Counting Retracted Publications by the Original Paper's Publication Year, 2022 Has the Most (7,133), and 2025 Has 5.40 per 10,000 Records (0.135 Times 2022), So Recent Years Look Lower — Counting Retraction Notices by the Notice's Year, the Most Is 2023 (8,030), and the Middle Year of the Counts Is 2020 for Retracted Publications and 2023 for Notices. Adding Up the Yearly Counts Counts Some Records in Two Years and Gives 1.1069 Times [M116]

Retracted publications line up by the paper's year, retraction notices by the notice's year — What separates them is whether you count by the year the paper appeared or the year the retraction was announced

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September 2026 ／ CC BY 4.0

Abstract

Using counts from PubMed (U.S. National Library of Medicine) retrieved through E-utilities (27 September 2026), this paper counted retracted publications (publication type Retracted Publication, the record of the original paper) and retraction notices (Retraction Notice, the record announcing the retraction) by publication year from 1975 to 2025. Which paper, journal, publisher, or author was retracted was not counted, and none is named. Whether retractions are many or few, good or bad, and the reasons for retraction are not discussed. No new mathematical theorem and no new law are claimed.

First, **ordering retracted publications by the original paper's publication year, 2022 had the most, 7,133 (39.99 per 10,000 records of that year), followed by 13.86 in 2023, 13.17 in 2024, and 5.40 in 2025 (0.135 times 2022), so recent years looked lower** (Section 4).

Second, and this is the core of this paper, **ordering retraction notices by the notice's publication year, the most was 8,030 in 2023, followed by 4,113 in 2024 and 4,824 in 2025, and 2026 already had 3,989 by the retrieval date. The middle year of the counts was 2020 for retracted publications and 2023 for retraction notices, and the share falling in the 3 years 2023–2025 was 0.148 for retracted publications and 0.548 for retraction notices** (Section 5).

Third, **the same retraction is counted in the original paper's year as a retracted publication and in the notice's year as a retraction notice. The difference between the count-weighted mean years was 3.00 years** (but notices were not paired with the papers they retract, so this is not the time to retraction itself; Section 5).

Fourth, **fewer retracted publications in recent publication years does not mean fewer retractions, because papers whose retraction has not yet been announced are not counted as retracted publications** (Section 5).

Fifth, **adding up the yearly counts gave 38,301 retracted publications, 1.1069 times the 34,602 counted over 1975–2025 as a single range. The same records are counted in two years** (1.0335 times for retraction notices; Section 6).

Sixth, what separates them is **whether you count by the year the paper appeared or the year the retraction was announced**. When you hear that "retractions increased (or decreased)," check which year the count was made by.

Scope note: **This paper claims no new mathematical theorem and no new law** — retraction counts are public in PubMed, and this paper only counted and ordered them. **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. Whether retractions are many or few, good or bad, and the reasons for retraction (error, misconduct, or other reasons) are not discussed. The quality or value of research is not discussed. No specific paper, journal, publisher, author, or research institution is named.** Why 2022 and 2023 have so many cannot be told from the counts. Notices were not paired with the papers they retract, and the time to retraction was not measured case by case. Retractions in PubMed are limited to retractions of records in PubMed. The counts are as of retrieval and change daily. **About the data**: Courtesy of the U.S. National Library of Medicine. The counts are as of 27 September 2026 and do not reflect the most current or accurate data from NLM. NLM does not endorse this paper. What this paper adds: **showing that the same retractions line up differently when counted by the paper's year and by the notice's year**, and **confirming with range queries that adding up yearly counts counts some records twice**.

1. Notation and question

- **Retracted publication**: a PubMed record with the publication type "Retracted Publication." In the original text of NLM's publication types page, it identifies "a citation previously published and now retracted," distinguished from the record announcing the retraction (Retraction Notice). **Its year is the original paper's publication year.**
- **Retraction notice**: a record with the publication type "Retraction Notice," "the citation retracting the original published item." **Its year is the notice's publication year.**

- **Per 10,000 records**: retracted publications of that publication year ÷ all records of that year × 10,000.
- **Middle year of the counts**: the year at which the running total from 1975 reaches half of the whole.

Question: How differently do retractions line up when counted by the year the paper appeared and by the year the retraction was announced? Why do retractions of recent publication years look fewer?

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2. Preview and design

Written honestly: the design was decided after looking at trial queries.

	Content
Data	PubMed E-utilities counts (main retrieval of 156 queries: 51 years 1975–2025 × 3 kinds plus 3 without years; additional retrieval of 6 range queries) and NLM's publication types page
Noticed in preview	The publication type for retraction notices was not found as "retraction of publication"[pt] (No items found) but was found as "retraction notice"[pt]
Noticed in preview (2)	Retracted publications peaked in publication year 2022, while retraction notices peaked in 2023
Noticed in preview (3)	Adding up the yearly counts did not match the counts without years, so they were recounted by range
Compared	Counts and per 10,000 records by publication year; peak year, middle year, and mean year; share in 2023–2025; sum of yearly counts vs range counts

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3. Data and checks

Calculation 3.1 Five files — the two count JSON files, the two retrieval scripts, and the copy of NLM's publication types page — were fixed by SHA-256, and the following were checked. The checker

computes only from the saved JSON files and does not query PubMed.

- The 156 main queries (27 September 2026, 02:03:20–02:05:42) and 6 additional queries are complete.
- The query translations contain the publication date range and the publication types ("retracted publication"[Publication Type] and "retraction notice"[Publication Type]) as intended.
- The only warnings were "No items found" for 3 queries with a count of 0 (retraction notices in 1976, 1978, and 1979); warnings indicating a misread query were 0. **Written honestly**: the check was first written expecting 0 warnings and failed once.
- The saved publication types page contains the original text distinguishing the two.

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4. Counts by publication year

Calculation 4.1 Records, retracted publications, and retraction notices by publication year (selected years)

Year	Records	Retracted publications (per 10,000)	Retraction notices
2000	532,637	131 (2.46)	25
2005	700,540	353 (5.04)	76
2010	942,368	721 (7.65)	311
2015	1,258,176	1,397 (11.10)	747
2019	1,418,997	2,796 (19.70)	930
2020	1,641,213	2,935 (17.88)	1,528
2021	1,787,579	3,745 (20.95)	2,032
2022	1,783,557	7,133 (39.99)	2,403
2023	1,697,588	2,353 (13.86)	8,030
2024	1,739,848	2,292 (13.17)	4,113
2025	1,881,905	1,017 (5.40)	4,824

Observation 4.2: **Ordering retracted publications by the original paper's publication year, 2022 had the most, 7,133 (39.99 per 10,000 records), and 2025 had 1,017 (5.40; 0.135 times 2022).** Per 10,000 records rose from 2.46 in 2000 until 2022 and then appears to fall. All years are in the checker's output.

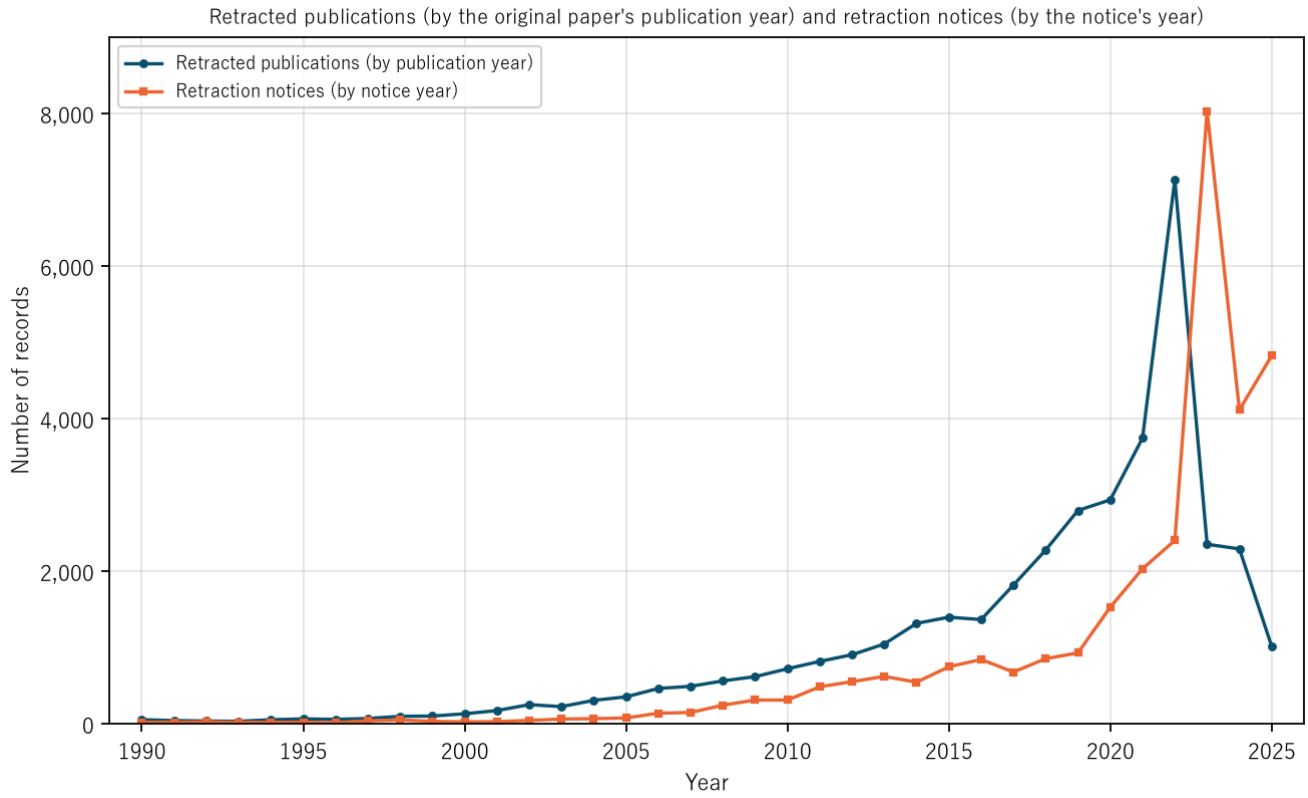


Figure 1: Counts of retracted publications (navy; by the original paper's publication year) and retraction notices (orange; by the notice's publication year), 1990–2025.

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5. The core — counting by the year the paper appeared or the year the retraction was announced

Observation 5.1: **Ordering retraction notices by the notice's publication year, the most was 8,030 in 2023, followed by 4,113 in 2024 and 4,824 in 2025. 2026 also had 3,989 by the retrieval date.** The peak of retraction notices comes one year after the peak of retracted publications (2022).

Observation 5.2: **The middle year of the counts was 2020 for retracted publications and 2023 for retraction notices. The share falling in the 3 years 2023–2025 was 0.148 for retracted publications and 0.548 for retraction notices, so retraction notices lean toward recent years. The count-weighted mean year was 2017.51 for retracted publications and 2020.50 for retraction notices, a difference of 3.00 years.** However, notices were not paired with the papers they retract, so this difference is not the time to retraction itself.

Observation 5.3: **Fewer retracted publications in recent publication years does not mean fewer retractions.** A retraction is announced after the paper appears, and papers whose retraction has not yet been announced are not counted as retracted publications. Counts by publication year can grow later. **Counts by the notice's year, on the other hand, are the retractions announced in that year and do not grow later by going back to earlier years.** Why 2022 and 2023 have so many cannot be told from the counts.

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6. Adding up yearly counts counts some records twice

Calculation 6.1 The sum of yearly counts and counts by range

Publication type	Without years	1975–2025 as one range	1974 or earlier	2026 or later	Sum of 51 yearly counts (times the range count)
Retracted publications	34,783	34,602	7	286	38,301 (1.1069)
Retraction notices	33,632	29,975	3	3,989	30,978 (1.0335)

Observation 6.2: **Counting retracted publications year by year for 51 years and adding them up gave 38,301, which is 3,699 more than the 34,602 counted over 1975–2025 as one range (1.1069 times).** The sum of yearly counts exceeds the single range count because the same records are counted in two or more years. The PubMed User Guide states that the publication date ([dp]) matches both electronic and print dates. This paper did not check this record by record. For retraction notices, the sum of yearly counts, 30,978, was 1.0335 times the range count of 29,975. **Of the counts without years (34,783 retracted publications and 33,632 retraction notices), 502 records carried both publication types.**

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7. Relation to earlier papers

M004 showed that the number of years in which PubMed papers double changes depending on what is counted, and reported that the recent fall in records could not be explained by "not yet fully counted," which applied only to the newest year. Retracted publications are a different case. Because a retraction is announced after the paper appears, the count of retracted publications by publication year can grow later, not only for the newest year (this paper did not measure by how much). M112 ordered the share of papers readable for free by publication year and split it into two parts. This paper counted retractions by two years, the paper's and the notice's.

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8. Limitations

1. **Whether retractions are many or few, good or bad, and the reasons for retraction are not discussed. No specific paper, journal, publisher, author, or research institution is named.**
2. Notices were not paired with the papers they retract. The 3.00-year difference in mean years is not the time to retraction itself.
3. Publication types are attached only to records in PubMed, and retractions not in PubMed are not counted. Changes in how publication types are assigned were not checked.
4. Yearly counts overlap because the same record can be counted in two years.
5. The counts are as of 27 September 2026 and change daily.

Conclusion

Counting retracted publications by the original paper's publication year, 2022 had the most, and recent years looked lower. Counting retraction notices by the notice's year, the most came one year later, in 2023, and the middle year of the counts came three years later. The same retractions line up in different places depending on which year they are counted by. And counts by publication year do not count papers whose retraction has not yet been announced.

What separates them is one thing — whether you count by the year the paper appeared or the year the retraction was announced.

When you hear that "retractions increased (or decreased)," **check whether the count was made by the year the paper appeared or by the year the retraction was announced.** When adding up yearly counts, **also check that the same records are not counted twice.**

Data and reproduction

Data	Counts and query translations retrieved from PubMed (U.S. National Library of Medicine) E-utilities (esearch), 27 September 2026, from 02:03:20. Courtesy of the U.S. National Library of Medicine. NLM's Publication Types page
Terms of use	NLM Terms and Conditions (free of charge; credit the source; do not imply NLM endorsement; state that the data are not the most current)
Coverage	PubMed records of publication years 1975–2025, and retracted publications and retraction notices; counts without years and by range
Verification	`検算/M116.py` (`--zu` also draws the figure). Every number in the text is taken from `検算/M116_output.txt`
Raw data	`data/pubmed_m116_20260927.json` and `data/pubmed_m116_extra_20260927.json`, the retrieval scripts `data/fetch_pubmed.py` and `data/fetch_pubmed_extra.py`, `data/nlm_pubtypes_20260927.html`, and `data/SOURCES.md` (terms of use, SHA-256, original text of the definitions)
Figure	`図/M116_zu1` (png, svg, English version)

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