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Digital surveillance: Are people actively seeking non-factual fluoride content on Google?

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Matheus LOTTO¹, Olivia Santana JORGE¹,
Thiago CRUVINEL^{1*}

¹ Department of Pediatric Dentistry, Orthodontics and Public Health, Bauru School of Dentistry, University of São Paulo, Bauru, Brazil

*Corresponding author:

Thiago Cruvinel
Department of Pediatric Dentistry, Orthodontics and Public Health
Bauru School of Dentistry, University of São Paulo
Alameda Octávio Pinheiro Brisolla, 9-75.
Vila Universitária.
17012-901, Bauru, São Paulo, Brazil
Phone: (+14) 3235-8318
E-mail: thiagocruvinel@fob.usp.br

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ABSTRACT

Purpose: The widespread dissemination of non-factual fluoride content (NFFC) across online platforms can stimulate the avoidance of consumption of fluoridated products. Then, this study aimed to analyze the activity of Google users in seeking NFFC in distinct countries.

Methods: The monthly variation of relative search volume (RSV) of the topic “fluoride – chemical compost”, with its issues and queries, were determined between January/2004 and April/2022 using Google Trends. Additionally, the presence of queries associated with NFFC was assessed on prominent social media platforms, namely Facebook, Instagram, and Reddit by expert examiners. Data were analyzed by forecasting models, comparison of frequencies of NFFC and factual issues and queries regarding dichotomized Human Development Index for education (HDIe), Internet access, online search activity, predicted online search activity, and burden of untreated dental caries (Chi-square test), and association of NFFC interests with dichotomized indicators (multiple logistic regression).

Results: The findings indicate a growing concern regarding the potential hazards of fluoride, as evidenced by its prevalence on social media platforms. This users' interest also encompassed confounding content that have been related to supportive scientific references. Notably, the relative search volume (RSV) for NFFC exhibited positive correlations with HDIe, while displaying negative associations with online search activity and the burden of untreated dental caries. This study reveals a concerning upward trend in the interest of Google users regarding NFFC over time, particularly in countries characterized by higher education levels, lower burdens of untreated dental caries, and reduced online search activity.

Conclusions: These observations underscore the importance of addressing the dissemination of NFFC to promote accurate information and enhance public understanding of the subject. Such efforts are crucial in safeguarding public health and promoting informed decision-making regarding the consumption of fluoridated products.

Key-words: eHealth; Fluoride; Information Seeking Behavior; Infodemiology; Misinformation

INTRODUCTION

In the contemporary digital era, the concept of self-care has played a pivotal role in fostering the proliferation of online health information-seeking behavior (OHISB) in parallel with the global diffusion of Internet access^[1,2]. Notably, this evolving trend has contributed substantially to fostering health empowerment and individual autonomy, thereby resonating with the principles underpinning democratic societies^[3]. It is crucial to underscore that OHISB is intricately interconnected with several factors, including the perceived utility, trustworthiness, and overall quality of the accessible information, as well as individual socio-demographic characteristics^[4]. These socio-demographic attributes encompass age, gender, race, educational attainment, and income levels, exerting notable influences on individuals' engagement in seeking health-related information through digital channels^[4].

Previous infoveillance studies focused on the dental domain have demonstrated a marked increase in user activity concerning searches for oral health-related topics^[5,6]. Indeed, these mounting interests can be attributed to people's innate necessity to (a) acquire or verify knowledge pertaining to disease prevention or treatment, and (b) address personal oral health concerns that could potentially impinge upon their overall quality of life^[6]. However, the positive outcomes of these information-seeking behaviors hinge upon users' aptitude to effectively select, comprehend, and utilize health-related information^[7].

With this in mind, the promotion of fluoride-containing measures should be underscored as an evidence-based, effective, and safe approach for controlling dental caries, the most prevalent global oral disease^[8-10]. Nevertheless, online platforms harbor non-factual fluoride content (NFFC) concerning potential side effects of fluoride-containing products and drinking water^[11,12]. This misinformation can contribute to the emergence and reinforcement of negative perceptions among Internet users, as well as fuel the propagation of anti-fluoridation propaganda^[11]. Consequently, such misinformation poses a threat to individual decision-making processes and can adversely impact oral health outcomes^[11,23]. Pertinently, the act of searching itself can indicate an individual's predisposition to align with a retrieved message^[4]. Moreover, search results often yield a wide array of information with conflicting content^[13], and individuals tend to favor and credit information influenced by their confirmation bias^[14]. Thus, the surveillance of digital searches for NFFC can shed light

on the influence of falsehoods on the formation of individuals' knowledge and beliefs^[15].

Therefore, this study aimed to analyze the activity of Google users in seeking NFFC in distinct countries. We hypothesized that this seeking behavior would have an association with countries' online search activity (H_1), education levels (H_2), Internet access (H_3), and the burden of untreated dental caries (H_4).

MATERIAL AND METHODS

Study design and ethical considerations

This longitudinal retrospective ecological study investigated fluoride-related computational metadata from 25 countries using Google Trends, as described in previous studies (5,6). The study collected relative search volume (RSV) data, along with rising and main issues and queries of interest to health seekers, pertaining to the topic "fluoride - chemical compost" from January 2004 to April 2022. The data underwent analysis through (i) 12-month ARIMA forecasting models, (ii) qualitative analysis of issues and queries related to NFFC, (iii) comparison of frequencies of NFFC and factual/confounding content with respect to dichotomized Human Development Index for education, Internet access, online search activity, predicted online search activity, and burden of untreated dental caries, and (iv) examination of the association between RSV of NFFC and dichotomized country development indicators.

Considering that research utilizing publicly available data is exempt from human subjects' regulations, this study did not require institutional review board approval from the Council of Ethics in Human Research of (blinded).

Relative Search Volume (RSV)

Google Trends is a free online tool demonstrating the search activity of Google users about specific queries or topics, represented by weekly or monthly variation of RSVs normalized by the maximum value found in a given time (RSV=100). The results can be filtered by period, source, location, and category. In this context, the queries represent the keywords entered by users on Google Search to retrieve the content of interest. In parallel, topic represent an algorithm-based function developed by Google to determine search volumes linked to an issue of interest, which include all relevant queries performed by users. As a result, it is possible to filter all metadata available for a specific topic without employing a search strategy composed of different

keywords. Thus, the present data collection enabled the use of massive data related to the topic of interest, avoiding data loss. On April 27, 2022, the topic "fluoride - chemical compost" was used to collect data filtered by health category and web searches from January 2004 to April 2022.

Countries selection

The inclusion criterion of countries was the sufficiency of data volume ($RSV \neq 0$). Out of the 250 countries available on Google Trends, 25 countries were selected for analysis: Australia (AUS), Belgium (BEL), Brazil (BRA), Canada (CAN), Denmark (DEN), Finland (FIN), France (FRA), Germany (GER), Hungary (HUN), India (IND), Ireland (IRL), Italy (ITA), Netherlands (NLD), New Zealand (NZL), Norway (NOR), Poland (POL), Portugal (POR), Serbia (SER), Slovenia (SVN), Sweden (SWE), Switzerland (CHE), South Africa (ZAF), Taiwan (TAI), United Kingdom (GBR), and United States (USA).

Top and rising issues and queries

Google Trends also offers a list of rising and main issues and queries, which represent the terms used by users to perform searches related to a specific topic. The study obtained a list of all fluoride-related issues and queries for each country. The term "breakout" indicates a subtle increase in the utilization of specific issues and queries compared to the immediate past.

Categorization of issues and queries

In the initial stage, two independent investigators (blinded) manually coded issues and queries based on their relevance to active interests in non-factual content (0=yes or 1=no/confounding content). Those issues and queries coded divergently were re-assessed by investigators until consensus. A third investigator (blinded) decided on the codification of issues and queries when a consensus was not reached.

Detection of scientific reference

In the subsequent stage, the themes that emerged from the analysis of issues and queries were examined for the presence of scientific reference support, particularly pertaining to systematic reviews of controlled clinical trials and cohort studies, as well as individual controlled clinical trials and cohort studies. To ensure rigor in this process, an independent investigator (blinded) conducted searches in prominent

bibliographic databases, including Cochrane, Embase Search, Clinical Trials, PubMed, Scopus, and Web of Science. The search strategies were meticulously formulated by combining thematic-driven keywords with the term 'fluoride,' utilizing the Boolean operator 'AND.' For example, the query 'pineal gland' led to the formulation of the search strategy "pineal gland" AND fluoride.

Issues and queries previously classified as NFFC were only confirmed as such when they lacked the aforementioned scientific references. In contrast, in order to prevent potential overestimation of Google users' interests in NFFC, those issues and queries that were accompanied by scientific references were instead re-classified as 'confounding content'. It is imperative to emphasize that the primary objective of this study was not to evaluate the level of evidence provided by the selected references. Instead, the focus was on identifying potential sources of information that individuals with limited scientific literacy in oral health might rely on to form or reinforce their health-related beliefs, which could, in turn, prompt active searches about NFFC.

Within this context, a recent systematic review indicated a correlation between fluoride use and neurotoxic effects^[16]. This finding led us to re-classify the topics of 'toxicity' and 'neurotoxin' from NFFC to 'confounding content'. This particular reference has the potential to influence individuals, including health professionals, to believe in the role of fluoride in causing cognitive impairment in children, with the perception that their beliefs are scientifically supported. Consequently, from the individual's standpoint, the OHISB were likely motivated not by falsehoods but by perceived truths.

Social media

Subsequently, the CrowdTangle™ platform was employed to identify instances of NFFC on three popular social media platforms: Facebook, Instagram, and Reddit. CrowdTangle™, owned by Meta Inc., is an online analytics and insights tool that facilitates the collection of posts containing specific keywords. This tool provides valuable data, including the publication date, author's profile, media type, total interactions, and an overperforming score. Additionally, filters for periods, languages, and social media platforms were utilized to refine the search process.

To ensure comprehensive coverage, distinct search strategies were devised for each NFFC, in association with the keyword "fluoride," as previously

described. On May 18, 2022, a single investigator (blinded) conducted exploratory searches using the formulated search strategies spanning the last 5 years. The results were carefully examined in their entirety to determine the presence of NFFC in each social media and to ascertain the reasons behind categorizing specific queries as NFFC.

Education

The education dimension of the Human Development Index (HDIe) ^[17] was used to group countries in relation to their education development levels. It summarizes the completed and expected mean years of schooling when a specific country's population enters the education system, with scores ranging from 0 to 1.

Internet access

This variable was determined by the percentage of Internet users in each country obtained from The World Bank database ^[2]. In this sense, Internet users are defined as individuals who have used the Internet (from any location) via a computer, mobile phone, personal digital assistant, games machine, and digital TV in the last 3 months.

The burden of untreated dental caries

This variable was determined by the measure of years lived with disability (YLD) for untreated dental caries in permanent teeth, compiled from the project Global Burden Disease ^[18]. It represents one full year of healthy life lost due to disability or ill health.

Data analysis

Statistical analysis was performed using the Statistical Package for Social Sciences (version 21.0; SPSS, Chicago, IL, USA).

Initially, ARIMA models were developed to determine 12-month forecasts of the variation of RSV values. The best-fitted models were selected by the lowest values of normalized Bayesian information criteria (normalized BIC). The curves resulting from these models were heuristically analyzed to determine the trends of fluoride-related seeking behavior over time. Also, the mean of observed values of RSV for the last 12 months was calculated to represent the online search activity of the population of each country, while the mean of predicted values of RSV for 12-month forecasts was calculated to represent the predicted online search activity. The frequencies of issues and

queries related to NFFC were weighted by their RSV values and compared by Pearson's Chi-square test according to median-based dichotomized country development indicators, as follows: education (HDI < 0.9 or \geq 0.9), Internet access (penetration < 90% or \geq 90%), online search activity (RSV mean < 19.86 or \geq 19.86), predicted online search activity (RSV mean < 20 or \geq 20), and burden of untreated dental caries (YLD < 27.5 or \geq 27.5). Moreover, multiple logistic regression models were developed to evaluate the association of issues and queries related to NFFC with country development indicators. Only factors with $P < 0.20$ in the simple regression models were included in the multiple regression models. For all analyses, $P < 0.05$ was considered significant.

RESULTS

Figure 1 illustrates four distinct patterns of time series representing all studied countries. The fluoride-related search volumes exhibited stability (no trend) in BEL, DEN, FIN, FRA, HUN, ITA, NOR, POL, POR, SER, SLO, TAI, and ZAF, a decreasing trend in IND, a transitory increase in AUS, CAN, CHE, GER, IRL, NZL, SWE, and USA, and an increasing trend with stability in recent years in BRA, GBR, and NLD (Supplemental files 1 and 2).

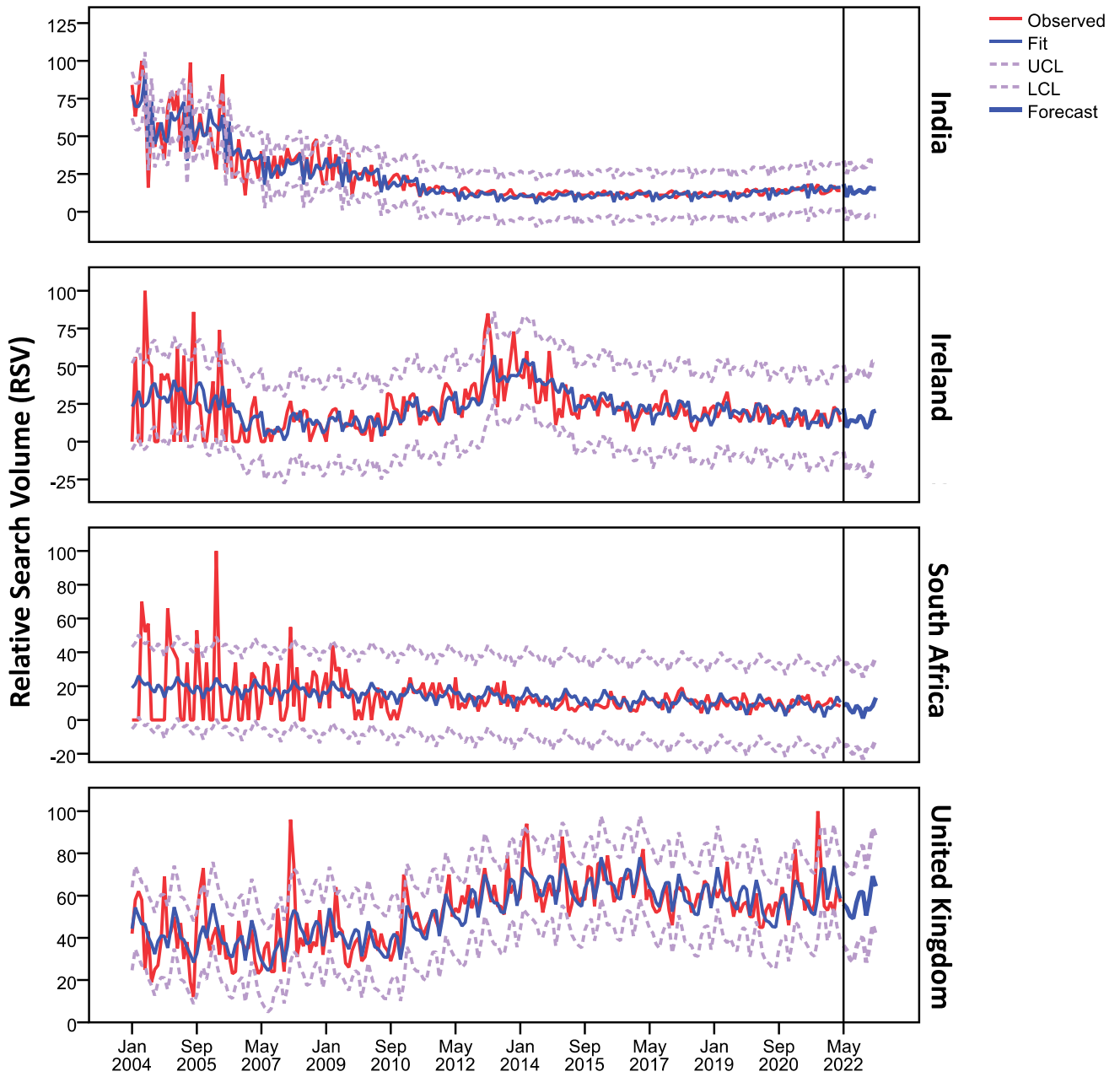


Figure 1. The predictive charts displaying the Relative Search Volume (RSV) values for fluoride-related searches in India, Ireland, South Africa, and the United Kingdom.

Table 1 summarizes issues and queries classified as NFFC (n=7). Overall, this content was associated with potential side effects of fluoride consumption. Specifically, NFFC linked fluoridation public programs with the purported interest of governments in controlling people's minds, theorizing that fluoride-containing water and oral care products are poisonous regardless of their concentration. Notably, the most frequent NFFC topic was the connection between fluoride usage and pineal gland calcification, suggesting potential hindrances to spiritual connections. These arguments were primarily identified on Facebook, with six of them also detected on Instagram and Reddit.

Table 1. The list of issues and queries related to non-factual fluoride content with their respective reasons for this categorization and detection in social media

Issues/queries	Reasons for categorization as non-factual fluoride content	Facebook	Instagram	Reddit
Adolf Hitler	Online content discourages the consumption of fluoridated water because, supposedly, the Nazis used this collective measure to control the minds of prisoners in concentration camps	Yes	Yes	Yes
Fluoride (water-) filter	Online content advises digital users on filtering the fluoride added in drinking water because its toxicity and side-effects	Yes	Yes	Yes
Fluoride lie/conspiracy	Online content endorses the water fluoridation as a government strategy that permits the control of populations	Yes	Yes	Yes
Fluoride poison/toxic/bad	Online content suggests that fluoride is a poison to people, regardless its concentration in drinking water and oral care products	Yes	Yes	Yes
Fluoride-free toothpaste	Online content recommends the use of fluoride-free toothpaste to avoid toxicity and side-effects	Yes	Yes	Yes
Girl against fluoride	Online content produced by a social media influencer who promotes de-fluoridation supported in low-quality studies	Yes	No	No
Pineal gland	Online content associates the use of fluoride with the calcification of the pineal gland, acting as a barrier to the spiritual connection of people	Yes	Yes	Yes

Table 2 presents the distribution of dichotomized country development indicators based on the frequencies of issues and queries related to NFFC (Supplemental file 3). The analysis revealed a significantly higher percentage of issues related to NFFC in countries with higher education levels and Internet access, as well as lower online search activity, predicted online search activity, and the burden of untreated dental caries. Additionally, a significantly greater percentage of queries related to NFFC was observed in countries with higher education levels and lower online search activity.

Table 2. Frequencies of issues and queries related to factual/confounding content and NFFC according to dichotomized country development indicators (Pearson’s Chi-square test, $P < 0.05$). Asterisk indicates significant statistical differences between dichotomized groups

Groups	Issues		χ^2	P	Queries		χ^2	P
	Factual/ Confounding content	NFFC			Factual/ Confounding content	NFFC		
Education								
HDI ≤ 0.9	6685 (96.9%)	214 (3.1%)	92.205	<0.001*	2749 (98.4%)	45 (1.6%)	23.147	<0.001*
HDI > 0.9	6275 (93.4%)	446 (6.6%)			2142 (96.2%)	84 (3.8%)		
Internet access								
Penetration $\leq 90\%$	6218 (96.1%)	253 (3.9%)	23.425	<0.001*	2581 (97.1%)	76 (2.9%)	1.904	0.168
Penetration $> 90\%$	6742 (94.3%)	407 (5.7%)			2310 (97.8%)	53 (2.2%)		
Online search activity								
RSV mean ≤ 19.86	6449 (94.1%)	403 (5.9%)	32.077	<0.001*	2145 (96.8%)	70 (3.2%)	5.522	0.019*
RSV mean > 19.86	6511 (96.2%)	257 (3.8%)			2746 (97.9%)	59 (2.1%)		
Predicted online search activity								
RSV mean ≤ 20	6798 (94.3%)	409 (5.7%)	22.824	<0.001*	2323 (97.0%)	72 (3.0%)	3.486	0.062
RSV mean > 20	6162 (96.1%)	251 (3.9%)			2568 (97.8%)	57 (2.2%)		
Burden of untreated dental caries								
YLD ≤ 27.5	6691 (94.6%)	385 (5.4%)	11.311	0.001*	2412 (97.7%)	57 (2.3%)	1.323	0.250
YLD > 27.5	6269 (95.8%)	275 (4.2%)			2479 (97.2%)	72 (2.8%)		

Table 3 presents the multiple logistic regression models for issues and queries related to NFFC. The analysis indicated that issues were positively associated with higher education levels (OR=2.147; $P < 0.001$) and negatively associated with online search activity (OR=0.682; $P < 0.001$).

Table 3. Multiple logistic regression models for interests in NFFC regarding issues and queries

	B ^a	S.E. ^b	Wald	P	OR ^c	95% IC	
						ICI	ICS
NFFC (Issues)							
Education (HDI ≥0.9)	0.764	0.099	60.018	<0.001	2.147	1.770	2.605
Internet access (penetration ≥90%)	0.033	0.096	0.118	0.731	1.033	0.857	1.247
Online search activity (RSV mean ≥19.86)	-0.383	0.083	21.050	<0.001	0.682	0.579	0.803
Burden of untreated dental caries (YLD ≥27.5)	-0.240	0.083	8.342	0.004	0.787	0.668	0.926
NFFC (Queries)							
Education (HDI ≥0.9)	0.840	0.188	19.973	<0.001	2.316	1.602	3.347
Online search activity (RSV mean ≥19.86)	-0.334	0.180	3.442	0.064	0.716	0.503	1.019

^aUnstandardized coefficient

^bStandard error

^cOdds ratio

For more comprehensive details, Supplemental files 4 and 5 provide lists of issues and queries per country. It is noteworthy that a considerable number of NFFC topics are associated with the term 'breakout,' indicating a recent surge in interest among individuals.

DISCUSSION

The study findings revealed that while the interest in fluoride remains stable in most populations over the years, there has been a sudden increase in the activity of seeking NFFC, particularly in developed countries. This increase was positively associated with higher education levels and a lower burden of untreated dental caries and negatively associated with the online search activity of Google users regarding the topic 'fluoride.' The thematic analysis suggests that Google users appear concerned about their health, possibly influenced by false beliefs about fluoride's significant side effects, such as poisoning and pineal gland calcification. Additionally, NFFC was prominently detected on Facebook, Instagram, and Reddit. Therefore, hypotheses H_1 , H_2 , and H_4 were accepted, whereas hypothesis H_3 was rejected.

It is important to highlight the growing interest in NFFC in developed countries, which are less affected by dental caries. A similar trend has been observed with vaccine hesitancy in high-income regions, where a significant percentage of individuals express concerns about vaccine safety^[19]. The association between lower disease burden and increased concerns about fluoride side effects may be attributed to factors such as (i) the empowerment of individuals to make health choices based on beliefs and intuition in the post-truth era, characterized by decisions based on beliefs and intuition^[20], and (ii) the unnecessary use of preventive agents for imagined diseases, even in caries-free adults.

Two determinant factors of health information-seeking behavior, perceived risk and affective responses to risk (e.g., anxiety, worries, and afraid)^[4,21], are directly affected by fear in contemporary society. Zygmunt Bauman sets that people in favorable and fortunate conditions may experience heightened feelings of threat and insecurity, leading them to seek information that aligns with their values and beliefs^[22]. These responses impulse individuals to acquire more information to satisfy their psychological discomforts, through access to content that they believe is useful, credible, and reliable information^[4,23]. Also, the individual acceptance of the use of preventive measures can be influenced by several cognitive biases, such as omission bias, present bias, ambiguity aversion, shared

information bias, and false consensus effect, which can lead to denialism and, consequently, refutation of benefits of evidence-based interventions^[24]. In this direction, issues and queries associated with political aspects (e.g., Adolf Hitler and fluoride conspiracy) indicate a tendency of users to interact with content related to their values, beliefs, and political ideology, assimilating congruent arguments uncritically^[25,26]. Then, the quality of content associated with the links retrieved by a search engine is relevant to the development of health literacy of individuals. Even though, studies have systematically demonstrated the poor quality of oral health content found on webpages and social media^[22,27,28].

It is noteworthy that the conservative approach adopted to categorize terms as NFFC only when strictly connected to untruth may contribute to the underestimation of the real search activity of Google users interested in falsehoods. We made this choice to prevent speculations, improve the reproducibility of indicators, and the consistency of future infoveillance analyses. In a rough examination, low percentages of NFFC could denote an attenuation of the negative impact of information disorder on oral health; however, this perception disregards the potential of 'viral spread' of NFFC in online channels^[29], neglecting the impact of these messages to reinforce conspiracies among antifuoridation groups. From a better perspective, these data showed that almost 3 out of 100 queries of Google users contained incorrect or false concepts related to fluoride commonly found on multiple cyberspaces. After contacting non-factual content for the first time, individuals can gain motivation to continue their searches for complementary information sources and also to share their discoveries with fellows, into a cyclic behavior of consumption and dissemination of misleading messages and the consequent public misperception of truth^[11], resulting in worst health literacy^[30].

Even with the late digital inclusion of underserved and vulnerable populations, which are characterized by higher prevalence and incidence of dental caries^[8], the interest of Google users in fluoride information was maintained stable or decreased over time. In this context, only 25 countries presented sufficient fluoride data volume ($RSV \neq 0$) to be analyzed in this study. This fact can be explained by two factors: (i) different oral health policies found worldwide^[31], and (ii) limited health literacy preventing access to specialized dental services^[32,33]. This scenario is still more relevant when considering other contextual and sociodemographic factors, such as the development of information and communication technologies, health

status, education level, sex, income, and type of information^[4].

These findings hold implications for identifying and controlling the spread of false fluoride content, particularly content produced for political motivations. Public health authorities should be attentive to individual users' motivations for seeking NFFC to develop community-centered educational approaches^[34]. Dental professionals and associations should be prepared to guide individuals in searching for reliable content and addressing concerns related to fluoride-containing measures. Additionally, fact-checking agencies should promptly disseminate warning messages based on the study's analyses. Within this context, corrective messages from such agencies can enhance truth discernment among individuals who have previously encountered misinformation^[35]. Furthermore, informational interventions tend to consistently enhance people's understanding of health-related falsehoods^[36], particularly when these corrections are grounded in logical and humorous approaches^[37,38].

At least three inherent shortcomings derived from this study design must be considered in the interpretation of these outcomes. Although Google is undoubtedly the leading search engine worldwide (> 92% of market share)^[39], these results disregarded the activity of Internet users on other platforms and within social media environments. Also, these data are prone to ecological fallacy, that is, the interpretation of findings depends on inferences related to groups (countries) and not on individuals within these groups. Specifically, it is impossible to define the personal characteristics of Google users because of data anonymity. Despite that, the geolocation provided by the platform allows comparisons between countries with distinct social development patterns, which leads to valuable interpretations and inferences for communities. Finally, although repetitive searches of a few people could mildly overestimate users' interests, actually the undermining effect generated by a restricted classification of issues and queries as NFFC probably overlapped that constraint.

CONCLUSIONS

The study reveals an exacerbation in Google users' search for NFFC, particularly in developed countries, with associations to education levels, burden of untreated dental caries, and online search activity. The predominant interests in NFFC are related to supposed side effects of fluoride, which are widespread on social media platforms. The findings

highlight the potential for the spread of fluoride falsehoods among populations, warranting attention from public health authorities, dental professionals, and fact-checking agencies.

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CONFLICT OF INTERESTS

None.

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Supplemental file 1. ARIMA model fit statistics for fluoride

Country, Model	R ²	Normalized BIC*	RMSE**	MAPE***
Australia	0.146	4.911	11.510	21.520
ARIMA (0,1,1) (0,0,0)				
Belgium	0.070	5.345	13.956	42.468
ARIMA (0,0,7) (0,0,0)				
Brazil	0.494	4.696	10.213	37.737
ARIMA (0,1,2) (0,0,0)				
Canada	0.188	4.961	11.515	19.465
ARIMA (1,0,0) (0,0,1)				
Denmark	0.027	4.674	10.099	50.811
ARIMA (0,0,2) (0,0,0)				
Finland	1.762E-016	5.882	18.701	49.349
ARIMA (0,0,0) (0,0,0)				
France	0.060	5.440	14.634	43.905
ARIMA (0,0,11) (0,0,0)				
Germany	0.554	4.067	7.547	30.954
ARIMA (0,1,1) (0,0,0)				
Hungary	0.066	5.174	12.656	45.695
ARIMA (0,0,4) (0,0,0)				
India	0.719	4.616	9.689	21.354
ARIMA (0,1,1) (0,0,0)				
Ireland	0.155	5.509	15.517	37.623
ARIMA (0,1,1) (0,0,0)				
Italy	0.015	5.575	15.658	34.822
ARIMA (0,0,0) (1,0,1)				
Netherlands	0.277	5.328	13.501	28.305
ARIMA (2,0,2) (0,0,0)				
New Zealand	0.189	4.506	9.059	41.691
ARIMA (0,0,4) (0,0,0)				
Norway	1.243E-015	4.266	8.338	53.509
ARIMA (0,0,0) (0,0,0)				
Poland	0.095	4.929	11.059	49.098
ARIMA (2,0,2) (0,0,1)				
Portugal	0.067	4.892	1.264	57.220
ARIMA (1,0,1) (0,0,0)				
Serbia	0.061	4.858	11.073	56.962
ARIMA (0,0,3) (0,0,0)				
Slovenia	-9.219E-016	4.806	10.920	41.036
ARIMA (0,0,0) (0,0,0)				
South Africa	0.102	5.153	12.522	51.879

ARIMA (4,0,9) (0,0,0)				
Sweden	0.072	6.000	19.358	40.232
ARIMA (0,0,3) (0,0,0)				
Switzerland	0.177	5.799	17.947	45.383
ARIMA (0,1,1) (0,0,0)				
Taiwan	0.021	5.794	17.679	60.030
ARIMA (0,0,1) (0,0,0)				
United Kingdom	0.470	4.890	11.095	16.465
ARIMA (1,1,1) (0,1,1)				
United States	0.334	4.181	7.882	8.638
ARIMA (0,1,1) (0,1,1)				
* Normalized Bayesian Information Criteria				
** Root mean square error				
*** Mean absolute percentage error				

Supplemental file 2. Parameter estimation of predictive ARIMA models for fluoride-related searches performed in different countries

			Estimate	SE*
Australia	Difference		1	
	MA**	Lag 1	0.841	0.039
Belgium	Constant		21.331	1.332
	MA	Lag 5	-0.228	0.065
		Lag 7	-0.214	0.066
Brazil	Difference		1	
	MA	Lag 1	0.579	0.067
		Lag 2	0.272	0.065
Canada	Difference		45.475	1.468
	AR***	Lag 1	0.364	0.063
	MA, Seasonal	Lag 1	-0.225	0.070
Denmark	Constant		10.648	0.864
	MA	Lag 2	-0.290	0.066
Finland	Constant		18.823	1.261
France	Constant	Lag 1	26.446	1.015
	MA	Lag 3	0.147	0.066
		Lag 11	-0.191	0.067
Germany	Difference		1	
	MA	Lag 1	0.625	0.053
Hungary	Constant		15.892	0.710
	MA	Lag 1	-0.163	0.067
		Lag 2	0.186	0.065
		Lag 4	0.145	0.066

India	Difference		1	
	MA	Lag1	0.834	0.039
	AR, Seasonal	Lag 1	0.910	0.058
	MA, Seasonal	Lag 1	0.770	0.100
Ireland	Difference		1	
	MA	Lag 1	0.850	0.037
Italy	Constant		29.496	1.116
	AR, Seasonal	Lag 1	-0.772	0.143
	MA, Seasonal	Lag 1	-0.898	0.122
Netherlands	Constant		44.916	6.184
	AR	Lag 1	1.797	0.072
		Lag 2	-0.803	0.071
	MA	Lag 1	1.851	0.049
		Lag 2	-0.901	0.044
New Zealand	Constant		14.888	1.081
	MA	Lag 1	-0.169	0.063
		Lag 2	-0.280	0.063
		Lag 4	-0.334	0.064
Norway	Constant		5.850	0.562
Poland	Constant		12.597	0.955
	AR	Lag 2	-0.895	0.037
	MA	Lag 1	0.121	0.021
		Lag 2	-0.968	0.028
Portugal	AR	Lag 1	0.998	0.005
	MA	Lag 1	0.948	0.028
Serbia	Constant		8.273	0.932
	MA	Lag 3	-0.253	0.066
Slovenia	Constant		8.032	0.736
South Africa	Constant		13.437	1.030
	AR	Lag 1	0.154	0.067
		Lag 4	-0.157	0.066
	MA	Lag 9	-0.239	0.067
Sweden	Constant		32.550	1.779
	MA	Lag 2	-0.167	0.066
		Lag 3	-0.203	0.066
Switzerland	Difference			
	MA	Lag 1	0.851	0.037
Taiwan	Constant		15.802	1.356
	MA	Lag 1	-0.138	0.067
	AR	Lag 1	0.256	0.083
United Kingdom	AR	Lag 1	0.256	0.083
	Difference		1	
	MA	Lag 1	0.890	0.042

	Seasonal Difference		1	
	MA, Seasonal	Lag 1	0.858	0.068
United States	Difference		1	
	MA	Lag 1	0.756	0.047
	Seasonal Difference		1	
	MA, Seasonal	Lag 1	0.910	0.085

* Standard error

** Moving average component

*** Autoregressive component

Supplemental file 3. Country development indicators. Superscript letters indicate the side of dichotomization (a = > median value; b = ≤ median value,)

Countries	Education	Internet access (%)	Online search activity	Predicted online search activity	Burden of untreated dental caries
Australia	0.92 ^a	90.00 ^b	28.25 ^a	40.00 ^a	26.97 ^b
Belgium	0.90 ^a	92.00 ^a	31.66 ^a	21.00 ^a	25.25 ^b
Brazil	0.69 ^b	81.00 ^b	36.66 ^a	20.00 ^b	23.68 ^b
Canada	0.89 ^b	97.00 ^a	46.58 ^a	45.00 ^a	23.31 ^b
Denmark	0.92 ^a	97.00 ^a	9.25 ^b	11.00 ^b	22.77 ^b
Finland	0.93 ^a	92.00 ^a	13.16 ^b	19.00 ^b	27.51 ^a
France	0.82 ^b	85.00 ^b	26.83 ^a	26.00 ^a	34.01 ^a
Germany	0.94 ^a	90.00 ^b	6.00 ^b	16.00 ^b	29.38 ^a
Hungary	0.82 ^b	85.00 ^b	14.08 ^b	16.00 ^b	35.36 ^a
India	0.56 ^b	43.00 ^b	14.75 ^b	23.00 ^a	25.89 ^b
Ireland	0.92 ^a	92.00 ^a	15.58 ^a	22.00 ^a	28.95 ^a
Italy	0.79 ^b	70.00 ^b	28.41 ^a	30.00 ^a	27.63 ^a
Netherlands	0.91 ^a	91.00 ^a	54.41 ^a	40.00 ^a	27.11 ^b
New Zealand	0.93 ^a	92.00 ^a	12.25 ^b	15.00 ^b	24.02 ^b
Norway	0.93 ^a	97.00 ^a	5.75 ^b	6.00 ^b	32.35 ^a
Poland	0.87 ^b	83.00 ^b	13.00 ^b	13.00 ^b	27.76 ^a
Portugal	0.77 ^b	78.00 ^b	14.25 ^b	10.00 ^b	25.81 ^b
Serbia	0.78 ^b	78.00 ^b	9.50 ^b	8.00 ^b	38.19 ^a
Slovenia	0.91 ^a	87.00 ^b	8.41 ^b	8.00 ^b	34.24 ^a
South Africa	0.72 ^b	70.00 ^b	9.75 ^b	13.00 ^b	24.84 ^b
Sweden	0.92 ^a	95.00 ^a	34.66 ^a	33.00 ^a	33.21 ^a
Switzerland	0.90 ^b	94.00 ^a	22.25 ^a	30.00 ^a	37.29 ^a
Taiwan	0.90 ^b	90.00 ^b	13.08 ^b	16.00 ^b	21.52 ^b
United Kingdom	0.93 ^a	95.00 ^a	60.91 ^a	52.00 ^a	28.01 ^a
United States	0.93 ^a	91.00 ^a	57.08 ^a	65.00 ^a	22.20 ^b
Median	0.90	90.00	19.86	20.00	27.50

Supplemental file 4. List of issues related to fluoride divided by country. (RSV=relative search volume, C=classification, F=factual, NF=No-factual, CC=confounding content. The term "breakout" indicates a subtle increase in the utilization of specific issues and queries compared to the immediate past.)

Country and Issue	RSV	C
Australia		
Water	100	F
Potable water	90	F
Fluoridation	86	F
Toothpaste	25	F
Sodium	12	F
Sodium fluoride	8	F
Fluoride	8	F
Dental caries	7	F
Fluoride varnish	6	F
Pineal gland	6	NF
Water filter	6	NF
Piped water	5	F
Tap	5	F
Bottled water	5	F
Fluoride poisoning	3	NF
Mouthwash	2	F
Sydney Water	2	F
Melbourne Water	2	F
Dental enamel	2	F
Toothpaste	Breakout	F
Pineal gland	Breakout	NF
Water filter	Breakout	NF
Bottled water	Breakout	F
Fluoride poisoning	Breakout	NF
Mouthwash	Breakout	F
Sydney Water	Breakout	F
Melbourne Water	Breakout	F
Dental enamel	Breakout	F
Fluoridation	> 90%	F
Potable water	> 80%	F
Water	> 50%	F

Belgium

Fluoride	100	F
Toothpaste	86	F
Sodium	62	F
Sodium fluoride	51	F
Potable water	36	F
Water	33	F
Fluor Corporation	33	F
Fluoridation	32	F
Dental caries	21	F
Calcium	17	F
Hydrogen fluoride	15	F
Hydrogen	12	F
Pineal gland	10	NF
Glycoses	10	F
Potassium	10	F
Ion	10	F
Mouthwash	10	F
Elmex	9	F
Poison	9	NF
Dental fluorosis	8	F
Calcium fluoride	8	F
Fluoride	Breakout	F
Toothpaste	Breakout	F
Sodium	Breakout	F
Sodium fluoride	Breakout	F
Potable water	Breakout	F
Water	Breakout	F
Fluor Corporation	Breakout	F
Fluoridation	Breakout	F
Dental caries	Breakout	F
Hydrogen fluoride	Breakout	F
Hydrogen	Breakout	F
Pineal gland	Breakout	NF
Glycoses	Breakout	F
Potassium	Breakout	F
Ion	Breakout	F
Mouthwash	Breakout	F
Elmex	Breakout	F
Poison	Breakout	NF
Dental fluorosis	Breakout	F

Brazil			Drink	9	F
Teeth	100	F	Piped water	9	F
Dentistry	78	F	Tap	5	F
Toothpaste	20	F	Pineal gland	5	NF
Fluor Corporation	20	F	Ion	4	F
Dental caries	18	F	Water filter	3	NF
Calcium	13	F	Concentration	3	F
Dental fluoride	13	F	Parts by notation	2	F
Iodine	12	F	Chlorine	2	F
Iron	11	F	Fluor Corporation	2	F
Phosphor	9	F	Fluoride varnish	Breakout	F
Chlorine	8	F	Pineal gland	Breakout	NF
Mineral	8	F	Ion	Breakout	F
Salt	7	F	Water filter	Breakout	NF
Organism	7	F	Concentration	Breakout	F
Fluoride	7	F	Parts by notation	Breakout	F
Mineral salts	6	F	Chlorine	Breakout	F
Toothbrush	6	F	Fluor Corporation	Breakout	F
Pineal gland	6	NF	Toothpaste	> 900%	F
Dental fluorosis	6	F	Fluoridation	> 100%	F
Teeth	Breakout	F	Water	> 60%	F
Dentistry	Breakout	F	Potable water	> 50%	F
Toothpaste	Breakout	F			
Calcium	Breakout	F			
Dental fluoride	Breakout	F			
Iron	Breakout	F			
Phosphor	Breakout	F			
Chlorine	Breakout	F			
Organism	Breakout	F			
Mineral salts	Breakout	F			
Toothbrush	Breakout	F			
Pineal gland	Breakout	NF			
Dental fluorosis	Breakout	F			
Canada					
Water	100	F	Denmark		
Potable water	79	F	Sodium fluoride	100	F
Fluoridation	69	F	Sodium	97	F
Toothpaste	34	F	Fluoride	93	F
Sodium	18	F	Toothpaste	84	F
Fluoride	12	F	Water	66	F
Sodium fluoride	11	F	Potable water	54	F
Florida	11	F	Flour	54	F
Fluoride varnish	9	F	McDonnell Douglas F/A-18	47	F
			Hornet		
			Fluor Corporation	31	F
			18F-fluorodesoxiglicose	23	F
			Dental caries	20	F
			Gland	15	F
			Calcium	15	F
			Pineal gland	14	NF
			Ion	11	F
			Positron emission	11	F
			tomography		
			Contrast	10	F
			Zendium	10	F

Part per million	Breakout	F	Dentistry	Breakout	F
Drink	Breakout	F	Fluor Corporation	Breakout	F
Dental fluorosis	Breakout	F	Elmex	Breakout	F
Florida	Breakout	F	Dental fluorosis	Breakout	F
Calcium fluoride	Breakout	F	Toxicity	Breakout	CC
			Florida	Breakout	F
			Dental enamel	Breakout	F
Finland			Potassium	Breakout	F
Fluoride	100	F	Intelligence quotient	Breakout	F
Sodium	82	F	Chlorine	Breakout	F
Sodium fluoride	80	F	Mouthwash	Breakout	F
Teeth	65	F	Poison	Breakout	NF
Water	63	F			
Toothpaste	60	F	France		
Potable water	55	F	Sodium	100	F
Pineal gland	39	NF	Sodium fluoride	91	F
Gland	39	F	Fluoride	78	F
Calcium	30	F	Toothpaste	68	F
Good	27	F	Water	35	F
Bad	25	NF	Fluor Corporation	35	F
Dental caries	22	F	Ion	30	F
Calcium fluoride	19	F	Calcium	21	F
Dentistry	17	F	Potassium	20	F
Fluor Corporation	17	F	Potable water	20	F
Elmex	14	F	Fluoridation	19	F
Dental fluorosis	13	F	Amine	15	F
Toxicity	13	CC	Risk	14	F
Florida	13	F	Potassium fluoride	14	F
Dental enamel	11	F	Florida	13	F
Potassium	11	F	Dental caries	13	F
Intelligence quotient	11	F	Calcium fluoride	12	F
Chlorine	11	F	Toothpaste	12	F
Mouthwash	9	F	Elmex	11	F
Sodium	Breakout	F	Mouthwash	11	F
Sodium fluoride	Breakout	F	Fluorite	10	F
Teeth	Breakout	F	Dental fluorosis	9	F
Water	Breakout	F	Chloride	7	F
Toothpaste	Breakout	F	Iodine	7	F
Potable water	Breakout	F	Fluoride	Breakout	F
Pineal gland	Breakout	NF	Water	Breakout	F
Gland	Breakout	F	Fluor Corporation	Breakout	F
Calcium	Breakout	F	Ion	Breakout	F
Good	Breakout	F	Potable water	Breakout	F
Bad	Breakout	NF	Fluoridation	Breakout	F
Dental caries	Breakout	F	Amine	Breakout	F
Calcium fluoride	Breakout	F	Risk	Breakout	F

Florida	Breakout	F	GSK	Breakout	F
Dental caries	Breakout	F	Elmex	Breakout	F
Calcium fluoride	Breakout	F	Ajona	Breakout	F
Elmex	Breakout	F	Biorepair	Breakout	F
Mouthwash	Breakout	F	Dental enamel	Breakout	F
Flourite	Breakout	F	Parts per notation	Breakout	F
Chloride	Breakout	F	Perodontax	Breakout	F
Iodine	Breakout	F	Colgate	Breakout	F
			Pineal gland	Breakout	NF
			Sensodyne	Breakout	F
			Fluid	Breakout	F
			Aspartame	Breakout	F
Germany			Duraphat	Breakout	F
Toothpaste	100	F	Toothpaste	> 300%	F
Fluor Corpotation	14	F			
Elmex	14	F			
Sodium fluoride	9	F			
Sodium	8	F			
Poison	8	NF			
Fluoride	7	F	Hungary		
Potable water	5	F	Toothpaste	100	F
Dental caries	5	F	Fluoride	83	F
GSK	5	F	Sodium	32	F
Flour	5	F	Sodium fluoride	29	F
Colgate Duraphat	5	F	Fluor Corporation	23	F
Elmex	4	F	Elmex	20	F
Fluoridation	4	F	Parodontax	16	F
Salt	3	F	Mouthwash	12	F
Mouthwash	3	F	Teeth enamel	10	F
Ajona	3	F	GSK	9	F
Biorepair	3	F	Dental caries	8	F
Oral care	3	F	Potable water	7	F
Dental enamel	3	F	Pineal gland	7	NF
Parts per notation	2	F	Calcium fluoride	6	F
Perodontax	2	F	Elmex	5	F
Poison	Breakout	NF	Colgate	5	F
Dental caries	Breakout	F	Parts by notation	5	F
			Amine fluoride	5	F
			Ion	4	F
			Toothpaste	Breakout	F
			Fluor Corpotation	Breakout	F
			Elmex	Breakout	F
			Parodontax	Breakout	F
			Mouthwash	Breakout	F
			GSK	Breakout	F
			Dental caries	Breakout	F

Potable water	Breakout	F
Pineal gland	Breakout	NF
Calcium fluoride	Breakout	F
Elmex	Breakout	F
Colgate	Breakout	F
Parts by notation	Breakout	F
Amine fluoride	Breakout	F
Ion	Breakout	F

India

Teeth	100	F
Toothpaste	86	F
Water	67	F
Dental caries	52	F
Sodium	48	F
Potable water	48	F
Sodium fluoride	32	F
Fluoridation	22	F
Drink	17	F
Fluor	13	F
Dental fluorosis	10	F
Fluoride varnish	9	F
Florida	9	F
Toxicity	6	CC
Concentration	6	F
Ion	6	F
Dental enamel	5	F
Mouthwash	5	F
Tap water	3	F
Potable water	Breakout	F
Fluoridation	Breakout	F
Drink	Breakout	F
Fluoride varnish	Breakout	F
Ion	Breakout	F
Dental enamel	Breakout	F
Mouthwash	Breakout	F
Tap water	Breakout	F
Teeth	> 950%	F
Toothpaste	>750%	F
Water	> 550%	F
Dental caries	> 160%	F
Sodium fluoride	> 60%	F

Ireland

Potable water	100	F
Water	89	F
Fluoridation	82	F
Toothpaste	35	F
Irish water	19	F
Sodium	18	F
Bottle	18	F
Drink	17	F
Fluor	17	F
Bottled water	17	F
Florida	14	F
Sodium fluoride	13	F
Dental caries	13	F
Tap water	12	F
Pineal gland	10	NF
Tap	10	F
Fluoride varnish	9	F
Water filter	8	NF
Dental fluorosis	8	F
Potable water	Breakout	F
Toothpaste	Breakout	F
Sodium	Breakout	F
Bottle	Breakout	F
Drink	Breakout	F
Fluor	Breakout	F
Bottled water	Breakout	F
Florida	Breakout	F
Sodium fluoride	Breakout	F
Dental caries	Breakout	F
Tap water	Breakout	F
Pineal gland	Breakout	NF
Tap	Breakout	F
Fluoride varnish	Breakout	F
Water filter	Breakout	NF
Dental fluorosis	Breakout	F

Italy			Pineal gland	17	NF
Sodium	100	F	Dental caries	15	F
Sodium fluoride	94	F	Elmex	13	F
Toothpaste	53	F	Mouthwash	12	F
Fluor	52	F	Poison	11	NF
Elmex	21	F	Dental enamel	6	F
Calcium fluoride	21	F	Calcium fluoride	5	F
Calcium	21	F	Toothbrushing	5	F
Mouthwash	20	F	Hydrogen fluoride	4	F
Stannous fluoride	16	F	Mouth guard	4	F
Dental caries	11	F	Fluor	Breakout	F
Chloride	10	F	Pineal gland	Breakout	NF
Bottled water	7	F	Elmex	Breakout	F
Magnesium fluoride	7	F	Poison	Breakout	NF
Fluoridation	6	F	Dental enamel	Breakout	F
Ingredient	6	F	Calcium fluoride	Breakout	F
Otosclerosis	5	F	Toothbrushing	Breakout	F
Chlorhexidine	5	F	Hydrogen fluoride	Breakout	F
Pineal gland	5	NF	Mouth guard	Breakout	F
Toothpaste	Breakout	F	New Zealand		
Elmex	Breakout	F	Water	100	F
Calcium fluoride	Breakout	F	Fluoridation	93	F
Calcium	Breakout	F	Potable water	84	F
Mouthwash	Breakout	F	Toothpaste	34	F
Stannous fluoride	Breakout	F	Sodium	22	F
Dental caries	Breakout	F	Dental caries	19	F
Chloride	Breakout	F	Fluoride	18	F
Bottled water	Breakout	F	Sodium fluoride	17	F
Magnesium fluoride	Breakout	F	Drink	16	F
Fluoridation	Breakout	F	Florida	9	F
Ingredient	Breakout	F	Toxicity	9	CC
Otosclerosis	Breakout	F	Pineal gland	9	NF
Chlorhexidine	Breakout	F	Fluoride varnish	8	F
Pineal gland	Breakout	NF	Supply water	8	F
Netherlands			Tap water	7	F
Fluoride	100	F	Tap	7	F
Toothpaste	65	F	Dental fluorosis	7	F
Potable water	29	F	Chlorine	6	F
Fluoridation	27	F	Ion	6	F
Sodium	23	F	Water filter	6	NF
Sodium fluoride	22	F	Toothpaste	Breakout	F
Fluor corporation	21	F			

Sodium	Breakout	F	Sodium	Breakout	F
Sodium fluoride	Breakout	F	Water	Breakout	F
Drink	Breakout	F	Toothpaste	Breakout	F
Florida	Breakout	F	Potable water	Breakout	F
Toxicity	Breakout	CC	Sodium fluoride	Breakout	F
Pineal gland	Breakout	NF	Dental caries	Breakout	F
Fluoride varnish	Breakout	F	Mouthwash	Breakout	F
Supply water	Breakout	F	Flour	Breakout	F
Tap water	Breakout	F	Pineal gland	Breakout	NF
Tap	Breakout	F	Calcium	Breakout	F
Dental fluorosis	Breakout	F	Gland	Breakout	F
Chlorine	Breakout	F	Parts per million	Breakout	F
Ion	Breakout	F	Frameless	Breakout	F
Water filter	Breakout	NF	Drink	Breakout	F
			Florida	Breakout	F
			Calcium fluoride	Breakout	F
			Side effects	Breakout	F
			Bad	Breakout	NF
			Fluoxetine	Breakout	F
Norway			Poland		
Fluoride	100	F	Sodium	100	F
Fluor corporation	81	F	Sodium fluoride	87	F
Sodium	55	F	Fluoride	39	F
Water	52	F	Calcium	28	F
Toothpaste	51	F	Toothpaste	20	F
Potable water	48	F	Glycoses	20	F
Sodium fluoride	46	F	Fluor corporation	19	F
Dental caries	29	F	Calcium fluoride	18	F
Flour	25	F	Blood plasma	18	F
Pineal gland	21	NF	Potassium	15	F
Calcium	18	F	Gram	15	F
Gland	17	F	Acid	14	F
Toxicity	16	CC	Fluoridation	14	F
Parts per million	15	F	Ion	13	F
Frameless	15	F	Dental caries	12	F
Drink	11	F	Potable water	11	F
Poison	11	NF	Solution	10	F
Florida	11	F	Concentration	10	F
Calcium fluoride	10	F	Atom	9	F
Side effects	10	F	Chloride	9	F
Bad	10	NF			
Fluoxetine	9	F			
Fluoride	Breakout	F			
Fluor Corporation	Breakout	F			

Substance	9	F			
Pineal gland	8	NF			
Elmex	8	F			
Chemical compound	8	F			
Sodium	Breakout	F	Dental hygiene	16	F
Sodium fluoride	Breakout	F	Poison	16	NF
Fluoride	Breakout	F	Chloride	16	F
Toothpaste	Breakout	F	Drink	16	F
Glycoses	Breakout	F	Hygiene	13	F
Fluor corporation	Breakout	F	Nitrate	13	F
Blood plasma	Breakout	F	Teeth	Breakout	F
Potassium	Breakout	F	Sodium	Breakout	F
Gram	Breakout	F	Sodium fluoride	Breakout	F
Acid	Breakout	F	Water	Breakout	F
Fluoridation	Breakout	F	Toothpaste	Breakout	F
Ion	Breakout	F	Fluor	Breakout	F
Dental caries	Breakout	F	Potable water	Breakout	F
Potable water	Breakout	F	Fluoridation	Breakout	F
Solution	Breakout	F	Fluor corporation	Breakout	F
Concentration	Breakout	F	Dental caries	Breakout	F
Atom	Breakout	F	Tube	Breakout	F
Chloride	Breakout	F	Gland	Breakout	F
Pineal gland	Breakout	NF	Pineal gland	Breakout	NF
Elmex	Breakout	F	Tooth whitening	Breakout	F
Chemical compound	Breakout	F	Toothbrush	Breakout	F
			Calcium	Breakout	F
Portugal			Dental extraction	Breakout	F
Teeth	100	F	Dental hygiene	Breakout	F
Sodium	87	F	Poison	Breakout	NF
Sodium fluoride	78	F	Chloride	Breakout	F
Water	78	F	Drink	Breakout	F
Toothpaste	74	F	Hygiene	Breakout	F
Fluoride	58	F	Nitrate	Breakout	F
Potable water	58	F			
Fluoridation	53	F			
Fluor corporation	42	F	Serbia		
Dental caries	29	F	Teeth	100	F
Tube	27	F	Toothpaste	70	F
Gland	24	F	Fluoride	54	F
Pineal gland	24	NF	Water	41	F
Tooth whitening	20	F	Mass	33	F
Toothbrush	18	F	Sodium fluoride	30	F
Calcium	18	F	Fluor corporation	28	F
Dental extraction	18	F	Calcium	21	F
			Potable water	19	F
			Dentistry	18	F
			Dental caries	16	F
			Human dentition	14	F
			Mass	12	F
			GSK	12	F

Toxicity	12	CC			
Protocol	11	F	Gland	Breakout	F
Pineal gland	11	NF	Mouthwash	Breakout	F
Parts per million	11	F	Flour	Breakout	F
Florida	9	F			
Poison	9	NF			
Teeth	Breakout	F	South Africa		
Toothpaste	Breakout	F	Toothpaste	100	F
Fluoride	Breakout	F	Potable water	66	F
Water	Breakout	F	Fluoridation	58	F
Mass	Breakout	F	Sodium	50	F
GSK	Breakout	F	Dental caries	44	F
Toxicity	Breakout	CC	Sodium fluoride	39	F
Protocol	Breakout	F	Fluoride	37	F
Pineal gland	Breakout	NF	Pineal gland	29	NF
Parts per million	Breakout	F	Florida	28	F
Florida	Breakout	F	Poison	27	NF
Poison	Breakout	NF	Fluoride varnish	26	F
			Calcium	23	F
			Toxicity	16	CC
			Tap water	13	F
			Fluorite	12	F
Slovenia			Toothpaste	Breakout	F
Toothpaste	100	F	Potable water	Breakout	F
Fluoride	94	F	Fluoridation	Breakout	F
Teeth	84	F	Sodium	Breakout	F
Water	60	F	Dental caries	Breakout	F
Mass	55	F	Sodium fluoride	Breakout	F
Fluor corporation	42	F	Pineal gland	Breakout	NF
Dental caries	21	F	Florida	Breakout	F
Hydrogen fluoride	21	F	Poison	Breakout	NF
Pineal gland	21	NF	Fluoride varnish	Breakout	F
Potable water	18	F	Calcium	Breakout	F
Gland	18	F	Toxicity	Breakout	CC
Mouthwash	16	F	Tap water	Breakout	F
Flour	13	F	Fluorite	Breakout	F
Toothpaste	Breakout	F			
Fluoride	Breakout	F			
Teeth	Breakout	F			
Water	Breakout	F			
Mass	Breakout	F			
Dental caries	Breakout	F			
Hydrogen fluoride	Breakout	F			
Pineal gland	Breakout	NF			
Potable water	Breakout	F			
Gland	Breakout	Factual			
Mouthwash	Breakout	Factual			
Flour	Breakout	Factual			

Sweden

Fluor	100	F
Water	99	F
Sodium	76	F
Fluoridation	72	F
Potable water	70	F
Sodium fluoride	68	F
Fluor	67	F
Toothpaste	61	F
Fluor corporation	53	F
Florida	37	F
Gland	36	F
Pineal gland	36	NF
Dental caries	32	F
Drink	18	F
Intelligence quotient	16	F
Calcium fluoride	14	F
Chloride	14	F
Bad	13	NF
Fluoride varnish	12	F
Toxicity	11	CC
Fluor	Breakout	F
Water	Breakout	F
Fluoridation	Breakout	F
Potable water	Breakout	F
Sodium fluoride	Breakout	F
Fluor	Breakout	F
Toothpaste	Breakout	F
Fluor corporation	Breakout	F
Florida	Breakout	F
Gland	Breakout	F
Pineal gland	Breakout	NF
Dental caries	Breakout	F
Drink	Breakout	F
Intelligence quotient	Breakout	F
Calcium fluoride	Breakout	F
Bad	Breakout	NF
Fluoride varnish	Breakout	F
Toxicity	Breakout	CC

Switzerland

Toothpaste	100	F
Sodium	65	F
Sodium fluoride	64	F
Elmex	57	F
Fluor	55	F
Fluor corporation	51	F
Potable water	33	F
Fluoridation	32	F
Dental caries	22	F
Elmex	16	F
Colgate Duraphat	16	F
Florida	14	F
Poison	13	NF
Colgate	12	F
Amine fluoride	11	F
Oral hygiene	10	F
Mouthwash	10	F
Pineal gland	9	NF
Potassium fluoride	9	F
Salt	9	F
Aspartame	8	F
Dental enamel	7	F
Vacutainer	7	F
Fluid	7	F

Taiwan			United Kingdom		
Fluoride	100	F	Water	100	F
Substance	72	F	Toothpaste	81	F
Toothpaste	37	F	Potable water	80	F
Sodium	29	F	Fluoridation	73	F
Sodium fluoride	26	F	Sodium	24	F
Ion	19	F	Dental caries	18	F
Dental caries	18	F	Fluoride varnish	17	F
Potable water	10	F	Sodium fluoride	16	F
Fluoridation	9	F	Fluoride	12	F
Mouthwash	8	F	Tap water	10	F
Florida	7	F	Tap	8	F
Hydrogen	5	F	Florida	7	F
Risk	5	F	Pineal gland	6	NF
Ammonium fluoride	5	F	Mouthwash	5	F
Toxicity	5	CC	Dental fluorosis	4	F
Dental fluorosis	4	F	Dental enamel	3	F
Fluoride	Breakout	F	Water filter	3	NF
Substance	Breakout	F	Bottled water	3	F
Toothpaste	Breakout	F	Chlorine	2	F
Sodium	Breakout	F	Tap water	Breakout	F
Sodium fluoride	Breakout	F	Tap	Breakout	F
Ion	Breakout	F	Pineal gland	Breakout	NF
Dental caries	Breakout	F	Dental enamel	Breakout	F
Potable water	Breakout	F	Water filter	Breakout	NF
Fluoridation	Breakout	F	Bottled water	Breakout	F
Mouthwash	Breakout	F	Chlorine	Breakout	F
Florida	Breakout	F	Toothpaste	> 450%	F
Hydrogen	Breakout	F	Dental caries	> 250%	F
Risk	Breakout	F	Fluoride varnish	>150%	F
Ammonium fluoride	Breakout	F	Potable water	> 140%	F
Toxicity	Breakout	CC	Fluoridation	> 90%	F
Dental fluorosis	Breakout	F	Water	> 50%	F
			United States		
			Water	100	F
			Potable water	69	F
			Fluoridation	55	F
			Toothpaste	44	F
			Sodium	26	F
			Fluoride varnish	24	F

Bad	22	NF
Sodium fluoride	20	F
Dental caries	19	F
Fluoride	15	F
Bottled water	13	F
Bottle	12	F
Poison	12	NF
Drink	11	F
Pineal gland	11	NF
Toxicity	10	CC
Tap water	7	F
Silver Diamine Fluoride	1	F
Intelligence quotient	1	F
Adolf Hitler	1	NF
Dentin hypersensitivity	1	F
Neurotoxin	1	CC
Silver Diamine Fluoride	Breakout	F
Intelligence quotient	Breakout	F
Adolf Hitler	Breakout	NF
Dentin hypersensitivity	Breakout	F
Neurotoxin	Breakout	CC
Pineal gland	> 1700%	NF
Bad	> 800%	NF
Tap water	> 500%	F
Fluoride varnish	> 400%	F
Toothpaste	> 300%	F
Bottled water	> 250%	F
Bottle	>200%	F
Potable water	> 150%	F
Water	> 110%	F
Fluoridation	> 90%	F
Dental caries	> 50%	F

Supplemental file 5. List of queries related to fluoride divided by country. (RSV=relative search volume, C=classification, F=factual, NF=No-factual, CC=confounding content. The term "breakout" indicates a subtle increase in the utilization of specific issues and queries compared to the immediate past.)

<i>Country and Query</i>	<i>RSV</i>	<i>C</i>
Australia		
Fluoride	100	F
Fluoride in water	27	F
Fluoride	25	F
Fluoride toothpaste	5	F
Sodium	3	F
Sodium fluoride	3	F
Fluoride in water	3	F
What is fluoride	2	F
Fluoride	2	F
Fluoride treatment	2	F
Fluoridation	2	F
Fluoride in water Australia	2	F
Fluoride side effects	2	F
Is fluoride bad	2	NF
Pineal gland	2	NF
Calcium fluoride	1	F
Water fluoridation	1	F
Pineal gland fluoride	1	NF
Fluoride filter	1	NF
Fluoride tablets	1	F
Fluorine	1	F
Fluoride in drinking water	1	F
Fluoride bad for you	1	NF
Is fluoride bad for you	1	NF
Fluoride water filter	1	NF
Fluoride toothpaste	Breakout	F
Fluoride side effects	Breakout	F
Pineal gland	Breakout	NF
Pineal gland fluoride	Breakout	NF
Fluoride filter	Breakout	NF
Fluoride bad for you	Breakout	NF
Is fluoride bad for you	Breakout	NF
Fluoride water filter	Breakout	NF
Tooth decay	Breakout	F
Sydney water	Breakout	F
Fluoride in water	Breakout	F
Fluoridated water	Breakout	F
Fluoride free toothpaste	Breakout	NF
Fluoride conspiracy	Breakout	NF
Fluoride dangers	Breakout	F
Fluoride	Breakout	F
Fluoride in water	> 90%	F
What is fluoride	> 70%	F

Fluoride	> 50%	F	Fluorosis	Breakout	F
Fluoride	> 50%	F	Mineral salts	Breakout	F
Fluoride treatment	> 40%	F	Calcium	Breakout	F
			Zinc	Breakout	F
			Potassium	Breakout	F
Belgium			Sodium	Breakout	F
Fluoride	100	F	Pineal gland	Breakout	NF
Toothpaste	12	F	Fluoride pineal gland	Breakout	NF
Fluoride	11	F	Fluoridated toothpaste	Breakout	F
Fluoride-free toothpaste	2	NF	Fluor	> 40%	F
NaF	2	F			
Toothpaste	Breakout	F			
Fluoride	Breakout	F	Canada		
Fluoride-free toothpaste	Breakout	NF	Fluoride	100	F
NaF	Breakout	F	Fluoride	28	F
			Fluoride in water	22	F
Brazil			Toothpaste	8	F
Fluor	100	F	Fluoride toothpaste	7	F
Fluoride	21	F	Sodium fluoride	3	F
Dental fluoride	14	F	Fluoride	3	F
Iron	3	F	Fluoride in water	3	F
Dental caries	3	F	What is fluoride	3	F
Iodine	3	F	Fluoride treatment	2	F
Fluoride in water	3	F	Fluoride for teeth	2	F
Calcium	2	F	Fluoride	2	F
Fluoride gel	2	F	Fluoride in drinking water	2	F
What is fluoride	2	F	Fluoride Calgary	1	F
Fluoride dentistry	2	F	Fluoride in toothpaste	1	F
Fluoride for teeth	2	F	Fluoridation	1	F
Chlorine	2	F	Fluorine	1	F
Sodium	2	F	Fluoride in water Canada	1	F
Dental fluoride	2	F	Pineal gland	1	NF
Fluoride-free toothpaste	2	NF	Fluoride pineal gland	1	NF
Fluoride application	2	F	Fluoride varnish	1	F
Magnesium	2	F	Cavities	1	F
Fluoride function	2	F	Fluoride dangers	1	F
Phosphor	2	F	Fluoride poisoning	1	NF
What is fluoride	2	F	Fluor	1	F
Magnesium	2	F	What is fluoride	Breakout	F
Fluorosis	1	F	Fluoride treatment	Breakout	F
Mineral salts	1	F	Fluoride for teeth	Breakout	F
Calcium	1	F	Fluoride in toothpaste	Breakout	F
Dental fluoride	Breakout	F	Pineal gland	Breakout	NF
Iron	Breakout	F	Fluoride pineal gland	Breakout	NF
Calcium	Breakout	F	Fluoride varnish	Breakout	F
Fluoride gel	Breakout	F	Cavities	Breakout	F
Fluoride dentistry	Breakout	F	Fluoride dangers	Breakout	F
Fluoride for teeth	Breakout	F	Fluoride poisoning	Breakout	NF
Chlorine	Breakout	F	Fluor	Breakout	F
Dental fluoride	Breakout	F	Is fluoride bad for you	Breakout	NF
Fluoride-free toothpaste	Breakout	NF	Fluoridated water	Breakout	F
Fluoride application	Breakout	F	Fluoride free toothpaste	Breakout	NF
Fluoride function	Breakout	F	Toothpaste	> 800%	F
Phosphor	Breakout	F	Fluoride toothpaste	> 650%	F
What is fluoride	Breakout	F	Fluoride in water	> 120%	F
Magnesium	Breakout	F	Fluoride	> 50%	F

Fluoride	> 40%	F	Ion fluoride	Breakout	F
			Fluoride-free toothpaste	Breakout	NF
Denmark			Fluorosis	Breakout	F
Fluoride	100	F	Fluorite	Breakout	F
Fluoride	88	F	Ion fluor	Breakout	F
Flour	26	F	Fluor danger	Breakout	F
Fluor	26	F	Magnesium fluoride	Breakout	F
18F-fluorodesoxiglicose	8	F	CaF2	Breakout	F
Sodium fluoride	6	F	Fluoride	> 40%	F
Fluoride	4	F			
Contrast	1	F			
Fluor	Breakout	F	Germany		
18F-fluorodesoxiglicose	Breakout	F	Fluor	100	F
Sodium fluoride	Breakout	F	Fluoride	25	F
Fluoride	Breakout	F	Toothpaste	25	F
Contrast	Breakout	F	Fluoride toothpaste	18	F
			Fluoride	6	F
Finland			Fluor	6	F
Fluoride	100	F	Elmex	4	F
Fluoride	15	F	Fluoride	4	F
Fluor	15	F	Toothpaste	3	F
Pineal gland	8	NF	Fluoride	3	F
Sodium fluoride	4	F	Fluoride teeth	3	F
NaF	3	F	Fluoride	3	F
Fluoride	Breakout	F	Fluoride in toothpaste	2	F
Pineal gland	Breakout	NF	Fluoride toxic	2	NF
Sodium fluoride	Breakout	F	Fluoride gel	2	F
NaF	Breakout	F	Fluoride baby	2	F
			Fluoride-free toothpaste	2	NF
France			Duraphat	2	F
Fluor	100	F	Fluoride harmful	2	F
Fluoride	67	F	Sodium	2	F
Sodium	27	F	Sensodyne fluoride	2	F
Fluor	19	F	Duraphat	2	F
Sodium fluoride	19	F	Elmex	2	F
Toothpaste	16	F	Fluor	1	F
Sodium fluoride	8	F	Fluoride toothpaste	1	F
Potassium	6	F	Fluoride in toothpaste	Breakout	F
Fluoride	4	F	Fluoride toxic	Breakout	NF
Potassium fluoride	3	F	Fluoride gel	Breakout	F
NaF	3	F	Fluoride-free toothpaste	Breakout	NF
Calcium fluoride	3	F	Sensodyne	Breakout	F
Fluoride	3	F	Fluor	Breakout	F
Ion fluoride	3	F	Sensodyne fluoride	Breakout	F
Fluoride-free toothpaste	3	NF	Caries	Breakout	F
Fluorosis	2	F	Fluoride toothpaste	Breakout	F
Fluorite	2	F	Fluoride	Breakout	F
Ion fluor	2	F	Toothpaste test	Breakout	F
Fluor danger	2	F	Ajona	Breakout	F
Magnesium fluoride	1	F	What is fluoride	Breakout	F
CaF2	1	F	Elmex gel	Breakout	F
Fluor	Breakout	F	Fluoride lies	Breakout	NF
Fluoride	Breakout	F	Toothpaste without fluoride	Breakout	NF
Calcium fluoride	Breakout	F	Biorepair	Breakout	F
Fluorine	Breakout	F	Sensodyne toothpaste	Breakout	F

Amino fluoride	Breakout	F	Sodium fluoride	3	F
Toothpaste	Breakout	F	Water fluoridation	3	F
Sodium fluoride	Breakout	F	Fluoride tablets	3	F
Elmex	Breakout	F	Fluorine	2	F
Fluoride	Breakout	F	Fluoride-free NZ	2	NF
Fluoride toothpaste	Breakout	F	Tooth decay	1	F
Calcium fluoride	Breakout	F	Pineal gland	1	NF
Mouthwash	Breakout	F	Fluoride tablets NZ	1	F
Elmex toothpaste	Breakout	F	Wellington water fluoride	1	F
Toothpaste without fluoride	Breakout	NF	Iodine	1	F
Calcium fluoride	Breakout	F	Fluoride toxicity	1	CC
Fluoride	Breakout	F	Fluoride	Breakout	F
Otosclerosis	Breakout	F	Fluoride in water NZ	Breakout	F
Elmex	Breakout	F	Fluoride in water	Breakout	F
			Sodium fluoride	Breakout	F
Netherlands			Fluoride tablets	Breakout	F
Fluoride	100	F	Fluorine	Breakout	F
Toothpaste	8	F	Fluoride-free NZ	Breakout	NF
Fluor	8	F	Pineal gland	Breakout	NF
Teeth	5	F	Fluoride tablets NZ	Breakout	F
Fluoride bad	5	NF	Wellington water fluoride	Breakout	F
Fluoride in water	4	F	Iodine	Breakout	F
Fluoridate toothpaste	4	F	Fluoride toxicity	Breakout	CC
Toothpaste without fluoride	3	NF	Fluoride	> 60%	F
Fluoride harmful	3	F			
Elmex	2	F	Norway		
Sodium	2	F	Fluoride	100	F
Toothpaste with fluoride	2	F	Fluoride	50	F
Sodium fluoride	2	F	Fluor	32	F
Mouthwash	2	F	Fluor	5	F
Sodium fluoride	2	F	Sodium fluoride	3	F
Fluoride toxic	1	NF	NaF	3	F
Pineal gland	1	NF	Fluoride	Breakout	F
Pineal gland	1	NF	Fluor	Breakout	F
Toothpaste	Breakout	F	Fluor	Breakout	F
Fluoride bad	Breakout	NF	Sodium fluoride	Breakout	F
Fluoride treatment	Breakout	F	NaF	Breakout	F
Toothpaste without fluoride	Breakout	NF			
Fluoride harmful	Breakout	F	Poland		
Elmex	Breakout	F	Fluoride	100	F
Sodium	Breakout	F	Fluoride	65	F
Toothpaste with fluoride	Breakout	F	Sodium fluoride	41	F
Mouthwash	Breakout	F	Fluor	20	F
Sodium fluoride	Breakout	F	Calcium fluoride	11	F
Fluoride toxic	Breakout	NF	EDTA	3	F
Pineal gland	Breakout	NF	Sorbitol	2	F
Pineal gland	Breakout	NF	Pineal gland	2	NF
			Hydrogen peroxide	2	F
New Zealand					
Fluoride	100	F	Portugal		
Fluoride in water	13	F	Fluoride	100	F
Fluoride	13	F	Fluoride	28	F
Fluoride in water NZ	5	F	Fluor	21	F
Fluoridation	4	F	Fluoride	Breakout	F
Fluoride in water	4	F			

Fluoride	Breakout	F	Pineal gland	Breakout	NF
Fluor	Breakout	F	Sodium fluoride	Breakout	F
Serbia			Fluoride	Breakout	F
Fluoride	100	F	Sodium fluoride	Breakout	F
Fluor	30	F	NaF	Breakout	F
Fluoride	29	F	Fluoride in water	Breakout	F
Fluoride	Breakout	F	Chloride	Breakout	F
Fluor	Breakout	F	Bicarbonate	Breakout	F
Fluoride	Breakout	F	Switzerland		
Slovenia			Fluoride	100	F
Fluoride	100	F	Fluoride	44	F
Pineal gland	30	NF	Fluoride toothpaste	16	F
Pineal gland	Breakout	NF	Fluor	16	F
South Africa			Elmex	13	F
Fluoride	100	F	Elmex gel	5	F
Fluoride	12	F	Fluoride	3	F
Fluoride toothpaste	9	F	Fluoride-free toothpaste	3	NF
Sodium fluoride	4	F	Aspartame	2	F
Pineal gland	3	NF	Fluor	2	F
Fluoride	2	F	Amino fluoride	1	F
Fluoride-free toothpaste	2	NF	Taiwan		
Dental caries	2	F	Fluoride	100	F
Zymafluor	1	F	Fluoride	58	F
Fluorosis	1	F	Fluoride	47	F
Fluoride toothpaste	Breakout	F	Fluoride in Chinese	16	F
Sodium fluoride	Breakout	F	Fluorine coated	7	F
Pineal gland	Breakout	NF	Fluoride	5	F
Fluoride-free toothpaste	Breakout	NF	NaF	4	F
Zymafluor	Breakout	F	Fluoride	2	F
Fluorosis	Breakout	F	Fluoride-free toothpaste	2	NF
Fluoride	> 90%	F	Fluoride	Breakout	F
Sweden			Fluoride	Breakout	F
Fluoride	100	F	Fluoride in Chinese	Breakout	F
Fluoride	31	F	Fluorine coated	Breakout	F
Fluoride	24	F	Fluoride	Breakout	F
Fluor	13	F	NaF	Breakout	F
Fluoride	12	F	Fluoride-free toothpaste	Breakout	NF
Fluoride	10	F	United Kingdom		
Pineal gland	6	NF	Fluoride	100	F
Sodium fluoride	5	F	Fluoride water	36	F
Fluoride	3	F	Fluoride	28	F
Sodium fluoride	3	F	Fluoride in water	22	F
NaF	2	F	Toothpaste	19	F
Fluoride in water	1	F	Fluoride water UK	10	F
Chloride	1	F	Fluoride water	7	F
Bicarbonate	1	F	Fluoride in water UK	7	F
Fluoride	Breakout	F	Sodium fluoride	6	F
Fluoride	Breakout	F	What is fluoride	5	F
Fluor	Breakout	F	Sodium fluoride	5	F
Fluoride	Breakout	F	Fluoride in water	4	F
Fluoride	Breakout	F	Fluoride in toothpaste	3	F

Fluoride for teeth	3	F	Fluoride	5	F
Fluoride varnish	2	F	Fluoride for teeth	4	F
Fluoride	2	F	Dental fluoride	4	F
Is fluoride bad	2	NF	Is fluoride bad	4	NF
Fluoride treatment	2	F	Fluoride effects	3	F
Fluoride free toothpaste	1	NF	Fluoride dentist	3	F
Pineal gland	1	NF	Fluoride on teeth	3	F
Fluoride toothpaste UK	1	F	Pineal gland	3	NF
Tooth decay	1	F	Bottled water fluoride	2	F
Is there fluoride in water	1	F	Fluoride in toothpaste	2	F
Fluoride pineal gland	1	NF	Fluoride varnish	2	F
Is fluoride in UK water	1	F	Fluoride in the water	2	F
Is fluoride bad	Breakout	NF	Fluoride pineal gland	Breakout	NF
Fluoride treatment	Breakout	F	Fluoride bad for you	Breakout	NF
Fluoride-free toothpaste	Breakout	NF	Is fluoride bad for you	Breakout	NF
Pineal gland	Breakout	F	Fluoride free water	Breakout	NF
Fluoride toothpaste UK	Breakout	F	Fluoride free toothpaste	Breakout	NF
Is there fluoride in water	Breakout	F	Water without fluoride	Breakout	NF
Fluoride pineal gland	Breakout	NF	What does fluoride do	Breakout	F
Is fluoride in UK water	Breakout	F	Toothpaste with fluoride	Breakout	F
Fluoride side effects	Breakout	F	Fluoride bad for teeth	Breakout	NF
Fluoride mouthwash	Breakout	F	Dentist fluoride treatment	Breakout	F
Enamel	Breakout	F	Fluoride in bottled water	Breakout	F
Fluoride bad for you	Breakout	NF	Fluoride for kids	Breakout	F
Fluoride-free water	Breakout	NF	Best toothpaste	Breakout	F
Too much fluoride	Breakout	F	Fluoride for toddlers	Breakout	F
Best toothpaste	Breakout	F	Fluoride definition	Breakout	F
Fluoride filter	Breakout	NF	Best fluoride toothpaste	Breakout	F
Toothpaste with fluoride	Breakout	F	Is fluoride bad for teeth	Breakout	NF
High fluoride toothpaste	Breakout	F	Is fluoride safe	Breakout	F
Fluoride dangers	Breakout	F	Is fluoride good for you	Breakout	F
Best fluoride toothpaste	Breakout	F	Why is fluoride in water	Breakout	F
Is fluoride bad for you	Breakout	NF	Fluoride allergy	Breakout	F
Fluoride conspiracy	Breakout	NF	Does bottled water have		
Fluoride water filter	Breakout	NF	fluoride	Breakout	F
Toothpaste	> 400%	F	Fluoride and pineal gland	Breakout	NF
Fluoride water	> 170%	F	Why is fluoride bad	Breakout	NF
			Is fluoride bad for your		
			teeth	Breakout	NF

United States

Fluoride	100	F
Fluoride	33	F
Fluoride water	30	F
Fluoride in water	16	F
Fluoride teeth	12	F
Toothpaste	10	F
Fluoride toothpaste	9	F
Fluoride water	8	F
Sodium fluoride	6	F
What is fluoride	6	F
Fluoride bad	5	NF
Fluoride treatment	5	F
Fluoride in water	5	F