



proprietary

POV: GOOGLE UPDATES ITS MEDICAL KNOWLEDGE GRAPH

MARCH 2016



GOOGLE UPDATES ITS MEDICAL KNOWLEDGE GRAPH

EXECUTIVE SUMMARY

Google recently updated the way search results display when a user searches for a medication, including brand names, generic/compound names and OTC products (see “Naproxen,” right). When a user searches by a medication name, a revamped version of Google’s Knowledge Graph information box now appears alongside regular search results.

- + Although the Knowledge Graph has been appearing in search results for some time, Google recently updated its design to be more appealing and interactive, and content is aggregated from various sources.
- + The new design mirrors the design Google rolled out last February for disease-condition searches.

Naproxen

Brand name: Anaprox

NSAID (anti-inflammatory)
It can treat fever and pain.

[SIDE EFFECTS](#) [INTERACTIONS](#) [WARNINGS](#)

Brands: Naprelan, Midol, Aleve, Select, Naprosyn, Anaprox, Rugby, and Ec-Naprosyn
Availability: Prescription sometimes needed
Pregnancy: Consult a doctor
Alcohol: Avoid. Very serious interactions can occur

Related medications

- Bromfenac (Xibrom) >
- Meloxicam (Mobic) >
- Piroxicam (Feldene) >
- Oxaprozin >
- Mefenamic acid (Ponstel) >

Consult a doctor for medical advice
Sources: Micromedex and others. [Feedback](#)

An Intouch Solutions analysis showed two issues of concern:

- + Content featured in these boxes continues to evolve and is not always consistent or completely accurate.
- + The update could negatively affect click-thru rates for branded product websites for certain search terms.

This POV provides information on the updated Knowledge Graph boxes and the implications for those involved in the promotion of medications online.



THE KNOWLEDGE GRAPH: THEN AND NOW

Knowledge Graphs have been appearing in search results for a variety of queries [since mid-2012](#). Google previously used different designs for health condition searches than it did for medication searches, but in December 2015, it switched to one format for both search types:

May 2012 The Knowledge Graph is introduced, but does not apply to **health condition** or **medication** searches.

Thomas Jefferson
3rd U.S. President

Thomas Jefferson was an American Founding Father, the principal author of the Declaration of Independence, and the third President of the United States. *Wikipedia*

Born: April 13, 1743, Shadwell, VA
Died: July 4, 1826, Charlottesville, VA
Presidential term: March 4, 1801 – March 4, 1809
Spouse: Martha Jefferson (m. 1772–1782)
Party: Democratic-Republican Party
Awards: AIA Gold Medal

Get updates about Thomas Jefferson Keep me updated

Nov. 2012 Knowledge Graphs begin appearing for **medications**, including brand, generic and OTC keywords.

Ibuprofen
Prescription drug, Over-the-counter drug
Consult a doctor if you have a medical concern.

Treats fever and pain, including pain caused by headache, toothache, arthritis, cold or flu, migraine, or menstrual cramps. This is a nonsteroidal anti-inflammatory drug (NSAID).

By mouth: [Side effects](#) - [Warnings](#) - [How to use](#)
Injection: [Side effects](#) - [Warnings](#) - [How to use](#)

National Library of Medicine

Brand names: Advil, Midol, Motrin, Caldolor, NeoProfen, Ibu
Pregnancy risk: Category C (Risk cannot be ruled out)
Possible side effects: Headache, Nausea, Vomiting, Bleeding, Dizziness, Flatulence
Drug classes: Non-steroidal anti-inflammatory drug, Analgesic
Other drugs in same class: Acetaminophen, Naproxen, Aspirin, [More](#)
May treat: Fever, Inflammation, Cold, Menstrual cramps, [More](#)

Feb. 2015 Knowledge Graphs begin appearing for **health conditions**, featuring a new look and original content from Mayo Clinic.

Cavity
Also called: dental caries

ABOUT SYMPTOMS TREATMENTS

Permanently damaged areas in teeth that develop into tiny holes.

Very common
More than 3 million US cases per year

- Treatable by a medical professional
- Requires a medical diagnosis
- Lab tests or imaging often required

Causes include bacteria, snacking, sipping sugary drinks, and poor teeth cleaning. There may be no symptoms. Untreated cavities can cause toothache, infection, and tooth loss. Treatments include fluoride, fillings, and crowns. Severe cases may need a root canal or removal.

Dec. 2015 The Knowledge Graph for **medications** is revised and updated to match the look and interactivity of the health condition information boxes, but content is from aggregated sources.

Procaine ↻
Brand name: Novocaine

Local anesthetic
It can numb part of the body for a short time to prevent pain during surgery or a medical procedure.

[SIDE EFFECTS](#) [INTERACTIONS](#) [WARNINGS](#)

Brands: Novocaine and Novocain
Availability: Prescription needed
Pregnancy: Consult a doctor
Alcohol: No known interactions with light drinking
Drug class: Sodium channel blocker

Related medications

- Benzocaine / Butamben / Tetracaine >
- Lidocaine (Lidoderm) >
- Cocaine >
- Lidocaine / Prilocaine (Craix) >
- Benzocaine (Americaine) >

Consult a doctor for medical advice
Sources: Micromedex and others. Feedback



SO WHAT'S IN THE UPDATED KNOWLEDGE GRAPH BOX?

- + Generic name (with option to hear pronunciation)
- + Brand name or list of common brand names
- + Drug class
- + Controlled substance warning (where applicable)
- + NIH.gov links to side effects, interactions and warnings (by administration type, if applicable)
- + Availability, i.e., if a prescription is needed
- + Pregnancy and alcohol safety considerations
- + Indications it may treat (where applicable)
- + Related medications

Thalidomide ⓘ
Common brands: Thalomid

Immunomodulator
It can treat and prevent a skin disease caused by leprosy (erythema nodosum leprosum). It can also be used with dexamethasone to treat multiple myeloma.

SIDE EFFECTS **INTERACTIONS** **WARNINGS**

Brands: Thalomid
Availability: Prescription needed
Pregnancy: Consult a doctor
Alcohol: Avoid. Very serious interactions can occur
Drug class: Angiogenesis inhibitor

May treat

Multiple myeloma A cancer of plasma cells.	Prurigo A skin condition characterized by multiple nodules on the backs of the arms and legs that are extremely itchy.
--	--

Related medications

Lenalidomide (REVLIMID) >

Consult a doctor for medical advice
Sources: Micromedex and others. Feedback

DO ALL MEDICATION SEARCH RESULTS SHOW THE REVAMPED KNOWLEDGE GRAPH BOX?

Not all medication searches result in the updated Knowledge Graph information box.

- + Before the December 2015 rollout, some medication searches resulted in the 2012 version of Knowledge Graph, while others had none at all.
- + Those with no Knowledge Graph before the rollout have continued without one.
- + Of the brands Intouch reviewed, 80% of those with the 2012 version of the box have transitioned to the new version, which suggests this is a permanent changeover as opposed to a test.

No Knowledge Graph

Simple Knowledge Graph

Revamped Knowledge Graph



NOTE: In order to receive either type of Knowledge Graph (original or revamped) in results, searches must contain only the brand or generic drug name in the query. No other words can be included. For example, “naproxen” triggers a Knowledge Graph box, but queries like “naproxen dosing” or “can naproxen be taken with other medications” or “naproxen side effects” do not.

WHAT'S THE SOURCE OF THE CONTENT, AND HOW IS IT INFLUENCED OR CHANGED?

WHERE KNOWLEDGE GRAPH CONTENT COMES FROM

One key difference between results displayed for a health condition Knowledge Graph box versus those displayed for a medication is the source of the content (shown at the bottom of the box at right). The content for health conditions is [compiled, curated and reviewed by a team of doctors and then checked by the Mayo Clinic](#). However, it appears that content for the revamped medication Knowledge Graph is aggregated from sites such as the U.S. Food and Drug Administration, U.S. National Library of Medicine, Mayo Clinic, DailyMed, Micromedex, and “others.”

This is similar to the way that other, non-medical Knowledge Graphs are populated. For example, content that appears from a search for musician [Bob Dylan](#) is a mixture of magazine articles, Wikipedia entries, Facebook fan pages and other “unofficial” sources — meaning the information could have been written without rigorous oversight.

REPORTING MISINFORMATION

Google provides a feedback box in the bottom-right corner of the Knowledge Graph for reporting problems with content. If the feedback option is not visible, the “More about this information” dropdown link can be clicked. There is also an option to request removal based on legal grounds.

NOTE: While all Google users have the ability to submit feedback, employees working in the pharmaceutical industry are encouraged proprietary

Naproxen ⓘ
Common brands: Naprelan, Midol, Aleve

NSAID (anti-inflammatory)
It can treat fever and pain.

SIDE EFFECTS **INTERACTIONS** **WARNINGS**

Brands: Naprelan, Midol, Aleve, Select, Naprosyn, Anaprox, Rugby, and Ec-Naprosyn
Availability: Prescription sometimes needed
Pregnancy: Consult a doctor
Alcohol: Avoid. Very serious interactions can occur

Related medications

- Bromfenac (Xibrom) >
- Meloxicam (Mobic) >
- Piroxicam (Feldene) >
- Oxaprozin >
- Mefenamic acid (Ponstel) >

Consult a doctor for medical advice
Sources: US FDA, US NLM, Mayo Clinic, DailyMed, Micromedex and others. Feedback

Naproxen ⓘ
Common brands: Naprelan, Midol, Aleve

NSAID (anti-inflammatory)
It can treat fever and pain.

SIDE EFFECTS **INTERACTIONS** **WARNINGS**

Brands: Naprelan, Midol, Aleve, Select, Naprosyn, Anaprox, Rugby, and Ec-Naprosyn
Availability: Prescription sometimes needed
Pregnancy: Consult a doctor
Alcohol: Avoid. Very serious interactions can occur

Related medications

- Bromfenac (Xibrom) >
- Meloxicam (Mobic) >
- Piroxicam (Feldene) >
- Oxaprozin >
- Mefenamic acid (Ponstel) >

Consult a doctor for medical advice
Sources: US FDA, US NLM, Mayo Clinic, DailyMed, Micromedex and others.

Click on the error ×
No errors? [Give general feedback](#).



to adhere to their own standard operating procedures regarding correction of [misinformation](#) on the Web.

WILL THE UPDATE HAVE AN EFFECT ON WEBSITE TRAFFIC?

Because [one in 20 Google searches](#) is for health-related information, many speculate the health-related Knowledge Graph is Google's ongoing effort to capture and keep the large volume of health-related searches on Google-related properties. If a healthcare provider, for example, is simply confirming the spelling of the generic name for a branded product, the box will tell them what they need to know without clicking through to a branded site.

As the revamped Knowledge Graph is designed to be more interactive and aesthetically pleasing, Intouch investigated whether the change was lowering organic click-thru rates in the search results. Intouch reviewed 26 brands across various pharmaceutical companies and estimated the new medication Knowledge Graph reduced organic click-thru rates to the websites by just over 4% on average.

- + Twelve of the 26 branded sites had no Knowledge Graph for their brand or generic term. This cohort acted as the control, and their average click-thru rate change from the week before the rollout to the week after was 0.01%.
- + However, for the 14 sites that changed from the old Knowledge Graph to the new one, the average click-thru rate change was -4.36% over the same timeframe.

While these results are not statistically significant, Intouch is reasonably confident in its conclusion: **The new Knowledge Graph results in a slight negative impact on organic traffic. It is probable that pay-per-click is also negatively affected.**

RECOMMENDATIONS

AUDIT CONTENT

All brands should review their Knowledge Graph results to understand what content appears in search results. Due to concerns about the [responsibility of pharmaceutical companies to correct inaccurate information found online](#), careful judgement should be used, referencing your company's own standard operating procedure. Submitting feedback to Google or the original proprietary



source does not guarantee they will make a change, but it certainly increases the chances. And since content changed even over the course of developing this POV, Knowledge Graph result audits should be conducted on a regular basis.

EXPAND LONG-TAIL CONTENT

Considering Knowledge Graph boxes may have slightly negative impacts on website traffic — and because only root branded and generic terms are triggering them — Intouch recommends seeking out and taking advantage of opportunities to optimize for long-tail branded traffic (e.g., “can Advil be taken with other medications”). Long-tail keywords are defined as any search queries consisting of four or more words. They generally have more identifiable search intent, are searched fewer times and are easier to rank for organically. Intouch consistently recommends attention to long-tail traffic for a variety of reasons — helping to fulfill specific user needs, increasing organic ranking likelihood, etc. — and this new information reinforces its importance. Now may be a good time to review and update your brand's paid search marketing strategy as well.

If you have questions about updates to Knowledge Graph, please reach out to your Intouch contact for more information.

© Intouch Solutions 2016
Author: Tylor Hermanson — Search Strategist

 **Kansas City**
913.317.9700

 **Chicago**
312.540.6900

 **New York**
646.795.3600

www.intouchsol.com
email: info@intouchsol.com
blog: intouchsoul.com
twitter: [@intouchsol](https://twitter.com/intouchsol)