

INSIGHTS FROM SOCIAL CONVERSATIONS ON TYPE 1 DIABETES

[Data for the period March 2020]





Summary of Insights

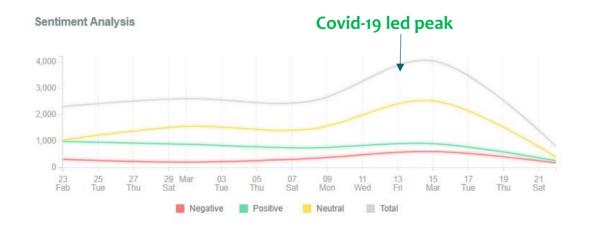
Consumer conversations on Type 1 Diabetes were analyzed over a 30-day period to gather insights. Interesting insights have been discovered:

- Conversations are predominantly from the developed economies. The United States & United Kingdom are where most conversations happened.
- Female conversations were higher than male. Conversations seek and provide information about ways to provide care to Type 1 Diabetes patient in the family.
- The key conversation themes were around the following:
 - The emerging Covid-19/Coronavirus pandemic and how it impacts those with compromised immunity. Families of patients are worried.
 - o Insulin access and high prices are a major cause of concern.
 - Discussions on promising research on treatment or cure for Type 1 Diabetes.

Consumer conversations carried a neutral to positive sentiment. About 13% of conversations were negative and in large part related to Covid-19 and about difficulty in accessing insulin and consumables needed for patient care.

Besides Covid-19, the other negative conversations related to the rejection of Eli Lilly's drug for Type 1 Diabetes.

Several organizations, brands, medical practitioners and other influencers contributed to the discussions and brought forth inspiring patient stories.





Sentiment

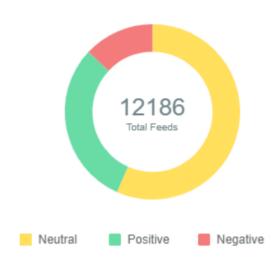


Figure 1: The volume of conversations over a 30-day period (March 2020). Sentiment distribution of consumer conversations.

Methodology

Auris, our AI powered consumer insights platform was used to create this report. Approximately 12,000 unique conversations on Type 1 Diabetes, sourced globally, have been analyzed. These conversations were captured from across mediums such as social, news, review boards and industry/consumer blogs. The platform's interactive dashboard was used to dive deep into topics, subtopics and issues and its visualizations were used to unearth insights.

Further data mining and analysis has been done to get deeper insights on themes which were brought forth by Auris' AI.

Demography of consumers discussing Type 1 Diabetes

A gender and location analysis of all the conversations was carried out. Some interesting insights have been obtained.



Conversations are led more by women than men. What explains this finding? Unlike Type II Diabetes, Type I Diabetes has a high proportion of young children as patients. Mothers are typically the primary care provider in such families. It is therefore expected that conversations around patient care, precautions, new treatment options and the like are led by women.

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Gender

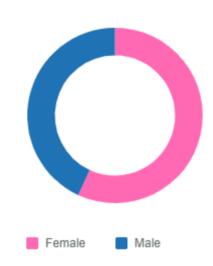


Figure 2: Type 1 Diabetes conversations by gender

Majority of users who engaged in conversations about Type 1 Diabetes belonged to the developed world. Within the developed world, the majority of the conversations originated in North America, followed by Western Europe.





Figure: Conversations on Type I Diabetes. The United States and Western Europe see most conversations.

Within the United States, New York and Washington areas saw more conversations relative to other geographies.

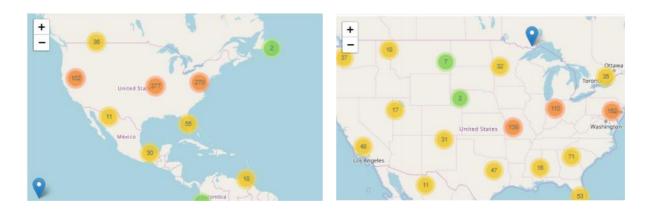


Figure: Eastern and Central America saw more conversations from within the country. The New York and Washington area saw a larger number of conversations on Type I Diabetes

Within Western Europe, the United Kingdom saw the most conversations.



Figure: Type 1 Diabetes related conversations in Europe.

This corresponds with the incidence rate of Type 1 Diabetes in different countries. The incidence rate is high in North America and Western Europe. Therefore, the conversations reflect the clinical reality on ground.

Conversation themes

Several topics of discussion emerged. The important themes were around the following 3 themes:

- 1. Concerns of the caregivers in the family with regard to their family's health.
- 2. Insulin access as a major issue.
- 3. Covid-19 as a strong sub-theme given its impact on those whose immunity is compromised.



Hot Topics



Figure: Key topics of conversations related to Type 1 Diabetes

The following sections discuss in detail each of these consumer conversation themes in detail.

Theme I: Concerns of the caregiver

Type 1 diabetes patients are often young. The primary care provider is the immediate family, typically the mother. Therefore, a lot of these conversations are familial and emotional. These conversations reflect the concerns of the caregiver for the patient in the family.

We deep dived into some of these topics to understand the conversations. The conversation word trees were revealing. Mothers, wives and daughters sought help, advice from and provided information to fellow caregivers. In nut-shell, it's the women in the family who are in charge when it comes to Type 1 Diabetes.







Figure: Conversations reflect the concerns of the caregivers, typically the women.





Figure: A word tree representation of how mothers use social platforms to seek answers to various questions related to their children.

Theme II: Insulin access is a major cause of concern for patients.

A deep dive into conversations reveal that patients face access issues related to insulin. These include issues related to availability, regulatory hurdles to securing prescriptions and pricing. A lot of the negative conversations related to issues with insulin availability. Campaigns by organizations and individuals championing the patients' cause are also generating a positive response.



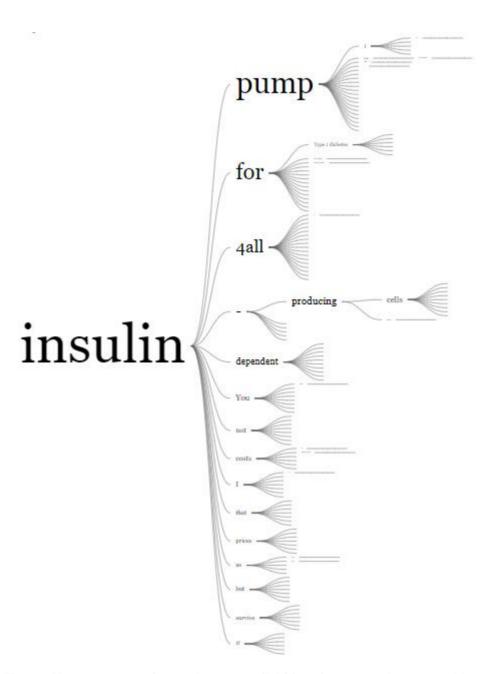
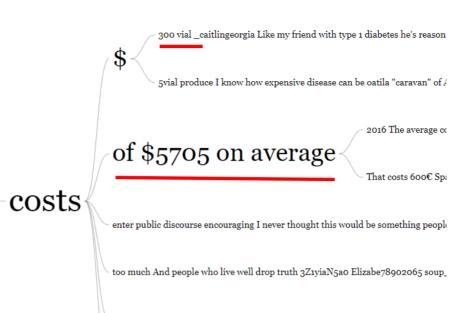


Figure: Many conversations relate to availability of pump and consumables.





So maybe Donate charity that helps with that finding cure \$GNPX Full interview: (

Can Mean Chasing Benefits Not Dreams vcZLAmGuTh via AJMC_Journal This No

diagnosed with type 1 diabetes Feb 6 AND bless other

Figure: Insulin prices are high and therefore a concern for Type 1 Diabetes patients.

started on lisinopril No follow-up blood test check cre m running low on supplies also can't get my insulin that saving my lif am getting elbow wrist trigger finger surgeries on April 3 rd I will nee understand grandparents scenario but what if those kids have parent just worry I support all healthcare workers! New diabetes clinical trial for Type 1 Diabetes Used manage my type 1 diabetes women's restroom on 3rd floor c basically my pancreas since mine doesn't work due my type makes both your lives bit easier means he won't be as restr What incredible myth-busting visibility for this community! ♥ KidsBa My whole childhood I thought about was like "I could never!" Sites4Cc supplies are there options continue coverage for those expense pump supplies I providing closed-loop glycaemic control greater independence for sufferers IjPF zwfjdxgnqb Seen some snidey comments around about nhsstaff getting free coff glucose monitor automatically deliver insulin people via complex algorithm" 2C Users With Type 1 Diabetes XWDPcYM5i7 New diabetes clinical trial: Current 5 he needed People are still helping months later ♥②♥ MrTomatooo1 's killing p LQTS an AICD PTSD I have had 38 heart attacks My life matters! I want long ha history of papilary thyroid cancer I also smoke have some liver issues What can Tandem T:SLIM X2 with Control IQ which promises put diabetes on 'auto pilot fitted monitor my blood glucose level" Say what now T1D GBdoc doc diabetes B coverage for people of all ages Follow our pages for updates on our 2020 Manito ScottBSNRN My mother died of Type 1 diabetes For last 15 years of her life she course out west What lovely bunch of chaps who together with over 150 years ex sensors New tubes insulin had pay for that each every month was not easy had o every 3 daysshe named pump "PIVOT" because of your scene make her laugh T therapy type 1 diabetes SianRilstone begins answ... For Young Adults With Type

insulin-pump

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international Stav_Si theahmedwong follow Stav: one of fiercest anti-zio Je d type1diabetes Today on blog: 7 Questions People Always Ask Me About Ty diabetic weightloss Thaneclinic healthy coronavirus CAUhn6ITNo I don't tweet alot hov human right includes access affordable insulin supplies care for everyone 29wQsWUysi goblinvirus lg8SfRltaA WorldofIsaac My 10 yo has type 1 diabetes 's an auto immune di [Read] PDF The Type 1 Life: Road Map for Parents of Children with Newly Diagnosed T zsR23xfKgP Hands on skills during our type 1 diabetes school setting class These skills JujuJudge Its scares me out here My son special needs has low immune system Some k larkin lyssa THANK YOU!!! As somebody raising child with Type 1 Diabetes I know that scalzi I'm one of unlucky: single parent home raised on Soc Sec no family help diagnose RT MHShonka: If you are college student have chronic illness such as: ADHD Asthma I type1diabetic T9NSENvJzc EGFaGtbj9O 3 months ago my youngest son Joe was diagno ! Visit GBz1XWb2sc sign up help! MAFSLifetime Nothing against people with Type 1 di-Page 15: 36d5R77Rw8 57whRCZszI WinPhd JimmyG2 Gustav1911 That's like me saying ManyeeLil three key messages on protein exercise for type 1 diabetes DiabetesDietExerc mnleg 9emdf6MEos RT DiabetesCanada: Broken bones type 1 diabetes Researchers fro My biggest flaw I'd have go with type 1 diabetes fact about stem cell treatment for type 1 ... RT t1international: Access affordability issues Uganda create big barriers for people l

Figure: Patient advocacy groups and influencers discussed the need to secure insulin for all under the insulin4all campaign.

Theme III: The looming Covid-19 pandemic

The Covid-19 or coronavirus pandemic has had patients worried. Type 1 Diabetes patients have relatively weaker immunity and sometimes have other co-morbidities such as asthma, for instance. Since Covid-19 causes respiratory issues in patients, worried caregivers are seeking help and discussing on ways to secure supplies. The patients and their families are at the forefront and proactively calling for social distancing.

Hot Topics

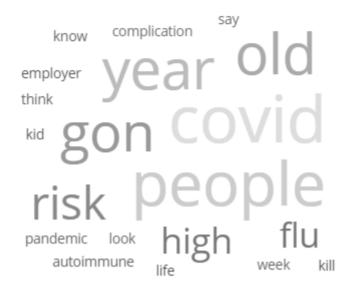


Figure: Topics of discussion on Covid-19 & Type 1 Diabetes shows concerns about the high health risk.

diabetes—asthma

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Figure: Conversations on how those with Type 1 Diabetes and Asthma are at very high risk because of Covid-19.



Top consumer stories on Type 1 Diabetes

A few consumer stories garnered a lot of interest from other users on social media. Some are heartwarming stories of how people are helping each other during the Covid-19 crisis. People responded very enthusiastically to inspirational stories of patients who overcame hurdles because of their condition and pursued their life and career goals.

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Some conversations also reflect the frustration of patients with the non-availability of treatment, the lack of awareness about Type 1 Diabetes and about the lack of support from the administration during the Covid-19 crisis.

Stories of love and inspiration.



Karyn Maughan 🕗 @karynmaughan · Mar 23

My friends know I have an autoimmune disorder (type 1 diabetes, anemia, thyroid issues, osteoporosis etc)

And so, they have carefully gone about making sure I don't go out, By getting groceries, medication etc and delivering it to my door So grateful for these quiet acts of love

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London Live @ @LondonLive · Mar 6

A new short film follows a footballer with Type 1 Diabetes and the difficulties he faces. Londoner, Jonsel Gourkan @T1showbizshizz, who lives with Type 1 Diabetes, and director Jordan Robinson, told @AliciaEdwards more about the film and what they hope to achieve.





Tennessee Titans <a> ② ② Titans · Mar 22
Join the Robinson family for a trip out of lockdown. <a> ② ②

#Titans GM Jon Robinson's daughter, Taylor, has Type 1 diabetes, Alopecia and rheumatoid arthritis. So this time is especially scary... But JRob makes it entertaining.

Thanks for the vlog, Tay!







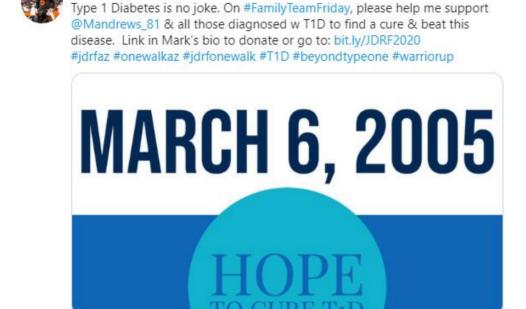
All Knower of Final Fantasy All Judgement/ACNH @ragn... · Mar 20 My daughter turned 11 today, and she is the bravest girl I know. Diagnosed with type 1 diabetes 3 years ago, she does her own blood tests, insulin measurements and injections, 4 times a day and im so proud of her. Got her AC and FFX since she wants to get into it. Stoked









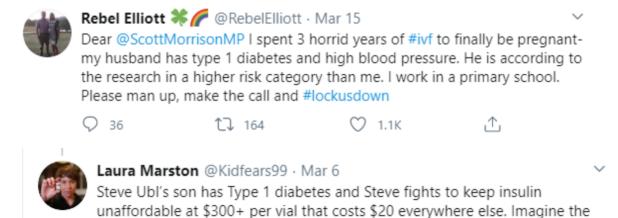


Baker Mayfield @ @bakermayfield · Mar 7

Stories reflecting patient frustrations

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greed necessary to price your own child out of his future.

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Dear @CareFirst and @CVSHealth - I have incurable Type 1 diabetes and require insulin to survive. I also am deathly allergic to Novo insulin. Why do I

need an ANNUAL prior auth? You deny my insulin during a national emergency to make my dr jump thru pointless hoops. Despicable.

Laura Marston @Kidfears99 · Mar 16

Research & Development-related conversations.

Some important research and development topics are also discussed by researchers, institutions and patients. Conversations around such developments show that the patients and their families are curious and eager to learn about possible solutions for Type I Diabetes. Advances in stem cell therapy, unique app-based treatment methods have led to optimism in patients.



Of the research and development-related news, the following have garnered the most interest amongst the patient population.

- FDA Rejects Lilly and Boehringer's Jardiance for Type 1 Diabetes 1
- Type 1 diabetes is not one but two distinct conditions, defined by diagnosis age_{2,3}. Type 1
 Diabetes Looks Like It's Actually 2 Separate Diseases, Scientists Find_{4,5}
- Home-based video visits improve glycemic control among pediatric type 1 diabetes patients6
- Chronic Post-Cardiac Surgery Pain More Likely in Diabetic Patients7
- Artificial pancreas app for type 1 diabetes patients launched after University of Cambridge research₈
- Researchers discover potential cure for type 1 diabetes using new method of creating insulin-producing cells from stem cells9. Human Stem Cells Cure Type 1 Diabetes in Mice 10
- 1 https://www.bioportfolio.com/news/article/4257977/Following-November-Adcom-Vote-FDA-Rejects-Lilly-and-Boehringers-Jardiance-for-Type.html?utm_source=dlvr.it&utm_medium=twitter
- 2 https://www.eurekalert.org/pub_releases/2020-03/uoe-t1d031020.php
- ${}_3\,https://yesicaneatcake.com/wp/2020/03/18/type-1-diabetes-found-to-be-two-distinct-conditions-depending-on-age/$
- 4 https://www.sciencealert.com/type-1-diabetes-looks-like-it-s-actually-2-separate-diseases-scientists-discover
- 5 https://www.sciencefocus.com/news/type-1-diabetes-is-two-separate-conditions-depending-on-age-at-diagnosis/?fbclid=IwARo-aJMgV1DbnCQHK5xDYsuQQbT4bpqptYxkNfmsoMjm7lUsuBAsZb4KzQE
- 6 https://health.ucdavis.edu/health-news/contenthub/home-based-video-visits-improve-glycemic-control-among-pediatric-type-1-diabetes-patients/2020/03
- 7 https://www.anesthesiologynews.com/Clinical-Anesthesiology/Article/03-20/Chronic-Post%E2%80%93Cardiac-Surgery-Pain-More-Likely-in-Diabetic-Patients/57573?utm_source=Social&utm_medium=twitter&utm_campaign=0320cardiacsurgpain
- 8 https://www.cambridgeindependent.co.uk/news/artificial-pancreas-app-for-type-1-diabetes-patients-launched-after-university-of-cambridge-research-9102950/
- 9 https://www.drwf.org.uk/news-and-events/news/researchers-discover-potential-cure-type-1-diabetes-using-new-method-creating
- 10 https://www.labroots.com/trending/drug-discovery-and-development/16984/human-stem-cells-cure-type-1-diabetes-mice?fbclid=IwAR2INFBakhCxWPgm9uYou9ZIFKYjUifkrAD5g3PgdGPBitghIqjrNAzObHk



Physicians, diabetologists and experts who contributed to the discussion.

Conversations on Type 1 Diabetes were enriched by the participation of some leading researchers and medical practitioners. We've picked a few representative experts who provided useful perspective to patients through social platforms.





Fred Wu, MD

@FredWuMD

I take care of adolescents & adults with congenital heart disease. #MedPeds #ACHD @BostonChildrens @BrighamWomens. Clinics in Boston, Waltham, Providence.

- ⊗ Boston, MA
 ⊗ childrenshospital.org/doctors/fred-m...
- Joined November 2014

1,305 Following 6,117 Followers



Stephen Shaya, M.D.

@DrSshay

J & B is a global health care solutions company. with 17 different business enterprises.. My role includes overseeing all strategy, innovation, and growth.

4,964 Following 1,172 Followers





Dr. Holly Witteman

@hwitteman

Assoc prof, family & emerg med. PhD: human factors engineering. Research:
@wittemanlab. Me: type 1 diabetes, mom, she/her. Tweets: topics I care about, En/Fr.

 \circledcirc traditional & unceded territory of Huron-Wendat, Abenaki, Wolastoqiyik & Haudenosaunee peoples (Québec City)

⊗ holly.witteman.ca 🖽 Joined November 2010

4,071 Following 11.7K Followers



Aaron R.Chidakel, MD

ACinNYC2K19



David Kerr MD is social distancing so should you

@GoDiabetesMD

Scotsman in the Golden State. Preventing disease is often down to connecting dots rather than splitting atoms

Santa Barbara, California
 Sansum.org
 Joined March 2011

2,455 Following 3,425 Followers







21/



Top influencers who engaged in Type 1 Diabetes conversations.

Auris has been used to identify both influential organizations and individuals who led conversations related to the Type 1 Diabetes condition. Organizations and individuals with powerful followership took on patient advocacy initiatives.



Important Organizations & Institution

The organizations which contributed to the discussions include JDRF, WHO, Diabetes UK, Diabetes Canada, Cleveland Clinic amongst others. Their social conversation snippets are shown below.









There's still time! Today and tomorrow when you visit select @StopandShop stores you can donate to JDRF at check out and help drive breakthroughtype 1 diabetes (T1D) research! Find your nearest location here: https://t.co/kZa6J1F Gri https://t.co/phZRJTzqAc



World Health Organization (WHO) INFLUENCE SCORE - 81



아 의료소 / :

y 20 days ago

a month ago

🔰 11 davs ago

20 days ago

@WHOSEARO @WHOAFRO @WHOEMRO @WHO Europe @pahowho @WHOWPRO Childhood obesity is one o f the most serious public health challenges of the 21st century. Overweight children are likely to become obese adults. They are more likely to develop #diabetes and cardiovascular diseases at a younger ...

Geneva +1 More



NCAA Women's Basketball INFLUENCE SCORE - 71



"It's really important that I show people that regardless oftype 1 diabetes, I can do anything that I want to do." Lauren Cox was able to play against her younger sister Whitney earlier this season. Now, the pair has won the @USWBA Pat Summit Courage Award. #ncaaW | @BaylorWBB ...

Indianapolis +88 More



Cheshire Live INFLUENCE SCORE - 61



A woman from Chester is preparing to run her first marathon – three years after being diagnosed withtype 1 diabetes @DiabetesUK: https://t.co/w1trjsrrNP

Chester

+1 More



UVA INFLUENCE SCORE - 62



"This medical breakthrough has the potential to improve care and the quality of life for many patients withtype 1 diabe tes." -- Dr. K. Craig Kent https://t.co/CulX6eqIT5

Charlottesville

+2 More





와 성 A A A :

"My sister hadtype 1 diabetes, and she couldn't afford her insulin. She passed." The price of insulin has tripled in the I ast ten years. People are dying. And Trump is still breaking his promise to lower fatally high drug costs. https://t.co/W boDabvqzd

+302 More







Diabetes UK INFLUENCE SCORE - 68



Our Family Weekenders are events for children withtype 1 diabetes and their families. Your child and their siblings will take part in action-packed activities, learning more about diabetes along the way. Book your place on our Leeds event from 15-17 May: https://t.co/WS7to2PWf4

UK +6 More



21 davs ado

Cleveland Clinic MD INFLUENCE SCORE - 68



One thorough patient history changed everything for a family misdiagnosed with type 1 diabetes for 30+ years: https:// t.co/SGiKLS4urw

Cleveland



Tennessee Titans INFLUENCE SCORE - 73



Join the Robinson family for a trip out of lockdown. a #Titans GM Jon Robinson's daughter, Taylor, hastype 1 diabet es, Alopecia and rheumatoid arthritis. So this time is especially scary... But JRob makes it entertaining. 😝 Thanks for the vlog, Tay! Thttps://t.co/kkbyd8ves4

Nashville +68 More



NPR INFLUENCE SCORE - 83



4 days ago

3 days ago

For Wendy Shaw, a charge nurse for an emergency room in Seattle, there's a very personal stress driving her to be c areful: She hastype 1 diabetes, and so does her young son — which makes her high risk for complications if she wer e to be infected. https://t.co/pjY846i8Pr

Seattle Wendy +6 More



Important Influencers who spoke on Type 1 Diabetes

Individuals with a large and powerful social following who initiated or supported Type 1 Diabetes-related discussions are shown below.





GARY VALENCIANO INFLUENCE SCORE - 80

S+ | 与 A A A | 1 :

@RidleysReylo You're right. In fact I did get sick but He helped me when I got my bypass...kidney cancer...and has b een helping me with mytype 1 diabetes for the last 41yrs now. Just doing my part of encouraging people with hope.



Baker Mayfield INFLUENCE SCORE - 72 18 days ago



type 1 diabetes is no joke. On #FamilyTeamFriday, please help me support @Mandrews 81 & all those diagnosed w T1D to find a cure & beat this disease. Link in Mark's bio to donate or go to: https://t.co/o6ht1oLe63 #jdrfaz #onewalk az #jdrfonewalk #T1D #beyondtypeone #warriorup ...

Austin +292 More



Cara Santa Maria 📮 INFLUENCE SCORE - 62



Scientists findtype 1 diabetes is actually 2 separate diseases. #Type1 #Diabetes #Subtypes #NewDiscovery #Scienc eResearch https://t.co/OXUKfnSnfs https://t.co/gfbMfuYqFG

Los Angeles +6 More



Sheku Kanneh-Mason INFLUENCE SCORE - 63

y a day ago



Proud to be the Global Ambassador for world leadingtype 1 diabetes charity @JDRFUK. Stay home and read my inte rview with them in the latest edition of the magazine: http://bit.ly/JDRFDiscovery https://t.co/Nnljv66QCb

England +8 More







My friends know I have an autoimmune disorder type 1 diabetes, anemia, thyroid issues, osteoporosis etc) And so, th ey have carefully gone about making sure I don't go out, By getting groceries, medication etc and delivering it to my d oor So grateful for these quiet acts of love

Johannesburg

+210 More







I'm honestly dealing with my anxiety by using my humor defense mechanism because guess who has two thumbs an d a compromised immune system bc I have type 1 diabetes which is an autoimmune disease?? 🔥 🔥 this girl

Takeaways for healthcare brands

The insights gathered point to some important opportunities for brands and organizations for whom Type 1 Diabetes patients are a relevant audience. Such brands and organizations can re-draw their strategies to:

- Communicate with the families: Engage the female audience, especially those in charge of the family's health. Type 1 Diabetes is a subject driven by emotion and therefore communication which has an emotional appeal will resonate with consumers.
- Be a patient advocate: Rally behind causes related to better access to insulin and consumables, lower pricing to engage patient families.
- Partner with organizations (ex. Diabetes UK), to create awareness about Type 1 Diabetes and its unique challenges.
- Showcase your thought leadership by sharing the most current research about Type 1 Diabetes.
- Engage with influencers who can help spread your word to the patients and their families.

In addition, Covid-19 presents an immediate opportunity to help Type 1 Diabetes patients by actively listening to their issues and helping them with information and good advice.

