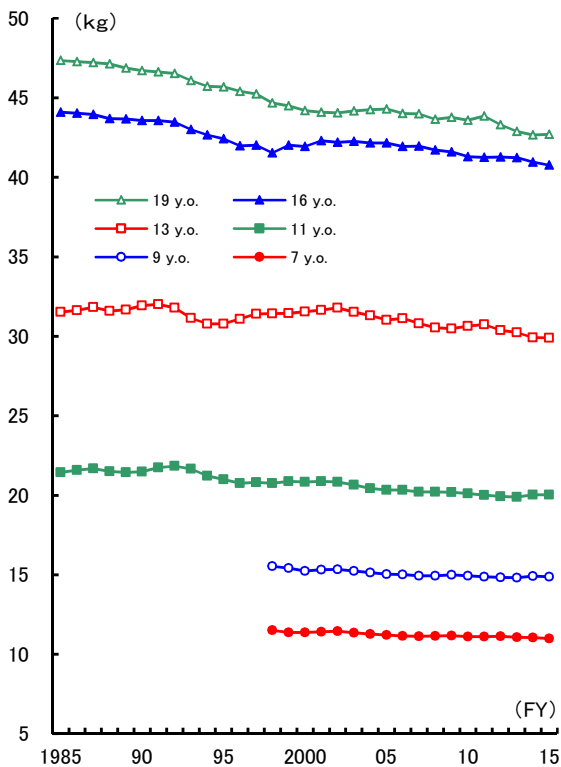


Fig. 2-1 Change over time for Grip Strength (males)

Note: The graph has been smoothed using a three-point moving average.

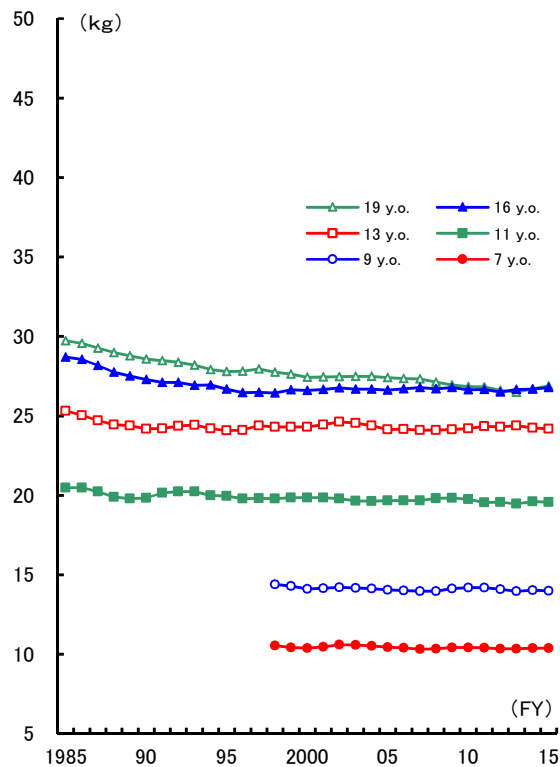


Fig. 2-2 Change over time for Grip Strength (females)

Note: Same note as for Fig. 2-1.

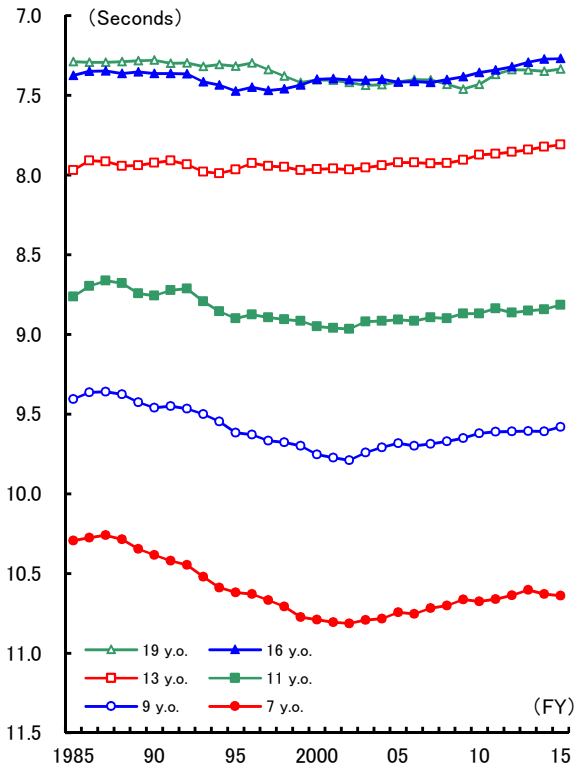


Fig. 2-3 Change over time for 50m Run (males)

Note: Same note as for Fig. 2-1.

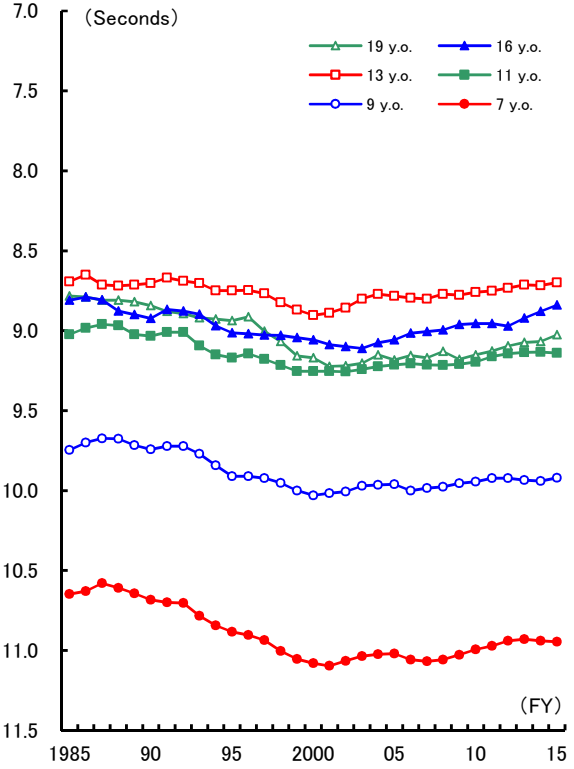


Fig. 2-4 Change over time for 50m Run (females)

Note: Same note as for Fig. 2-1.

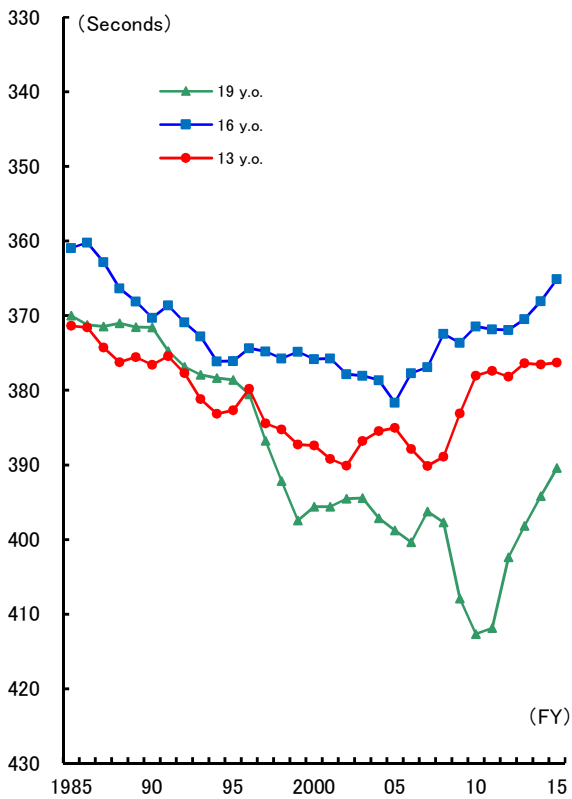


Fig. 2-5 Change over time for Endurance Run (1500m, males)

Note: Same note as for Fig. 2-1.

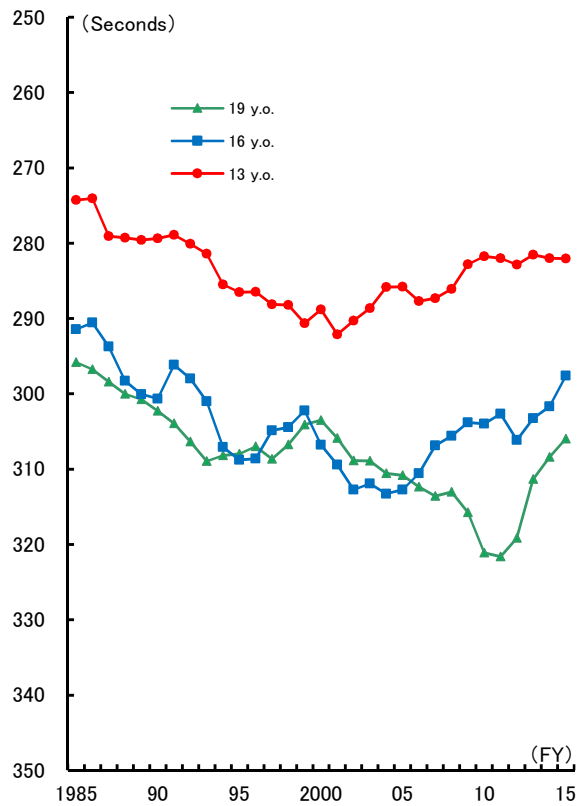


Fig. 2-6 Change over time for Endurance Run (1000m, females)

Note: Same note as for Fig. 2-1.

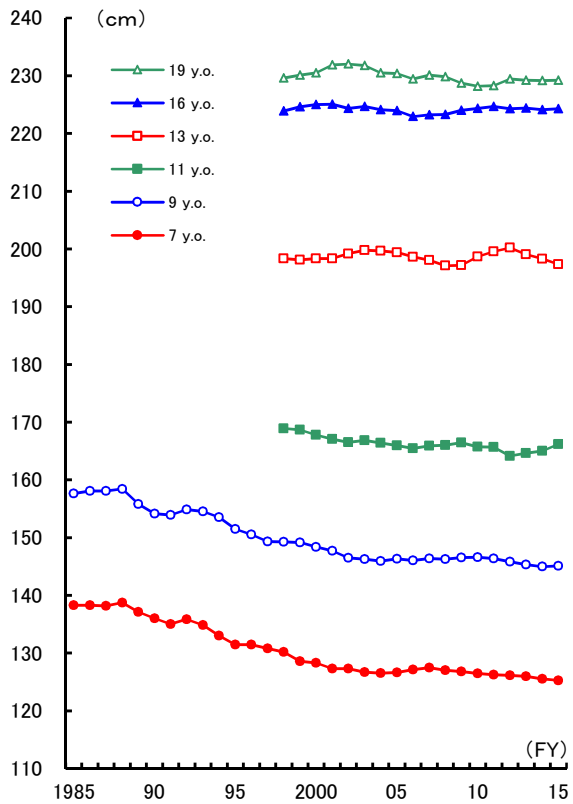


Fig. 2-7 Change over time for Standing Long Jump (males)

Note: Same note as for Fig. 2-1.

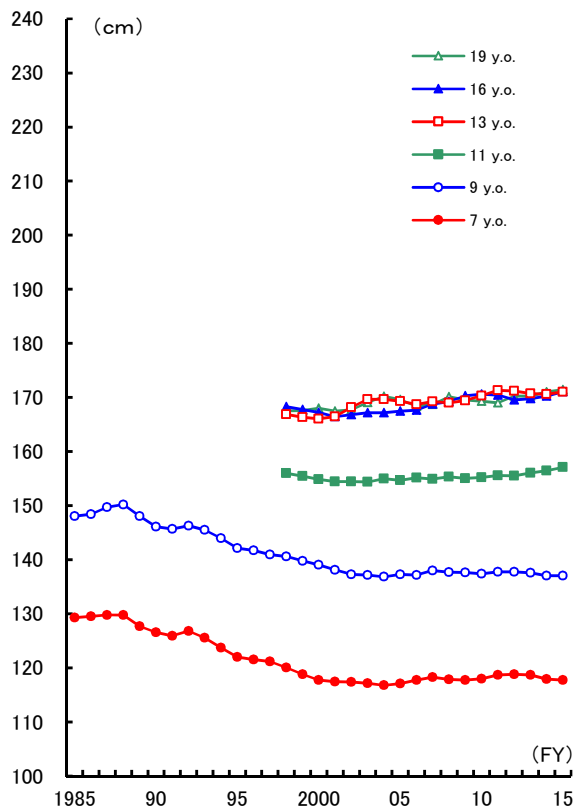


Fig. 2-8 Change over time for Standing Long Jump (females)

Note: Same note as for Fig. 2-1.

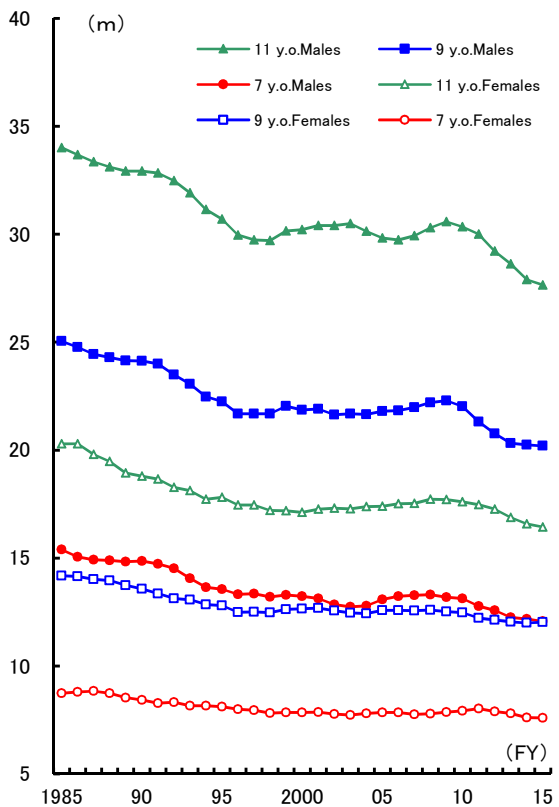


Fig. 2-9 Change over time for Softball Throw

Note: Same note as for Fig. 2-1.

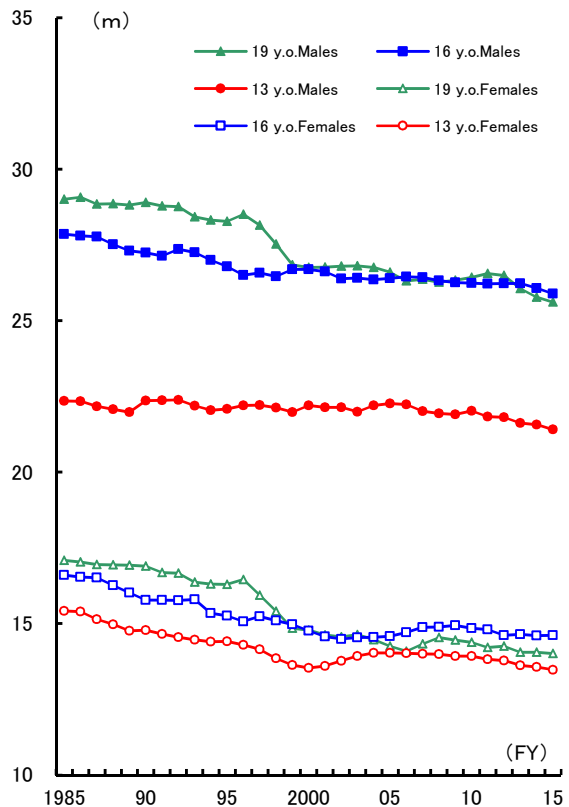


Fig. 2-10 Change over time for Handball Throw

Note: Same note as for Fig. 2-1.

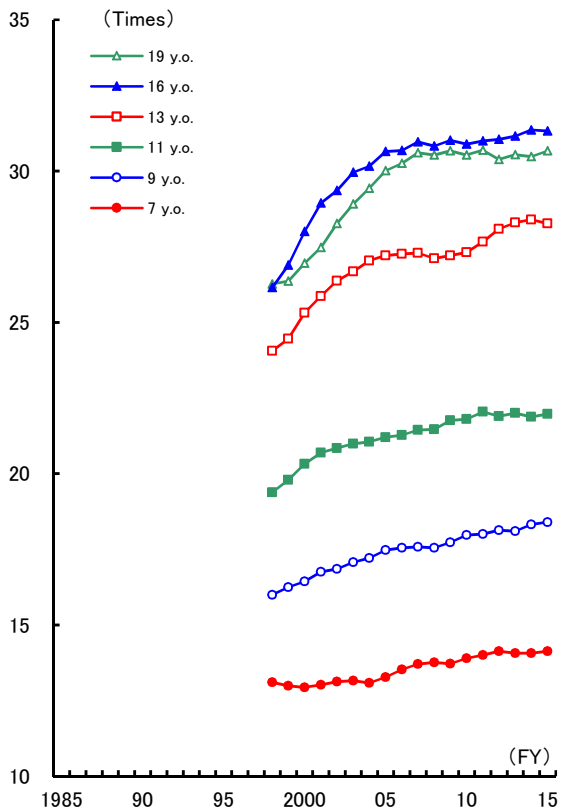


Fig. 2-11 Change over time for Sit Up (males)

Note: Same note as for Fig. 2-1.

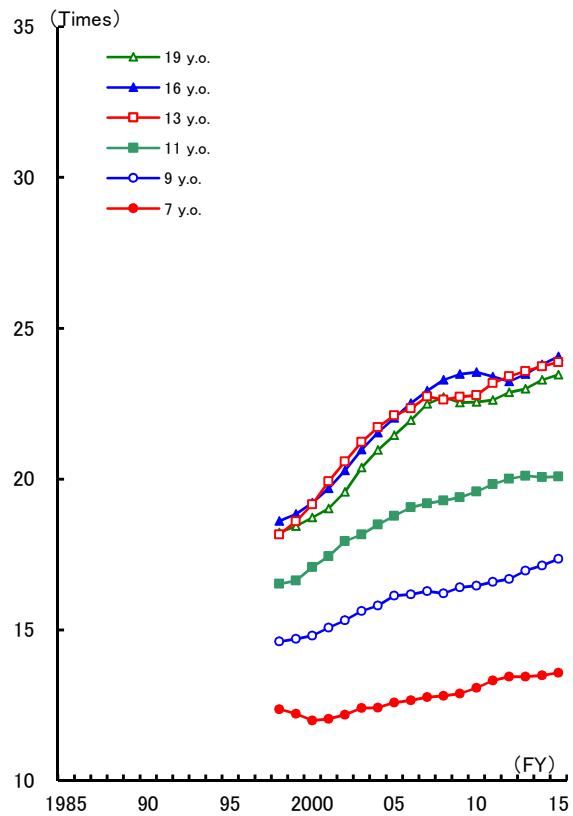


Fig. 2-12 Change over time for Sit Up (females)

Note: Same note as for Fig. 2-1.

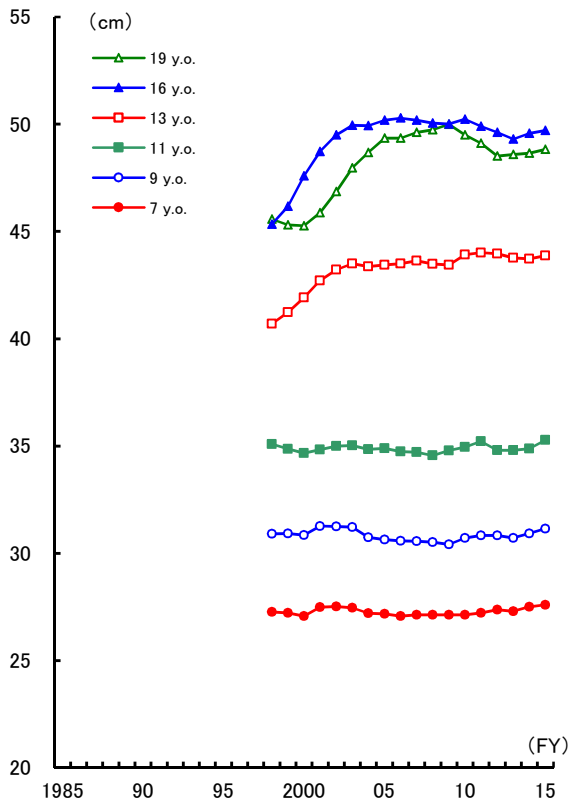


Fig. 2-13 Change over time for Sit & Reach (males)

Note: Same note as for Fig. 2-1.

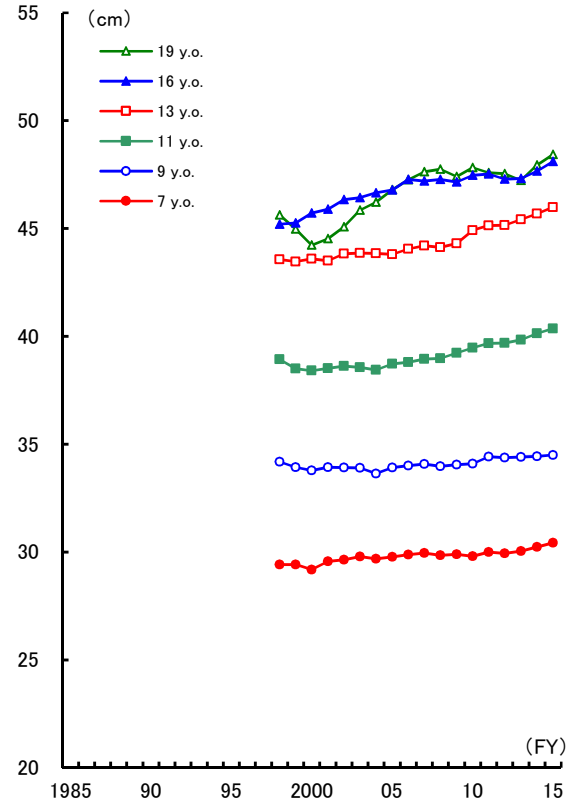


Fig. 2-14 Change over time for Sit & Reach (females)

Note: Same note as for Fig. 2-1.

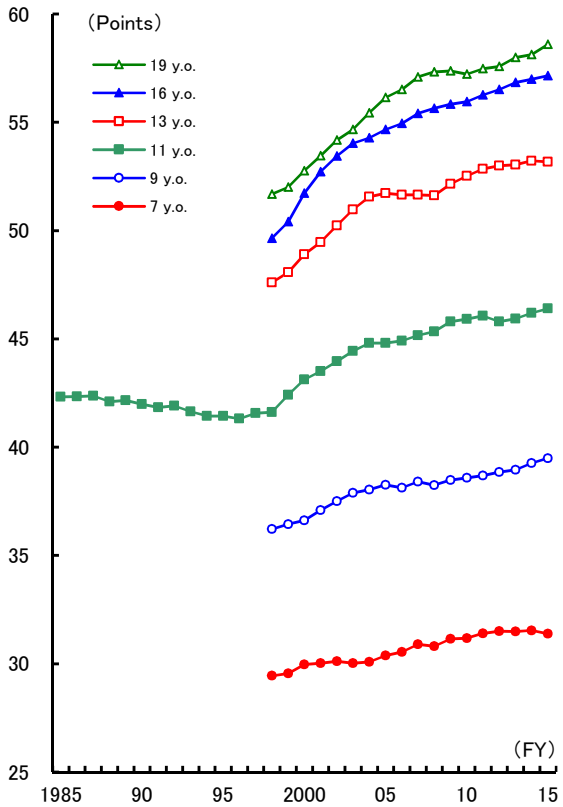


Fig. 2-15 Change over time for Side Step (males)

Note: Same note as for Fig. 2-1.

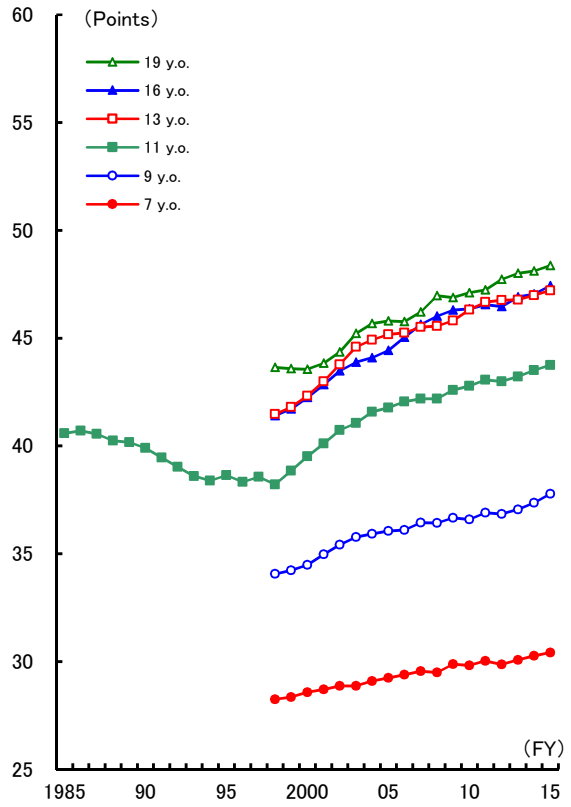


Fig. 2-16 Change over time for Side Step (females)

Note: Same note as for Fig. 2-1.

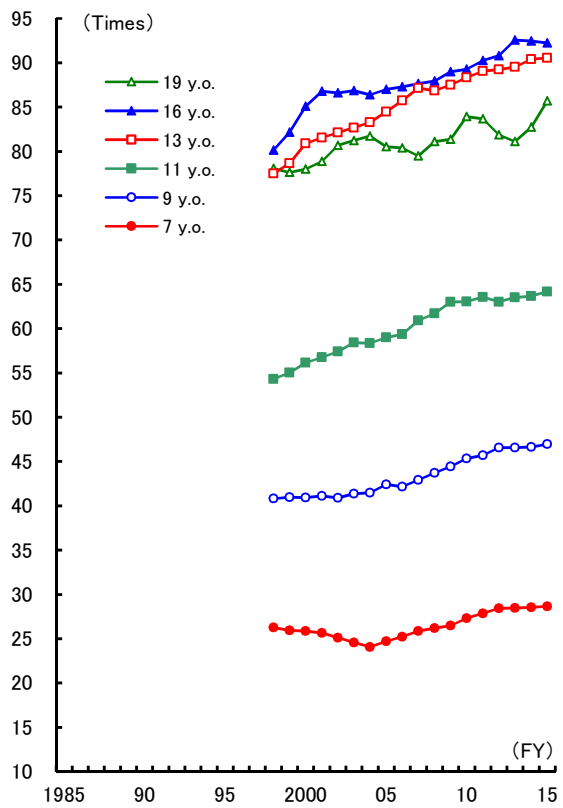


Fig. 2-17 Change over time for 20m Shuttle Run (males)

Note: Same note as for Fig. 2-1.

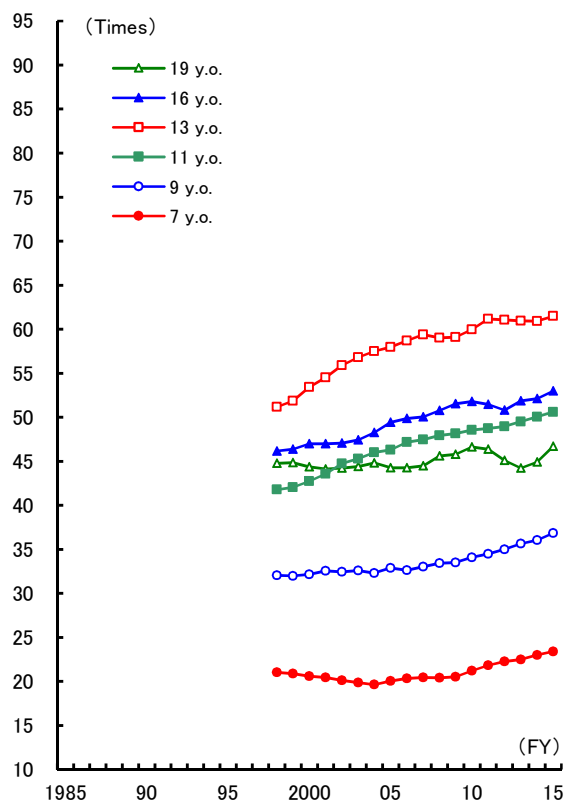


Fig. 2-18 Change over time for 20m Shuttle Run (females)

Note: Same note as for Fig. 2-1.

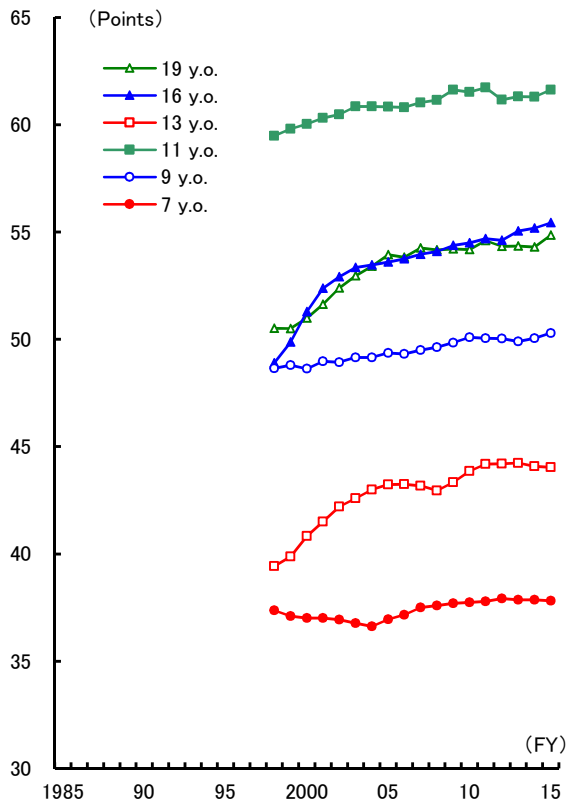


Fig. 2-19 Change over time in the New Physical Fitness Test Total Scores (males)

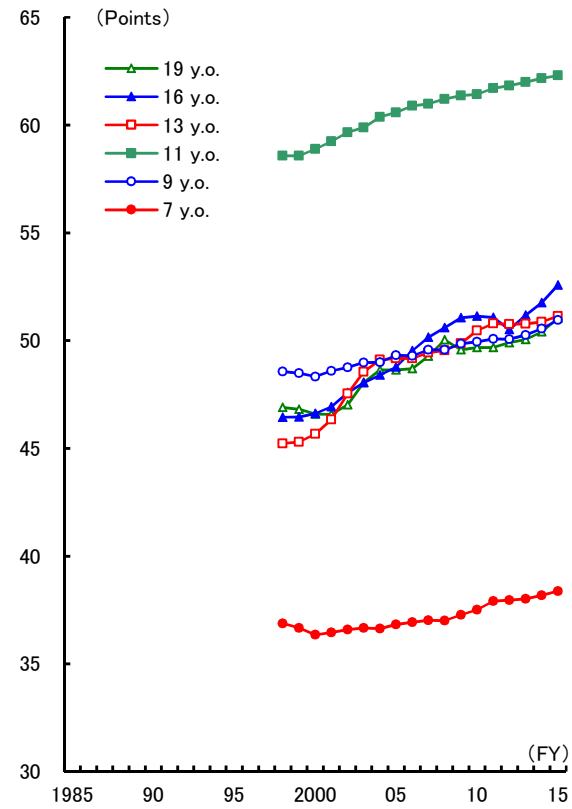


Fig. 2-20 Change over time in the New Physical Fitness Test Total Scores (females)

- Note 1. The graph has been smoothed using a three-point moving average. Note: Same note as for Fig. 2-19.
2. Total scores are based on the Test Scoring Table in the New Physical Fitness Test Implementation Requirements.
3. Scoring criteria are differentiated by age range (6-11 and 12-19).

② Adults (20-64 years old) (Fig. 3-1 to 3-9)

For adults, figures 3-1 to 3-4 show changes over time for test items for which long-term changes are comparable: Grip Strength, Side Step and Fast Walk. Change over time for Sit Up, Sit & Reach, 20m Shuttle Run, Standing Long Jump and the New Physical Fitness Test Total Scores are shown in figures 3-5 to 3-9.

- Over the long-term, Fast Walk shows no fixed trends for each age group, but Side Step shows an increased performance.
- Looking at the 18 years following the start of the New Physical Fitness Test, the men's 20m Shuttle Run shows improved performance. For Fast Walk, little change can be seen in each age group. For Side Step, a gradual improvement is seen, except for women in their 30s. Most age groups show improved results for Sit Up, but Sit & Reach performance declined. For Grip Strength and Standing Long Jump, the 20-40 age group showed decline, but the 50-60 age group shows improved performance.
- In terms of change over time for the total scores in the 18 years following the start of the New Physical Fitness Test, females in their 30s showed a decline in total scores, while males in their 20s and, males and females aged 50 or over show a gradual increase in scores.

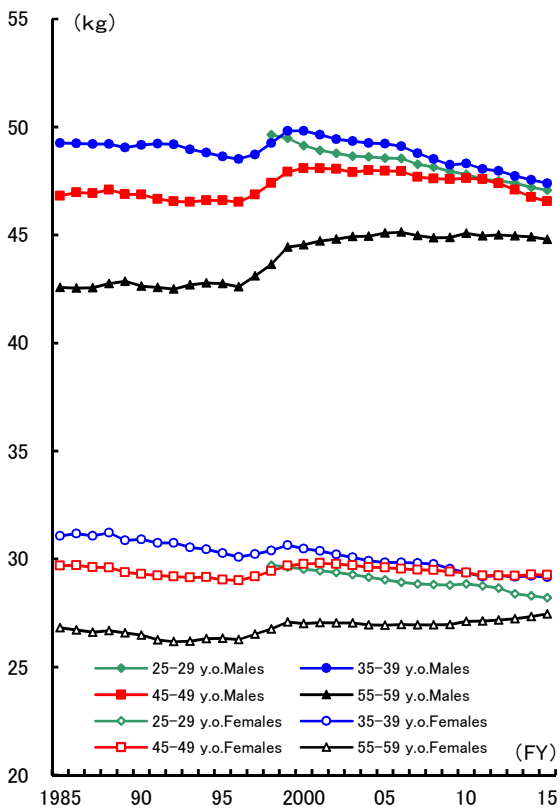


Fig. 3-1 Change over time for Grip Strength

Note: The graph has been smoothed using a three-point moving average.

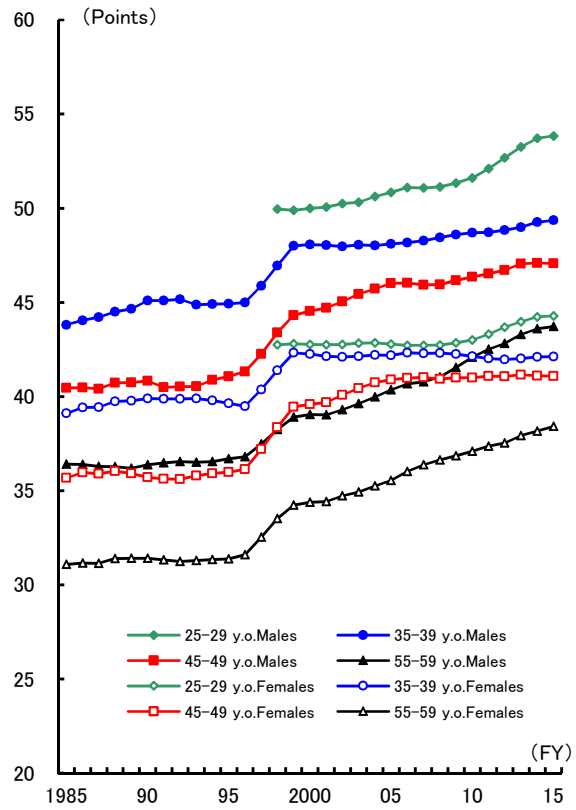


Fig. 3-2 Change over time for Side Step

Note: The graph has been smoothed using a three-point moving average.

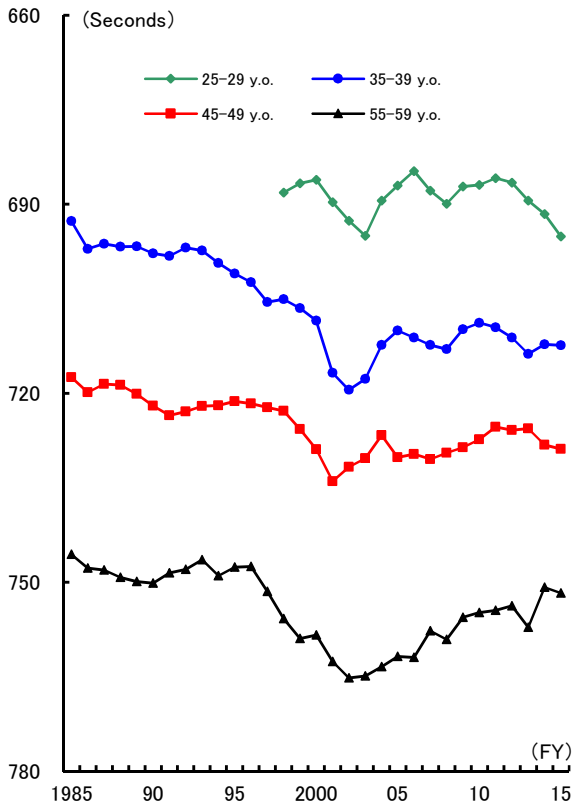


Fig. 3-3 Change over time for Fast Walk (men's 1500m)
 Note: Same note as for Fig. 3-1.

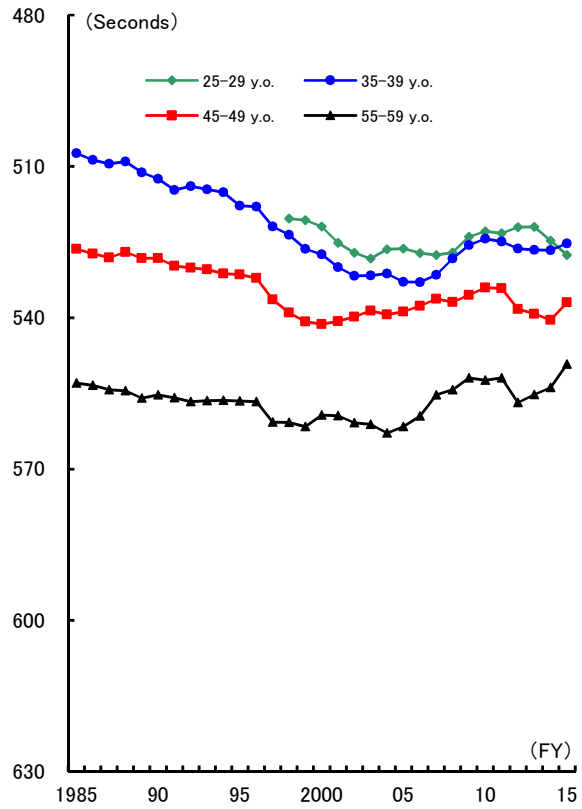


Fig. 3-4 Change over time for Fast Walk (women's 1000m)
 Note: Same note as for Fig. 3-1.

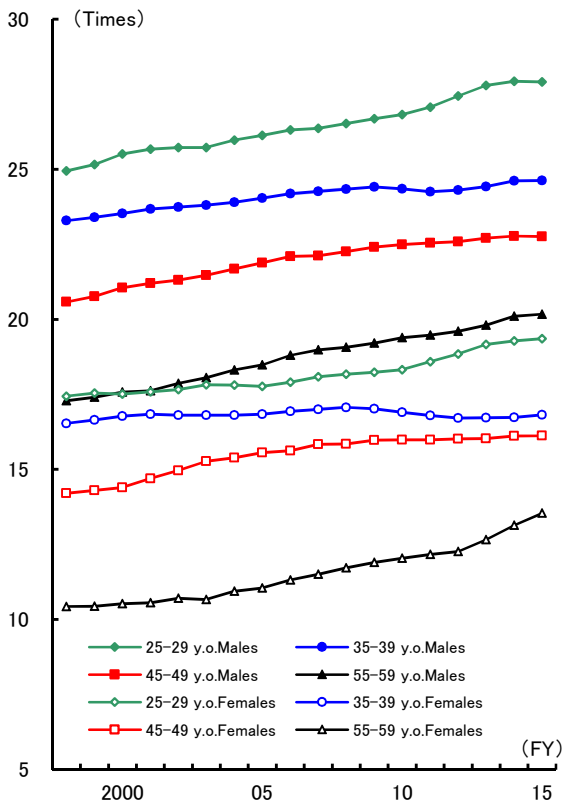


Fig. 3-5 Change over time for Sit Up
 Note: Same note as for Fig. 3-1.

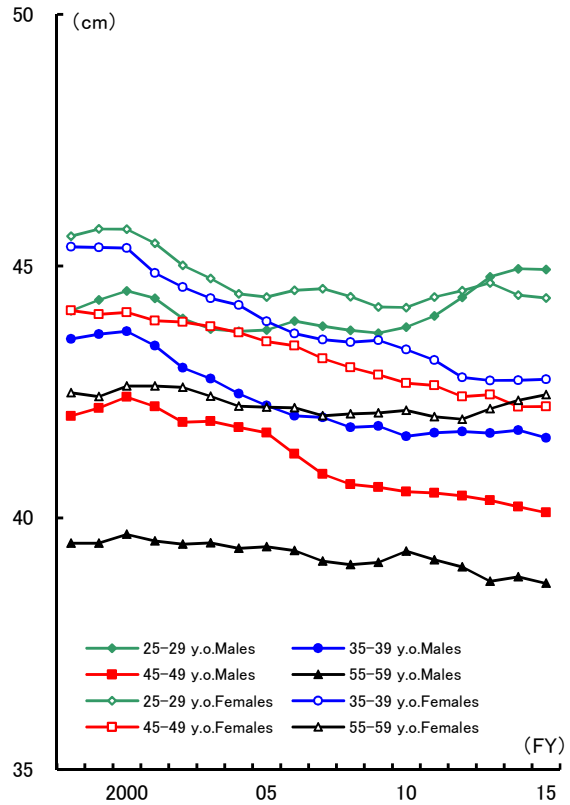


Fig. 3-6 Change over time for Sit & Reach
 Note: Same note as for Fig. 3-1.

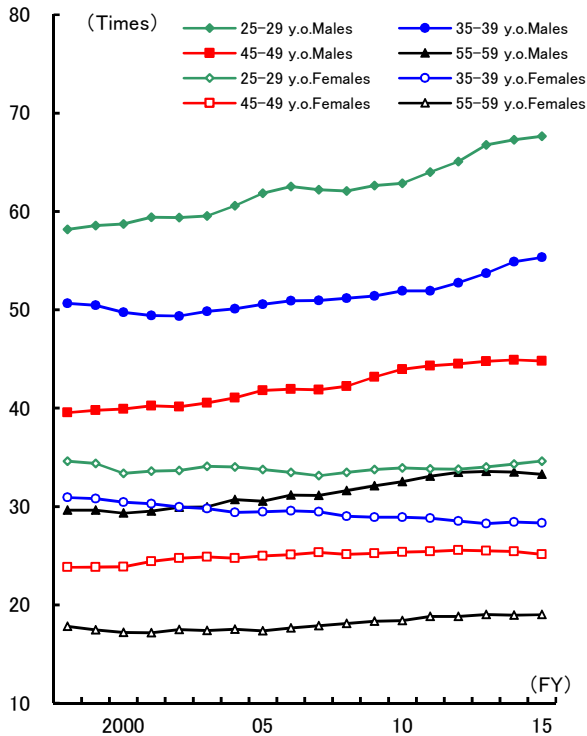


Fig. 3-7 Change over time for 20m Shuttle Run

Note: Same note as for Fig. 3-1.

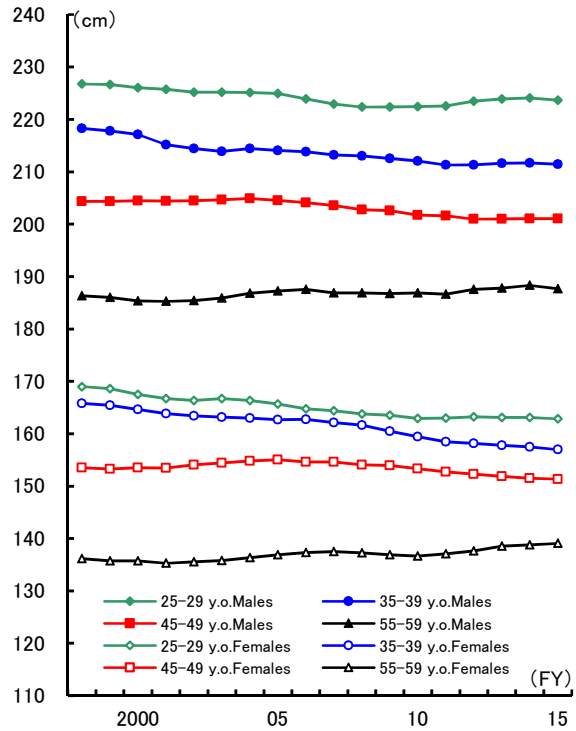


Fig. 3-8 Change over time for Standing Long Jump

Note: Same note as for Fig. 3-1.

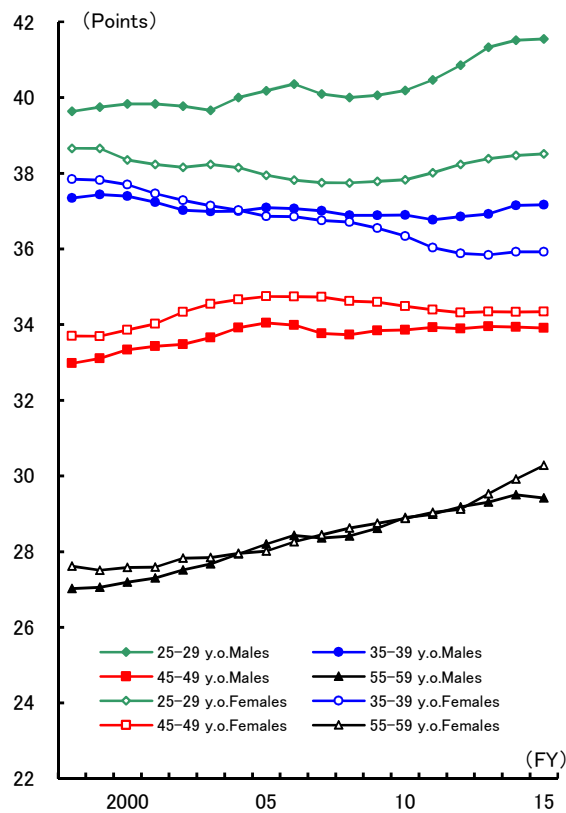


Fig. 3-9 Change over time in the New Physical Fitness Test Total Scores

- Note 1. The graph has been smoothed using a three-point moving average.
2. Total scores are based on the Test Scoring Table in the New Physical Fitness Test Implementation Requirements.
3. Scoring criteria are differentiated by gender.

③ Seniors (65-79 years old) (Fig. 4-1 to 4-7)

For seniors, the change over time for Grip Strength, Sit Up, Sit & Reach, Eyes Open One Leg Stand, 10m Obstacle Walk, 6 Minute Walk and in the 18 years since the start of the New Physical Fitness Test are shown in figures 4-1 to 4.7. Improved results can be seen for almost all assessed items and the total scores.

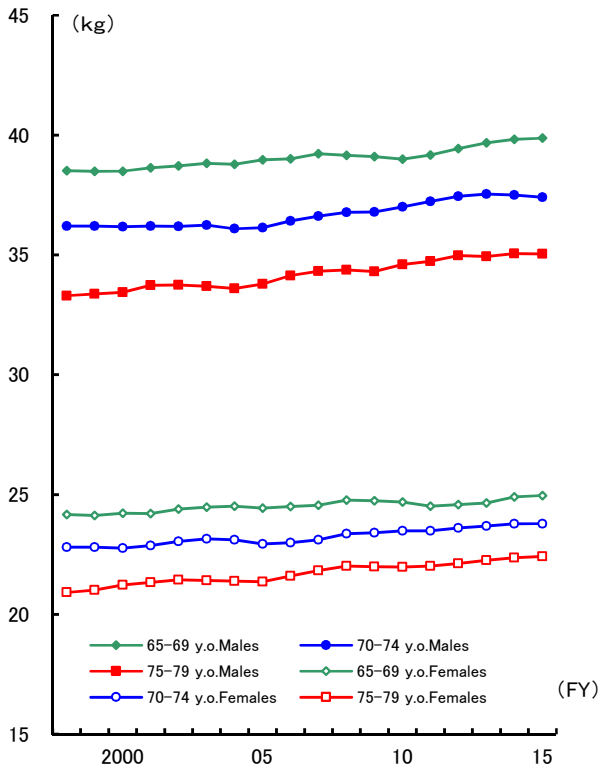


Fig. 4-1 Change over time for Grip Strength

Note: The graph has been smoothed using a three-point moving average.

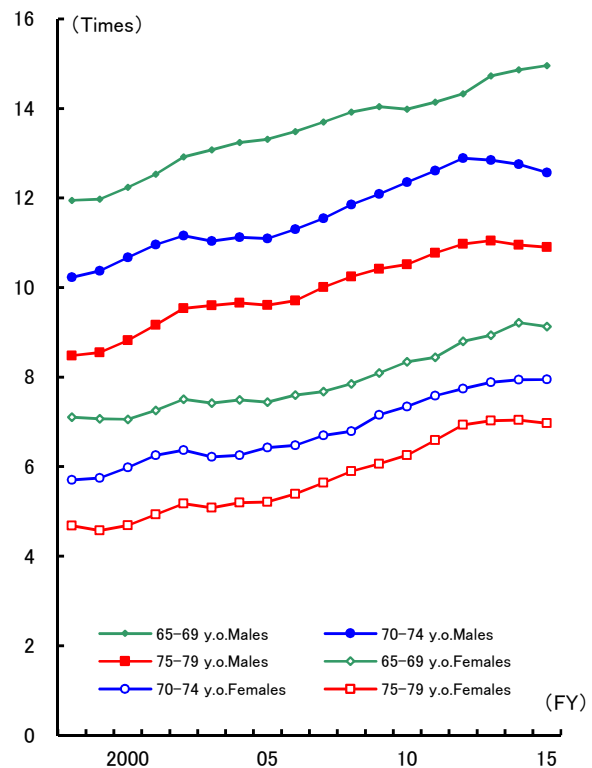


Fig. 4-2 Change over time for Sit Up

Note: Same note as for Fig. 4-1.

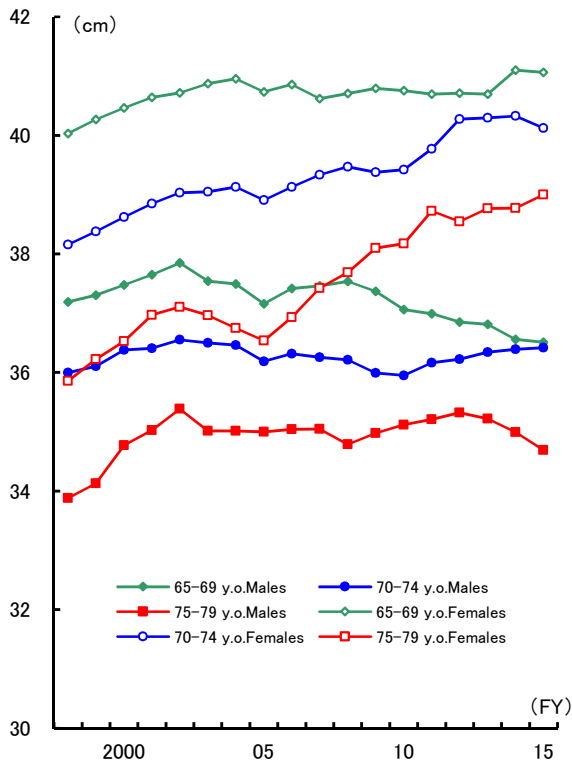


Fig. 4-3 Change over time for Sit & Reach

Note: Same note as for Fig. 4-1.

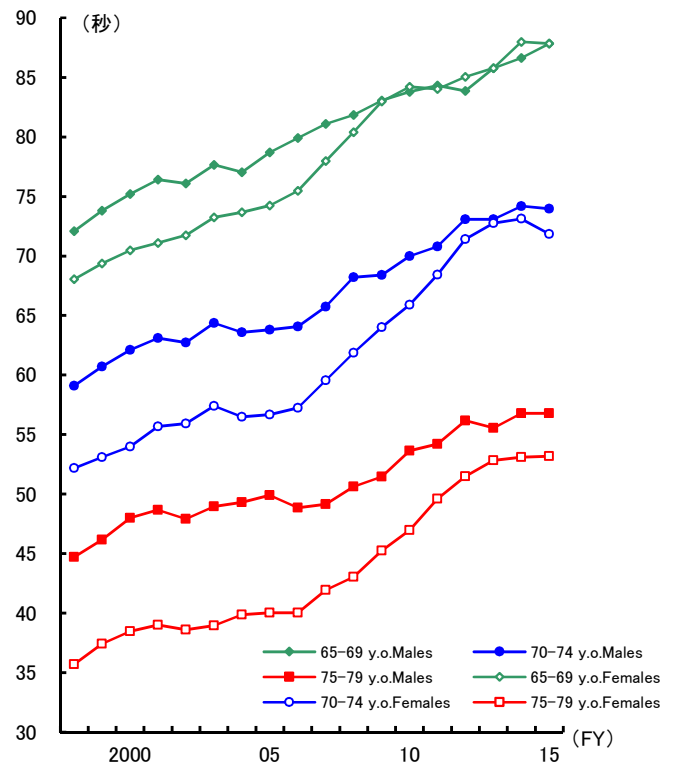


Fig. 4-4 Change over time for Eyes Open One Leg Stand

Note: Same note as for Fig. 4-1.

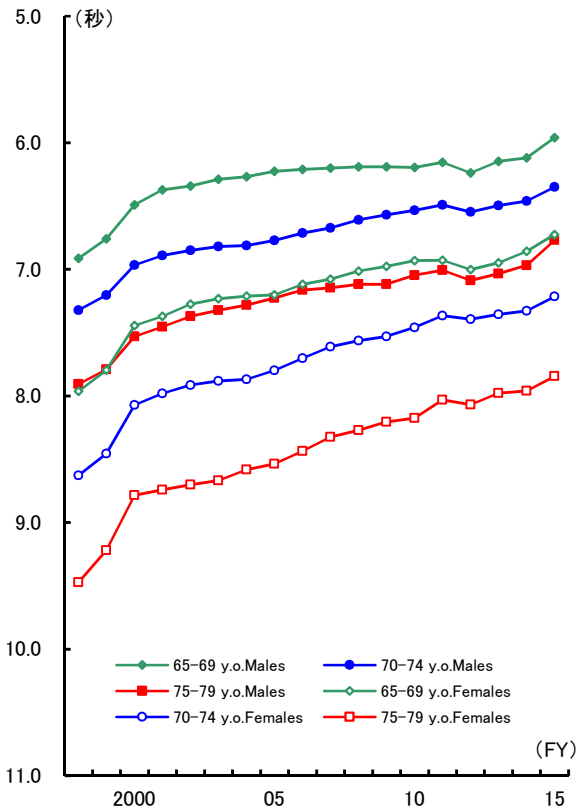


Fig. 4-5 Change over time for 10m Obstacle Walk

Note: Same note as for Fig. 4-1.

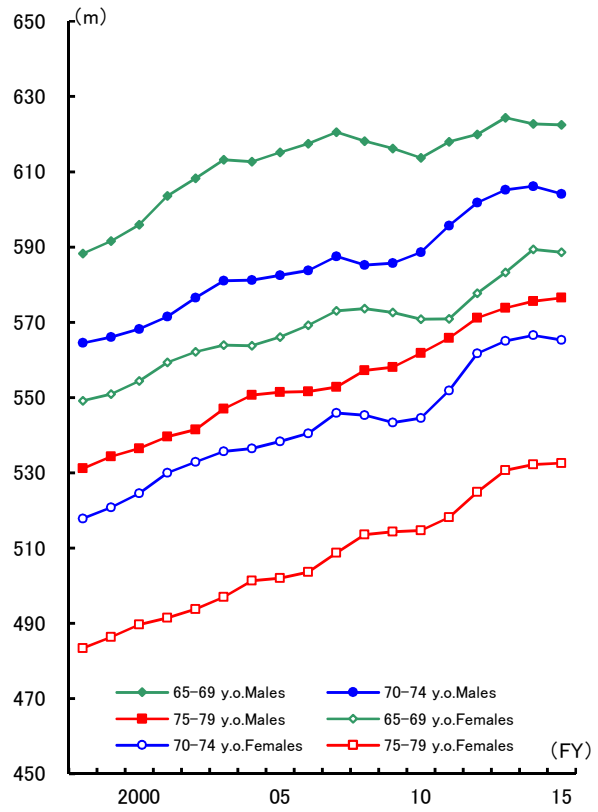


Fig. 4-6 Change over time for 6 Minute Walk

Note: Same note as for Fig. 4-1.

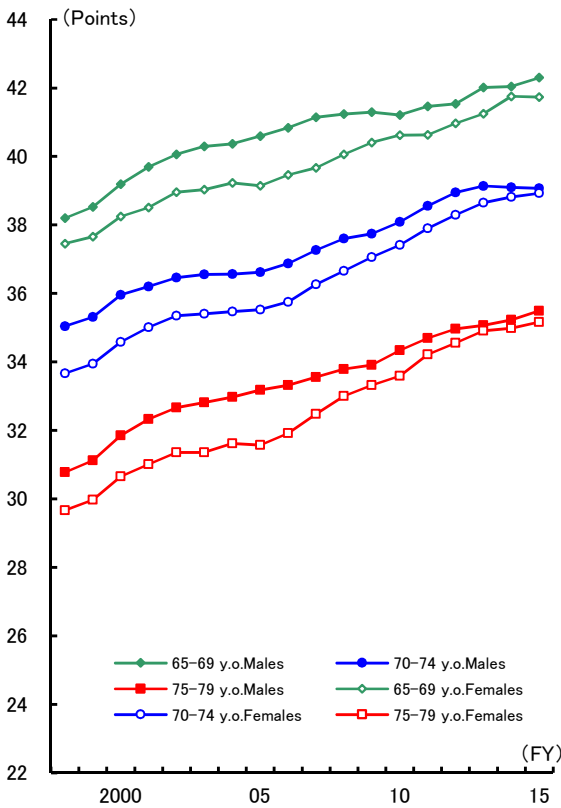


Fig. 4-7 Change over time in New Physical Fitness Test Total Scores

Note 1. The graph has been smoothed using a three-point moving average.

2. Total scores are based on the Test Scoring Table in the New Physical Fitness Test Implementation Requirements.

3. Scoring criteria are differentiated by gender.