

Google Trends, 2004-2026: how the data is made

Americans for Non-Profit Transparency · Source pack · Google Trends, 2004-2026: how the data is made
Source file: 01_GOOGLE_TRENDS.md, as it stood on 7 October 2026. Published for checking. Internal cross-references to other files were left as written; private names, non-Latin search strings and local file paths were removed. Google Trends dates in this file are what Google returned at the time stated; Trends redraws its sample.

01 — GOOGLE TRENDS: reference bible for the fact-check

Compiled: 2026-10-04 **Purpose:** Understand Google Trends well enough to judge one claim: that tiny Google Trends spikes on people's names prove those people visited a military base. The setup being checked is region **"Tucson (Sierra Vista) AZ"**, property **Image Search**, exact phrase in quotes, date range **1/1/2025 – 9/9/2025**.

How to read the tags - [CONFIRMED official]: Google's own text. That covers support.google.com/trends, blog.google, Search Central, Google News Initiative, Google-authored papers, Google's own Trends web endpoints, and Wayback Machine copies of those pages. - **[CONFIRMED secondary]:** a peer-reviewed paper, a fact-checker, a major outlet, or third-party documentation. - **[INFERENCE]:** my reasoning from the sources. It is not stated anywhere verbatim.

Quotes are verbatim (curly apostrophes normalized). Wayback snapshots are given as `web.archive.org/web/<timestamp>/<url>;`, and the timestamps are UTC (YYYYMMDDhhmmss).

Method note: Help pages were downloaded raw with curl and checked by text search, not by an AI summarizer. To date each wording change, I scanned every English capture of the FAQ (support.google.com/trends/answer/4365533) in the Wayback Machine from 2014 to 2026 and recorded the last capture without a phrase and the first capture with it. The exact configuration in question was also sent to Google Trends' own explore endpoint (trends.google.com/trends/api/explore) on 2026-10-04 to read back how Google itself encodes it. I used a neutral test phrase for this, not any name from the case.

1. History timeline, 2001–2026

Date	Event	Source and verbatim quote	Tag
2001	First public year-end "Google Zeitgeist" (later renamed "Year in Search").	https://blog.google/products/search/20-years-year-search/ — "Originally, these year-end lists evolved out of an internal project, eventually becoming the annual, public-facing report in 2001."	[CONFIRMED official]
10–11 May 2006	Google Trends launches as a Google Labs experiment.	Date: TechCrunch, https://techcrunch.com/2006/05/10/google-trends-launches/ (search-result level only; I did not open the article). Labs origin: https://blog.google/products-and-platforms/products/search/catching-15-years-google-trends/ (Yossi Matias, 11 Aug 2021) — "Google Trends was initially an experimental tool in Google Labs". The about page captured 2006-07-02 (https://web.archive.org/web/20060702011623/http://www.google.com/trends/about.html) says: "Google Trends is a Google Labs product ... you probably don't want to write your PhD dissertation based on this information."	Date: [CONFIRMED secondary]. Labs and caveat: [CONFIRMED official]
2006 (launch-era page)	Earliest documented method: Trends analyzes only a portion of searches, and location comes from IP address .	Same 2006-07-02 capture — "Google Trends analyzes a portion of Google web searches to compute how many searches have been done for the terms you enter relative to the total number of searches done on Google over time." / "Google Trends uses IP address information from our server logs to make a best guess about where queries originated."	[CONFIRMED official] (historical)
June 2008	Numbers on the graph and CSV export are added.	https://adwords.googleblog.com/2008/08/announcing-google-insights-for-search.html — "In June, we updated Google Trends with numbers and the ability to download results to a spreadsheet."	[CONFIRMED official]
5 Aug 2008	Google Insights for Search	Same post, dated Tuesday, August 05, 2008 — "Today, we're launching Google Insights for Search, a new product designed with the advertiser in mind."	[CONFIRMED official]

Date	Event	Source and verbatim quote	Tag
	launches, aimed at advertisers.		
Dec 2008	The about page still calls the data approximate and warns about sampling.	https://web.archive.org/web/20081217014603/http://www.google.com/intl/en/trends/about.html — "The data Trends produces may contain inaccuracies for a number of reasons, including data-sampling issues and a variety of approximations that are used to compute results."	[CONFIRMED official] (historical)
12 Jul 2011	Geographic assignment is changed, applied retroactively to 1 Jan 2011.	Help article 1383240, captured 2014 (https://web.archive.org/web/2014/http://support.google.com/trends/answer/1383240) — "On July 12, 2011 we rolled out a significant improvement to our geographical assignment ... This update was applied retroactively from January 1, 2011 and may manifest itself in certain queries as a discontinuity in the trend line."	[CONFIRMED official]
Dec 2011	Category taxonomy is rebuilt.	Help article 2370165 (same 2014 capture route) — "During December 2011, we updated the categorization taxonomy."	[CONFIRMED official]
12 Jun 2012	"Hot Searches" (today's "Trending now") is refreshed.	https://blog.google/topics/trends/find-out-what-people-are-searching-for/ — "an algorithm analyzes millions of searches in the U.S. and determines which queries are being searched much more than usual."	[CONFIRMED official]
27 Sep 2012	Insights for Search is merged into Google Trends.	https://search.googleblog.com/2012/09/insights-into-what-world-is-searching.html (Yossi Matias) — "Now we are merging Insights for Search into Google Trends, wrapping it all up in a clean new interface".	[CONFIRMED official]
Dec 2012	Help text lists the properties then available: Web, Images , Product, News.	Help article 87276, "How does Google Trends work?" (2014 capture) — "You can choose to see data for select Google properties, including Web search, Images, Product search, and News search".	[CONFIRMED official]
3 Dec 2013	Topics/entities arrive, grouping misspellings and languages.	https://search.googleblog.com/2013/12/an-easier-way-to-explore-topics-and.html — "Starting today, you'll find new topic reports to help you more easily measure search interest in the people, places and things you care about."	[CONFIRMED official]
18 Dec 2013	New homepage; Top Charts in 72 countries; Hot Searches in 47.	https://search.googleblog.com/2013/12/a-new-year-new-trends.html	[CONFIRMED official]
17 Jun 2015	Real-time (minute-by-minute) data added; the post calls it the biggest expansion since 2012. It also says coverage was widened for "smaller geographies".	https://blog.google/products/search/a-new-window-into-our-world-with-real/ — "today we're announcing the biggest expansion of Google Trends since 2012" / "We've also increased the breadth and coverage of Google Trends data to allow for in-depth research on more niche topics in smaller geographies."	[CONFIRMED official]
1 Jan 2016	Charts show a "data collection" discontinuity at 1/1/2016.	Kerry Liu, <i>Discover Data</i> 2:7 (2024), https://doi.org/10.1007/s44248-024-00013-3 — "Figure 1 also illustrates a data collection update as of January 1, 2016. Should the region be altered to the United States ... an additional data collection update transpired on January 1, 2011."	[CONFIRMED secondary]
2016 "redesign"	Not verified. I found no official 2016 redesign announcement. The verified 2016 items are the	—	Unverified

Date	Event	Source and verbatim quote	Tag
	1/1/2016 data-collection note and the July 2016 News Lab explainer (next row). The help pages captured in April 2016 still describe a "Forecast" checkbox.		
1 Jul 2016	Google News Lab explainer (Simon Rogers). The current FAQ links to it.	https://web.archive.org/web/20180103182409/https://medium.com/google-news-lab/what-is-google-trends-data-and-what-does-it-mean-b48f07342ee8 — "Real time is a random sample of searches from the last seven days, while non-real time is another random sample of the full Google dataset that can go back anywhere from 2004 to ~36 hours ago."	[CONFIRMED official] (Google staff, Google News Lab publication)
27 Nov 2017	News, Shopping, Images and YouTube data surfaced more broadly. The Images property itself already existed by 2012 (see the Dec 2012 row).	TechCrunch, https://techcrunch.com/2017/11/27/google-trends-now-surfaces-data-from-news-images-youtube-and-shopping-verticals — "with the addition of search data from verticals like Google News, Shopping, Images and YouTube."	[CONFIRMED secondary]
23 May 2018	Site redesign; "Trending searches" revamped.	https://blog.google/products/search/see-what-world-searching-updated-google-trends/ — "A revamped Trending searches section, showing what is trending in search right now, both daily and minute-by-minute."	[CONFIRMED official]
Jul 2022	Sampling change at Google Health Trends API (a separate researcher product), effective for data from 1 Jan 2022. Researchers report "strange" results on the public Trends site after 2022.	Myburgh, <i>IJERPH</i> 19(22):15396 (2022), via Europe PMC PMC9692853 — "Future research using the GHT API should not attribute increases in GHT data from 1 January 2022 onward as being reflective of increased search activity ... but rather attribute it to the implemented change to the GHT sampling strategy." Liu 2024 (above) — "after 2022 when the data collection method was updated, Google Trends generates search results for terms that were not yet coined or yields too few results."	[CONFIRMED secondary]
8 Mar 2023	New Google Trends site.	https://blog.google/products/search/google-trends-new-design/	[CONFIRMED official]
14 Aug 2024	"Trending now" rebuilt: refreshes about every 10 minutes, 125 countries.	https://blog.google/products-and-platforms/products/search/google-trends-trending-now-update/ — "It detects 10 times as many emerging trends as before and refreshes every 10 minutes on average".	[CONFIRMED official]
24 Jul 2025	Google Trends API (alpha) announced.	https://developers.google.com/search/blog/2025/07/trends-api — "On the Trends website, the results are scaled from 0 to 100 every time you request data. The API uses a different method for scaling which is consistent across requests".	[CONFIRMED official]
14 Jan 2026	New Explore page with a Gemini side panel , desktop first.	https://blog.google/products-and-platforms/products/search/google-trends-explore-with-ai/ (Nir Kalush) — "The updated Explore page has a new side panel that uses Gemini capabilities to automatically identify and compare relevant trends for your area of interest." The help page https://support.google.com/trends/answer/16763742 says: "Generative AI features on Google Trends are experimental. These features may display inaccurate information."	[CONFIRMED official]

1a. Dated changes to the wording of the official FAQ (support.google.com/trends/answer/4365533)

All dates below come from the Wayback Machine. "Last without" is the last capture lacking the wording; "first with" is the first capture containing it.

Wording	Last without	First with	Notes
Page titled "How Trends data is adjusted" (normalization and 0–100 only)	—	20140126171049 (...4365533?hl=en&ref_topic=4365599)	Earliest capture. Text: "each data point is divided by the total searches of the geography and time range it represents ... The resulting numbers are then scaled to a range of 0 to 100."
"Where Trends data comes from ... unbiased sample ... Realtime data is a random sample of searches from the last 7 days ... Non-realtime ... up to 36 hours before your search", plus "Data that is excluded" (very few people / duplicate / special characters)	20180516231332 (...?hl=en)	20180722090608 (...?hl=en&ref_topic=4365599&visit_id=0-636678471654830299-2041688598&rd=1)	
Page renamed " FAQ about Google Trends data "; adds " largely unfiltered sample ", the irregular-activity/"spam" paragraph and " not a scientific poll "	20190921195239	20191015212824 (...?hl=en)	
"36 hours" becomes " 72 hours " before your search	20220802085647 (http://...?hl=en)	20220911012354 (...?hl=en)	
" What samples are	20250124010506 still has it (wording: "goes as far back as 2004 and up to 72 hours before your search")	First English capture without it: 20250306213953 (...?hl=en). A capture of the URL without hl=en at	Removal falls between 24

Wording	Last without	First with	Notes
provided?" (real-time vs non-realtime) removed		20250126204951 also lacks it.	Jan and 6 Mar 2025.
"What time zone is used ... UTC (30 days or longer) ... local time (7 days or shorter)" added	20250327051843	20250420201956 (...?hl=en&ref_topic=6248052)	
"Searches made by Google products and services: This includes internal searches made by AI Mode and AI Overviews." added	20250720074212	20250805214900 (...?hl=en&topic=13975&visit_id=638900273399500582-616668748&rd=1)	Added between 20 Jul and 5 Aug 2025, inside the 1/1–9/9/2025 window. The page does not say whether the filter was applied retroactively.
"Why does Google Trends data sometimes show unusual spikes ... To protect your privacy, we incorporate statistical noise ... These apparent one-off spikes should not be interpreted as real search activity or evidence of individual searches." added	20260425160217 (...?hl=en&ref_topic=6248052&sjid=17331994889885751895-EU)	20260511162001 (...?hl=en). Still present at 20260808024514 and on the live page (fetched 2026-10-04).	Same edit: the irregular-activity paragraph changed from "attempts to spam our search results" to "attempts to manipulate our search results" and added "In very rare cases". Google spokespeople had already said the same thing publicly in Dec 2025 (\$4).

Snapshot list used (all for 4365533, English): 20140126171049, 20160428072824, 20171119152643, 20180516231332, 20180722090608, 20190512213603, 20190921195239, 20191015212824, 20191120195223, 20200306211112, 20200529231147, 20220802085647, 20220911012354, 20231108050418, 20240804001644, 20250124010506, 20250306213953, 20250327051843, 20250420201956, 20250720074212, 20250805214900, 20251003234030, 20251206120742, 20260425160217, 20260511162001, 20260808024514.

2. Data mechanics

2.1 What a data point is

- **A share of all searches, rescaled.** "Each data point is divided by the total searches of the geography and time range it represents to compare relative popularity." / "The resulting numbers are then scaled on a range of 0 to 100 based on a

topic's proportion to all searches on all topics." — <https://support.google.com/trends/answer/4365533> **[CONFIRMED official]**

- **Built from a portion of searches; it means "likelihood of a random user".** "Google Insights for Search analyzes a portion of Google web searches ... This analysis indicates the likelihood of a random user to search for a particular search term from a certain location at a certain time." — Insights for Search help, "How is the data derived?", <https://web.archive.org/web/20111125024503/http://www.google.com/support/insights/bin/answer.py?hl=en&answer=92768> **[CONFIRMED official]** (historical, 2011)
- **In-product definition of the line chart.** Returned by Google's own explore endpoint on 2026-10-04: "Numbers represent search interest relative to the highest point on the chart for the given region and time. A value of 100 is the peak popularity for the term. A value of 50 means that the term is half as popular. A score of 0 means there was not enough data for this term." — trends.google.com/trends/api/explore (TIMESERIES widget, helpDialog) **[CONFIRMED official]**
- **Not absolute counts.** "the numbers don't reflect absolute numbers, they reflect search interest." — <https://developers.google.com/search/blog/2025/07/trends-api> **[CONFIRMED official]**

2.2 Sampling

- **Official.** "While only a sample of Google searches are used in Google Trends, this is sufficient because we handle billions of searches per day. Providing access to the entire data set would be too large to process quickly." — FAQ 4365533 **[CONFIRMED official]**
- **Two separate samples (2018–Jan 2025 wording).** "Real-time data is a sample covering the last seven days." / "Non-realtime data is a separate sample from real-time data and goes as far back as 2004 and up to 72 hours before your search." — <https://web.archive.org/web/20250124010506/https://support.google.com/trends/answer/4365533?hl=en> **[CONFIRMED official]** (removed Jan–Mar 2025; I found no official statement that the two-sample design itself changed)
- **When a new sample is drawn (Google-authored).** "Google Trends data comes from a sample of the total Google search corpus. This means samples might differ slightly if you get a different sample." / "data is cached each day. Even though it comes from a sample, the same request made on the same day will report data from the same sample. A researcher who wants to average multiple samples must wait a day to get a new sample." — Stephens-Davidowitz & Varian (Google, Inc.), *A Hands-on Guide to Google Data*, rev. 7 Mar 2015, <https://people.ischool.berkeley.edu/~hal/Papers/2015/primer.pdf> **[CONFIRMED official]** (Google authors; describes the 2014–15 system)
- **Earlier Google-authored statement.** "Currently Google Trends data is computed by a sampling method and varies somewhat from day to day. This sampling error adds some additional noise to the data." — Choi & Varian (Google), *Predicting the Present with Google Trends*, draft 10 Apr 2009, https://static.googleusercontent.com/media/www.google.com/en//googleblogs/pdfs/google_predicting_the_present.pdf **[CONFIRMED official]**
- **Re-draw frequency measured independently.** "The sampling appears to take place daily, such that requesting an identical query on different days returns slightly different series." The authors "downloaded each series on 17 occasions during the months of May and June 2010". — Carrière-Swallow & Labbé, Central Bank of Chile WP 588 (2010), <https://dialnet.unirioja.es/descarga/articulo/3724603.pdf> (published as *J. Forecasting* 2013, doi:10.1002/for.1252) **[CONFIRMED secondary]**
- **Short versus long ranges (2025).** "For short-term data ... Google continually updates results in real time. For longer-term data, Google only adds one new sample per day". — Jacques Raubenheimer (Univ. of Sydney biostatistician), *The Conversation*, 18 Dec 2025, <https://theconversation.com/how-misreading-google-trends-is-fuelling-bondi-attack-conspiracy-theories-272251> **[CONFIRMED secondary]**
- **Sample size.** I found **no official figure** for the sampling fraction. AAP FactCheck says "a random sample of about 10 per cent of all Google searches" (<https://www.aap.com.au/factcheck/bondi-attacker-search-data-is-static-not-a-conspiracy/>, 24 Dec 2025). That figure is **not confirmed by Google documentation.** **[CONFIRMED secondary – unverified number]**
- **Measured variation between pulls.** See §6.

2.3 Normalization: 0–100 is recomputed on every request

- "On the Trends website, the results are scaled from 0 to 100 every time you request data." / "each Trends website request scales the data between 0 to 100." — <https://developers.google.com/search/blog/2025/07/trends-api> **[CONFIRMED official]**
- The peak is set to 100 and everything else is relative to it. "Each point on the graph is divided by the highest point, or 100. When we don't have enough data, 0 is shown." — help article 87285 "What do the numbers on the graph mean?", <https://web.archive.org/web/20121216041755/http://support.google.com:80/trends/answer/87285/> **[CONFIRMED official]** (2012)

- **Values are rounded to whole numbers.** "Google Trends data is averaged to the nearest integer." — Stephens-Davidowitz & Varian 2015 (above) **[CONFIRMED official]**. "normalized to the range from 0 to 100 and rounded to integer precision ... rounding causes major problems, to the extent that entirely uninformative, all-zero time series may be returned for unpopular queries" — West, CIKM '20, <https://arxiv.org/pdf/2007.13861> **[CONFIRMED secondary]**
- **Consequence [INFERENCE]:** In a single-term chart, whichever day has the highest sampled share becomes "100", whatever the real number of searches. For a rare phrase, that day can be a handful of sampled searches, or noise (\$2.4, \$4).

2.4 How "0", "<1" and "not enough data" happen

- **"0" (official).** "Searches made by very few people: Trends only shows data for popular terms, so search terms with low volume appear as "0."" — FAQ 4365533 **[CONFIRMED official]**
- **A privacy threshold on absolute numbers (Google authors).** "Google Trends has an unreported privacy threshold. If total searches are below that threshold, a 0 will be reported. ... The privacy threshold is based on absolute numbers. Thus, smaller places will more frequently show zeros, as will earlier time periods." — Stephens-Davidowitz & Varian 2015 **[CONFIRMED official]**
- **Minimum thresholds (2012 help).** "Trends only shows results for searches that have a significant amount of volume, and enforces minimum thresholds for inclusion in the tool." — help article 98987 (captured 2014 via <https://web.archive.org/web/2014/http://support.google.com/trends/answer/98987>) **[CONFIRMED official]**
- **"Not enough data" for a graph.** "When a search term doesn't have enough total Google Search queries, Trends can't create graphs." — <https://support.google.com/trends/answer/9009229> **[CONFIRMED official]**
- **"<1".** I found **no official definition**. Observed usage: "<1" appears in Trends tables and CSVs for values that are non-zero but round below 1. **[INFERENCE — unverified]**
- **Zero is not proof of no searches.** "The value 0 does not necessarily indicate no searches, but rather indicates very low search volumes that are not included in the results." — Mavragani & Ochoa, *JMIR Public Health Surveill* 2019;5(2):e13439, <https://doi.org/10.2196/13439> **[CONFIRMED secondary]**

2.5 Duplicate filtering

- "Duplicate searches: Trends eliminates repeated searches from the same person over a short period of time." — FAQ 4365533 **[CONFIRMED official]**
- 2011 wording: "Our system also eliminates repeated queries from a single user over a short period of time, so that the level of interest isn't artificially impacted by these type of queries." — Insights help 92768 (2011 capture above) **[CONFIRMED official]**
- Mavragani & Ochoa (2019) describe this as filtering by "the same internet protocol address". Google's text says "same person" or "single user". **[CONFIRMED secondary]**, with a wording discrepancy noted.

2.6 Special characters

- "Special characters: Trends filters out queries with apostrophes and other special characters." — FAQ 4365533 **[CONFIRMED official]**
- 2012: "search terms that contain special characters such as an apostrophe, single quotes, and parentheses will be ignored." — help 94777 (2014 capture) **[CONFIRMED official]**

2.7 Irregular or automated activity

- Current text: "We have strong mechanisms in place to detect and filter the vast majority of irregular activity. In very rare cases, Google Trends can also reflect irregular search activity, such as automated searches or queries that may be associated with attempts to manipulate our search results." / "In rare cases, these searches may be retained in Google Trends as a security measure ... those relying on Google Trends data should understand that it's not a perfect mirror of search activity." — FAQ 4365533 **[CONFIRMED official]**
- Wording in force from Oct 2019 to Apr 2026, which covers the 2025 window: "it can also reflect irregular search activity, such as automated searches or queries that may be associated with attempts to spam our search results." — https://web.archive.org/web/20260425160217/https://support.google.com/trends/answer/4365533?hl=en&ref_topic=6248052&sjid=17331994889885751895-EU **[CONFIRMED official]**
- **Google's own AI searches are excluded.** "Searches made by Google products and services: This includes internal searches made by AI Mode and AI Overviews." — FAQ (added between 2025-07-20 and 2025-08-05) **[CONFIRMED official]**

2.8 Time granularity and time zone

- **Time zone (official).** "For time ranges of 30 days or longer: The data shown in the graph uses Coordinated Universal Time (UTC). This applies when the data has a granularity of one day, one week, or one month." / "For time ranges of 7 days or shorter: The data shown in the graph uses your own local time zone as set in your browser or device." — FAQ 4365533 (added Mar–Apr 2025) **[CONFIRMED official]**
- **The exact configuration returns daily data.** Sending "<phrase>", geo US-AZ-789, property images, time 2025-01-01 2025-09-09 to trends.google.com/trends/api/explore on 2026-10-04 returned "resolution": "DAY", "geo": {"dma": "789"}, keyword "type": "PHRASE", "property": "images". **[CONFIRMED official]** (observed from Google's endpoint; test phrase was neutral)
- **Where the daily/weekly cutoff falls (observed by researchers).** "from October 4, 2017, to June 30, 2018, the data are retrieved in daily intervals, while from October 3, 2017, to June 30, 2018, the data are retrieved in weekly intervals". Their Table 3: Past 7 days = hourly; Past day = 8 min; Past 4 hours = 1 min; Past 5 years = weekly; 2004–present = monthly. — Mavragani & Ochoa 2019 **[CONFIRMED secondary]**
- **[INFERENCE] — Arizona clock time.** Each daily point in the 2025 range is a **UTC day**. Arizona (outside the Navajo Nation) is on Mountain Standard Time all year (A.R.S. §1-242, <https://azleg.gov/ars/1/00242.htm>: "The state of Arizona elects to reject daylight saving time"), which is UTC−7. So a "spike on date D" covers roughly **5:00 PM MST on D−1 to 4:59 PM MST on D**, not the local calendar day.
- 2012 help also says graphs were in GMT: "indicating interest over time (GMT)" — help 87276 **[CONFIRMED official]**

2.9 How far back, and real-time vs non-real-time

- Web Search goes back to 2004 (FAQ wording 2018–2025: "goes as far back as 2004") **[CONFIRMED official]**. Other properties, Image Search included, go back to 2008: "Historical data for other types: available from 2008-01-01." — DataForSEO API docs, https://docs.dataforseo.com/v3/keywords_data/google_trends/explore/task_post.md **[CONFIRMED secondary]**
- API: "a rolling window of 1800 days (~5 years) ... The data goes all the way up to just 2 days ago." — Trends API blog **[CONFIRMED official]**
- 2012 help: "The values for your query may not have been available or finalized at the time you were viewing them; you may have been viewing partial data." — help 165883 **[CONFIRMED official]**

Source for all quotes in this subsection: <https://support.google.com/trends/answer/4359582> (search tips) **[CONFIRMED official]** - No quotes: "Results can include searches containing both tennis and shoes in any order." - **Quotes:** ""tennis shoes" Results include the exact phrase inside double quotation marks, possibly with words before or after, like "red tennis shoes."" - Plus: "tennis + squash Results can include searches containing the words "tennis" OR "squash."" - Minus: "tennis -shoes Results include searches containing the word "tennis," but exclude searches with the word "shoes."" - No variants: "No misspellings, spelling variations, synonyms, plural, or singular versions of your terms are included." / "Trends considers each version of a word a different search, including misspellings." - On the Trending-now page: "Note: Chart is exact-match, while the Explore page chart is broad-match." — <https://support.google.com/trends/answer/3076011> **[CONFIRMED official]** - **[INFERENCE]** A quoted name therefore counts **every** sampled search containing that phrase: other people with the same name, the name plus unrelated words, and so on. That widens the match, but it does not tell you who searched or why.

2.11 Search term vs topic

- "A search term, also known as a search query, is the exact word or phrase that users type into the Google search bar - whether that's on Web Search, Image Search, News Search, Google Shopping or Youtube." / "A topic is a group of related search terms that all share the same concept or refer to the same real-world entity. Google's Knowledge Graph helps group these related searches". The page recommends search terms for "Researching a very new or niche query that hasn't been assigned a topic yet." — <https://support.google.com/trends/answer/17309543> **[CONFIRMED official]**

2.12 Categories

- "If you're using Trends to search for a word that has multiple meanings, you can filter your results to a certain category". — <https://support.google.com/trends/answer/4359597> **[CONFIRMED official]**
- "search terms in a category are automatically selected, so some errors in classification may exist." — help 96542 (2012) **[CONFIRMED official]**

2.13 Image Search property

- Image Search is a selectable property. "A search term ... is the exact word or phrase that users type into the Google search bar - whether that's on Web Search, Image Search, News Search, Google Shopping or Youtube." — help 17309543 **[CONFIRMED official]**. It was listed as "Images" in 2012 (help 87276) **[CONFIRMED official]**.
- 2016 help: "Forecasts currently only work for Web Search. If you've selected Image Search, News Search, or Product Search, you won't see a forecast." — help 4359078, <https://web.archive.org/web/20160428072702/https://support.google.com/trends/answer/4359078> **[CONFIRMED official]**
- Internal parameter observed on 2026-10-04: "property": "images" **[CONFIRMED official]**
- Data starts in 2008 for non-web properties (DataForSEO, \$2.9) **[CONFIRMED secondary]**
- **No official numbers exist** for Image Search's share of searches or its thresholds. **[INFERENCE]** Image Search is a subset of Google searching. Restricting to it **plus** one metro **plus** an exact rare phrase **plus** daily resolution pushes counts toward the very low volumes where Google says noise is "most noticeable" (\$4).

3. Geography

3.1 How a search's location is assigned

- **Historical official statement (Trends)**. "Google Trends uses IP address information from our server logs to make a best guess about where queries originated." — Trends about page captured 2006-07-02 and 2008-12-17 (<https://web.archive.org/web/20081217014603/http://www.google.com/intl/en/trends/about.html>) **[CONFIRMED official]** (historical)
- **Current Trends documentation does not say** how location is assigned. I found no current help page on this. **[Unverified for today]**
- **How Google Search estimates location in general (not Trends-specific)**. "IP addresses are roughly based on geography, similar to phone number area codes." — <https://support.google.com/websearch/answer/1696588>. The same page warns that "sometimes you might find activity from locations that aren't your actual location. This usually happens when you use your account on a mobile network". Search also uses device location, home/work addresses and past activity: <https://support.google.com/websearch/answer/179386> **[CONFIRMED official]** (Search, not Trends)
- **Geo assignment has been changed retroactively before**. The 12 Jul 2011 change was applied back to 1/1/2011 (\$1) **[CONFIRMED official]**
- **Expert view**. "The platform's location data is also imprecise ... Internet traffic is often routed through different cities or across borders, which can lead to searches being misattributed". — Raubenheimer via AAP FactCheck, 24 Dec 2025 **[CONFIRMED secondary]**
- **[INFERENCE]** A Trends metro attribution means a search was *assigned* to that metro by Google's geolocation. It is not a GPS fix, and nothing in it ties the search to a particular facility.

3.2 What "metros" are (Nielsen DMAs)

- Current help: "Metros are geographical areas that generally correspond to metropolitan areas. Currently, Google Trends only provides metros for some countries." — <https://support.google.com/trends/answer/4355212> **[CONFIRMED official]**
- 2010–2012 (Insights for Search): "Metros are geographical areas defined by Arbitron that generally correspond to the United States federal government's Metropolitan Areas." — help 142218 (2014 capture) **[CONFIRMED official]** (historical)
- **Today they are DMAs**. The Trends BigQuery dataset help says: "Top 25 and Top 25 Rising queries across 210 Designated Market Areas (DMAs)" — <https://support.google.com/trends/answer/12764470> **[CONFIRMED official]**. Trends' own geo picker (trends.google.com/trends/api/explore/pickers/geo, fetched 2026-10-04) lists **210 unique US metro IDs**, which matches the 210 Nielsen DMAs. The explore request for "Tucson (Sierra Vista) AZ" encodes the area as "geo": {"dma": "789"} **[CONFIRMED official]**.

3.3 Arizona's metros in Google Trends (from Google's geo picker, 2026-10-04) **[CONFIRMED official]**

Trends name	ID	Trends code
Phoenix AZ	753	US-AZ-753
Tucson (Sierra Vista) AZ	789	US-AZ-789
Yuma AZ-El Centro CA	771	US-AZ-771 (also listed under CA)

- Under Arizona, the picker lists only these three. "Albuquerque-Santa Fe NM" (790) appears only under New Mexico. Secondary sources say the Albuquerque DMA covers part of northeastern Arizona (e.g., Apache County). **[CONFIRMED secondary – not verified against Nielsen's own list]**
- **Counties in the Tucson (Sierra Vista) DMA.** Sources disagree. eMediaMonitor lists "Pima, Pinal, Santa Cruz, and Cochise counties" (<https://wp-content.emediamonitor.net/en/country-information/north-america/united-states-dmas/tucson-sierra-vista-arizona/>). Other summaries list only Cochise, Pima and Santa Cruz. TVB: DMA rank 65, about 1.27 million population (2026 estimate) (<https://www.tvb.org/markets/tucson-sierra-vista-az/>). **[CONFIRMED secondary; county list unresolved]**
- **[INFERENCE — verify locally]** This DMA covers the whole of Tucson (about 1 million people) plus Sierra Vista and Nogales. A Trends value for "Tucson (Sierra Vista) AZ" is therefore a metro-wide figure. It cannot isolate any single installation inside that area (e.g., Fort Huachuca in Cochise County or Davis-Monthan AFB in Tucson).

3.4 Smallest unit and city-level data

- "This allows us to display interest in a particular topic from around the globe or down to city-level geography." — FAQ 4365533 **[CONFIRMED official]**
- Inside the Tucson DMA, Google's endpoint returns the subregion map at "resolution": "CITY" (observed 2026-10-04) **[CONFIRMED official]**. **City is the smallest unit Trends exposes.** There is nothing at base, ZIP, building or person level.
- **City thresholds are not published.** "Google Trends has an unreported privacy threshold ... smaller places will more frequently show zeros". — Stephens-Davidowitz & Varian 2015 **[CONFIRMED official]**. 2012: "rare or uncommon searches, or ones that pertain to a very narrow time range or region may not have enough search volume to be presented." — help 98987 **[CONFIRMED official]**
- In-product note on the region map: "A higher value means a higher proportion of all queries, not a higher absolute query count. So a tiny country where 80% of the queries are for "bananas" will get twice the score of a giant country where only 40% of the queries are for "bananas"." — explore endpoint GEO_MAP helpDialog **[CONFIRMED official]**
- "If a region on the map isn't highlighted, it doesn't mean there's no interest." — help 4355212 **[CONFIRMED official]**

4. Privacy: every official statement found

Year	Statement	Source	Tag
2006	"Our graphs are based on aggregated data from millions of searches done on Google over time. The results that Google Trends displays are produced entirely by an automated formula - you can rest assured that no one is reviewing your personal info. As an additional measure, Google Trends will only return results for those terms that have received a significant amount of search traffic."	https://web.archive.org/web/20060702011623/http://www.google.com/trends/about.html	[CONFIRMED official]
2012	"Keep in mind that Trends uses data aggregated over millions of users without personally identifiable information."	help 87276 (2014 capture)	[CONFIRMED official]

Year	Statement	Source	Tag
	Additionally, it only shows results for search terms that receive a significant amount of traffic, and enforces minimum thresholds for inclusion in the tool."		
2015	"Google Trends has an unreported privacy threshold. If total searches are below that threshold, a 0 will be reported."	Stephens-Davidowitz & Varian (Google)	[CONFIRMED official]
2016	"It's anonymized (no one is personally identified), categorized (determining the topic for a search query) and aggregated (grouped together)."	Simon Rogers, Google News Lab, 1 Jul 2016 (Wayback 20180103182409)	[CONFIRMED official]
2018–2019	"After search data is collected, we categorize it, connect it to a topic, and remove any personal information."	https://web.archive.org/web/20180722090608/https://support.google.com/trends/answer/4365533?hl=en&ref_topic=4365599&visit_id=0-636678471654830299-2041688598&rd=1	[CONFIRMED official]
2019–now	"It's anonymized (no one is personally identified), categorized (determining the topic for a search query) and aggregated (grouped together)."	FAQ 4365533	[CONFIRMED official]
17 Dec 2025	ABC NEWS Verify: "a spokesperson said it may show statistical noise due to privacy protections and/or low sampling volume." / "for very uncommon terms, Trends data may appear to show some search interest even if there were no actual searches." / "apparent spikes for low-interest search terms should not be interpreted as reflecting actual search activity."	https://www.abc.net.au/news/2025-12-17/abc-news-verify-misinformation-bondi-terrorist-attack/106150286	[CONFIRMED secondary] (reported Google statement)

Year	Statement	Source	Tag
24 Dec 2025	AAP FactCheck: "To protect user privacy, Google deliberately adds or removes small variations in the data, known as "statistical noise."" / "Spikes should not be interpreted as evidence of actual search activity on a specific date or in a specific country, a Google spokesperson said."	https://www.aap.com.au/factcheck/bondi-attacker-search-data-is-static-not-a-conspiracy/	[CONFIRMED secondary] (reported Google statement)
May 2026–now	"To protect your privacy, we incorporate statistical noise that includes small and random fluctuations that don't represent actual search behavior. While this noise is always present, it is most noticeable on queries with low or no search interest. This means that for these queries, Trends data will sometimes reflect statistical noise rather than actual search interest. These apparent one-off spikes should not be interpreted as real search activity or evidence of individual searches."	FAQ 4365533 (first captured 20260511162001)	[CONFIRMED official]
current	BigQuery Trends data is "designed to mimic the US dataset's privacy-first architecture, ensuring data is normalized and aggregated prior to publication."	https://support.google.com/trends/answer/12764470	[CONFIRMED official]

Note on timing [INFERENCE]: The noise paragraph reached the help page in May 2026, after the 2025 window. But Google's statements say "this noise is always present", and spokespeople described the same mechanism in December 2025. Nothing official says the noise was absent in 2025. Whether it applies to 2025 data cannot be proven from outside Google. The most defensible reading is that Google's current guidance applies when anyone views 2025 data today.

5. What Google Trends is NOT (official statements)

1. **Not a poll.** "Google Trends is not a scientific poll and shouldn't be confused with polling data. It merely reflects the search interest in particular topics." — FAQ 4365533 **[CONFIRMED official]**
2. **Not proof of popularity or a reason.** "A spike in a particular topic does not reflect that a topic is somehow "popular" or "winning," only that for some unspecified reason, there appear to be many users performing a search about a topic. Google Trends data should always be considered as one data point among others before drawing conclusions." — FAQ **[CONFIRMED official]**
3. **Not evidence of individual searches.** "These apparent one-off spikes should not be interpreted as real search activity or evidence of individual searches." — FAQ (2026) **[CONFIRMED official]**
4. **Not a perfect mirror of searching.** "those relying on Google Trends data should understand that it's not a perfect mirror of search activity." — FAQ **[CONFIRMED official]**
5. **Not absolute counts.** "the numbers don't reflect absolute numbers, they reflect search interest." — Trends API blog 2025 **[CONFIRMED official]**. Older help: "They don't represent absolute search volume numbers" — help 87285 (2012) **[CONFIRMED official]**
6. **Not the full dataset.** "only a sample of Google searches are used in Google Trends" — FAQ **[CONFIRMED official]**
7. **Not comparable across separate website requests.** "each Trends website request scales the data between 0 to 100." — Trends API blog **[CONFIRMED official]**
8. **A falling line does not mean fewer searches.** "A line trending downward means that a search term's relative popularity is decreasing—not necessarily that the total number of searches for that term is decreasing". — Google News Initiative lesson, <https://newsinitiative.withgoogle.com/resources/lessons/google-trends-understanding-the-data/> **[CONFIRMED official]**
9. **An unhighlighted region does not mean no interest.** "If a region on the map isn't highlighted, it doesn't mean there's no interest." — help 4355212 **[CONFIRMED official]**
10. **Not Google Ads data.** "Google Trends is a different data source from Google Ads. Please do not cite these sources together." — <https://support.google.com/trends/answer/4365538> **[CONFIRMED official]**
11. **Not research-grade (original caveat).** "you probably don't want to write your PhD dissertation based on this information." — 2006 about page **[CONFIRMED official]** (historical)

6. Pitfalls documented by researchers

#	Finding	Source and verbatim quote	Tag
6.1	Identical queries give different series on different days.	Cebrián & Domenech, <i>Technological Forecasting and Social Change</i> 202 (2024) 123318, doi:10.1016/j.techfore.2024.123318 (abstract via https://ideas.repec.org/a/eee/tefoso/v202y2024ics0040162524001148.html) — "Due to the sampling, the SVI series are not entirely consistent, as the same query produces different results that can widely change from day to day."	[CONFIRMED secondary]
6.2	Sampling noise can be large.	Eichenauer, Indergand, Martínez & Sax, <i>Economic Inquiry</i> 60(2):694–705 (2022), doi:10.1111/ecin.13049 — "In addition, sampling noise can be substantial."	[CONFIRMED secondary]
6.3	Low-volume terms are hit hardest.	Springer, Strzelecki et al., <i>Quality & Quantity</i> (2025), doi:10.1007/s11135-025-02431-0 (PDF: https://webm.ue.katowice.pl/strzelecki/papers/s11135-025-02431-0.pdf) — "Subsampling from Google Trends could have a negative impact on the reliability of data collection, especially with low search volumes (Eichenauer et al. 2022)." Same paper, summarizing Cebrián & Domenech: "Google Trends data for queries with low search volumes can result in significantly deviating time series".	[CONFIRMED secondary]
6.4	Re-pulling 130 samples changes published results.	Raubenheimer, Buckley, Inkiriwang & Wu, <i>Digital Health Week</i> 2(1), 19 Dec 2023, https://openjournals.library.sydney.edu.au/DHW/article/view/17934 — "Each study showed some variation in its results across multiple samples, from minor, but noticeable, to significantly different outcomes." / "Research using GT needs to take multiple samples of data to obtain accurate estimates before analysis."	[CONFIRMED secondary]
6.5	Rare terms and small regions show the "zeros plus isolated spikes" pattern.	Raubenheimer, <i>The Conversation</i> , 18 Dec 2025 — "queries related to terms that are not widely searched ... or in small geographical regions ... can display a wide variation of results from one sample to the next." / "The high variation causes a very distinct pattern of zero or near-zero values with some isolated big spikes".	[CONFIRMED secondary]
6.6	Spikes appear for terms before they existed.	Kerry Liu, <i>Discover Data</i> 2:7 (2024) — "it is surprising to observe numerous search results on 'covid-19' before December 2019 ... it is implausible for people to have searched for this term between 2013 and 2019."	[CONFIRMED secondary]
6.7	Replicability questioned	Franzén, <i>Acta Sociologica</i> 66(3) (2023), doi:10.1177/00016993221151118 — "I use an unplanned experiment to test the reliability and replicability of Google Trends. The results strongly indicate that	[CONFIRMED secondary]

#	Finding	Source and verbatim quote	Tag
	outright.	scientists in all fields should refrain from using the tool Google Trends when conducting research." Rebuttal-style reply: Raubenheimer, <i>Acta Sociol.</i> 67(2):251–256 (2024).	
6.8	Rounding to integers destroys low-volume signal.	West, CIKM '20 (above) — "entirely uninformative, all-zero time series may be returned for unpopular queries when requested together with more popular queries."	[CONFIRMED secondary]
6.9	Most studies ignore sample instability.	Mehlretter, Keusch & Sajons, ESRA 2023 abstract, https://www.europeansurveyresearch.org/conf2023/prog.php?sess=175 — "the large majority of the literature fails to assess the validity of their Google Trends measure, does not consider whether the retrieved data is consistent across samples".	[CONFIRMED secondary]
6.10	Retrieval time must be recorded.	Mavragani & Ochoa 2019 — "Note that data may slightly vary depending on the time of retrieval; thus, the date and time of downloading must be reported."	[CONFIRMED secondary]
6.11	Methodology breaks: 2011 geo, 2016 collection, 2022 (Health Trends API).	See §1 (help 1383240; Liu 2024; Myburgh 2022)	[CONFIRMED official/secondary]
6.12	Field test of this exact kind of claim.	ABC NEWS Verify, 17 Dec 2025 — "ABC NEWS Verify tried to replicate the fake spike in Israel in the days before the attack. The result only showed a spike from about the time the gunman's name was revealed by the ABC. Tests in other countries such as Mongolia, Japan and Kenya did produce spikes, showing the unreliability of this method."	[CONFIRMED secondary]
6.13	Same technique used on the Charlie Kirk and Bondi cases.	AAP FactCheck, 24 Dec 2025 — "Similar claims involving the results from the website were made after US conservative Charlie Kirk's assassination." Raubenheimer: "Generally, everything with a zero trendline and then a sudden spike in values is probably not to be trusted ... The volumes are just too low."	[CONFIRMED secondary]
6.14	Re-pulling is the standard fix.	Stephens-Davidowitz & Varian (Google) — "a researcher can pull multiple samples and average them to get a more precise estimate."	[CONFIRMED official]

7. What this means for reading a single spike on a rare name

The setup in question: phrase in quotes, Image Search, Tucson (Sierra Vista) AZ, 1/1/2025–9/9/2025.

1. **Google itself says not to do this.** Its official FAQ says one-off spikes on low-interest queries "should not be interpreted as real search activity or evidence of individual searches" (§4, §5.3). A Google spokesperson told AAP that spikes "should not be interpreted as evidence of actual search activity on a specific date or in a specific country" (§4).
2. **A spike can occur with zero real searches.** Google told ABC that for very uncommon terms, Trends "may appear to show some search interest even if there were no actual searches" (§4). The cause is deliberate privacy noise, which Google says is "most noticeable on queries with low or no search interest" (§4).
3. **"100" is not a count.** Each request rescales its own peak to 100, and values are relative shares rounded to integers (§2.3). A single noisy or tiny day becomes "100" automatically when everything else is 0.
4. **The settings stack up toward noise.** Exact phrase + a rare name + Image Search only + one TV market + daily points is about as low-volume as Trends gets. Google and Google's own economists say zeros and noise grow as places and periods shrink (§2.4, §3.4, §2.13 — the combined effect is [INFERENCE], each part is official).
5. **Re-run it and the spike may move or vanish.** Trends draws samples, researchers find the same query "can widely change from day to day" (§6.1), and ABC got spikes for the same name in Mongolia, Japan and Kenya (§6.12). One screenshot from one day is one sample, not a measurement.
6. **The place is a TV market, not a base.** "Tucson (Sierra Vista) AZ" is Nielsen DMA 789 (§3.2–3.3). It covers Tucson and its surroundings, and Trends' smallest unit is the city (§3.4). Nothing in Trends can place a searcher on a specific installation.
7. **The location is an estimate.** Google's earlier Trends documentation said location is a "best guess" from IP address (§3.1). Google's Search help warns that IP-based location can be wrong, especially on mobile networks. Location assignment has also been revised retroactively before (§3.1, §1).
8. **The day is a UTC day.** For a 252-day range the data is daily and in UTC (§2.8). For Arizona, a "date" runs from about 5 PM the previous day to 5 PM local time, so lining a spike up against a local event date can be off by a day ([INFERENCE] from official UTC rule + A.R.S. §1-242).

9. **A search is not a visit, and a phrase match is not the person.** Quoted terms match any sampled search containing the phrase, including namesakes and unrelated wording (§2.10). Repeat searches by one person are collapsed (§2.5). Trends is "not a scientific poll" and "one data point among others" (§5.1–5.2). Even a real search shows only that someone in the metro typed a phrase into Image Search. It does not show who that was, why, or that the named person was anywhere.
10. **This exact method has been debunked before.** After the Bondi and Charlie Kirk cases, fact-checkers (ABC NEWS Verify, AAP FactCheck) and a biostatistician who studies Trends (Raubenheimer) showed that pre-event "name spikes" were noise artifacts. ABC reproduced such spikes in unrelated countries (§6.12–6.13).

Suggested controls for our own tests (to log in 04_OUR_TESTS.md) [INFERENCE]: - Re-run each screenshot's exact settings on several different days and record the date and time of each pull. - Run the same settings for invented or gibberish names, and for random ordinary names. - Run the same names in unrelated metros. - Switch Image Search to Web Search. - Widen the range so the data becomes weekly.

If the spikes appear just as often in the controls, they are noise.

Items I could not verify (stated plainly)

- A specific official "2016 redesign" announcement.
- Any official sampling percentage. The "about 10%" figure is AAP's, not Google's.
- An official definition of "<1".
- How Trends assigns location *today*. The IP-address wording is 2006–2008.
- Whether privacy noise or the AI-Mode filter were applied retroactively to 2025 data.
- The official text of the public-Trends chart note for 1/1/2022. The verified 2022 change is to the Health Trends API.
- The exact county list of DMA 789 (secondary sources conflict).
- The exact launch date of YouTube search data in Trends.