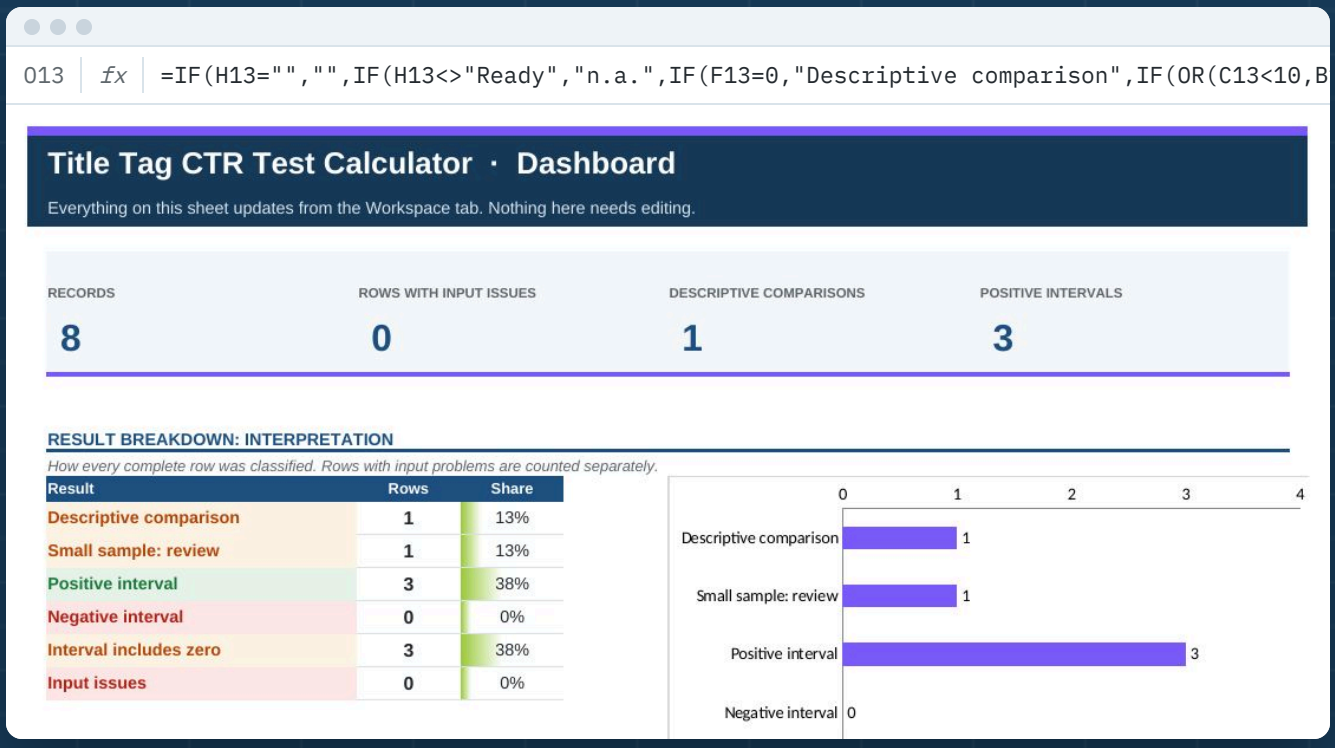
OptimizationTheory.com

Content SEO Toolkit, resource 24

Title Tag CTR Test Calculator

Compare two CTRs with a 95% interval and plain-English verdicts, so you don't ship a title change that was just noise.

Built for the DataForSEO API: On-Page API



Field guide, v3.0, November 2026

Jourdan Rombough, optimizationtheory.com

What this template decides

Whether a title or snippet change produced a CTR difference that's distinguishable from noise, with honest labels for small samples and non-randomized comparisons.

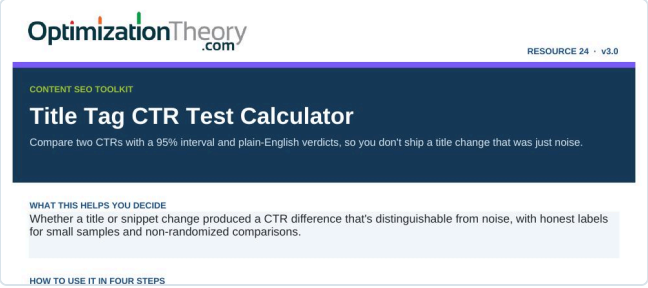
Title tag tests are one of the few SEO experiments small teams can run, and one of the easiest to misread. A CTR going from 3.1% to 3.4% looks like a win until you realize the interval around that difference includes zero.

This SEO title tag testing calculator compares CTR for version A and version B, calculates the difference in percentage points, an unpooled standard error and an approximate 95% confidence interval, then labels each test: Positive interval, Negative interval, Interval includes zero, Small sample: review, or Descriptive comparison when the test wasn't randomized.

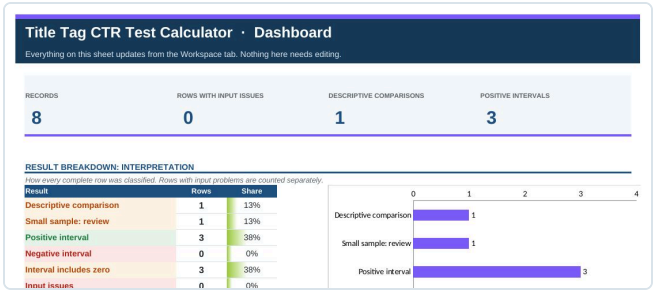
Who it's for

- SEOs testing titles and meta descriptions
- Ecommerce teams testing product title formats at scale
- Analysts who need to report test results honestly
- Teams with SEO split-testing setups

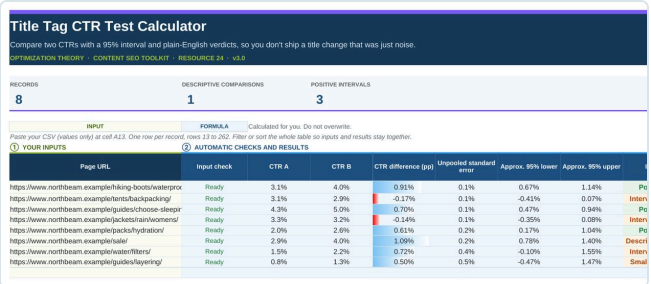
What's in the workbook



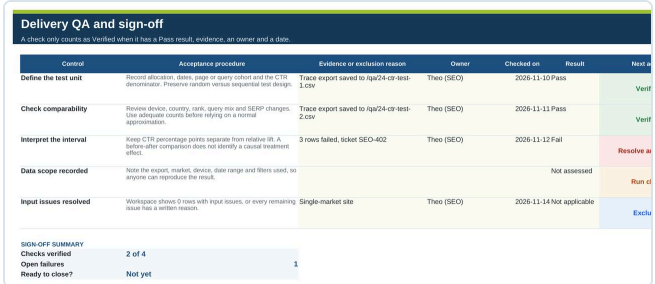
Start Here. Purpose, four-step setup and colour key.



Dashboard. KPIs, charts, Top 10 and an automatic action list.



Workspace. The working table, room for 250 rows.



Delivery QA. Evidence, owner and date for each validation step.

How the calculation works

CTR = clicks ÷ impressions for each version. Difference = CTR B − CTR A. Standard error = √(pA(1−pA)/nA + pB(1−pB)/nB). The approximate 95% interval is difference ± 1.96 × SE. Fewer than 10 clicks or non-clicks in either group is flagged as a small sample.

The key formula, as written in the workbook

```
=IF(H13="","",IF(H13<>"Ready","n.a.",IF(F13=0,"Descriptive comparison",IF(OR(C13<10,B13-C13<10,E13<10,D13-E13<10),"Small sample: review",IF(AND(M13>0,N13>0),"Positive interval",IF(AND(M13<0,N13<0),"Negative interval","Interval includes zero"))))))
```

Result column	Plain-English formula	What it tells you
CTR A	Version A clicks ÷ Version A impressions	Version A clicks / impressions.
CTR B	Version B clicks ÷ Version B impressions	Version B clicks / impressions.
CTR difference (pp)	CTR B-CTR A	Percentage-point difference displayed as a percentage.
Unpooled standard error	SQRT(CTR A × (1-CTR A) ÷ Version A impressions+CTR B × (1-CTR B) ÷ Version B impressions)	Normal-approximation standard error of the difference.
Approx. 95% lower	CTR difference (pp)-1.96 × Unpooled standard error	Unpooled Wald interval lower bound.
Approx. 95% upper	CTR difference (pp)+1.96 × Unpooled standard error	Unpooled Wald interval upper bound.
Interpretation	IF(Random allocation verified=0,"Descriptive comparison",IF(OR(Version A clicks<10,Version A impressions-Version A clicks<10,Version B clicks<10,Version B impressions-Version B clicks<10),"Small sample: review",IF(AND(Approx. 95% lower>0,Approx. 95% upper>0),"Positive interval",IF(AND(Approx. 95% lower<0,Approx. 95% upper<0),"Negative interval","Interval includes zero"))))	Checks allocation and small expected-count concerns before labeling the interval.

The results you'll see

Descriptive comparison | Small sample: review | Positive interval | Negative interval | Interval includes zero

Green means the row meets the checks, red means fix it first, amber needs a human review and blue marks an opportunity. Rows with missing or out-of-range inputs show in the Input check column and are left out of

the results until fixed.

How to use it, step by step

1

Define A and B

Split comparable pages into two groups, or compare time periods for one page if you can't split.

2

Collect impressions and clicks

From Search Console, for the same date range and filters for each version.

3

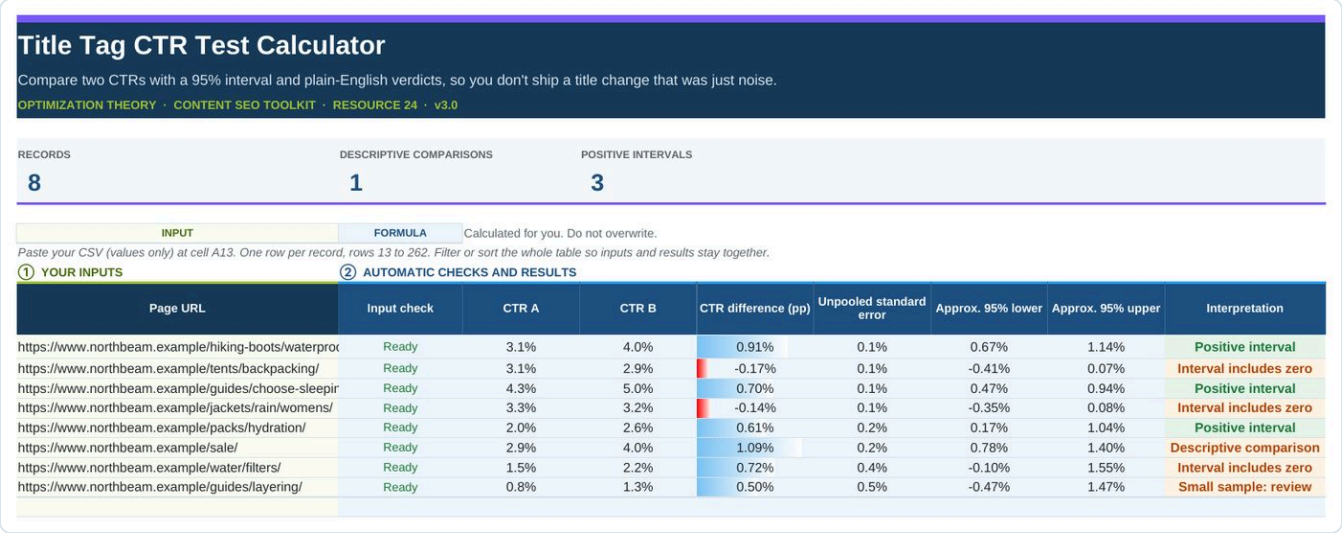
Mark randomization

Mark 1 only if pages were randomly assigned to A and B. Before/after on one page is 0.

4

Read the interval, not the point

Ship only Positive interval results. Keep testing when the interval includes zero.



Title Tag CTR Test Calculator

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OPTIMIZATION THEORY · CONTENT SEO TOOLKIT · RESOURCE 24 · v3.0

RECORDS	DESCRIPTIVE COMPARISONS	POSITIVE INTERVALS
8	1	3

INPUT FORMULA Calculated for you. Do not overwrite.

Paste your CSV (values only) at cell A13. One row per record, rows 13 to 262. Filter or sort the whole table so inputs and results stay together.

① YOUR INPUTS ② AUTOMATIC CHECKS AND RESULTS

Page URL	Input check	CTR A	CTR B	CTR difference (pp)	Unpooled standard error	Approx. 95% lower	Approx. 95% upper	Interpretation
https://www.northbeam.example/hiking-boots/waterproo	Ready	3.1%	4.0%	0.91%	0.1%	0.67%	1.14%	Positive interval
https://www.northbeam.example/tents/backpacking/	Ready	3.1%	2.9%	-0.17%	0.1%	-0.41%	0.07%	Interval includes zero
https://www.northbeam.example/guides/choose-sleepir	Ready	4.3%	5.0%	0.70%	0.1%	0.47%	0.94%	Positive interval
https://www.northbeam.example/jackets/rain/womens/	Ready	3.3%	3.2%	-0.14%	0.1%	-0.35%	0.08%	Interval includes zero
https://www.northbeam.example/packs/hydration/	Ready	2.0%	2.6%	0.61%	0.2%	0.17%	1.04%	Positive interval
https://www.northbeam.example/sale/	Ready	2.9%	4.0%	1.09%	0.2%	0.78%	1.40%	Descriptive comparison
https://www.northbeam.example/water/filters/	Ready	1.5%	2.2%	0.72%	0.4%	-0.10%	1.55%	Interval includes zero
https://www.northbeam.example/guides/layering/	Ready	0.8%	1.3%	0.50%	0.5%	-0.47%	1.47%	Small sample: review

The Workspace tab with the worked example. Lime cells are inputs; blue cells are formulas.

Fill it with DataForSEO

This template is built to run on **DataForSEO On-Page API**: a crawl of your site: URLs, status codes, canonicals, inlinks and sitemap membership.

Most of the data columns fill automatically. Add the business inputs listed below, then paste.

1. Request the data

```
POST https://api.dataforseo.com/v3/on_page/task_post
[
  {
    "target": "yourdomain.com",
    "max_crawl_pages": 1000
  }
]
```

Post the crawl task, wait for it to finish, then request on_page/pages with {"id": "<task id>", "limit": 1000} and save that response.

2. Save the full JSON response

Save the complete response, not just the task ID, next to the template folder.

3. Convert it to the input CSV

The script in the Automation folder runs offline: no API call, no credentials.

```
python3 Automation/dataforseo_import.py import --template 24 --input response.json --output my-inputs.csv
```

Fills automatically	You add
Page URL	Version A impressions, Version A clicks, Version B impressions, Version B clicks, Random allocation verified

Source reference fills automatically with the task ID, endpoint, location, language, device and snapshot time, so every row is traceable. Paste the finished CSV at Workspace cell A13. Estimate the cost first with the DataForSEO Cost Calculator (template 38).

Input dictionary

Keep the CSV columns in this order and paste values at Workspace cell A13. A missing observation stays blank; use 0 only for a measured zero or a verified No.

CSV field	Column	Meaning and rule	Typical source
`url`	Page URL	Exact absolute URL. Keep case and query parameters unless a documented normalization rule applies.	DataForSEO: url
`impressions_a`	Version A impressions	Eligible observations for version A under a documented allocation.	Your records or manual review
`clicks_a`	Version A clicks	Clicks among version A impressions.	Your records or manual review
`impressions_b`	Version B impressions	Eligible observations for version B.	Your records or manual review
`clicks_b`	Version B clicks	Clicks among version B impressions.	Your records or manual review
`randomized`	Random allocation verified	1 only if allocation supports the independent randomized-comparison assumptions. 1 = Yes, 0 = No.	Your records or manual review
`source_ref`	Source reference	Task ID, export filename and observation scope. Retain the untouched source response separately. Optional.	DataForSEO: source_ref

The worked example

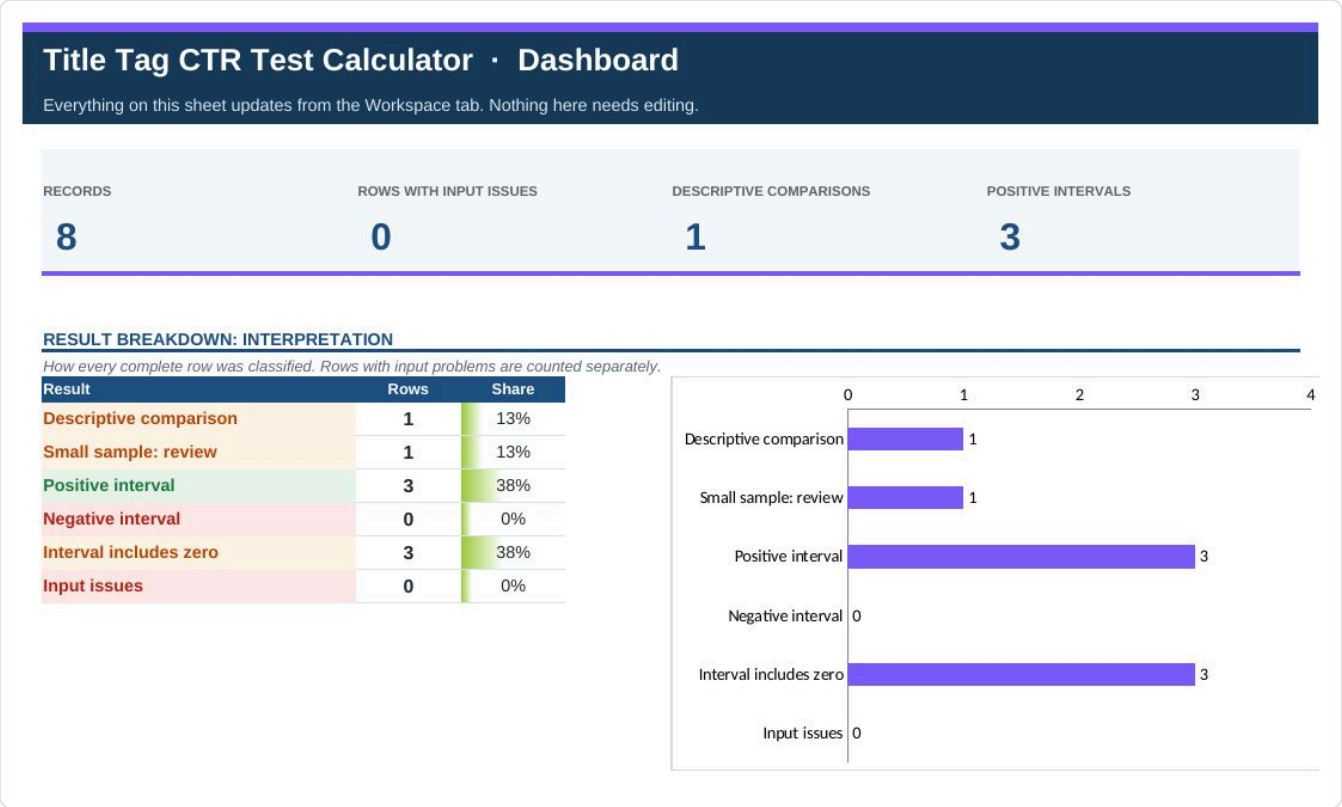
Every workbook ships filled with data from Northbeam Outdoor, a fictional outdoor-gear retailer. This one has 8 example rows.

8	0	1	3
Records	Rows with input issues	Descriptive comparisons	Positive intervals

Three example tests show a clearly positive interval. The tent category test went slightly negative but includes zero, and the sale page test wasn't randomized, so it's descriptive only.

Top 10 by CTR difference (pp)

#	Page URL	CTR difference (pp)
1	https://www.northbeam.example/sale/	1.09%
2	https://www.northbeam.example/hiking-boots/waterproof/	0.91%
3	https://www.northbeam.example/water/filters/	0.72%
4	https://www.northbeam.example/guides/choose-sleeping-bag/	0.70%
5	https://www.northbeam.example/packs/hydration/	0.61%



The Dashboard updates automatically from the Workspace tab.

Reading the result honestly

Ordinary before-after GSC windows are descriptive. The randomized flag must not be used to upgrade observational data.

Limits. Normal approximation can fail for small counts. Repeated peeking, correlated impressions and multiple tests need a different analysis.

Mistakes to avoid

Declaring winners on tiny samples. With a few hundred impressions, almost any difference is noise.

Before/after tests treated as experiments. Rankings, seasonality and SERP features all change over time. Label them descriptive.

Ignoring position changes. CTR depends on rank. Check average position stayed similar between versions.

Tips from the field

Use the SEO split test calculator for traffic-level tests with control groups.

Test patterns across many pages rather than one page at a time.

Save the winning pattern in your content brief template for future pages.

Questions people ask

How do I A/B test title tags for SEO?

Change titles on a randomly selected group of similar pages, keep a control group unchanged, and compare CTR over the same period with a confidence interval.

How long should an SEO title test run?

Until each group has enough impressions and clicks to produce a tight interval, typically several weeks for most sites.

Why isn't a higher CTR always a win?

Because random variation produces differences too. The confidence interval shows whether the difference is likely real.

Can I test one page before and after?

Yes, but it's a descriptive comparison, not a controlled test. The template labels it that way.

Templates that work well with this one

SEO Split Test Calculator
Estimate ratio-adjusted lift and difference-in-differences against matched control pages, with a pre-trend check.

Content Decay Analysis Template
Separate lost impressions, lower CTR and falling demand, so you refresh the pages that really decayed.

SEO Content Brief Template
A content brief built for Google and AI answers: real questions, original evidence, sources and a three-step approval workflow.

Keyword Cannibalization Checker Template
Find queries splitting clicks across two URLs, check whether intent really overlaps and decide whether to consolidate.

SEO Visibility Score Calculator
Weight rankings by search volume and CTR to see real visibility gains and losses across a fixed keyword set.

SEO Forecast Template
Project added clicks and contribution per keyword cluster with CTR, attainment and seasonality you can defend.

Read the full tutorial online: **optimizationtheory.com/download-view/seo-ctr-test-calculator/**
Get all six templates in the **Content SEO Toolkit**, or all 40 in the **Complete SEO & GEO Toolkit**.