

## **SUPPLEMENTARY MATERIALS**

### **An online survey among US patients with immune-mediated conditions: Attitudes about biosimilars**

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**SUPPLEMENTARY TABLE 1** Sample Disposition

**SUPPLEMENTARY TABLE 2** Patient Demographic Characteristics and Biologic Use

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**SUPPLEMENTARY FIGURE 1** Patients Were Shown the FDA Definition of Biosimilars Then Asked, Thinking About Taking Biosimilars, What Do You Worry About?

**SUPPLEMENTARY EXHIBIT 1** Survey Results Show That People With Immune-Mediated Inflammatory Conditions Want to Know More About Biosimilar Medicines

**SUPPLEMENTARY TABLE 1** Sample Disposition

<b>Total Responses</b>	<b>2013</b>
Screening terminates	226
Q.S1 - Said "no" to Survey consent	38
Q.S2 - Selected all three conditions	8
Q.S2 - Selected "None" to conditions	49
Q.S3 Not diagnosed by specialist doctor	54
Q.S4: Diagnosed Less than year ago	46
Q.S5 Not in US State or territory	2
QS6 Less than 18 years of age*	2
Q7B Mentioned Inflectra or Renflexis or Avsola	22
Failed ReCAPTCHA	5
Over Quota	1287
<b>Total Completes</b>	<b>500</b>

**SUPPLEMENTARY TABLE 2 Patient Demographic Characteristics and Biologic Use**

	<b>All (N=500)</b>	<b>RA (n=167)</b>	<b>PsO/A (n=167)</b>	<b>IBD (n=166)</b>
<b>Age, y, mean (SD)</b>	48.6 (14.3)	48.9 (13.4)	46.6 (14.4)	50.1 (15.0)
<b>Gender, n (%)</b>				
Male	193 (38.6)	62 (37.1)	78 (46.7)	53 (31.9)
Female	306 (61.2)	105 (62.9)	89 (53.3)	112 (67.5)
Prefer not to say	1 (0.2)	0	0	1
<b>Region, %</b>				
Northeast	124 (24.8)	40 (24.0)	42 (25.1)	42 (25.3)
Midwest	125 (25.0)	42 (25.1)	42 (25.1)	41 (24.7)
West	123 (24.6)	41 (24.6)	41 (24.6)	41 (24.7)
South	128 (25.6)	44 (26.3)	42 (25.1)	42 (25.3)
<b>Years since diagnosis, n(%)</b>				
1-5	201 (40.2)	80 (47.9)	64 (38.3)	57 (34.3)
6-10	130 (26.0)	64 (27.5)	45 (26.9)	39 (23.5)
>10	169 (33.8)	41 (24.6)	48 (34.7)	70 (42.2)
<b>Concurrent conditions</b>				
RA* only	138 (27.6)	138 (82.6)	0	0
RA and PsO/PSA	29 (5.8)	29 (17.4)	0	0
PsO only	101 (20.2)	0	101 (60.5)	0
PsA only	13 (2.6)	0	13 (7.8)	0
PsO and PsA	42 (8.4)	0	42 (25.1)	0
PsO/PsA and IBD	11 (2.2)	0	11 (6.6)	0
IBD*	147 (29.4)	0	0	147 (88.6)
IBD and RA	17 (3.4)	0	0	17 (10.2)
IBD and PsO/A and RA	2 (0.4)	0	0	2 (1.2)
<b>Biologic medicine use, n (%)†</b>				
Not currently receiving biologic	279 (55.8)	83 (49.7)	89 (53.3)	107 (64.5)
Past use	80 (16.0)	21 (12.6)	28 (16.8)	31 (18.7)
Biologic naïve	199 (39.8)	62 (37.1)	61 (36.5)	76 (45.8)
Current biologic use	221 (44.2)	84 (50.3)	78 (46.7)	59 (35.5)
Current Anti-TNF $\alpha$ use	150 (67.9)	67 (79.8)	47 (60.3)	36 (61.0)
Adalimumab	83 (55.3)	31 (46.3)	34 (72.3)	18 (50.0)
Cetrolizumab pegol	10 (6.7)	7 (10.4)	0 (0)	3 (8.3)
Etanercept	39 (26.0)	25 (37.3)	8 (17.0)	6 (16.7)
Golimumab	5 (3.3)	1 (1.5)	3 (4.3)	2 (5.6)
Infliximab	13 (8.7)	3 (4.5)	3 (6.4)	7 (19.4)

anti-TNF $\alpha$ =anti-tumor necrosis factor  $\alpha$ ; IBD=inflammatory bowel disease; PsO/A=psoriasis or psoriatic arthritis; RA=rheumatoid arthritis.

\*Patients with RA may also have juvenile RA; patients with IBD could have ulcerative colitis and/or Chron's disease.

†Patients were asked "Are you or have you ever been on a biologic medicine. You can see the names of many biologic medicines below." Answer choices were "Yes, I'm currently

receiving treatment,” “Yes, in the past, but I stopped,” and “No, I have never taken one of these medicines.”

**SUPPLEMENTARY TABLE 3 Patient Information Sources and Preferences**

**Q13: Where do you currently get your health care information?**

	<b>All patients</b>		<b>Current biologic users</b>		<b>Past biologic users or biologic-naïve</b>	
<b>Total</b>	500	100%	221	100%	279	100%
Health care provider (for example, doctor, pharmacist, nurse practitioner, physician assistant)	415	83%	184	83%	231	83%
Internet search (for example, Google or other search engine)	230	46%	103	47%	127	46%
TV and/or radio	59	12%	26	12%	33	12%
Health website (for example, WebMD®, Mayo Clinic, Healthline)	229	46%	106	48%	123	44%
Social media (for example, Twitter, Facebook, Instagram)	50	10%	31	14%	19	7%
Direct mail	0	0%	0	0%	0	0%
Email from organizations (for example, Crohn's and Colitis Foundation, National Psoriasis Foundation)	73	15%	39	18%	34	12%
Other patients with my disease	43	9%	23	10%	20	7%
Other, please specify	8	2%	1	0%	7	3%

**Q14: Where would you ideally like to get your health care information from?**

	<b>All patients</b>		<b>Current biologic users</b>		<b>Past biologic users or biologic-naïve</b>	
<b>Total</b>	500	100%	221	100%	279	100%
Health care provider (for example, doctor, pharmacist, nurse practitioner, physician assistant)	438	88%	189	86%	249	89%
Internet search (for example, Google or other search engine)	176	35%	85	38%	91	33%
TV and/or radio	51	10%	27	12%	24	9%
Health website (for example, WebMD®, Mayo Clinic, Healthline)	176	35%	76	34%	100	36%
Social media (for example, Twitter, Facebook, Instagram)	48	10%	35	16%	13	5%
Direct mail	0	0%	0	0%	0	0%
Email from organizations (for example, Crohn's and Colitis Foundation, National Psoriasis Foundation)	89	18%	47	21%	42	15%
Other patients with my disease	50	10%	20	9%	30	11%
Other, please specify	6	1%	0	0%	6	2%

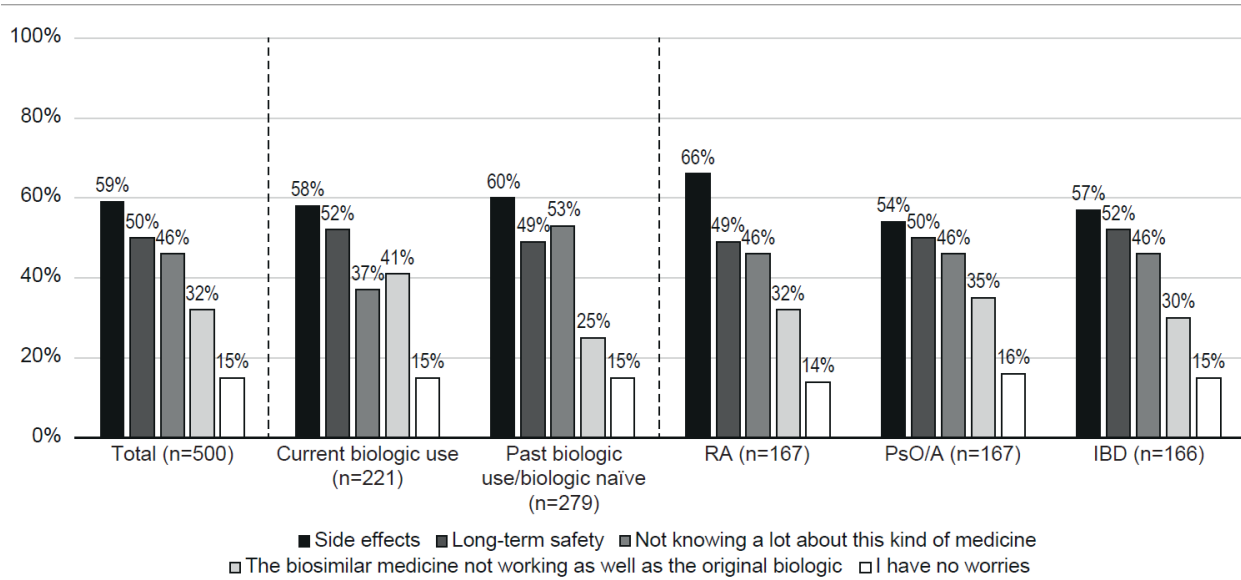
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**Q16: What is your preferred content format?**

	<b>All patients</b>		<b>Current biologic users</b>		<b>Past biologic users or biologic-naïve</b>	
<b>Total</b>	500	100%	221	100%	279	100%
Video	176	35%	84	38%	92	33%
Infographic	99	20%	51	23%	48	17%
Audio	67	13%	36	16%	31	11%
Print	309	62%	125	57%	184	66%
Face-to-face	187	37%	84	38%	103	37%
Other, please specify	3	1%	0	0%	3	1%

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**SUPPLEMENTARY FIGURE 1** Patients Were Shown the FDA Definition of Biosimilars Then Asked, Thinking About Taking Biosimilars, What Do You Worry About?



Results are presented by condition and current biologic use vs past biologic use/biologic naïve.

## Supplementary Plain Language Summary

# Survey results show that people with immune-mediated inflammatory conditions want to know more about biosimilar medicines

Date of summary: April 2022

### Abstract

A 16-question online survey asked 500 adults with rheumatoid arthritis, psoriasis, psoriatic arthritis, and/or inflammatory bowel disease about biosimilars. Overall, 66% did not know what a biosimilar was, 24% did, and 10% were unsure. Patients identified side effects, long-term safety, and not knowing a lot as top concerns. Around 40% of patients would switch to a biosimilar and 30–40% were unsure. Cost was something that 43% of patients considered when making treatment choices. Finally, about 7 in 10 patients wanted more information on biosimilars in general and 5 in 10 on the relationship between biosimilars and original biologics.

### Who should read this summary?

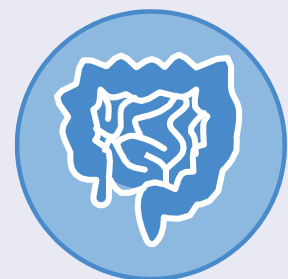
This summary is for people with immune-mediated inflammatory conditions. This summary is also for caregivers, patient advocates, and healthcare professionals involved in treating immune-mediated inflammatory conditions.

### What did this survey ask and why was it done?

- This survey asked people with immune-mediated inflammatory conditions about their thoughts on biosimilar medicines.
- More biosimilar medicines will be available in the United States. It is important to understand what patients know about biosimilars and how they would feel about being treated with one.

### What are immune-mediated inflammatory conditions?

- Immune-mediated inflammatory conditions are a group of long-term (chronic) diseases caused by problems with the immune system.
- Different conditions can affect different parts of the body, including:





**Joints**, such as rheumatoid arthritis and psoriatic arthritis

What are biologics, TNF $\alpha$  blockers, and biosimilars?



Biologic medicines are made from natural and living sources, such as cells from animals or plants, or from bacteria or yeast. Biologics are given by injection under the skin or infusion into a vein.



One example of a biologic is called a tumor necrosis factor alpha (TNF $\alpha$  for short) blocker.

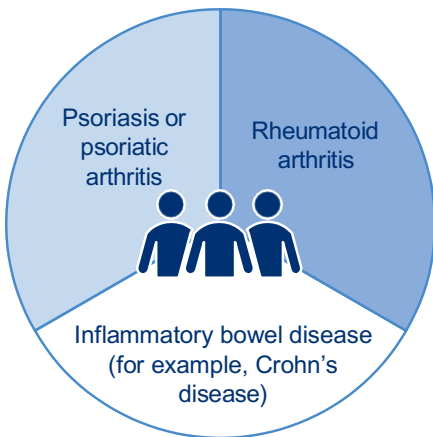
TNF $\alpha$  is a substance in the body that causes inflammation. For example, too much TNF $\alpha$  in the joints can cause pain, swelling, and stiffness in rheumatoid arthritis.

Medicines that block TNF $\alpha$  (anti-TNF $\alpha$  medicines, also called TNF $\alpha$  blockers or TNF $\alpha$  inhibitors) can reduce inflammation.

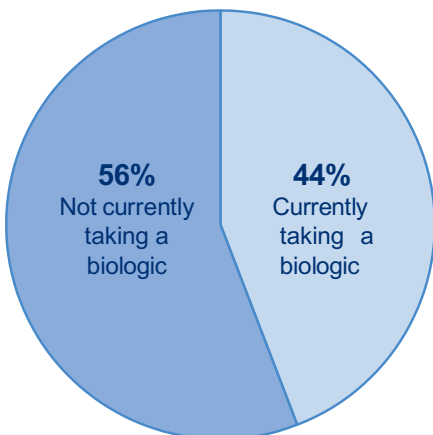


Biosimilars are a group of biologic medicines developed to be very similar to an original biologic medicine. (These can also be called the reference biologic or reference product or original biologic.) There are several biosimilars for the different biologic medicines that are TNF $\alpha$  blockers.

Who took part in the survey?



- 500 people took part in the survey.
- One-third of people who took part had rheumatoid arthritis. One-third had psoriasis or psoriatic arthritis. One-third had inflammatory bowel disease (for example, Crohn's disease).
- People who had more than one of these conditions only answered questions about one of them.



- More than half (56%) of people who took part were not currently taking a biologic (40% had never taken a biologic and 16% had taken one in the past).
- Less than half (44%) of people who took part were currently taking a biologic.

## What was the survey about?



The survey asked **16 questions** and focused on the use of original biologics and people’s thoughts on biosimilar medicines.

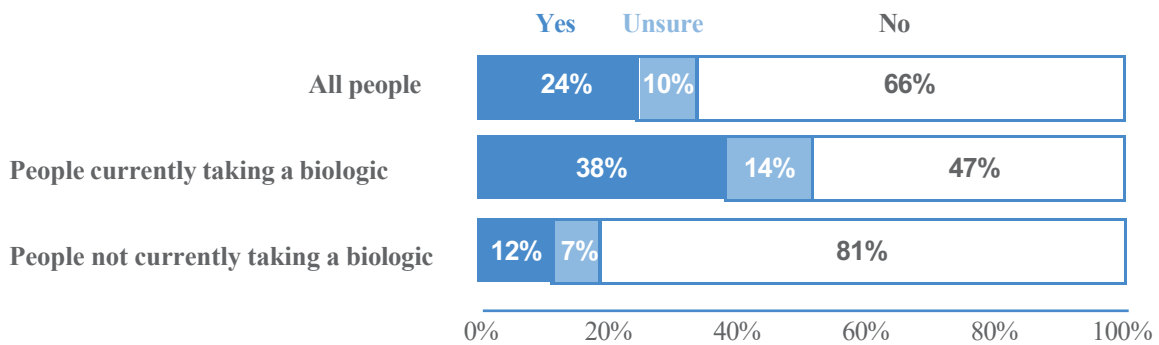


The survey was shared online across the **United States**.

## What were the results of the survey?

### 1. Did people taking part in the survey already know about biosimilars?

- Around **1 in 4** of all people who took part in the survey had heard of biosimilars.



- People currently taking a biologic were more likely to have heard of biosimilars than those not currently taking a biologic.
- People taking part in the survey were shown the definition of a biosimilar before answering more questions. A biosimilar is a biologic medicine developed to be similar to an original biologic. Biosimilars:
  - Are made from the same types of natural sources as the original biologic
  - Are as safe and effective as the original biologic
  - Provide the same treatment benefits
  - Have the same potential side effects
  - Have the same strength and dosage
  - Give people more treatment options

### 2. What concerns about biosimilars did people have?



**6 in 10** people (59%) worried about side effects



**5 in 10** people (50%) worried about long-term safety

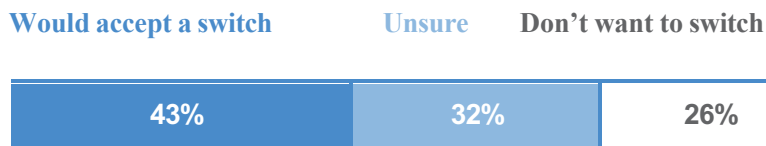


**Around 4 in 10** people (46%) worried about not knowing a lot about biosimilar medicines

### 3. Did people want to switch to a biosimilar?

- **Around 4 in 10** people who took part in the survey would switch from a reference biologic to a biosimilar, but many were unsure.

People who were **currently taking a biologic** were asked what they thought about switching from their current biologic to a biosimilar of the same medicine (if available)

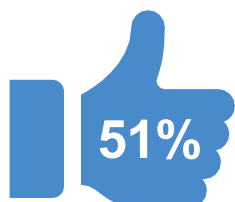


People who were **not currently taking a biologic** were asked what they thought about their doctor prescribing an original anti- TNF $\alpha$  biologic, but their insurance company requiring a switch to a biosimilar of that medicine

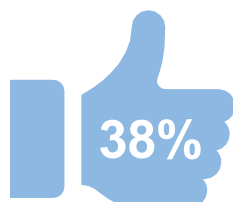


- **Around 4 in 10** people (42%) who did not want to switch from their current biologic to a biosimilar were worried about financial support (such as co-pay assistance).
- **Around 4 in 10** people (44%) not currently taking a biologic said that if one was prescribed, their preference for the original biologic or its biosimilar would depend on cost.

### 4. Were people open to the possibility of pharmacist substitution of an original biologic with an interchangeable biosimilar?

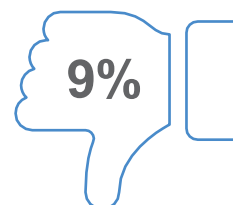


Would be okay with substitution if **they AND their doctor** were told



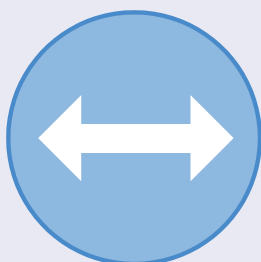
19% would be okay with substitution if **they** were told

19% would be okay with substitution if **their doctor** was told



**Would NOT** be okay with substitution

#### What is an interchangeable biosimilar?



- An interchangeable biosimilar is one that can be substituted for the original biologic by your pharmacist without the consent of your doctor, if state law allows this.
- At the time of this survey there were no interchangeable biosimilars available.

## What are the authors' main conclusions?

- People with immune-mediated inflammatory conditions need further information and reassurance about the side effects and long-term safety of biosimilars.
- Many people who took part in the survey think about the cost of biosimilars when considering treatment choices.
- Many people who took part in the survey would be willing to switch to a biosimilar and would accept pharmacist substitution if they and their doctor were told.
- The majority of people want more information about biosimilars in general and about the relationship between biosimilars and original biologics.



### How to say:

**Ankylosing spondylitis** = an-kee- loh-zing spon-dee-ly-tiss

**Arthritis** = are-thry-tiss **Biologic** = bye-oh-lo-jik **Biosimilar** = bye-oh-sim-e-lar **Crohn's** = Cro'nz

**Interchangeable** = in-ter-change-a-bull

**Immune** = imm-yoon **Psoriatic** = saw-ree-a-tik **Psoriasis** = saw-ry-a-siss **Rheumatoid** = room-a-toyd

**Ulcerative colitis** = ul-sir-ah-tiv kol-ly-tiss

## **Who sponsored the study?**

- Boehringer Ingelheim Pharmaceuticals, Inc. sponsored this study.
- Boehringer Ingelheim Pharmaceuticals, Inc. would like to thank the people who responded to the survey for sharing their answers

## **Where can I find more information?**

- The full title of this article is: An online survey among US patients with immune-mediated conditions: beliefs about biosimilars. <Journal - please insert DOI for JMCP article>
- US FDA patient materials about biosimilars: <https://www.fda.gov/drugs/biosimilars/patient-materials>
- A Patient's Guide to Understanding Biosimilars: [https://creakyjoints.org/wp-content/uploads/2018/12/GHLF\\_Biosimilars\\_Patient\\_Guidelines\\_2018.pdf](https://creakyjoints.org/wp-content/uploads/2018/12/GHLF_Biosimilars_Patient_Guidelines_2018.pdf)

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