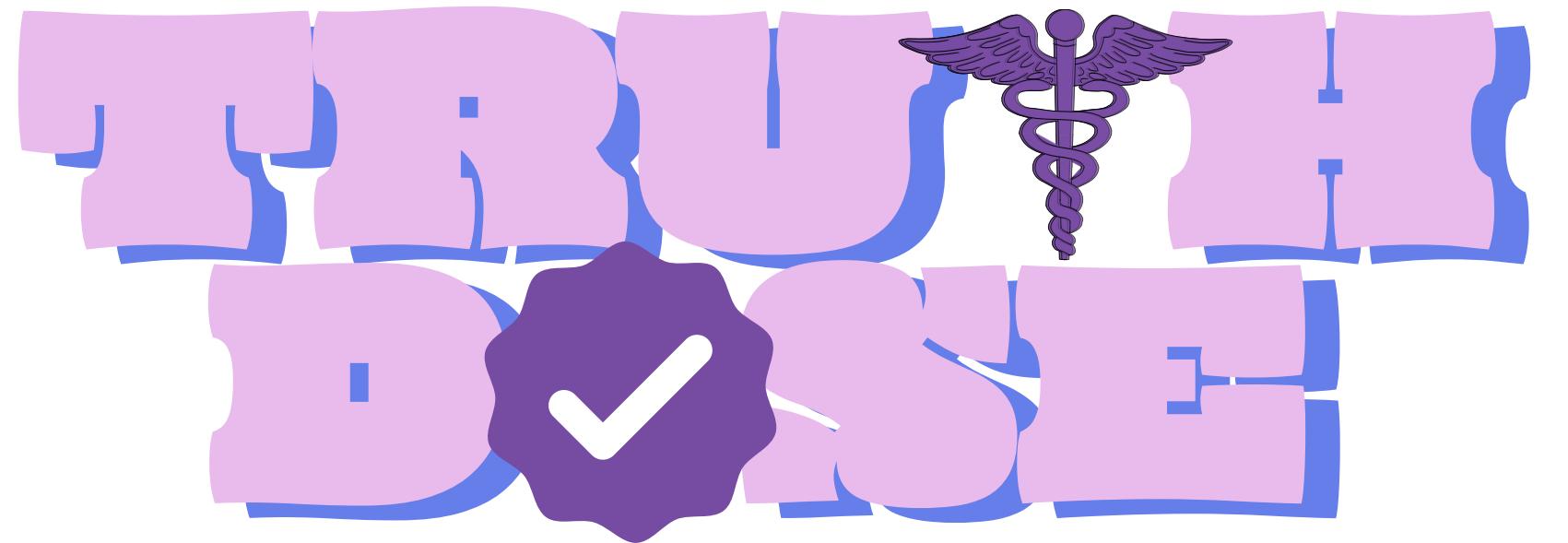




Google
Chrome
Built-in AI
Challenge
2025



Combating the Health Misinformation with Evidence

*Because everyone deserves to make
informed health decisions.*



Health misinformation : A global challenge

800 people died, 5,876 were hospitalized, and 60 became blind from drinking methanol during COVID-19, believing misinformation that it would cure the virus [1]

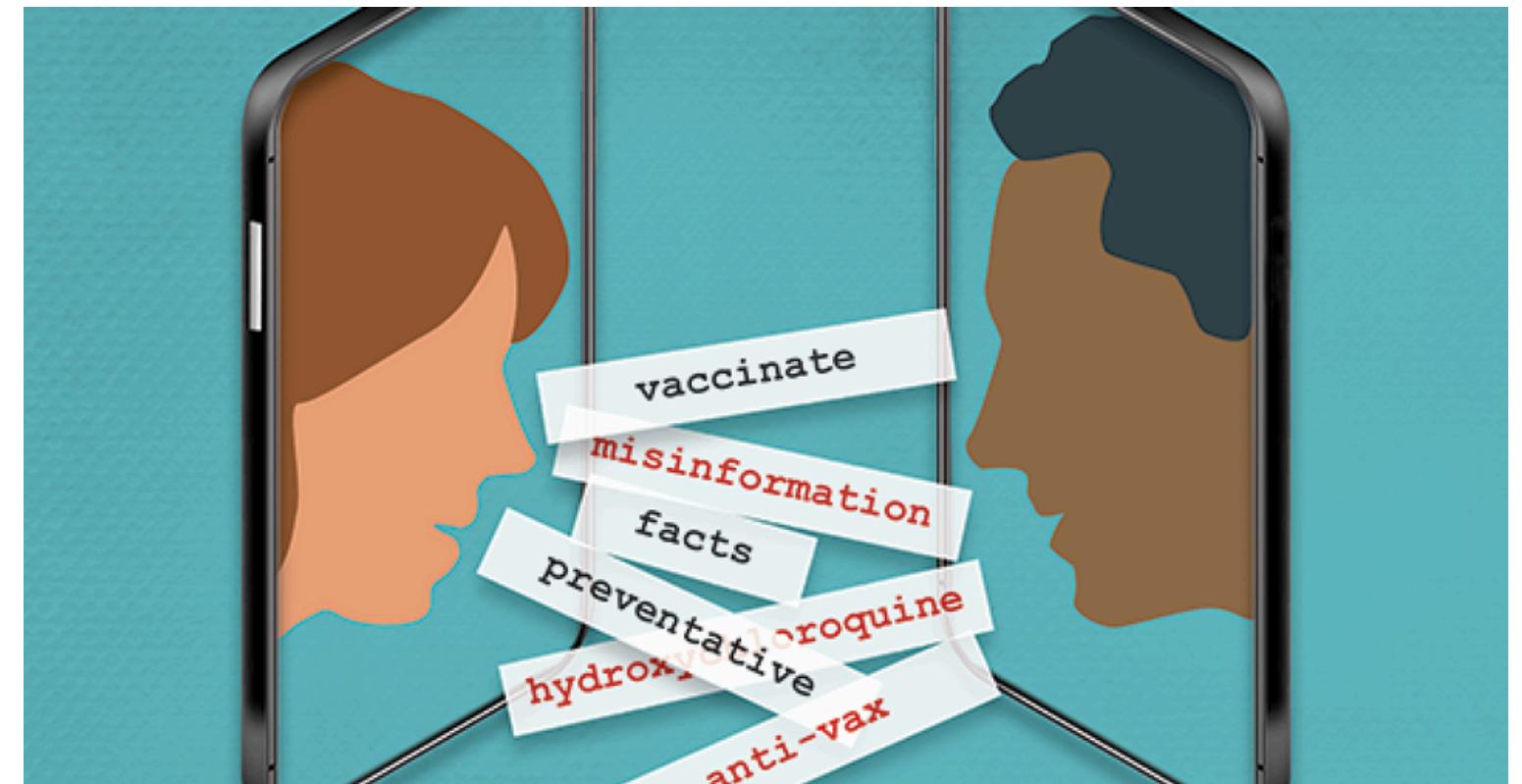
TruthDose: A research backed approach

- *A Chrome extension that verifies health claims with peer-reviewed research*
- *Prioritizing user privacy, your health queries never leave your device.*

1. Ashby, Jessica. "The Effects of Medical Misinformation on the American Public." Ballard Brief, Mar. 2024, ballardbrief.byu.edu/issue-briefs/the-effects-of-medical-misinformation-on-the-american-public.

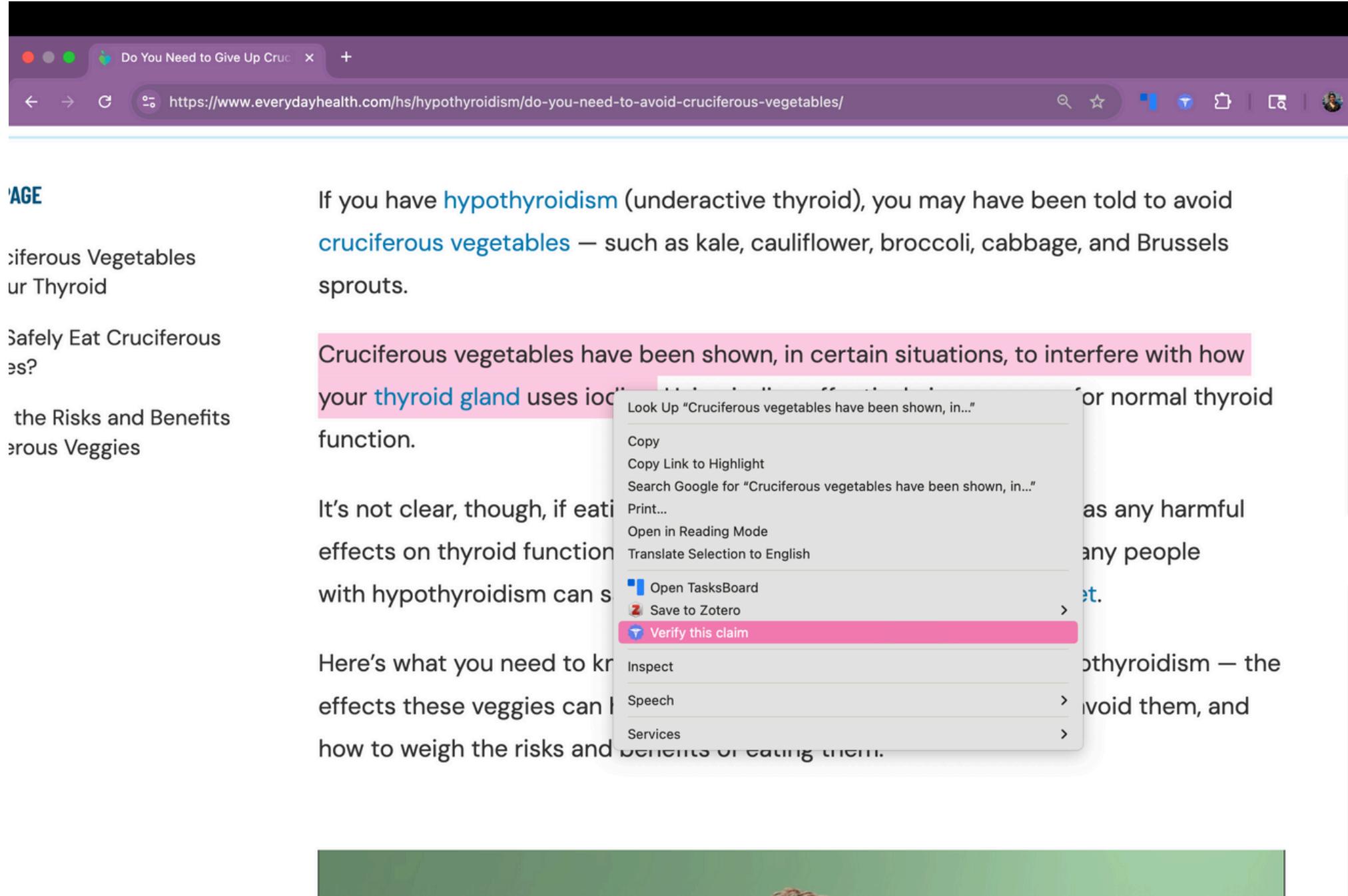
The Problem - Part 1 Health misinformation : A global infodemic

- Infodemic refers to the rapid spread of information—both accurate and inaccurate, false narratives—in the age of the internet and social media.
- 800 people died, 5,876 were hospitalized, and 60 became blind from drinking methanol during COVID-19, believing misinformation that it would cure the virus [1]



1. Ashby, Jessica. "The Effects of Medical Misinformation on the American Public." Ballard Brief, Mar. 2024, ballardbrief.byu.edu/issue-briefs/the-effects-of-medical-misinformation-on-the-american-public.

TruthDose: A research backed approach



Option 1: Highlight text

A screenshot of the TruthDose extension interface. At the top, there's a logo featuring a caduceus inside a blue circle. Below it, the text "Truth Dose" is displayed in bold. A subtext reads "Your AI-powered tool to verify medical opinions you are reading online". A "Chrome Built-in AI" button is visible. The main area contains a text input field with the placeholder "Enter health claim to verify:" followed by an example: "e.g., 'Drinking lemon water every morning boosts immunity'". Below this is a "Result language:" dropdown set to "English". At the bottom is a large blue button with the text "How true is that?"

Option 2: Enter text into extension

Pipeline

User inputs a claim into the extension or highlights a text on the browser when reading a article / social media → clicks on verify this claim to access TruthDose extension

Query
Rephrasing

Chrome
Prompt API

Hybrid paper
search + ranking

PubMed+Semantic
Scholar API

Meta data
extraction

Chrome
Prompt API

Abstract
summarization

Chrome
Summarizer API

Sentiment
analysis :
Confidence score

Chrome
Prompt API

Provides a Truth score

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Translation
Chrome
Translator API

Technology Highlights

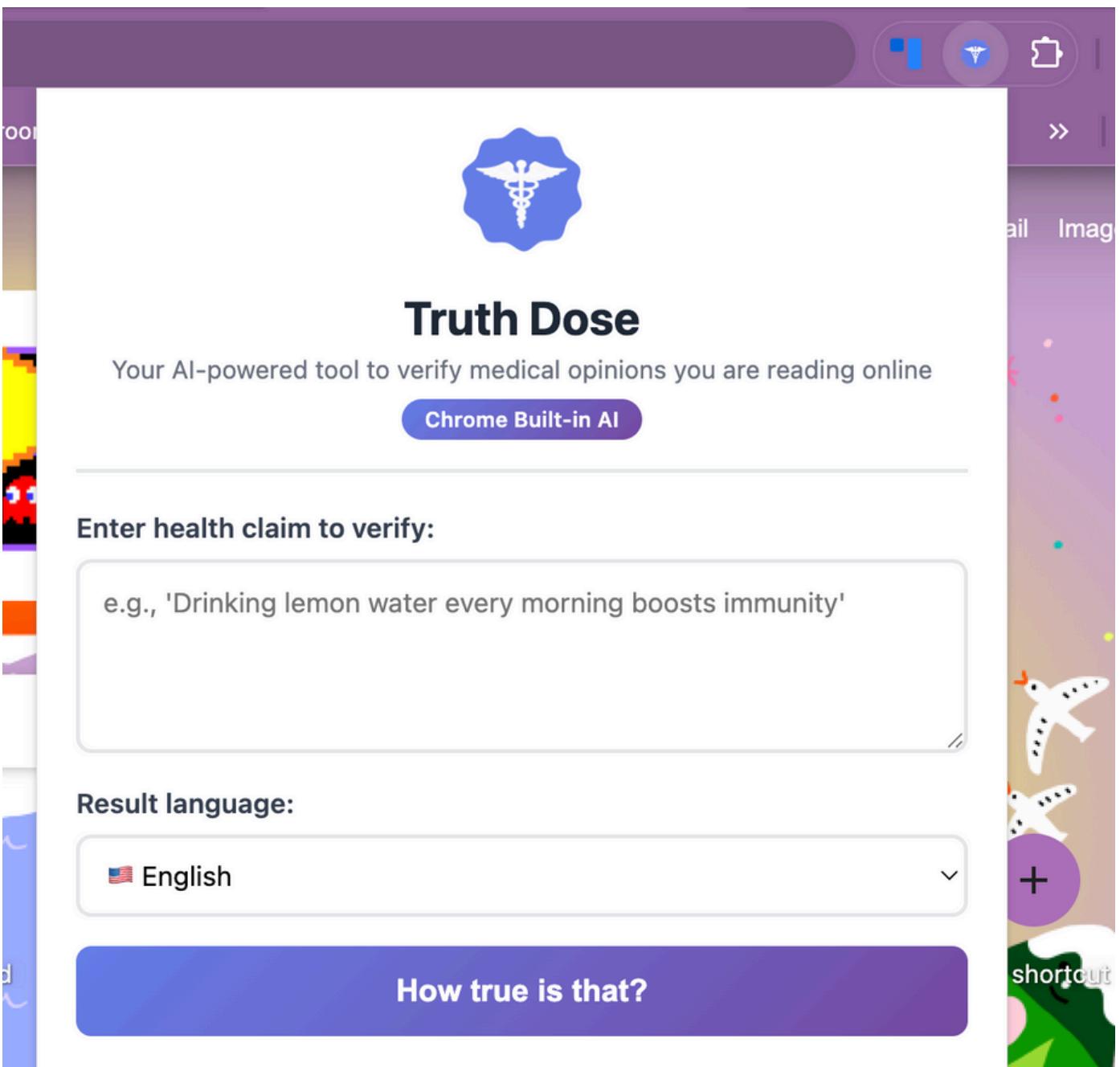
Privacy-first: All AI processing happens locally using Chrome's Built-in APIs—Prompt API, Summarizer API, and Translator API. Your health data stays on your device.

Smart ranking: PubMed for gold-standard medical literature + Semantic Scholar to surface breakthrough recent studies with high citation velocity.

Transparent: You see exactly which papers support or contradict claims, with links to read the full studies yourself."



Demo



Research papers



Default "relevance" favors papers with:

- Strong MeSH (controlled medical vocabulary) term matches , gold standard for medical literature.
- High journal impact factor
- Established citation history
- Recency is secondary - prioritizes "best evidence".



Semantic Scholar

Uses neural embeddings for semantic similarity:

- Focuses on citation velocity (citations/year, not total)
-
- **Recency bias** surfaces "hot" new research over established classics.
- **Cross-disciplinary** (CS, biology, medicine mixed)
- Favors "rising star" papers over established classics

Ranking metric

Quality score : Influential citations (60%) + Recency score (40%)

60% Influential Citations (peer validation)

Uses log scale: $\log_{10}(\text{count} + 1) / 3.5$

3,000+ influential citations = max score

Filters out self-citations and citation farms

40% Recency (current knowledge)

This year = 1.0 score

10 years old = 0.5 score

20+ years old = 0.0 score

Formula: $1 - (\text{age} / 20)$

Final Truth Score

Step 1: Weight Each Paper

- Each paper's weight = its quality score / total quality scores
- Higher quality papers (more influential citations + recency) = more weight

Step 2: Apply Confidence

- Multiply paper weight by Chrome AI sentiment confidence (0.0-1.0)
- Creates weighted sentiment score for each paper

Step 3: Aggregate Sentiments

- Sum all weighted scores by sentiment type:
- Support% = sum of all POSITIVE weighted scores
- Contradict% = sum of all NEGATIVE weighted scores
- Neutral% = sum of all NEUTRAL weighted scores

Step 4: Calculate Final Truth Score

Truth Score = Support% - Contradict%

- Clamped between 0% and 100%
- Neutral papers don't affect the score

Meta data extraction from abstracts : Chrome Prompt API

- Study Type: Research methodology (systemic review, case study etc)
- Demographics: age, gender, population
- Statistical significance (p-value, effect size)

Important to know when genders, age groups , communities are not included in medical research



Women are overmedicated because drug dosage trials are done on men, study finds

Overprescribing women results in widespread side effects, UChicago research suggests

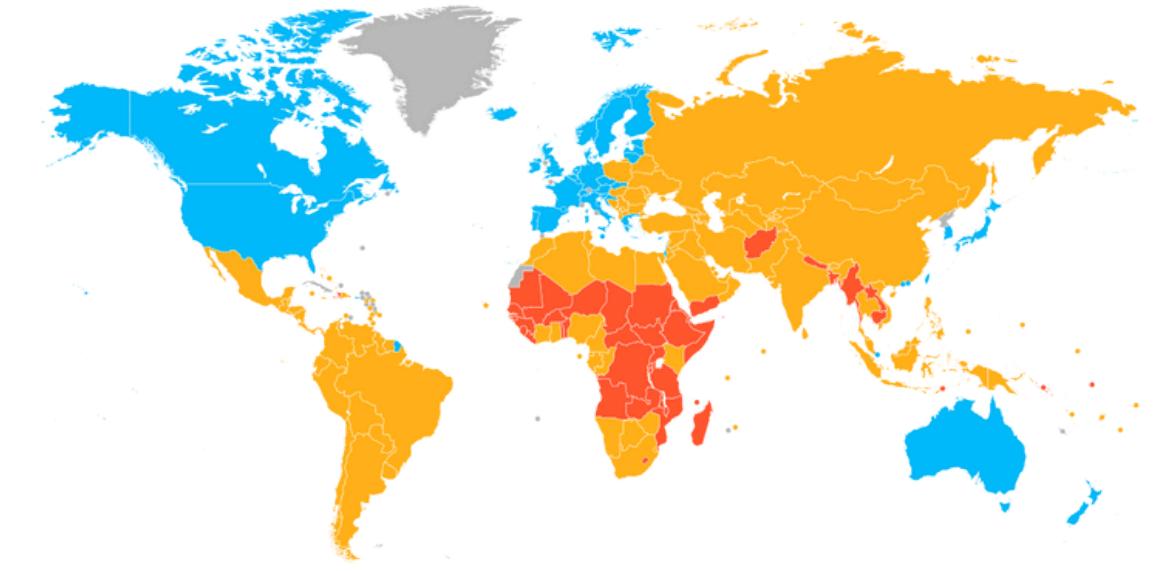
Part 2: Medical Research Has a Representation Problem (“Missed information”).

Women are overmedicated because drug dosage trials are done on men, study finds

Overprescribing women results in widespread side effects, UChicago research suggests



Gender and racial gaps



Geographical concentration

Community anecdotes: Real experiences from diverse populations

Ma, Manuel A., et al. "Minority representation in clinical trials in the United States: trends over the past 25 years." Mayo Clinic Proceedings. Vol. 96. No. 1. Elsevier, 2021.

Future work

“Missed information” : How can we learn from other’s experiences?

Community Insights

- Real experiences from diverse populations
- Proxy to global perspectives often missing from trials



Future work

Data sources



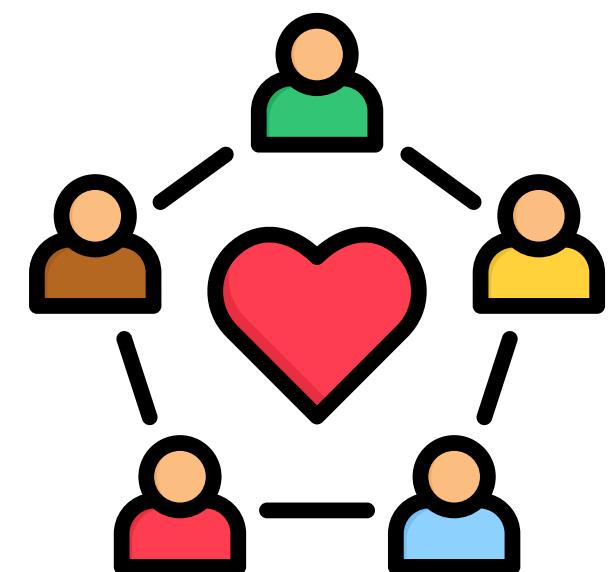
openFDA

Features

- Gender
- Ethnicity
- Geographic location

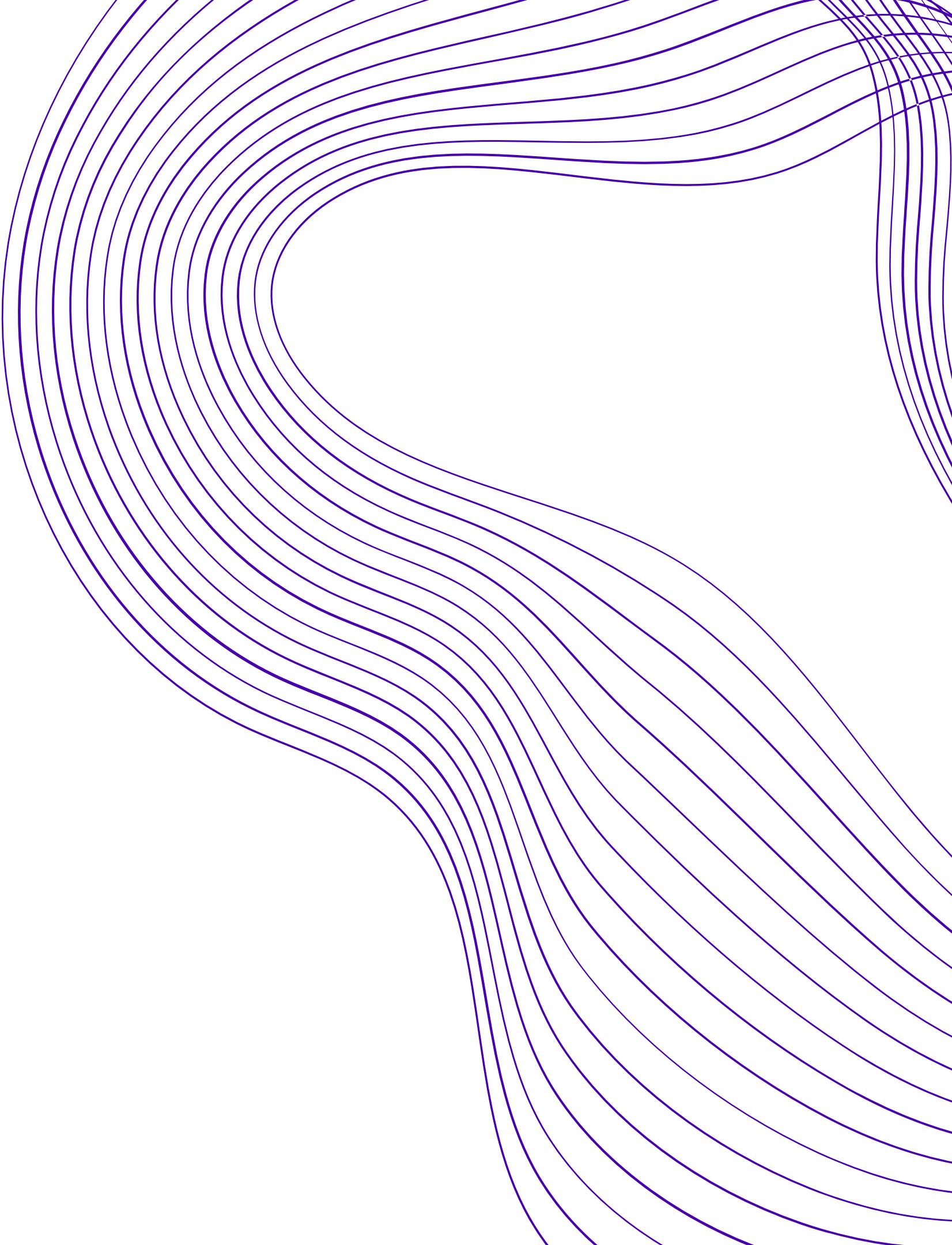
Extensions

- Symptom tracker
- Community
- Self health experimentation tracker





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Thank you!

