

6 Survey Result Details

This survey has been conducted every year since 1964 and the 2013 survey marked its 50th anniversary. Such a survey, continuously measuring Japanese citizens' physical fitness and motor skills for over a half-century, targeting a wide section of age groups, is a very valuable thing with no equivalent in the world.

This year, in addition to showing the condition of citizens' physical fitness and motor skills for the 2013 period, the 50 collections of data since the survey began will be put to use in analyzing trends over the long period since 1964.

I. Yearly Trends in Youths' Physical Fitness and Motor Skills (1998–2013)

Survey analysis approach

Analysis is carried out for the 16 year period from 1998 to 2013 based on trends in the physical fitness and motor skills of 11 year-old elementary school children, 13 year-old junior high school children, and 16 year-old high school children tested after the implementation of the New Physical Fitness Test.

(1) Yearly Trends in Youths' Physical Fitness and Motor Skills (Figure 1)

Trends for individual items for the 16 year period following the implementation of the New Physical Fitness Test are shown in Figure 1. For the indicators of fitness, Grip Strength, Sit-ups, Sit & Reach, and Side Step there is a trend toward remaining static or improving in every category except Grip Strength in males.

Again, for indicators of motor skills such as running, jumping, and throwing, in all categories: 20 Meter Shuttle Run, Endurance Run, 50 Meter Run, Standing Long Jump, and Softball/Handball Throw there was a trend in remaining static or improving, except in Standing Long Jump for elementary school males and in Handball Throw for high school males.

Figure 1. Trends in Physical Fitness and Motor Skills Since Implementation of New Physical Fitness Test (1998–2013)

11yrs Elementary Children	Grip Strength	Sit-ups	Sit & Reach	Side Step	20 Meter Shuttle Run		50 Meter Run	Standing Long Jump	Ball Throw	Total Score
Male	Decline ↓	↑ Improvement	↑ Improvement	↑ Improvement	↑ Improvement		↑ Improvement	Decline ↓	= Static	↑ Improvement
Female	= Static	↑ Improvement	↑ Improvement	↑ Improvement	↑ Improvement		↑ Improvement	= Static	= Static	↑ Improvement

13yrs Junior High Children	Grip Strength	Sit-ups	Sit & Reach	Side Step	20 Meter Shuttle Run	Endurance Run	50 Meter Run	Standing Long Jump	Ball Throw	Total Score
Male	Decline ↓	↑ Improvement	↑ Improvement	↑ Improvement	↑ Improvement	↑ Improvement	↑ Improvement	= Static	= Static	↑ Improvement
Female	= Static	↑ Improvement	↑ Improvement	↑ Improvement	↑ Improvement	↑ Improvement	↑ Improvement	↑ Improvement	= Static	↑ Improvement

16yrs High School Children	Grip Strength	Sit-ups	Sit & Reach	Side Step	20 Meter Shuttle Run	Endurance Run	50 Meter Run	Standing Long Jump	Ball Throw	Total Score
Male	Decline ↓	↑ Improvement	↑ Improvement	↑ Improvement	↑ Improvement	= Static	↑ Improvement	= Static	Decline ↓	↑ Improvement
Female	= Static	↑ Improvement	↑ Improvement	↑ Improvement	↑ Improvement	= Static	↑ Improvement	↑ Improvement	= Static	↑ Improvement

※ indicates variance in trend compared with previous year.

(2) Youth New Physical Fitness Test Total Score Yearly Comparisons (Figure 2)

When total scores for each age group are compared within the 16 year 1998–2013 period, the 2013 results see 13yrs junior high males and 11yrs elementary females in second place and 16years high school males in third place.

Figure 2. Rankings for 1998-2013 Period New Physical Fitness Test Total Scores

Male		1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
11yrs	Total Score	59.19	59.78	60.44	59.89	60.64	60.90	61.03	60.61	60.88	60.90	61.29	61.27	62.30	61.01	61.88	60.61
	Ranking	16	15	13	14	10	7	5	11	9	7	3	4	1	6	2	11
13yrs	Total Score	38.87	39.99	40.77	41.73	41.98	42.89	42.91	43.20	43.59	42.94	43.00	42.89	44.11	44.57	43.86	44.17
	Ranking	16	15	14	13	12	10	9	6	5	8	7	10	3	1	4	2
16yrs	Total Score	48.00	49.80	51.83	52.23	53.07	53.43	53.55	53.43	53.82	54.01	54.04	54.21	54.89	54.41	54.78	54.67
	Ranking	16	15	14	13	12	10	9	10	8	7	6	5	1	4	2	3

Female		1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
11yrs	Total Score	58.56	58.58	58.59	59.47	59.65	59.86	60.14	61.13	60.48	61.07	61.37	61.16	61.55	61.59	62.00	61.90
	Ranking	16	15	14	13	12	11	10	7	9	8	5	6	4	3	1	2
13yrs	Total Score	45.26	45.19	45.44	46.39	47.17	49.06	49.43	48.83	49.23	49.44	49.62	49.58	50.40	51.39	50.58	50.31
	Ranking	15	16	14	13	12	10	8	11	9	7	5	6	3	1	2	4
16yrs	Total Score	46.29	46.60	46.49	46.76	47.53	48.44	48.15	48.60	49.57	50.42	50.46	50.89	51.82	50.69	50.70	50.12
	Ranking	16	14	15	13	12	10	11	9	8	6	5	2	1	4	3	7

* Score values are shown rounded to 3 decimal points

II Long Term Trends in Japanese Physical Fitness and Motor Skills

(1) Long Term Trends in Youth Physical Fitness and Motor Skills (1964–2013)

Survey analysis approach

Trends for the period 1964–2013 are analyzed for 11 year-old elementary school children in Grip Strength, 50 Meter Run, Ball Throw, and Side Step; and, for 13 year-old junior high and 16 year-old high school children, in Grip Strength, 50 Meter Run, Ball Throw, and Endurance Run.

In order to present trends systematically under the same measure for each category, records for 1964 (average values) are adjusted to a relative value of 100.

1. Elementary School Students

Figure 1 shows trends between 1964 and 2013 in Grip Strength (muscle strength), 50 Meter Run (speed), Ball Throw (dexterity/muscle power), and Side Step (agility) for 11 year-old elementary school children.

[Long Term Trends]

- From the 1964 Olympics/Paralympics until around 1985—with the Sapporo Olympics in 1972—improvement was seen in Grip Strength, 50 Meter Run, and Side Step for both males and females. Scores for males in Ball Throw remained static and those for females improved.
- From around 1985 until around 1998 all categories for both males and females showed static or declining scores.
- Since the 1998 Nagano Olympics/Paralympics, Grip Strength has been in decline for males while females' scores remained static. Both males and females have improved in 50 Meter Run and Side Step. Scores remained static for both males and females in Ball Throw.

[Comparison of 1964 (Survey First Year) and 2013 Surveys]

- Both males and females exceed the levels of 1964 in Grip Strength, 50 Meter Run, and Side Step. Scores for both males and females in Ball Throw are below that of 1964.

[Comparison of 1985 and 2013 Surveys]

- Scores for all categories, excluding Side Step, are below 1985 levels for both males and females.

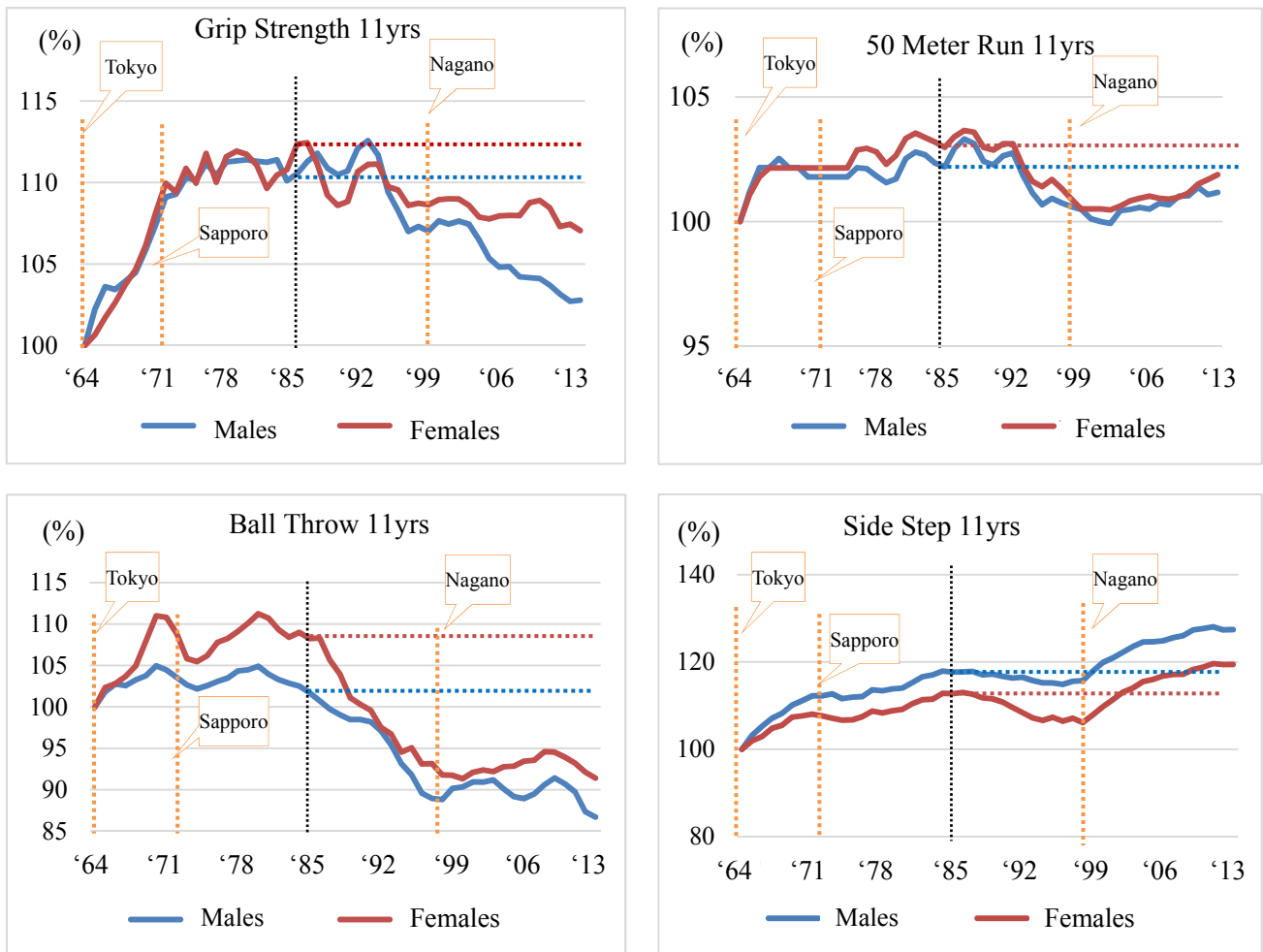


Figure 1. Comparative Trends in Physical Fitness and Motor Skills Based on 1964 Survey Values
11yrs elementary school children

(Note:) 1. Average values for 1964's scores are adjusted to 100 and average scores for each year are given in corresponding values.

2. The figure simplifies data using a 3 point moving average method. “.....” and “.....” show 1964 levels.

3. “ ” indicates a year when the Olympics was held in Japan.

2. Junior High School Children

Figure 2 shows trends between 1964 and 2013 in Grip Strength (muscle strength), 50 Meter Run (speed), Ball Throw (dexterity/muscle power), and Endurance Run (full body endurance) for 13 year-old junior high school children.

[Long Term Trends]

- From the 1964 Tokyo Olympics/Paralympics until around 1985—with the Sapporo Olympics in 1972—improvement was seen in Grip Strength, 50 Meter Run, and Endurance Run for both males and females. Scores for males in Ball Throw improved and those for females remained static.
- From around 1985 until around 1998 Grip Strength for males was static and declined for females. In 50 Meter Run, male scores were static while those of females declined. In Ball Throw, males were static while females declined. In Endurance Run, scores for both males and females declined.
- Since the 1998 Nagano Olympics/Paralympics, Grip Strength has been in decline for males while females' scores have remained static. Both males and females have improved in 50 Meter Run and Endurance Run. Scores have remained static for both males and females in Ball Throw.

[Comparison of 1964 (Survey First Year) and 2013 Surveys]

- Both males and females exceed the levels of 1964 in Grip Strength, 50 Meter Run, and Endurance Run. Scores for males in Ball Throw are above the 1964 level while those for females are below.

[Comparison of 1985 and 2013 Surveys]

- 50 Meter Run scores for males are above the 1985 level. In all other categories except Ball Throw levels are below.

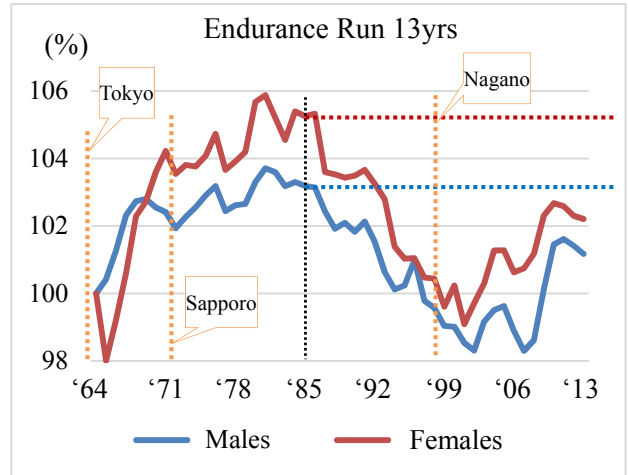
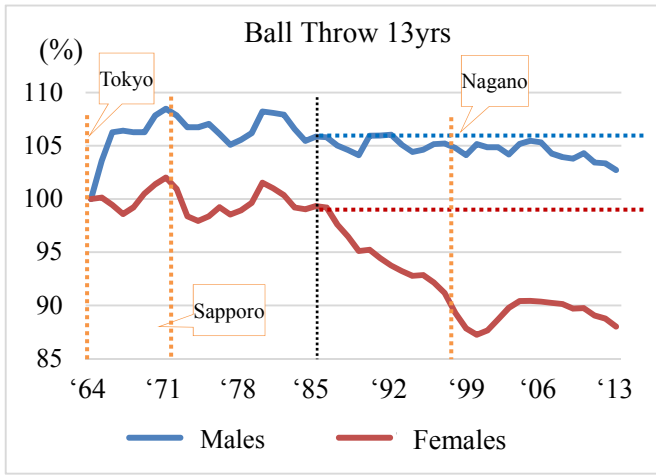
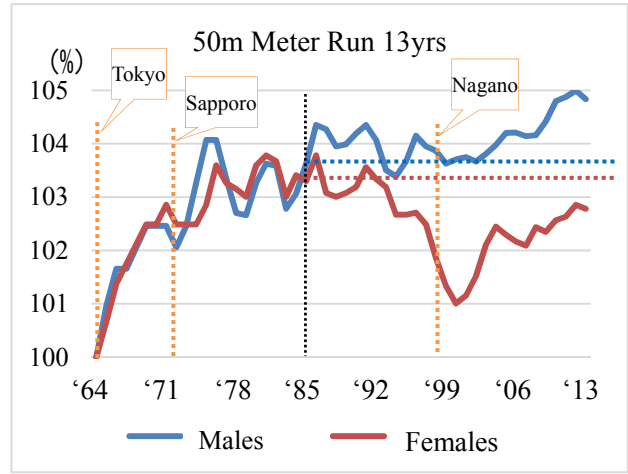
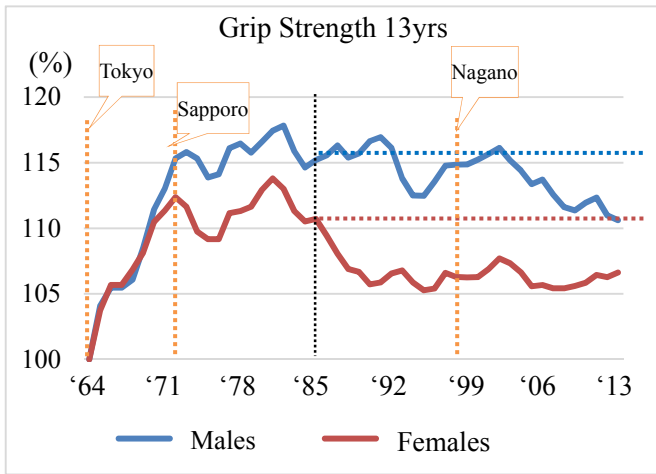


Figure 2. Comparative Trends in Physical Fitness and Motor Skills Based on 1964 Survey Values
 13yrs junior high school children
 (Note:) See note for Figure 1.

3. High School Children

Figure 3 shows trends between 1964 and 2013 in Grip Strength (muscle strength), 50 Meter Run (speed), Ball Throw (dexterity/muscle power), and Endurance Run (full body endurance) for 16 year-old high school children.

[Long Term Trends]

- From the 1964 Olympics/Paralympics until around 1985—with the Sapporo Olympics in 1972—improvement was seen in Grip Strength, 50 Meter Run, and Endurance Run for both males and females. Scores for males in Ball Throw improved and those for females declined.
- From around 1985 until around 1998 there was a downward trend for both males and females in all categories.
- Since the 1998 Nagano Olympics, Grip Strength has been in decline for males while females' scores have remained static. Both males and females have improved in 50 Meter Run. In Ball Throw, scores have declined for males and remained static for females. Scores have remained static for both males and females in Endurance Run.

[Comparison of 1964 (Survey First Year) and 2013 Surveys]

- Males exceeded the level of 1964 in Grip Strength while females scored under that level.
- Both males and females exceed the levels of 1964 in 50 Meter Run.
- Both males and females are below 1964 levels for Ball Throw.
- Males are below 1964 level for Endurance Run while females are above.

[Comparison of 1985 and 2013 Surveys]

- Males are above 1985 level in 50 Meter Run. In all other categories levels are down.

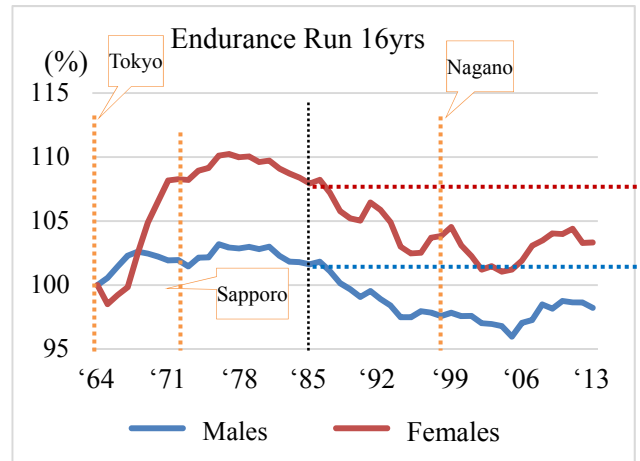
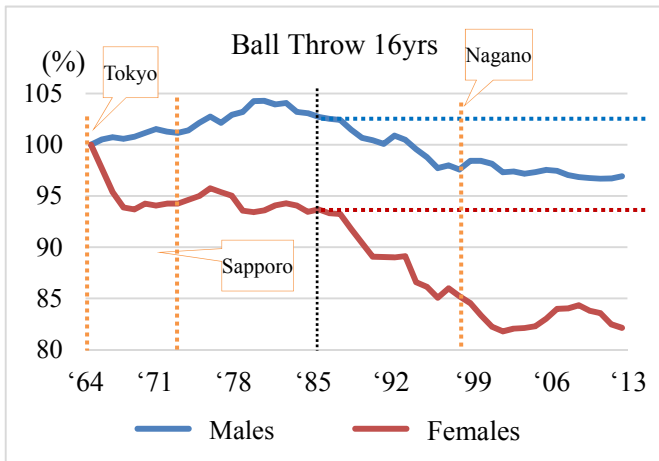
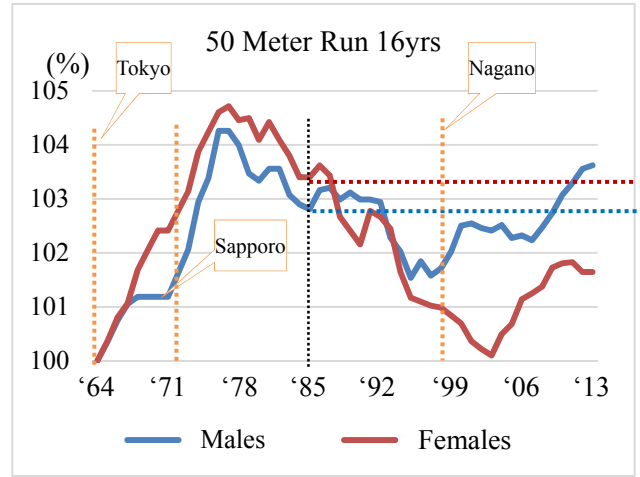
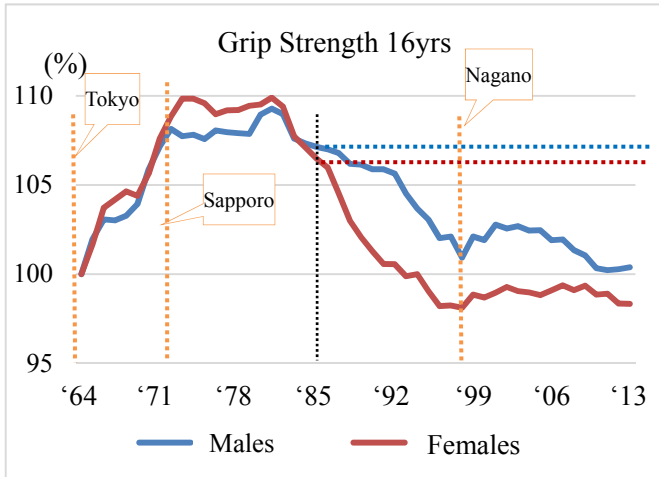


Figure 3. Comparative Trends in Physical Fitness and Motor Skills Based on 1964 Survey Values
 16yrs high school children
 (Note:) See note for Figure 1.

(2) Long Term Trends in Adult Physical Fitness and Motor Skills (1967–2013)

Survey analysis approach

For adults, trends since 1967 are analyzed for Grip Strength in 25–29 year-olds and for Grip Strength, Fast Walk, and Side Step for 35–39 year-olds, 45–49 year-olds, and 55–59 year-olds.

In order to present trends systematically under the same measure for each category, records for 1967 (average values) are adjusted to a relative value of 100.

1. 25–29 Year-olds

Figure 4 shows trends between 1967 and 2013 in Grip Strength (muscle strength) for 25–29 year-olds.

[Long Term Trends]

- From around 1967 to around 1985 scores for both males and females showed an upward trend.
- From around 1985 to around 1998 both males and females trended downward.
- From around 1998 to 2013 both males and females trended downward.

[Comparison of 1967 (Survey First Year) and 2013 Surveys]

- Compared with 1967 levels males score higher while females score lower.

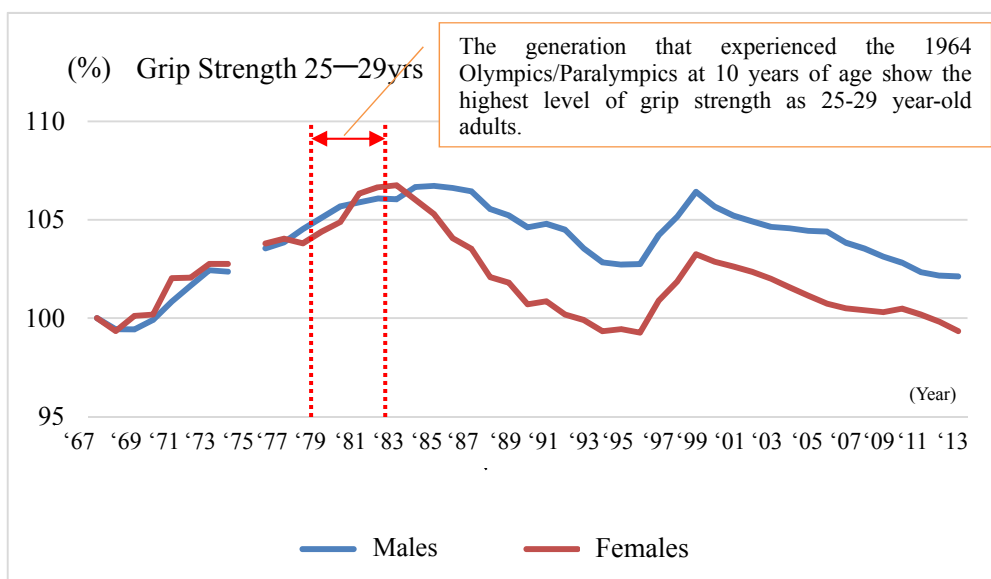



Figure 4. Comparative Trends in Physical Fitness and Motor Skills Based on 1964 Survey Values (25–29 year-olds)

- (Note:)
1. Average values for 1967's scores are adjusted to 100 and average scores for each year are given in corresponding values.
 2. The figure simplifies data using a 3 point moving average method.
 3. The survey was not conducted for this age group in 1975.
 4. “” indicates the period when those who were 10 years old in 1964 are 25–29 years old. This generation is aged between 55–59 in the 2013 survey.

2. 35–39 Year-olds

Figure 5 shows trends between 1967 and 2013 in Grip Strength (muscle strength), Fast Walk (full body endurance), and Side Step (agility) for 35–39 year-olds.

[Long Term Trends]

Grip Strength:

- From around 1967 to around 1985 scores for both males and females showed an upward trend.
- From around 1985 to around 1998 scores for males remained static and those for females trended downward.
- From around 1998 to 2013 both males and females trended downward.

Fast Walk:

- From around 1967 to around 1985 female scores showed an upward trend while those for males were down.
- From around 1985 to 1998 both males and females trended downward.
- From around 1998 to 2013 scores for both males and females remained static.

Side Step:

- From 1967 to 2013 both males and females showed an upward trend.

[Comparison of 1967 (Survey First Year) and 2013 Surveys]

- Males exceeded the level of 1967 in Grip Strength while females scored under.
- Males were below the level in Fast Walk while females were at almost the same level as 1967.
- Both males and females exceeded the levels of 1967 in Side Step.

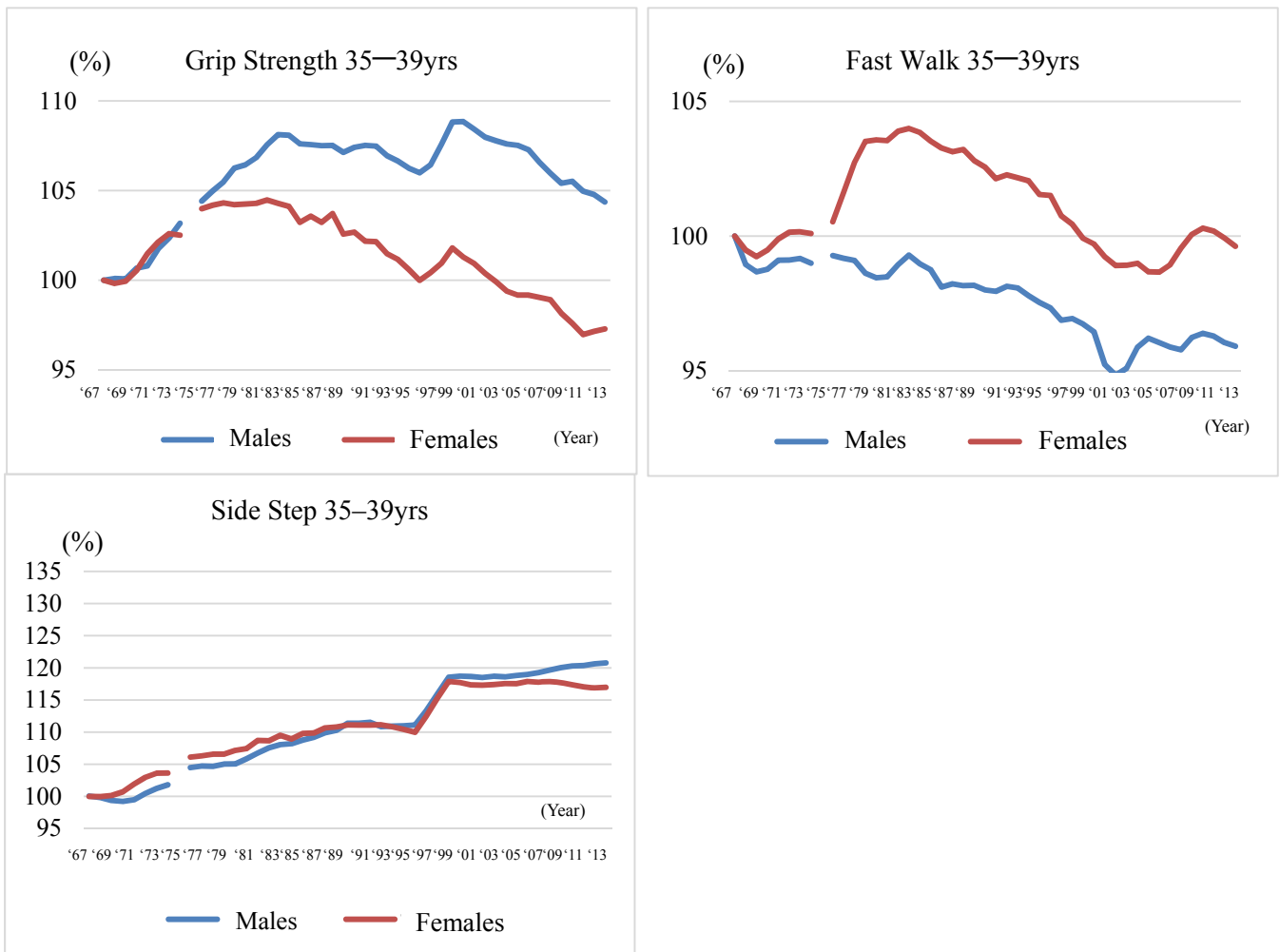


Figure 5. Comparative Trends in Physical Fitness and Motor Skills Based on 1964 Survey Values (35-39 year-olds)

(Note:) See notes 1-3 for Figure 4

3. 45–49 Year-olds

Figure 6 shows trends between 1967 and 2013 in Grip Strength (muscle strength), Fast Walk (full body endurance), and Side Step (agility) for 45–49 year-olds.

[Long Term Trends]

Grip Strength:

- From around 1967 to around 1985 scores for both males and females showed an upward trend.
- From around 1985 to around 1998 scores for males remained static and those for females trended downward.
- From around 1998 to 2013 both males and females trended downward.

Fast Walk:

- From around 1967 to around 1985 scores for males remained static and those for females trended upward.
- From around 1985 to 1998 both males and females trended downward.
- From around 1998 to 2013 scores for both males and females remained static.

Side Step:

- From 1967 to 2013 both males and females showed an upward trend.

[Comparison of 1967 (Survey First Year) and 2013 Surveys]

- Both males and females exceeded the level of 1967 in Grip Strength.
- Males were below the level in Fast Walk while females were at almost the same level as 1967.
- Both males and females exceeded the levels of 1967 in Side Step.

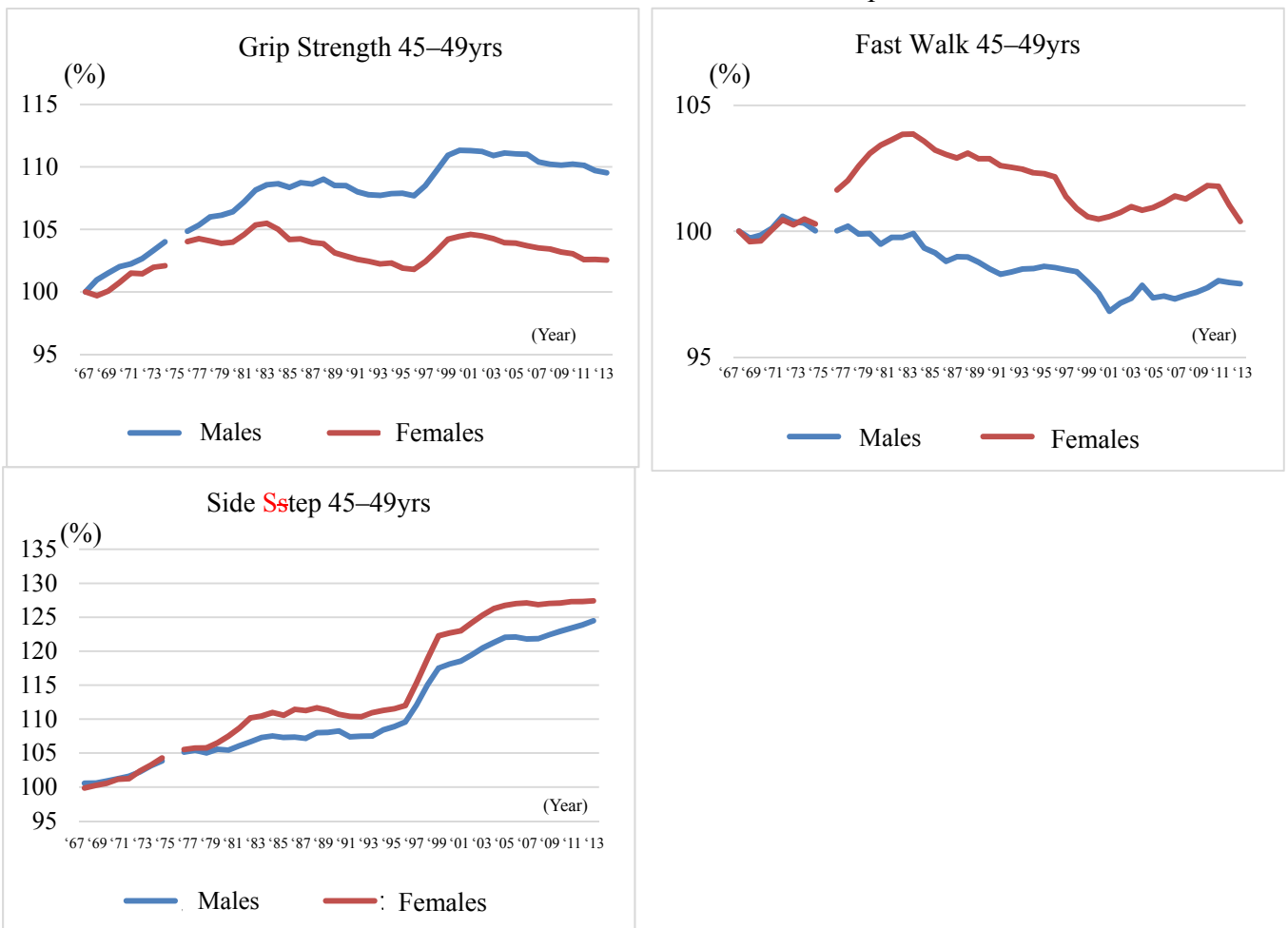


Figure 6. Comparative Trends in Physical Fitness and Motor Skills Based on 1967 Survey Values (45–49 year-olds)

(Note:) See notes 1–3 for Figure 4

4. 55–59 Year-olds

Figure 7 shows trends between 1967 and 2013 in Grip Strength (muscle strength), Fast Walk (full body endurance), and Side Step (agility) for 55–59 year-olds.

[Long Term Trends]

Grip Strength:

- From 1967 to 2013 scores for both males and females showed an upward trend.

Fast Walk:

- From 1967 to 2013 scores trended downward for males and upward for females.

Side Step:

- From around 1967 to around 1985 scores for males remained static and those for females trended upward.
- From around 1998 to 2013 both males and females showed an upward trend.

[Comparison of 1967 (Survey First Year) and 2013 Surveys]

- Both males and females exceeded the level of 1967 in Grip Strength.
- Males were below the level in Fast Walk while females were above the level of 1967.
- Both males and females exceeded the levels of 1967 in Side Step.

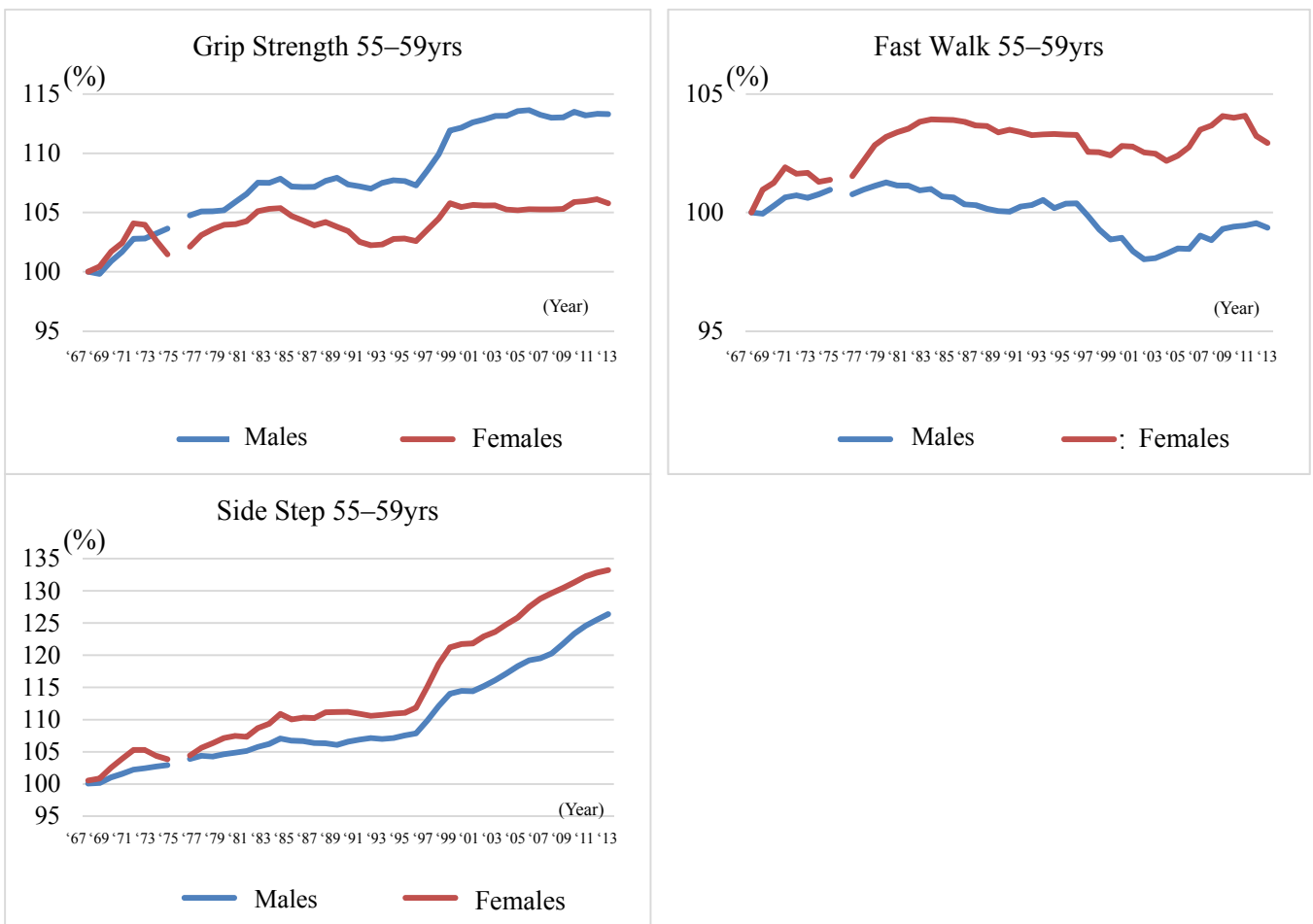


Figure 7. Comparative Trends in Physical Fitness and Motor Skills Based on 1967 Survey Values (55–59 year-olds)

(Note:) See notes 1–3 for Figure 4

(3) Long Term Trends in Rates of Adult Participation in Exercise and Sports (1977–2013)

Survey analysis approach

Trends in rates of participation in exercise or sports once or more a week—as the goal for the Basic Sports Planning strategy—are analyzed from 1977 onward.

- From 1977 to 2013, participation in exercise or sports by both males and females in the 25–29 and 35–39 year old age brackets trended toward a static rate.
- Rates for both males and females in the 45–49 and 55–59 year old age brackets have trended upward since 1977.
- For females, the rate of those in the 40–50 year old age bracket surpasses that of those aged 20–30 years.
- The 2013 survey results show that, apart from females in the 35–39 year-old age bracket, participation rates exceeded the 1977 level.
- For all age brackets, rates of participation in sport in the 2013 survey fell below the goal level in the Basic Sports Planning strategy of 2 out of 3 people (around 65%).

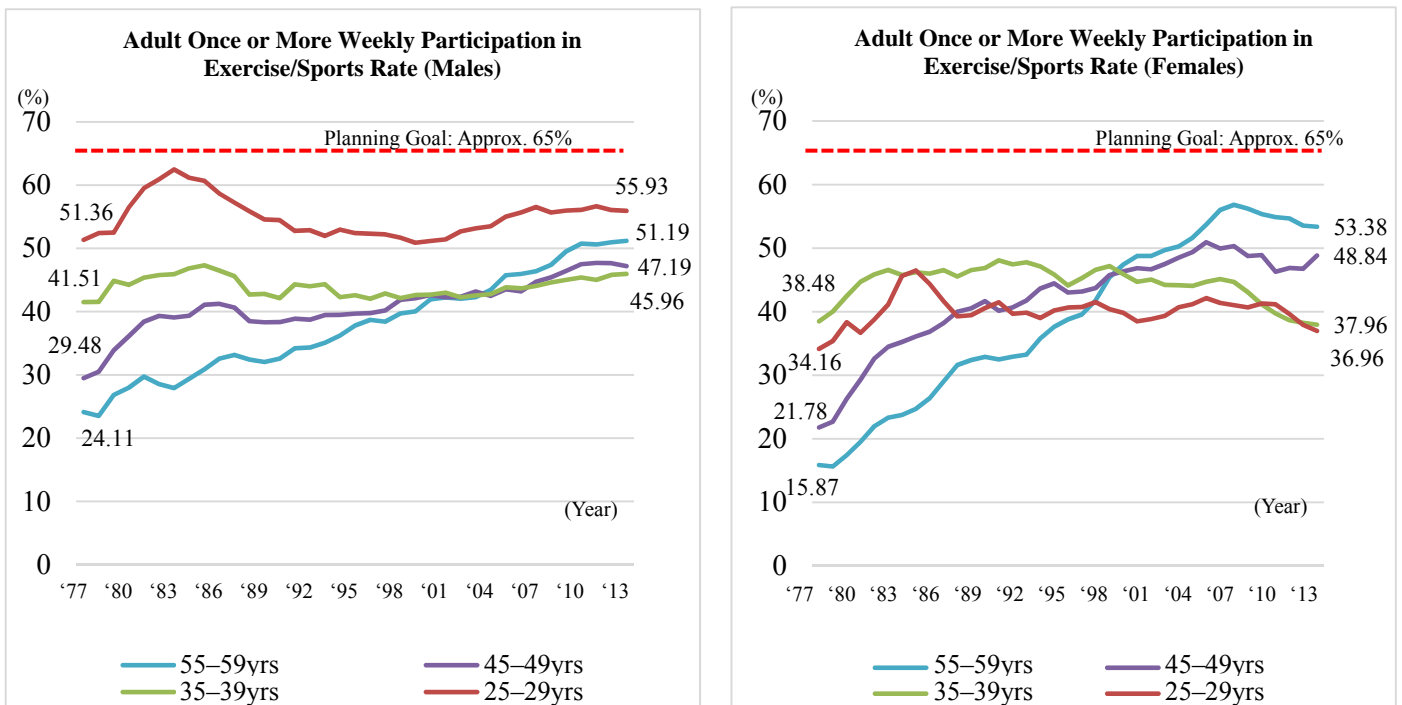


Figure 8. Trends in rates of adult participation in exercise or sports once or more a week (1977–2013)

(Note:.) Rates for participation in exercise or sports once a week or more are derived from combining the totals of those who answered “almost every day (3–4 times or more a week)” and “occasionally (around once or twice a week).” Note also that the figure simplifies data using a 3 point moving average method.

III Comparison/Analysis of Physical Fitness and Motor Skills Between Three Generations

Survey analysis approach

Using the data from 50 surveys, comparisons and an analysis are made of 10 year-olds in 1964, 1989, and 2013 in terms of their Grip Strength, 50 Meter Run, Ball Throw, and Side Step in order to measure 3 generations of youths' physical fitness and motor skills.

- In Grip Strength and 50 Meter Run, both the male and female 10 year-olds of 1989 show the highest score. When scores from 1964 and 2013 are compared, 10 year-olds of 2013 are at a higher level.
- In Ball Throw, the decline in male scores is significant. 10 year-olds in 1964 score highest (30.38m), those of 1989 drop by around 2 meters, and those of 2013 drop even further by around 6 meters compared with 1964.
- In Side Step, both male and female 10 year-olds in 2013 score highest.



Figure 9. Comparison of three generations of 10 year-olds in Grip Strength, 50m Sprint, Ball Throw, and Side Step