The Share of Women Among Physicians Rose from 0.1270 to 0.2443 Between 1994 and 2024, Rising in All 14 Surveys, but Following Cohorts Aged 30–59 for 10 Years the Share Moves by No More Than 0.0102 — the Average Change Over 10 Years Within the Same Age Group (0.0559) Is 5.20 Times the Change Following the Cohort (0.0107) [M090]

10-year change in an age group's share = cohort replacement + change within the cohort ── What separates them is comparing at the same age or following the same cohort

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Abstract

Using the Ministry of Health, Labour and Welfare's Statistics of Physicians, Dentists and Pharmacists (Table 14, trend in the number of physicians by age group and sex, 14 surveys from 1994 to 2024), this paper split the rise in the share of women among physicians into two views: comparing the same age group, and following the same cohort as it moves 10 years up to the next age group. No new mathematical theorem and no new law are claimed.

First, the tables are consistent. In every year, men + women = total and the 6 age groups sum to the total (0 people of unknown age), and the percentage shares match the values computed from the counts (Section 3).

Second, **physicians rose 1.509-fold from 230,519 in 1994 to 347,772 in 2024; women rose 2.903-fold and men 1.306-fold. The share of women rose from 0.1270 to 0.2443, above the previous survey in all 14 surveys. In 2024 the share of women is higher at younger ages, from 0.3687 at 29 or under to 0.0995 at 70+** (Section 4).

Third, this is the core of the paper. **Across 9 pairs of years 10 years apart, comparing the change in the share of women within the same age group with the change following the same cohort into the age group 10 years older, the average size over 36 combinations is 0.0559 for the same age group and 0.0107 following the cohort, a 5.20-fold difference. For cohorts starting at ages 30–59, the share moves by no more than 0.0102 over 10 years** (Section 5).

Fourth, for example, the share of women in the cohort aged 30–39 in 1994 hardly moves: 0.1336 → 0.1358 at 40–49 in 2004 → 0.1416 at 50–59 in 2014 → 0.1420 at 60–69 in 2024. **The rise in the share within the same age group appears as younger cohorts with higher shares of women entering each age group in place of older cohorts with lower shares** (Section 5).

Fifth, there is one exception. **Cohorts moving from 29 or under to 30–39 show a fall in the share of women in all 9 pairs (−0.0490 to −0.0156).** Why it falls cannot be separated with this table (Section 5).

Sixth, what separates them is **comparing at the same age or following the same cohort**. "More women have become physicians" looks like a large rise when seen as the share within the same age group, but following the same cohort it hardly moves in cohorts past age 30; what moves is the replacement of cohorts.

Scope note: **This paper claims no new mathematical theorem and no new law** — the numbers of physicians are in public tables, and this paper only compared the share of women in two directions, the same age group and the same cohort. **This paper is a structural interpretation of the shape of numbers in public aggregate data; it is not medical advice, not a diagnosis, and not a treatment recommendation. The author is not a physician. Decisions about individual health should be discussed with a physician or a medical institution. This is a preprint that has not been peer reviewed. It does not judge whether more women physicians is good or bad, how physicians work, or whether there are too many or too few physicians or specialists.** The counts are as of 31 December each year; following a 10-year age group one step up 10 years later roughly follows people born in the same years, but because people become physicians, stop practising, and enter or leave the notifications, they are not necessarily the same people. Why the share falls in cohorts moving from 29 or under to 30–39, and why it hardly moves in cohorts past age 30, cannot be separated with this table. Individuals, hospitals, and prefectures are not compared. **About the data**: the Statistics of Physicians, Dentists and Pharmacists (Ministry of Health, Labour and Welfare) were taken from e-Stat and used under the Government of Japan Standard Terms of Use (Version 2.0); the shares and differences in this paper were processed from them. What this paper adds: **setting the 10-year change in the share of women among physicians side by side in two directions, the same age group and the same cohort, and showing that the change within the same age group is 5.20 times the change following the cohort, and that in cohorts past age 30 the share hardly moves even after 10 years.**

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1. Notation and question

- **Share of women**: number of women physicians in an age group ÷ number of physicians.
- **10-year change within the same age group**: the difference in the share of women in the same age group between year t and t+10.

- **10-year change following the cohort**: the difference between the share of women in an age group in year t and in the age group 10 years older in year t+10.

Question: Did the share of women among physicians rise because it rose within each cohort, or because cohorts with different shares replaced each other?

Observation 1.1: M003 showed that a year's life expectancy is a snapshot collecting that year's death rates of different cohorts, and differs from the value obtained by following the same people. This paper applies the same split, "cross-section by year or following the cohort," to the table of physician numbers.

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2. Preview and design

Written honestly: the design was decided after looking at the table.

	Content
Table	Statistics of Physicians, Dentists and Pharmacists 2024, trend Table 14 (number of physicians and composition by age group and sex, 14 surveys from 1994 to 2024, 10-year age groups)
Noticed in the preview	Age groups are 10 years wide, and 9 pairs of years 10 years apart are available. Looking one age group up 10 years later roughly follows people born in the same years
Comparison	Overall share of women, share by age group in 2024, and the 10-year change in two directions, the same age group and the same cohort (9 pairs × 4 age groups = 36)

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3. Data and checks

Calculation 3.1 The 1 retrieved file was fixed by SHA-256, and the following were checked.

- Table 14 is the 2024 edition, as of 31 December each year, in persons. The year columns are the 14 surveys from 1994 to 2024.
- Both the counts and the percentage shares have rows for the total, 6 age groups, and unknown × total, men, and women.
- In every year, men + women = total and the 6 age groups sum to the total (0 unknown). The share of women matches the value computed from the counts rounded to 1 decimal place.

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4. Number of physicians and share of women

Calculation 4.1 Number of physicians and share of women

Year	Physicians	Men	Women	Share of women
1994	230,519	201,244	29,275	0.1270
2004	270,371	225,743	44,628	0.1651
2014	311,205	247,701	63,504	0.2041
2024	347,772	262,801	84,971	0.2443

Observation 4.2: **From 1994 to 2024, physicians rose 1.509-fold, women 2.903-fold, and men 1.306-fold. The share of women rose above the previous survey in all 14 surveys.**

Calculation 4.3 Share of women by age group, 2024

Age	29 or under	30–39	40–49	50–59	60–69	70+
Share of women	0.3687	0.3208	0.3107	0.2342	0.1420	0.0995

Observation 4.4: **In 2024 the share of women is higher in the younger of every two adjacent age groups.**

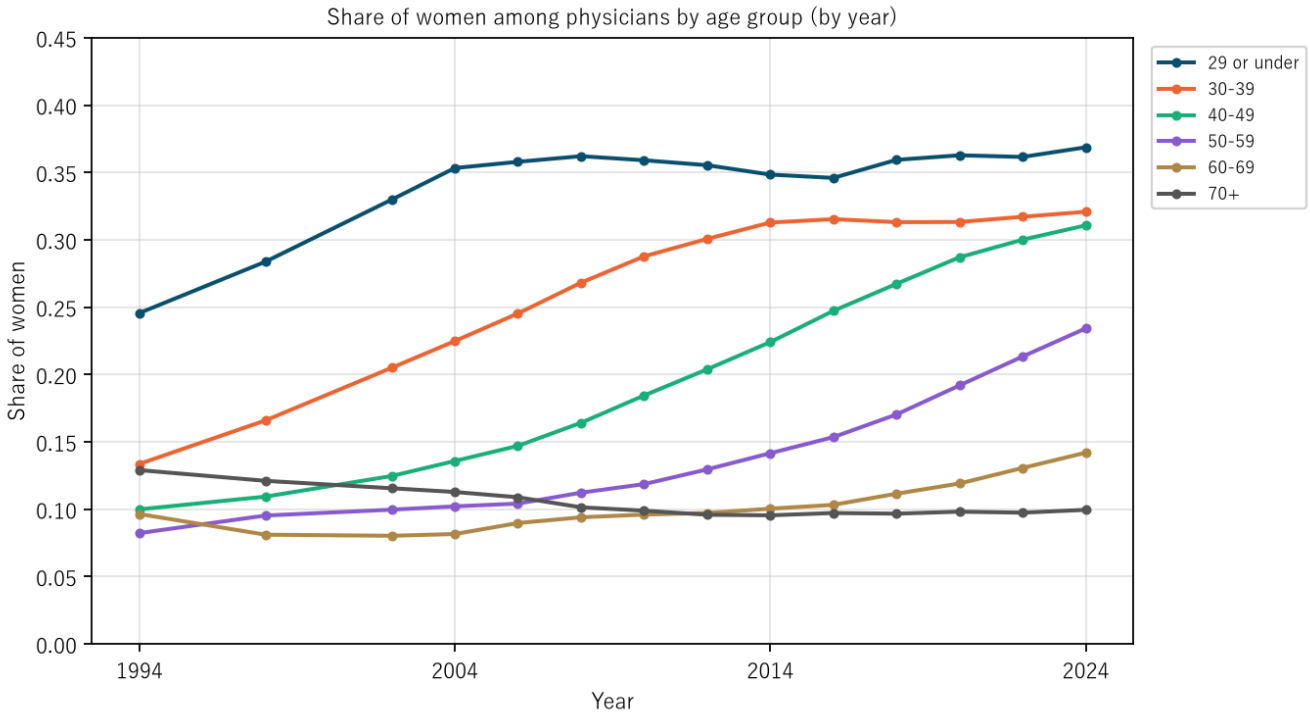


Figure 1: Share of women among physicians by age group (1994–2024).

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5. The core — comparing at the same age or following the same cohort

Calculation 5.1 Change over 10 years (9 pairs of years)

Starting age group	Following the cohort	Same age group
29 or under	−0.0490 to −0.0156	−0.0120 to +0.1077
30–39	−0.0021 to +0.0022	+0.0080 to +0.1022
40–49	+0.0022 to +0.0102	+0.0359 to +0.1031
50–59	−0.0025 to +0.0011	+0.0170 to +0.0926
Average size over 36	0.0107	0.0559

Observation 5.2: **The average size over the 36 combinations is 0.0559 for the change within the same age group and 0.0107 for the change following the cohort, a 5.20-fold difference. In the 27**

combinations starting at ages 30–59, the change following the cohort is at most 0.0102, while the average size of the change within the same age group is 0.0649.

Calculation 5.3 Share of women in cohorts followed every 10 years from 1994

1994	2004	2014	2024
29 or under 0.2456	30–39 0.2248	40–49 0.2241	50–59 0.2342
30–39 0.1336	40–49 0.1358	50–59 0.1416	60–69 0.1420
40–49 0.0999	50–59 0.1021	60–69 0.1004	
50–59 0.0823	60–69 0.0816		

Observation 5.4: **The cohort aged 30–39 in 1994 keeps its share of women within 0.1336–0.1420 for 30 years, up to ages 60–69.** The rise in the share within the same age group appears as younger cohorts with higher shares of women entering each age group in place of older cohorts with lower shares.

Observation 5.5: **Cohorts moving from 29 or under to 30–39 show a fall in the share of women in all 9 pairs (−0.0490 to −0.0156).** The cohort aged 29 or under in 1994 fell from 0.2456 to 0.2248 and then hardly moved, at 0.2241 and 0.2342. Why it falls around age 30 cannot be separated with this table.

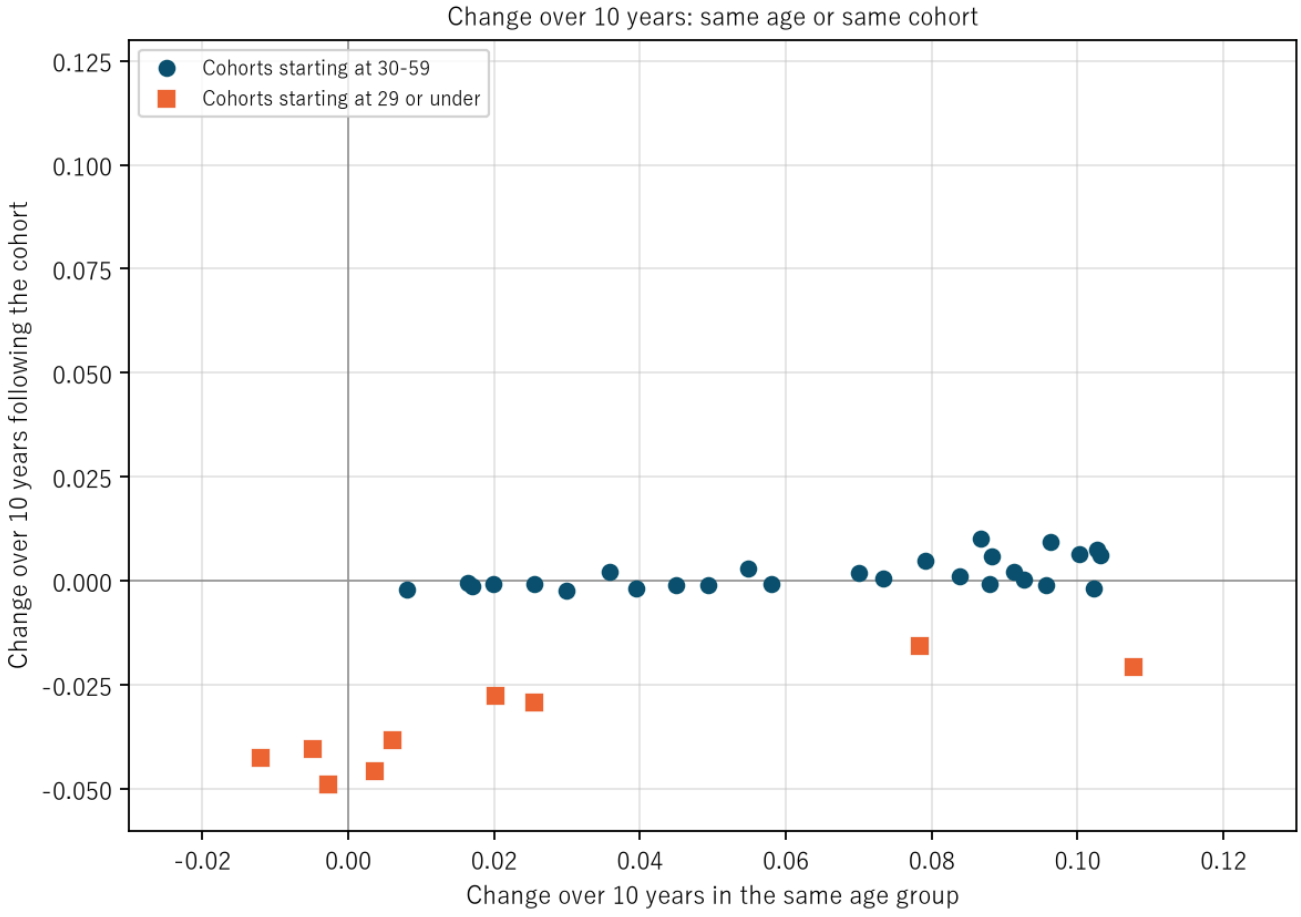


Figure 2: Two directions of 10-year change. Horizontal is the change within the same age group; vertical is the change following the cohort. Navy is cohorts starting at ages 30–59; orange is cohorts starting at 29 or under.

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6. Limitations

1. **Looking one age group up 10 years later roughly follows people born in the same years, but they are not necessarily the same people.** People become physicians, stop practising, and enter or leave the notifications.
2. Why the share falls from 29 or under to 30–39, and why it hardly moves in cohorts past age 30, cannot be separated with this table.
3. Age groups are 10 years wide, and 70+ is open at the top, so cohorts are not followed from 60–69. From 1994 to 2002 the surveys are 4 years apart, so there are only 9 pairs 10 years apart.
4. Physician numbers are notified counts and do not reflect differences in working hours or places.

5. The paper does not judge whether more women physicians is good or bad, how physicians work, or whether there are too many or too few.

Conclusion

The share of women among physicians rose from 0.1270 in 1994 to 0.2443 in 2024, rising in all 14 surveys. Yet following cohorts aged 30–59 for 10 years, the share moved by no more than 0.0102. The average change over 10 years within the same age group (0.0559) was 5.20 times the change following the cohort (0.0107); what moved was the replacement of cohorts.

What separates them is one thing — comparing at the same age or following the same cohort.

When you hear "more women have become physicians," **check together whether it compares the same age or follows the same cohort.**

Data and reproduction

Data	Statistics of Physicians, Dentists and Pharmacists 2024, trend Table 14 (Ministry of Health, Labour and Welfare, e-Stat) (retrieved 26 September 2026)
Terms of use	e-Stat follows the Government of Japan Standard Terms of Use (Version 2.0). The shares and differences in this paper were processed from it and are not numbers produced by the government
Coverage	Japan, physicians, 14 surveys from 1994 to 2024 (as of 31 December), 10-year age groups, sex
Verification	`検算/M090.py` (`--zu` also draws the figures). Every number in the text is taken from `検算/M090_output.txt`
Raw data	`data/` holds the retrieved file and `SOURCES.md` (URL, retrieval date, SHA-256, terms of use, definitions and how the calculations were set up)
Figures	`図/M090_zu1`, `図/M090_zu2` (png, svg, English versions)

References

- Ministry of Health, Labour and Welfare. Statistics of Physicians, Dentists and Pharmacists 2024, trend Table 14 (in Japanese). e-Stat (accessed 26 September 2026). https://www.e-stat.go.jp/
- Yamagishi, Y. (2026). Life Expectancy Is Not the Number of Years Anyone Actually Lives [M003]. Zenodo. https://doi.org/10.5281/zenodo.22963485