React19 Persistent Symptoms Survey #2

Second survey 9/30/2021 - 3/4/2022

REACT 19

RESEARCH • EDUCATION • ACTION • THERAPEUTICS

Key findings

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1. **The number of symptoms correlates with severity of vaccine injury.** This suggests that symptom count can be used as a diagnostic test, providing objective evidence of vaccine injury.
2. **There may be two (or more) different types of vaccine injury.** The more severe version has additional symptoms rarely found in the less severe form.

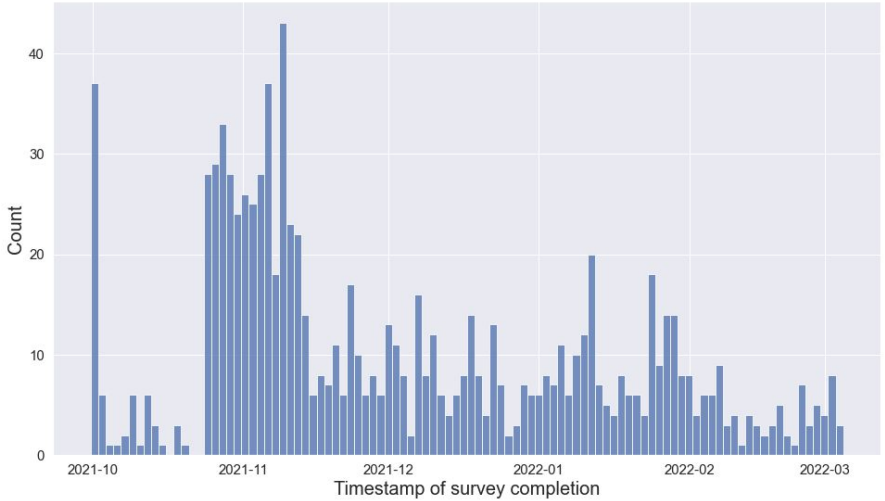
Other findings:

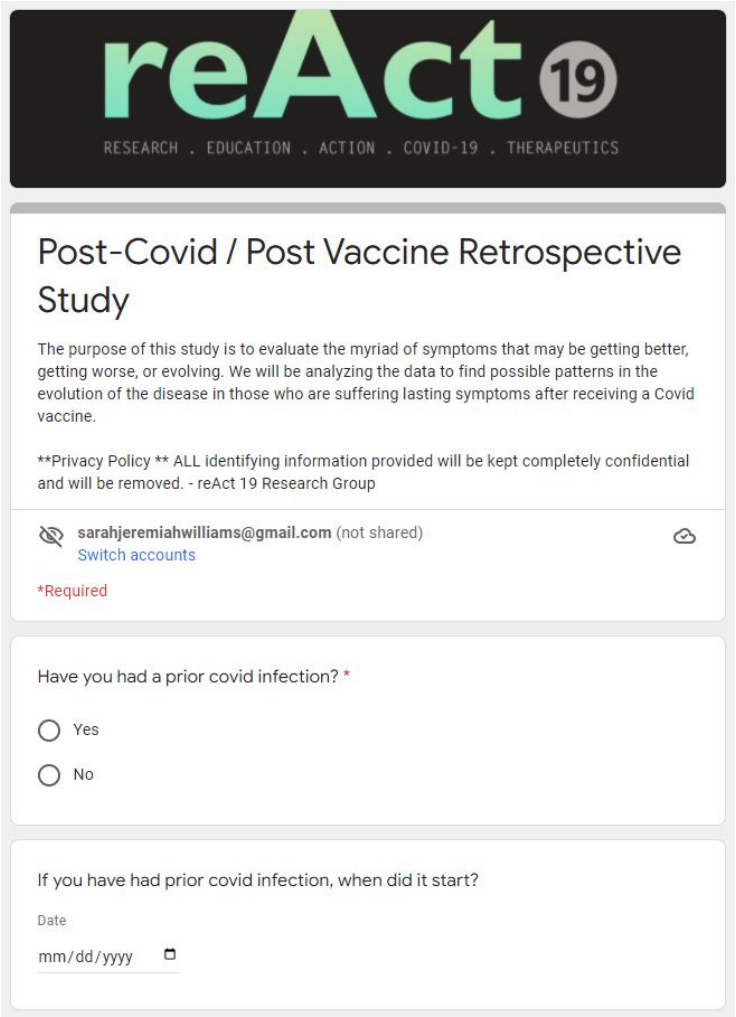
- Autoimmunity may be a risk factor for COVID vaccine injury.
- Symptom evolution over time may be incongruent with the microclot and hyperimmunity theories.

Part 1: Methodology and limitations

Survey participants

A Google Form was used to collect responses from visitors to the React19 website. Survey questions are available via [this link to the Google Form](#).





Limitation #1 - Surveyees have a diversity of interpretations

967 completed the survey by 3/4/2022

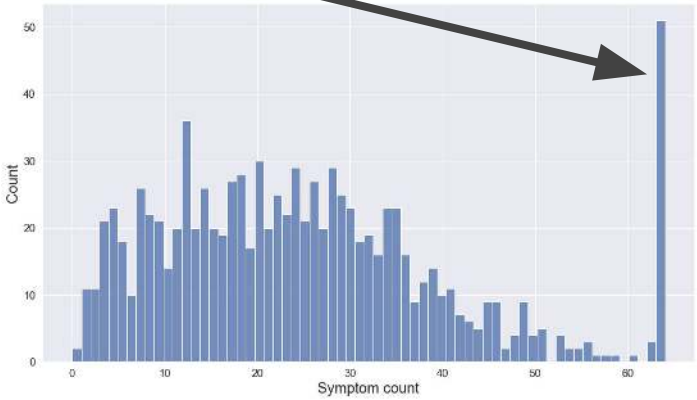
4 responses were removed for various reasons (e.g. duplicate, unvaccinated)

A few reported having over 44 symptoms but reported the lowest severity.

Limitation #1 - Surveyees have a diversity of interpretations

51 reported having *all* 64 of 64 symptoms on the survey. That includes *both* high and low blood pressure.

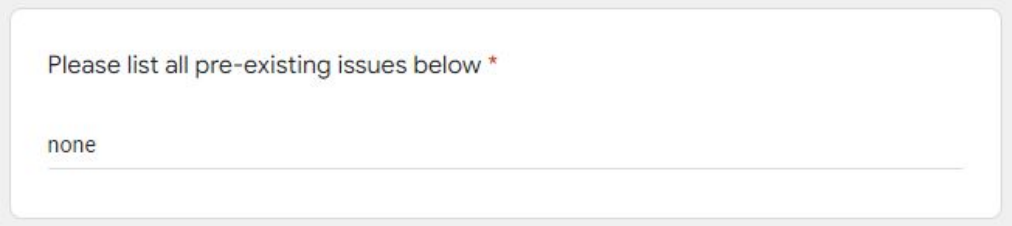
One interpretation is that going from *no fatigue* to *no fatigue* is “staying the same” rather than “not applicable”.



Please indicate which symptoms are Improving, staying the same, getting worse, or not applicable *

	improving	getting worse	staying the same	Not Applicable
Fatigue	○	○	◉	○
Brain Fog	○	○	○	○
Burning Sensation on Skin	○	○	○	○

Limitation #2 - Freeform text responses were not analyzed manually



Regular expressions in Python were used to look for particular words (e.g. “autoimmune”) in the free-form response. This method takes less time than going through thousands of entries. However, it is less accurate than manual interpretation.

```
AUTOIMMUNE_LIST = HASHI_LIST + CELIAC_LIST + RHEUMATOID_LIST + LUPUS_LIST + MS_LIST + [r"\bautoimmune\b", r"\bSjogren\b", r"\bGBS\b",
r"\bGuillain\b", r"\bGuillan\b", r"\bAnkylosing\b", r"\bspondylitis\b",
r"\baddison", r"\balopecia\b", r"\bcrohn", r"\bbasedow", r"\bgraves\b", r"\bgrave's\b", r"\bInflammatory bowel\b", r"\bibd\b", r"\bMyasthenia\b", r"\bgravis\b",
r"\bPernicious anemia\b", r"\bPernicous anemia\b", r"\bPolymyalgia rheumatica\b", r"\bPsoriasis\b", r"\bType 1 diabetes\b", r"\bT1D\b", r"\bType I\b",
r"\bulcerative colitis\b",  #Colitis is common response, we'll assume it isn't autoimmune
r"\bUveitis\b", r"\biridocycltis\b", r"\bCIDP\b", r"Chronic inflammatory demyel", r"\bVITT\b", r"\bADEM\b", r"Acute disseminated enceph",
r"Aplastic anemia", r"Transverse myelitis"
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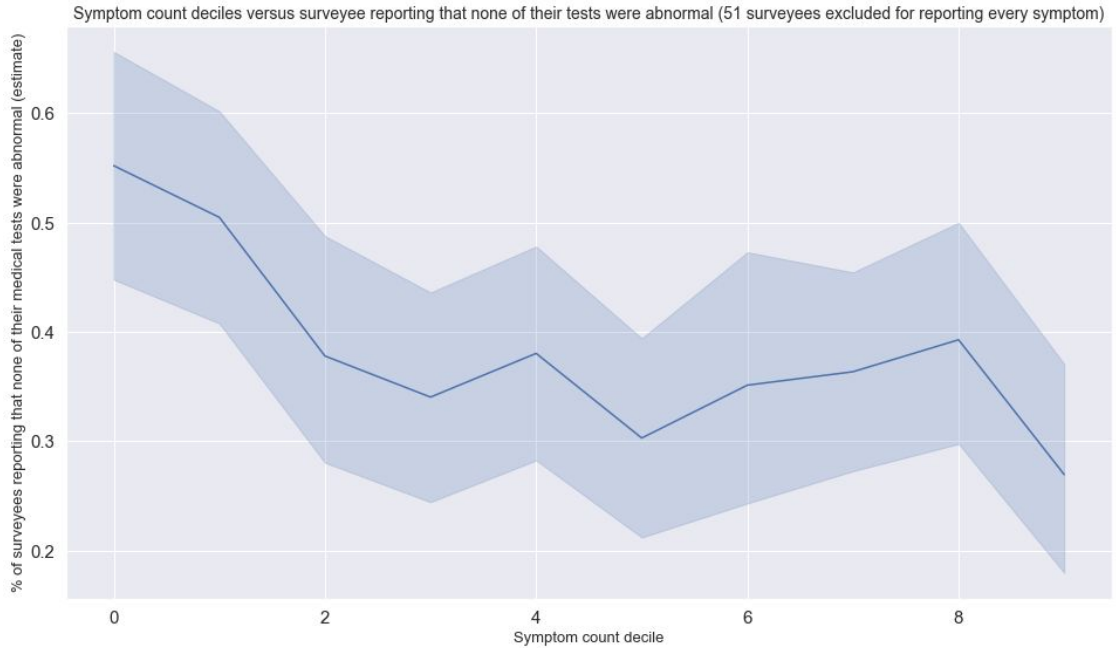
Limitation #3 - Some vaccine injured have difficulty filling out surveys

Some vaccine injured have cognitive difficulties or are unable to tolerate computer/smartphone screens. Those people may be underrepresented in our survey.

Part 2: Symptom count as a potential diagnostic for vaccine injury

The need for testing

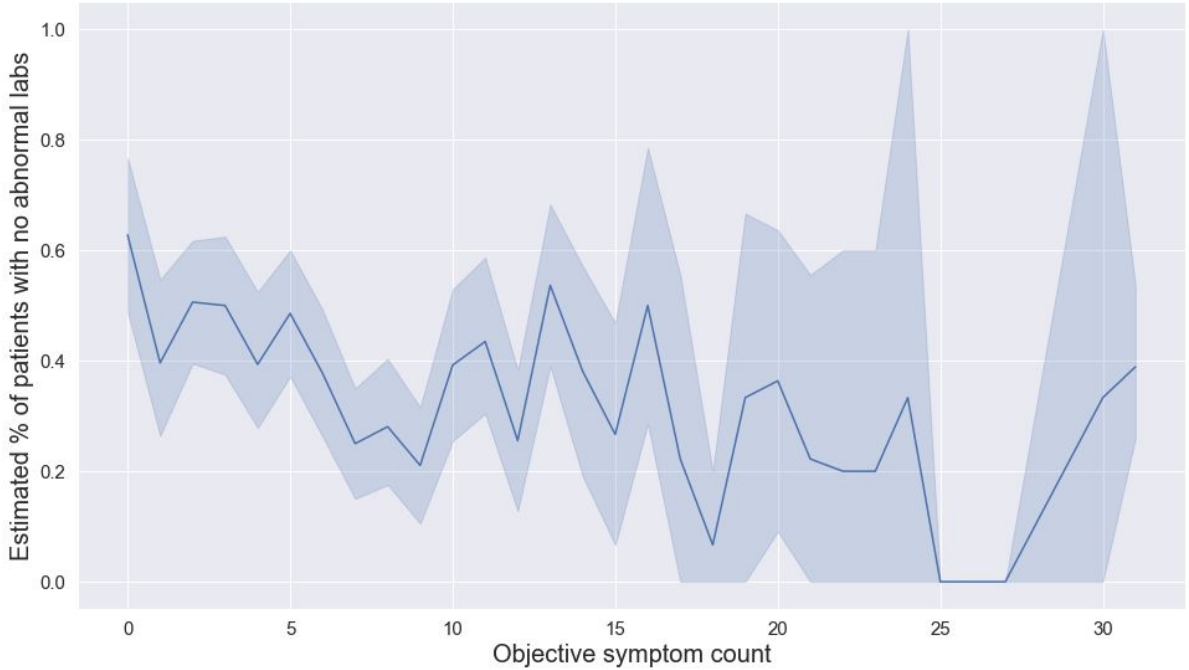
20-60% of surveyees reported that none of their tests came back abnormal. Better diagnostics and tests are needed to better understand vaccine injuries.



*Free-form poll responses were analyzed via Python regular expressions, which are less accurate than manual analysis by a human.

The need for testing (continued)

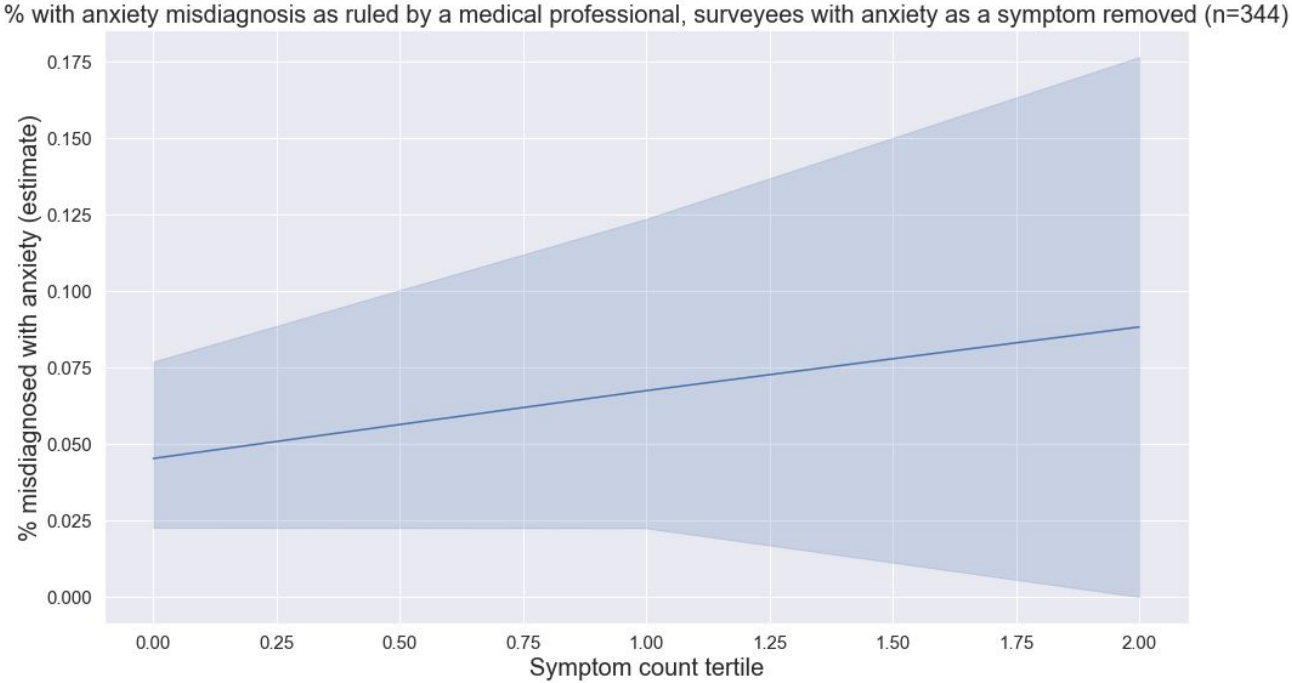
Despite the presence of objective symptoms, many patients report that all of their labs came back normal.



Objective symptoms: [Muscle Twitching], [High Heart Rate], [Insomnia], [Muscle Loss], [Swollen Lymph Nodes], [Chills], [Irregular Menstrual Cycle], [Diarrhea], [Low Blood Pressure], [High Blood Pressure], [Tremors], [Dry Eyes], [Dry Mouth], [Frequent Urination], [Excessive Sleep], [Hair Loss], [Bulging Veins], [Swelling of Extremities], [Sore Throat], [Skin redness, hives, petechia, or rashes], [Disturbances in Glucose Levels], [Paralysis], [Anaphlaxis], [Yellowing of skin, (or yellowing in whites of eyes)], [Glaucoma], [Seizures], [Loss of Bowel Control], [White, or blue finger tips (digital ischemia)], [Bloody, or black tar-like stool], [Constipation], [Sleep Disturbances]

The need for better testing and/or doctors

Several percent of patients were judged to be misdiagnosed with anxiety. (Patients who reported either *anxiety/adrenaline surges* or *severe anxiety* were removed.)



The chart below shows the correlation between symptom count and severity of vaccine injury. The total number of symptoms is a fairly objective measurement that strongly correlates with severity.

***Note**: the data on the right side of the chart is distorted by participants' diversity of interpretations.

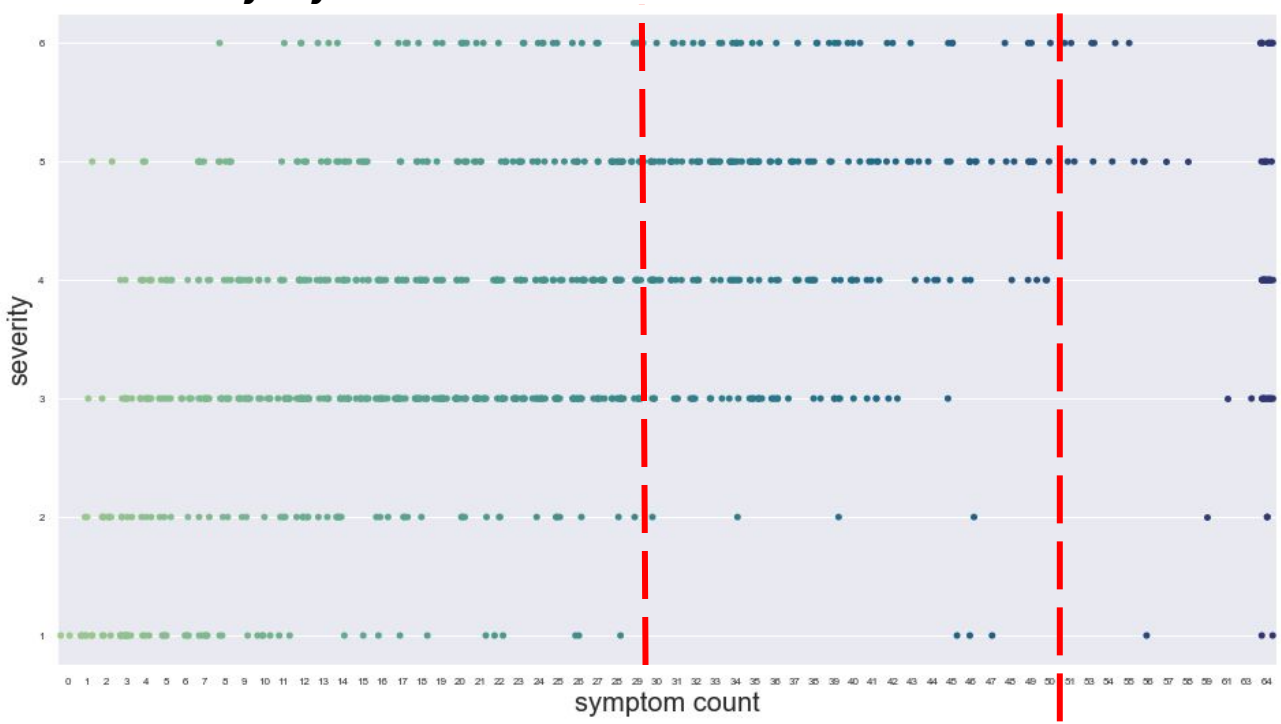
Severity scale

6 = "I am unable to work and bedridden most days"
5 = "I am unable to work but still doing chores"
4 = "I work or do chores but can't exercise"
3 = "I work or do chores and do light exercise"
2 = "I work and I am exercising normally"
1 = "I can live life like i did before"

*severity data missing for 50 participants

Arrows indicate data points where the surveyees may be filling out a ‘different’ survey. High symptom count with low severity is an unlikely situation. (High severity with only 1 symptom is also unlikely.)

Most surveyees with 30+ symptoms (out of the 64 surveyed) are severity 3 or higher. They have limited physical activity or worse.
Most surveyees with >50 symptoms are unable to work, with severity 5 or 6, if outlier data points are ignored.
While vaccine injury is poorly understood, symptom count may provide evidence of bodily dysfunction.



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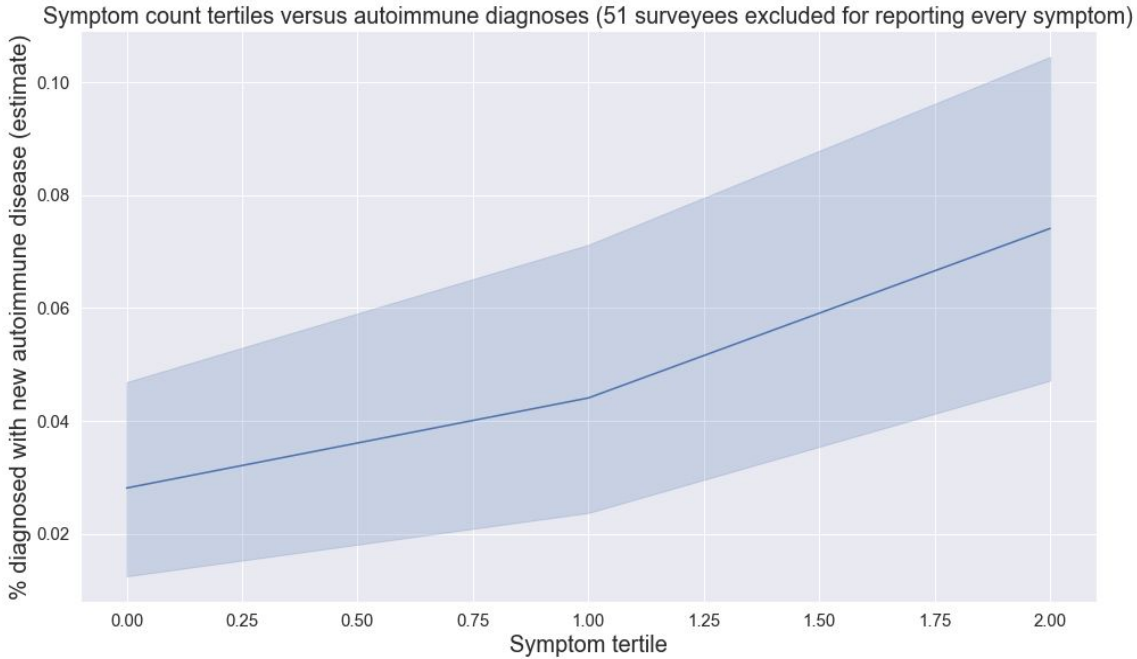
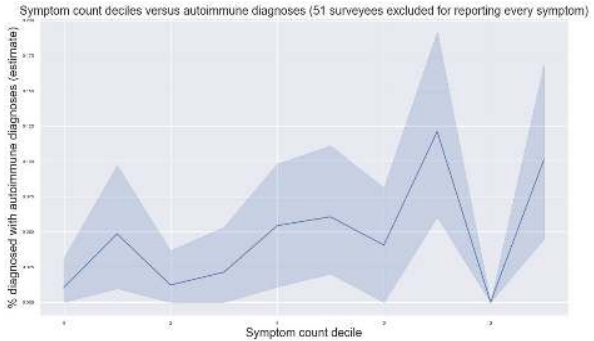
*Severity data missing for 50 participants because the earliest versions of the survey did not ask.

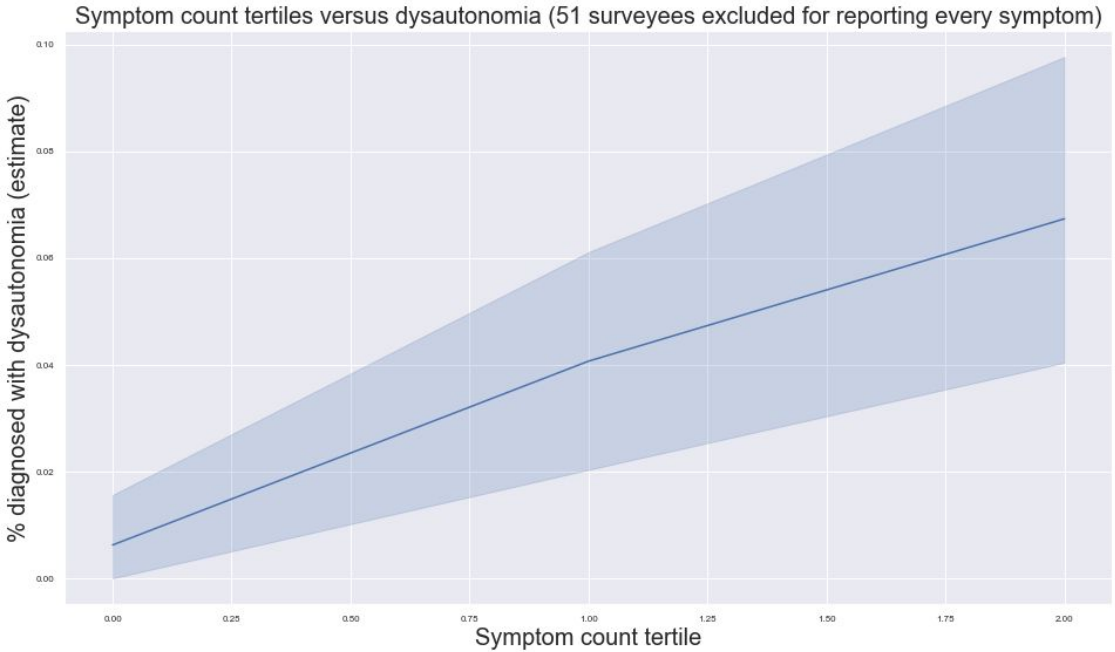
Symptom count has a correlation with formal diagnoses of autoimmune conditions

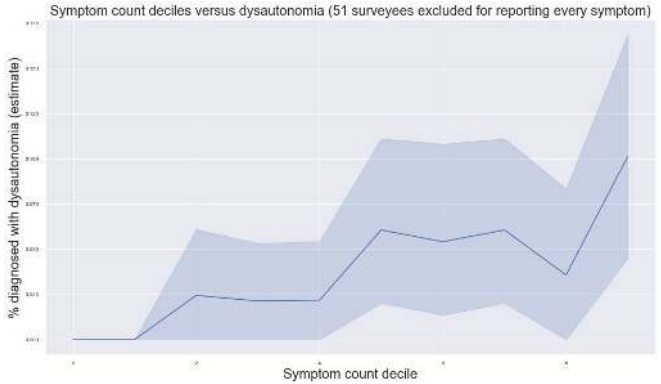




*Free-form poll responses were analyzed via Python regular expressions, which are less accurate than manual analysis by a human.

Symptom count has a correlation with formal diagnosis of dysautonomia





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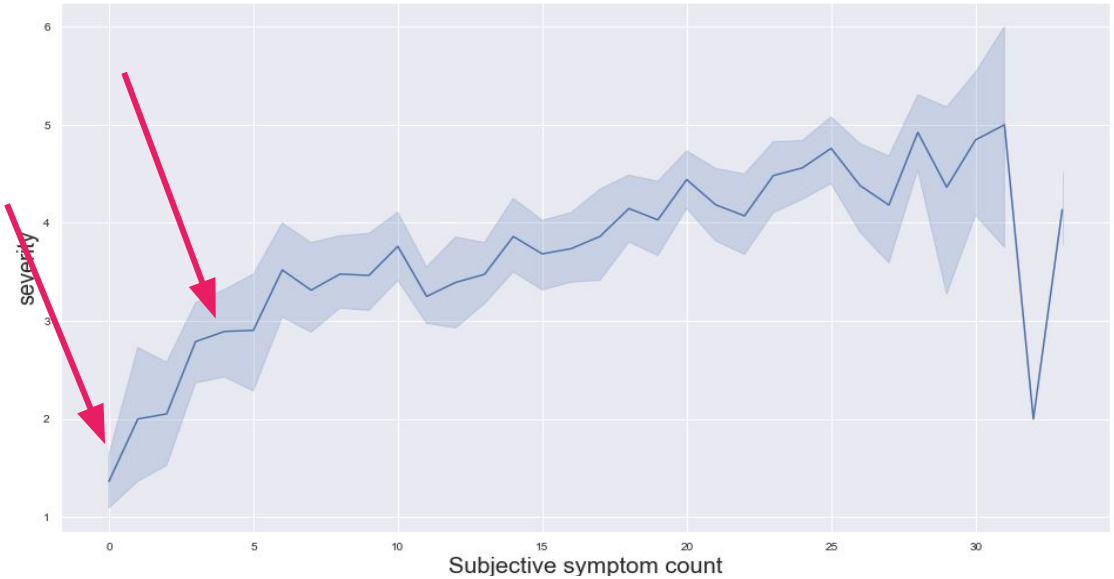
Subjective self-reported symptoms may be necessary to detect mild cases

Unfortunately, some mildly vaccine injured have **zero** or very few objective symptoms. The absence does not mean that the patient is healthy.

Objective symptoms: [Muscle Twitching], [High Heart Rate], [Insomnia], [Muscle Loss], [Swollen Lymph Nodes], [Chills], [Irregular Menstrual Cycle], [Diarrhea], [Low Blood Pressure], [High Blood Pressure], [Tremors], [Dry Eyes], [Dry Mouth], [Frequent Urination], [Excessive Sleep], [Hair Loss], [Bulging Veins], [Swelling of Extremities], [Sore Throat], [Skin redness, hives, petechia, or rashes], [Disturbances in Glucose Levels], [Paralysis], [Anaphlaxis], [Yellowing of skin, (or yellowing in whites of eyes)], [Glaucoma], [Seizures], [Loss of Bowel Control], [White, or blue finger tips (digital ischemia)], [Bloody, or black tar-like stool], [Constipation], [Sleep Disturbances]

Subjective self-reported symptoms may be necessary to detect mild cases

The presence of 0-4 subjective symptoms helps differentiate between mild cases.



Subjective or self-reported symptoms: [New Persistent Headaches], [Feeling off balanced, or motion at rest], [Nausea], [Exercise Intolerance], [New Food Allergies], [Joint Pain (Arthritic)], [Tinnitus], [Memory Loss], [Severe Anxiety], [Heaviness in Legs], [Heart Burn, Indigestion], [Excessive Gas], [Sound Sensitivity], [Burning Sensation on Skin], [Heart Palpitations], [Dizziness], [Muscle Weakness], [Shortness of Breath], [Nerve Pain], [Tingling (numbness) in Extrememities], [Internal Vibrations], [Anxiety / Adrenaline Surges], [Temporary Blindness], [Heat intolerance], [Light Sensitivity], [Muscle Aches], [Persistent Cough], [Fatigue], [Myocarditis], [Visual Disturbances], [Brain Fog], [Increased Thirst], [Abdominal/Stomach Pain]

*Pilot testing from another survey suggests that some surveyees will self-report myocarditis as a symptom without a formal diagnosis.

List of objective and subjective symptoms

The determination was somewhat arbitrary. ‘Objective’ symptoms are those that can easily be verified or are unlikely to suffer from self-reporting issues. Borderline objective symptoms are highlighted in magenta.

Objective symptoms: [Muscle Twitching], [High Heart Rate], [Insomnia], [Muscle Loss], [Swollen Lymph Nodes], [Chills], [Irregular Menstrual Cycle], [Diarrhea], [Low Blood Pressure], [High Blood Pressure], [Tremors], [Dry Eyes], [Dry Mouth], [Frequent Urination], [Excessive Sleep], [Hair Loss], [Bulging Veins], [Swelling of Extremities], [Sore Throat], [Skin redness, hives, petechia, or rashes], [Disturbances in Glucose Levels], [Paralysis], [Anaphlaxis], [Yellowing of skin, (or yellowing in whites of eyes)], [Glaucoma], [Seizures], [Loss of Bowel Control], [White, or blue finger tips (digital ischemia)], [Bloody, or black tar-like stool], [Constipation], [Sleep Disturbances]

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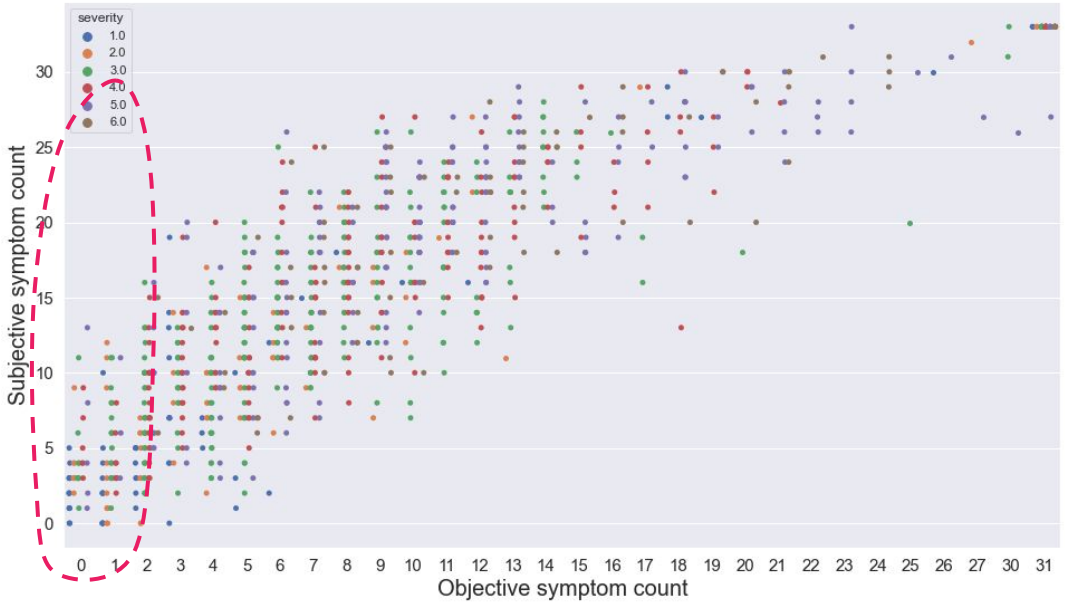
*Pilot testing from another survey suggests that some surveyees will self-report myocarditis as a symptom without a formal diagnosis.

Survey data inconsistent with subjective symptoms being fabricated

The data does not show a high prevalence of people with multiple subjective symptoms and zero objective symptoms (see the left-most column below). Objective and subjective/self-reported symptoms are correlated with each other.



Potential use

Symptom count could be used as a test that:

- Provides objective verification of vaccine injury and its severity, allowing for diagnosis of a ‘**post vaccination syndrome**’.
- Is partially resistant to self-reporting distortions or biases as some symptoms (e.g. hair loss) can be objectively verified.
- Is low cost.
- Can objectively measure the outcome of treatments and interventions.

Part 3: There may be at least 2 different types of COVID vaccine injury

Jaccard analysis

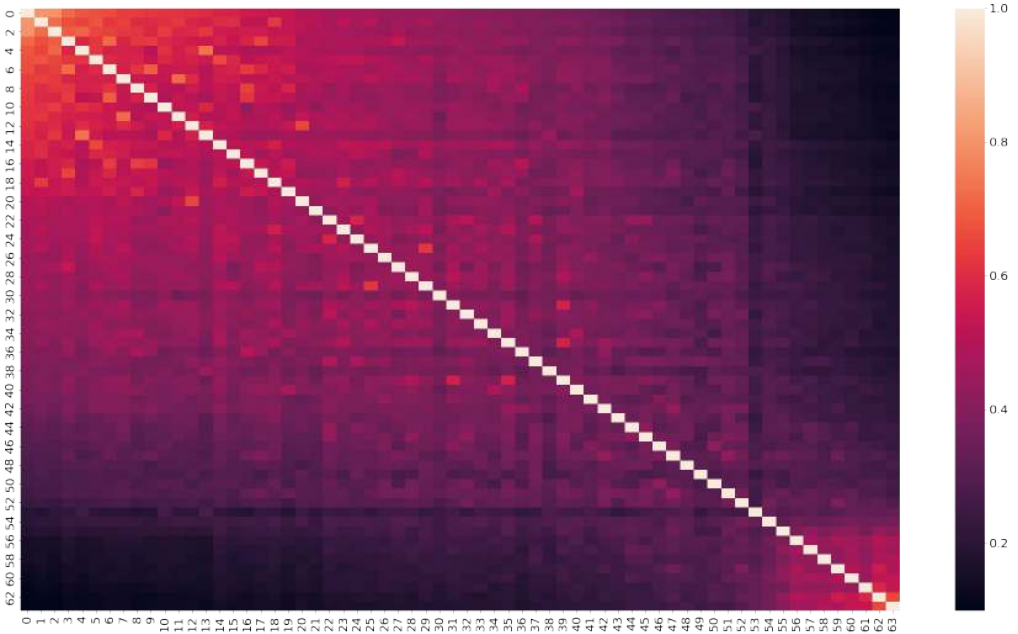
The Jaccard coefficient can put a number on the overlap between two different symptoms. 0 indicates no overlap while 1 indicates a perfect overlap. Higher Jaccard coefficients are highlighted in the table below.

In general, there are no symptoms with a particularly high level of overlap. Patients seem to share a common ‘pool’ of symptoms but with each patient having a *very* different combination of symptoms than other patients.

		[Fatigue]	[Brain Fog]	[Burning Sensati	[Tingling (numbr	[Dizziness]	[Muscle Twitchir	[Heart Palpitatio	[Exercise Intoler	[Joint Pain (Arth	[Nerve Pain]	[New Persistent	[Muscle Aches]	[Muscle Weakne	[Heaviness in Le	[Tinnitus]
1	[Fatigue]	1.00	0.81	0.40	0.63	0.67	0.54	0.68	0.80	0.62	0.55	0.58	0.67	0.72	0.55	0.50
2	[Brain Fog]	0.81	1.00	0.39	0.60	0.68	0.53	0.65	0.72	0.59	0.53	0.60	0.63	0.67	0.52	0.51
8	[Exercise Intolerance]	0.80	0.72	0.40	0.62	0.65	0.54	0.71	1.00	0.59	0.56	0.55	0.64	0.70	0.56	0.49
13	[Muscle Weakness]	0.72	0.67	0.44	0.63	0.63	0.55	0.59	0.70	0.63	0.58	0.54	0.72	1.00	0.65	0.50
12	[Muscle Aches]	0.67	0.63	0.45	0.62	0.60	0.56	0.57	0.64	0.69	0.63	0.58	1.00	0.72	0.59	0.48
7	[Heart Palpitations]	0.68	0.65	0.37	0.57	0.62	0.52	1.00	0.71	0.51	0.48	0.51	0.57	0.59	0.49	0.48
5	[Dizziness]	0.67	0.68	0.40	0.58	1.00	0.52	0.62	0.65	0.54	0.51	0.59	0.60	0.63	0.54	0.50
4	[Tingling (numbness) in Extrememities]	0.63	0.60	0.48	1.00	0.58	0.58	0.57	0.62	0.58	0.64	0.52	0.62	0.63	0.54	0.49
18	[Shortness of Breath]	0.62	0.61	0.36	0.51	0.59	0.45	0.61	0.63	0.49	0.44	0.52	0.54	0.59	0.50	0.43
64	[Sleep Disturbances]	0.64	0.64	0.41	0.54	0.58	0.50	0.57	0.63	0.53	0.52	0.56	0.57	0.58	0.52	0.49
9	[Joint Pain (Arthritic)]	0.62	0.59	0.43	0.58	0.54	0.52	0.51	0.59	1.00	0.62	0.51	0.69	0.63	0.54	0.46
26	[Anxiety / Adrenaline Surges]	0.61	0.58	0.39	0.55	0.57	0.54	0.60	0.59	0.51	0.50	0.51	0.55	0.55	0.49	0.48
10	[Nerve Pain]	0.55	0.53	0.51	0.64	0.51	0.55	0.48	0.56	0.62	1.00	0.52	0.63	0.58	0.54	0.46
20	[Insomnia]	0.61	0.63	0.38	0.50	0.56	0.47	0.56	0.59	0.54	0.48	0.53	0.55	0.57	0.49	0.49
16	[High Heart Rate]	0.60	0.57	0.35	0.51	0.55	0.48	0.74	0.63	0.47	0.45	0.49	0.51	0.55	0.46	0.46
60	[Feeling off balanced, or motion at rest]	0.58	0.60	0.40	0.54	0.66	0.50	0.52	0.56	0.54	0.50	0.52	0.57	0.58	0.52	0.49
24	[Memory Loss]	0.54	0.63	0.37	0.51	0.55	0.48	0.49	0.54	0.54	0.49	0.51	0.54	0.55	0.51	0.49
14	[Heaviness in Legs]	0.55	0.52	0.44	0.54	0.54	0.53	0.49	0.56	0.54	0.54	0.46	0.59	0.65	1.00	0.43
33	[Light Sensitivity]	0.44	0.48	0.37	0.44	0.48	0.41	0.41	0.43	0.42	0.41	0.50	0.45	0.46	0.44	0.47
32	[Sound Sensitivity]	0.47	0.50	0.37	0.45	0.49	0.41	0.45	0.45	0.43	0.44	0.49	0.46	0.48	0.45	0.49
25	[Severe Anxiety]	0.50	0.52	0.38	0.48	0.49	0.47	0.50	0.50	0.46	0.45	0.46	0.49	0.48	0.43	0.43
57	[Seizures]	0.10	0.11	0.18	0.12	0.12	0.14	0.11	0.10	0.13	0.14	0.15	0.13	0.12	0.15	0.15
56	[Glaucoma]	0.10	0.10	0.17	0.12	0.12	0.13	0.11	0.10	0.12	0.14	0.13	0.13	0.12	0.15	0.14

Jaccard analysis (continued)

The Jaccard coefficients can also be visualized as a heatmap. No symptoms particularly stand out as having an unusually high Jaccard coefficient with another symptom. However, a different type of analysis does reveal an interesting pattern in the data…



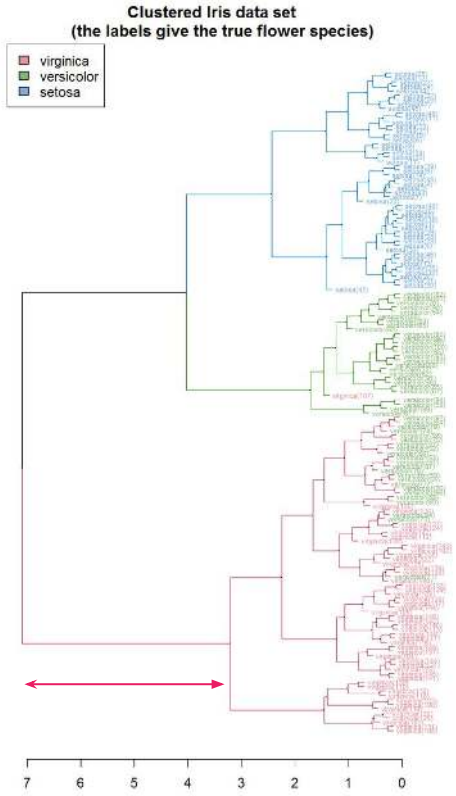
Hierarchical clustering suggests at least 2 types of vaccine injury

Hierarchical clustering can examine the distance between data points. If 2-dimensional data were to be printed on a piece of paper, hierarchical clustering would involve measuring the distances between each data point with a ruler. The same process can be mathematically expanded to more dimensions, e.g. 64 dimensions for 64 symptoms.

All the data points can then be arbitrarily grouped together into any number of clusters.

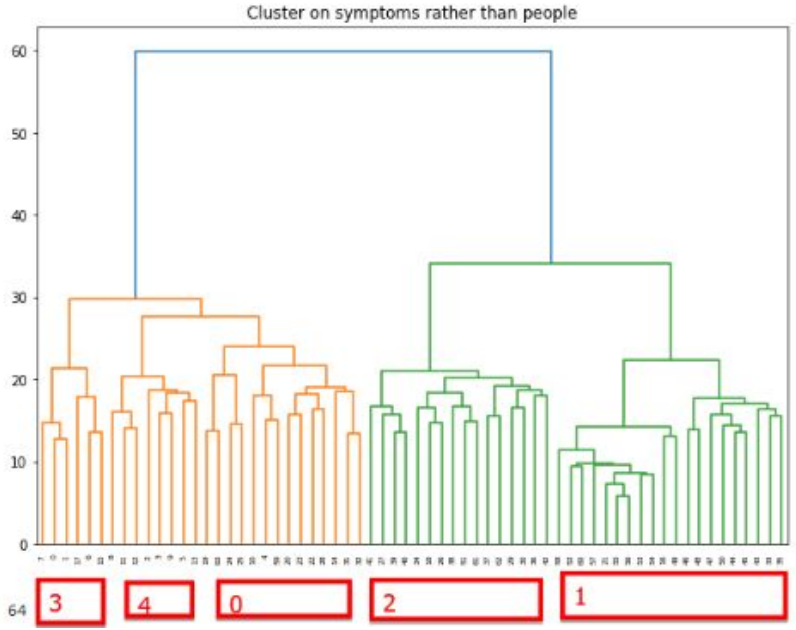
Hierarchical clustering can be visualized with a dendrogram. The dendrogram on the right shows a hierarchical clustering analysis on physical measurements of three different species of flowers. Long trunks and branches in the dendrogram tree are highly suggestive of unique clusters.

In this particular example on the right, hierarchical clustering can correctly segment 2 flower species into separate clusters but fails at correctly segmenting the Versicolor species into its own cluster.



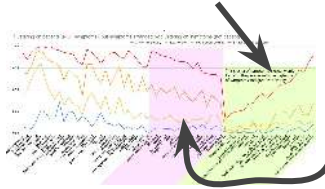
Hierarchical clustering applied to symptom data

The dendrogram tree for the vaccine injury survey data suggests that there are at least 2 unique clusters of symptoms, as shown in orange and green below. The following slides in this presentation will focus on the right half of the green trunk labelled #1.



Symptom clusters

Cluster 1 (pale green):
[Myocarditis]
[Temporary Blindness]
[Irregular Menstrual Cycle]
[Low Blood Pressure]
[Hair Loss]
[Bulging Veins]
[Swelling of Extremities]
[Sore Throat]
[Skin redness, hives, petechia, or rashes]
[Persistent Cough]
[Disturbances in Glucose Levels]
[New Food Allergies]
[Paralysis]
[Anaphlaxis]
[Yellowing of skin, (or yellowing in whites of eyes)]
[Glaucoma]
[Seizures]
[Loss of Bowel Control]
[White, or blue finger tips (digital ischemia)]
[Bloody, or black tar-like stool]



Cluster 2 (purple):
[Nausea]
[Abdominal/Stomach Pain]
[Increased Thirst]
[Swollen Lymph Nodes]
[Chills]
[Diarrhea]
[High Blood Pressure]
[Tremors]
[Heart Burn, Indigestion]
[Dry Eyes]
[Dry Mouth]
[Frequent Urination]
[Excessive Sleep]
[Excessive Gas]
[Constipation]
[Internal Vibrations]

Cluster 3:
[Fatigue]
[Brain Fog]
[Heart Palpitations]
[Exercise Intolerance]
[High Heart Rate]
[Shortness of Breath]

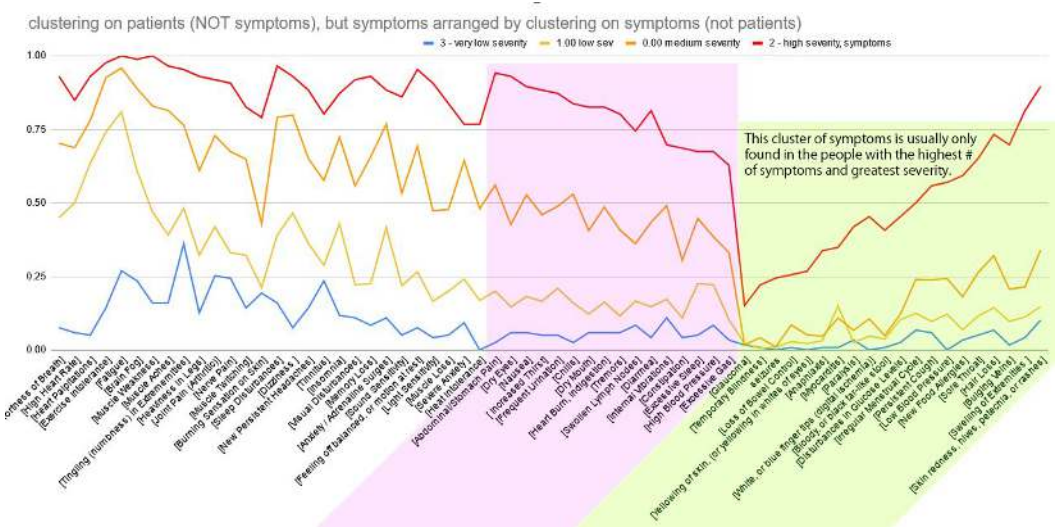
Cluster 0:
[Dizziness]
[New Persistent Headaches]
[Tinnitus]
[Insomnia]
[Visual Disturbances]
[Heat intolerance]
[Memory Loss]
[Severe Anxiety]
[Anxiety / Adrenaline Surges]
[Muscle Loss]
[Sound Sensitivity]
[Light Sensitivity]
[Feeling off balanced, or motion at rest]
[Sleep Disturbances]

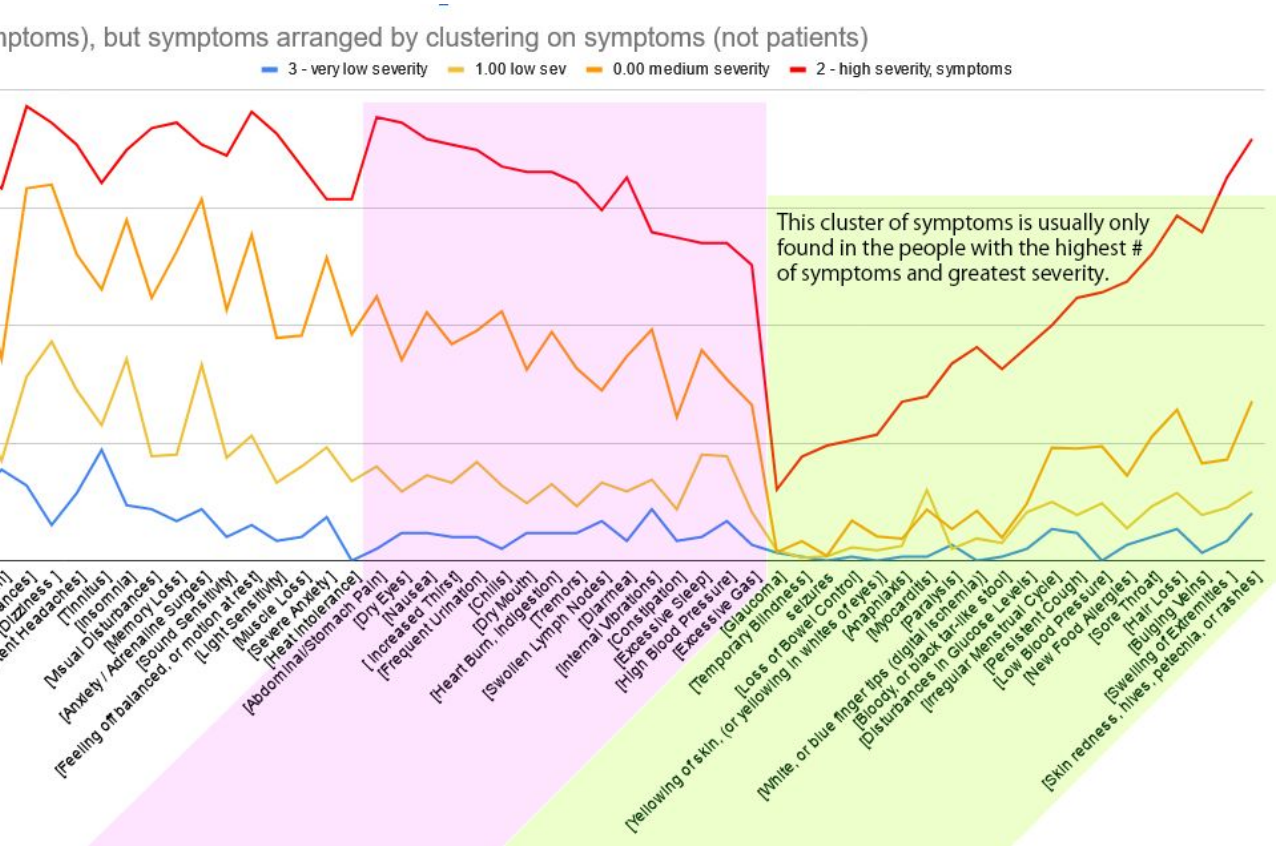
Cluster 4:
[Burning Sensation on Skin]
[Tingling (numbness) in Extrememities]
[Muscle Twitching]
[Joint Pain (Arthritic)]
[Nerve Pain]
[Muscle Aches]
[Muscle Weakness]
[Heaviness in Legs]

An interesting cluster of symptoms

The #1 branch from the last slide is highlighted in pale green below. It is plotted against 4 arbitrary clusters of patients. The pattern is this: all patient clusters seem to draw on a common pool of symptoms. However, the 2 patient clusters with the most symptoms are more likely to draw from the pale green pool of symptoms shown below. The vertical position of the line indicates what percentage of patients have that particular symptom.

A weaker but similar effect exists for the ‘purple’ pool of symptoms shown below.



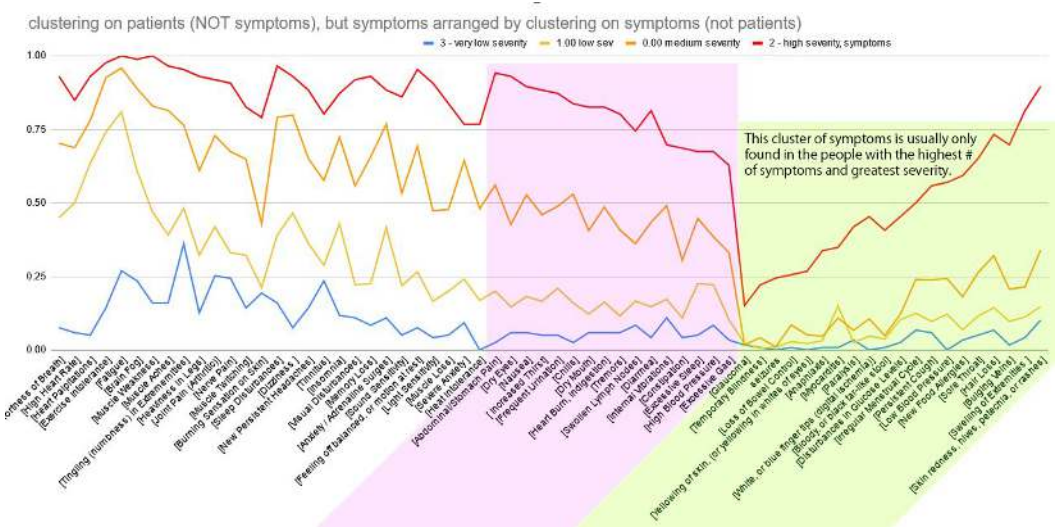


Cluster 1 (pale green):
[Myocarditis]
[Temporary Blindness]
[Irregular Menstrual Cycle]
[Low Blood Pressure]
[Hair Loss]
[Bulging Veins]
[Swelling of Extremities]
[Sore Throat]
[Skin redness, hives, petechia, or rashes]
[Persistent Cough]
[Disturbances in Glucose Levels]
[New Food Allergies]
[Paralysis]
[Anaphlaxis]
[Yellowing of skin, (or yellowing in whites of eyes)]
[Glaucoma]
[Seizures]
[Loss of Bowel Control]
[White, or blue finger tips (digital ischemia)]
[Bloody, or black tar-like stool]

An interesting cluster of symptoms (continued)

The patient cluster with the most symptoms (in red below) has the following characteristics:

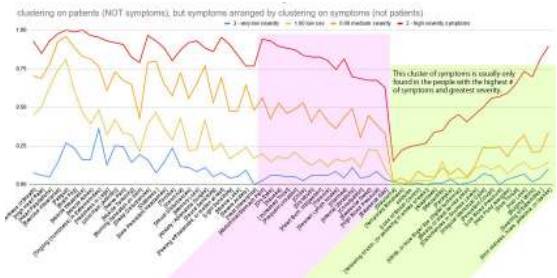
- High number of symptoms
- High severity (shown in next slide)
- A higher prevalence of symptoms being drawn from the pale green pool of symptoms (shown below).

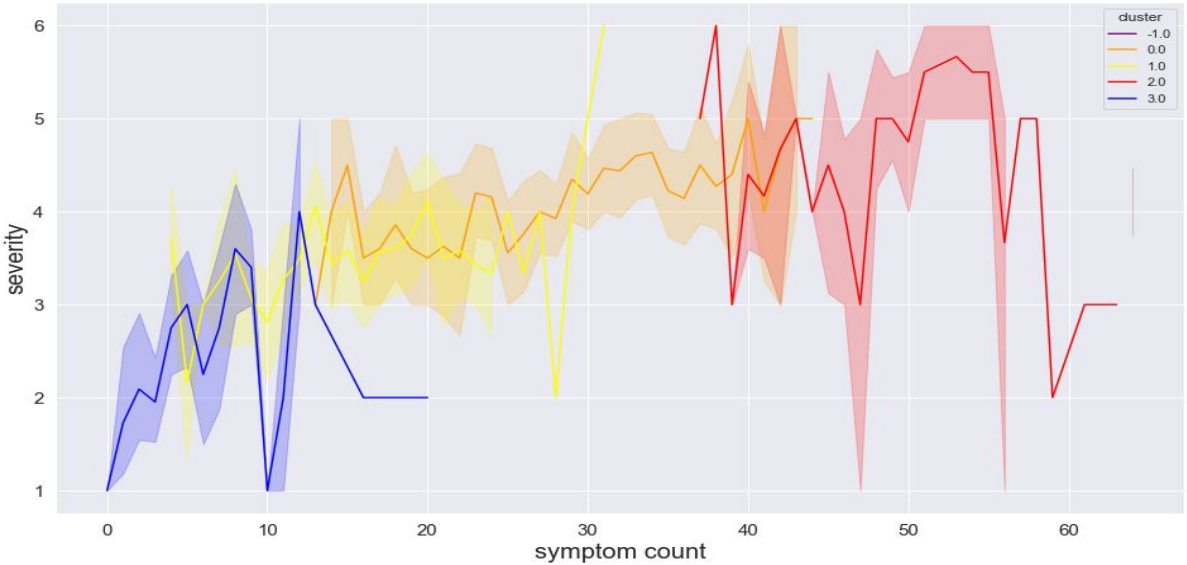


Analyzing the 4 arbitrary clusters of patients

All 4 clusters are plotted on a line plot showing symptom count of the patients versus severity. The red cluster has the most symptoms on average, with average severity barely above that of the orange cluster.

Symptoms from the green pool are mainly found in this red cluster, where patients have the most symptoms.



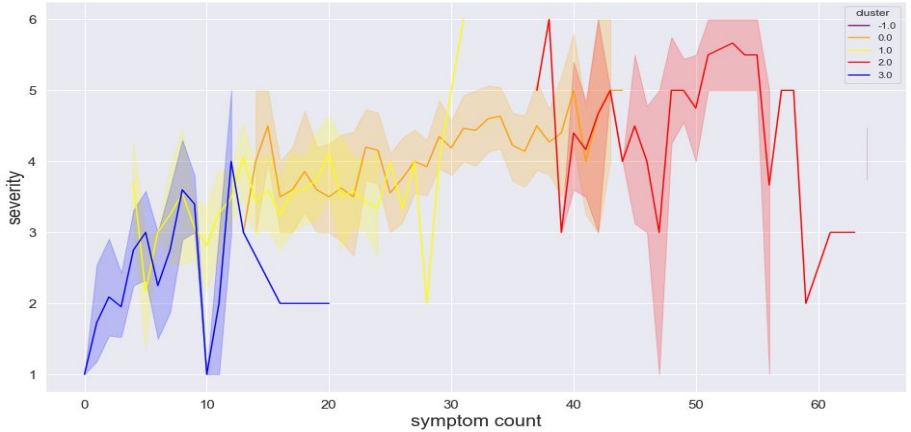


*The -1 cluster shown in purple represents the surveyees who answered every symptom question.

Possible causes of the high-symptom cluster: diversity of interpretations

Surveyees may guess the best answer based on the information available to them. For example, patients with little access to healthcare do not really know if they have myocarditis. While 13.3% reported myocarditis as a symptom, only 5.0% reported myocarditis (or pericarditis) as a formal diagnosis.

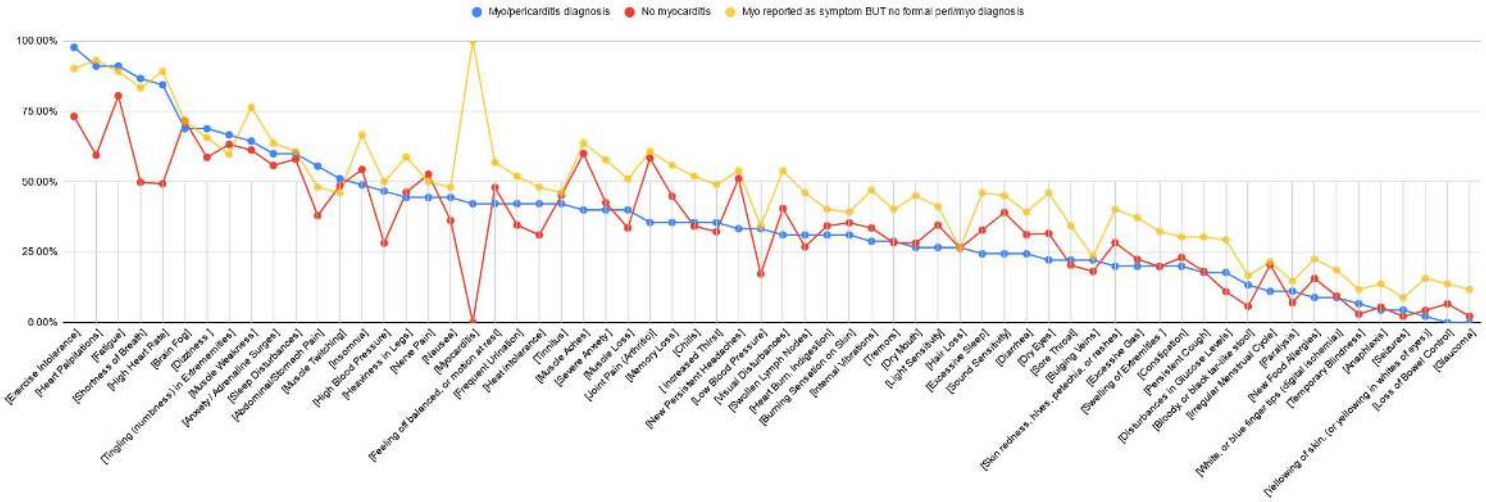
Surveyees may also have different interpretations about what the words on a survey mean. Natural variation means that some surveyees will report more symptoms. This may explain why the high-symptom cluster has high variation in severity.



Possible causes of the high-symptom cluster: diversity of interpretations

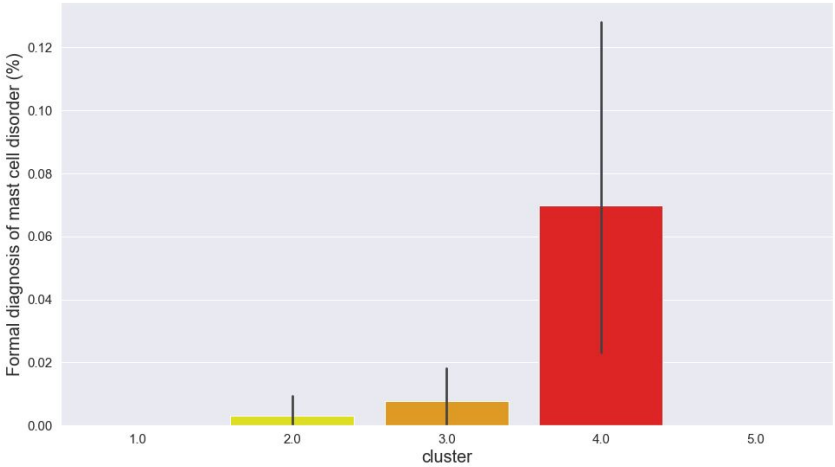
The yellow line below represents those who reported myocarditis as a symptom but *not myo/pericarditis as a formal diagnosis*. Their symptom prevalence should fall in between the other two groups (those with and without a formal diagnosis) because the myo/pericarditis rate must be between 0-100%.

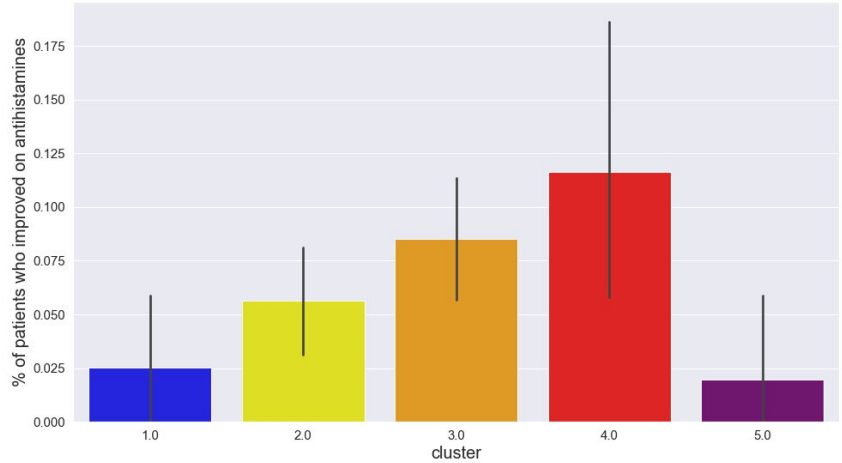
The data suggests that some surveyees are over-reporting their symptoms due to speculative self-diagnoses or different survey interpretations.



Possible causes of the high-symptom cluster: mast cell disorders

Inappropriately hyperactive mast cells can cause inflammation in the body. The cluster had the highest percentage of surveyees who were formally diagnosed with MCAS, the most common mast cell disorder (left chart). The cluster also had the highest percentage who reported improvements on anti-histamines, a class of drugs commonly used to treat MCAS (right chart).





*Free-form poll responses were analyzed via Python regular expressions, which are less accurate than manual analysis by a human.

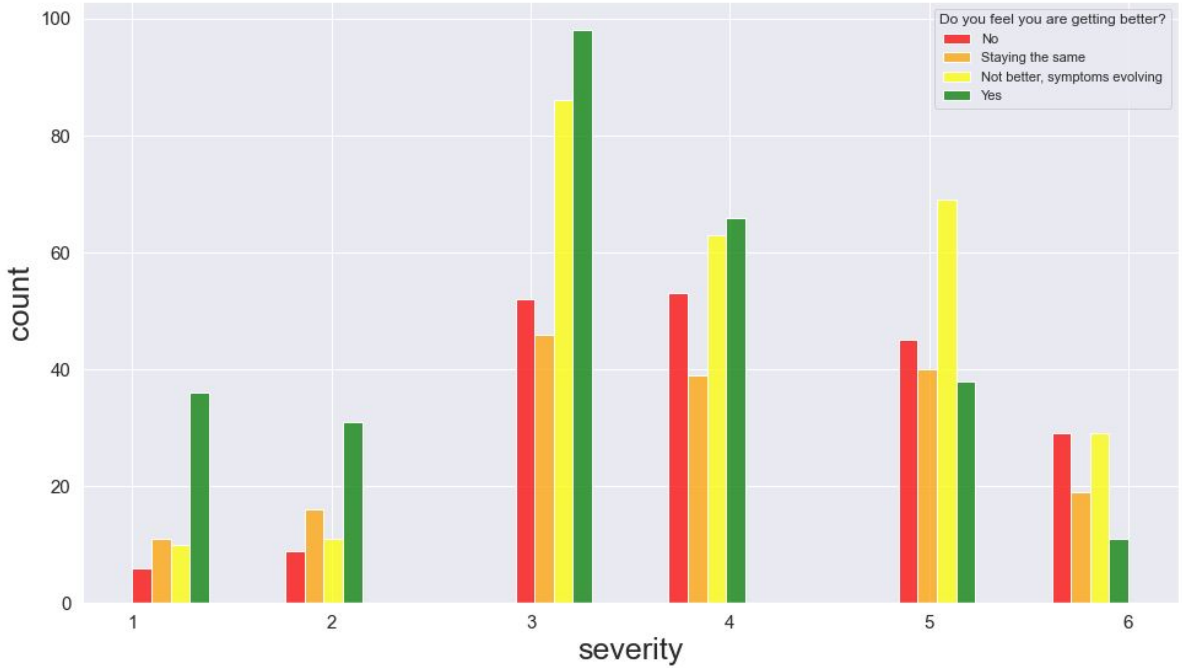
Possible causes of the high-symptom cluster: stress

Both hair loss and irregular menstrual cycle have been linked to stress. It is possible that stress is necessary for uncommon symptoms to manifest.

Part 4: Symptom evolution over time

Do you feel you are getting better?

The surveyees with the lowest severity mostly feel like they are getting better. The severest surveyees are the opposite and are more likely to report getting worse.



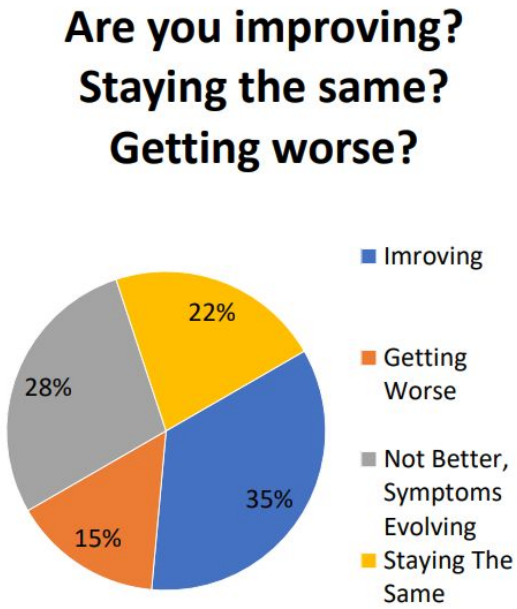
Severity scale

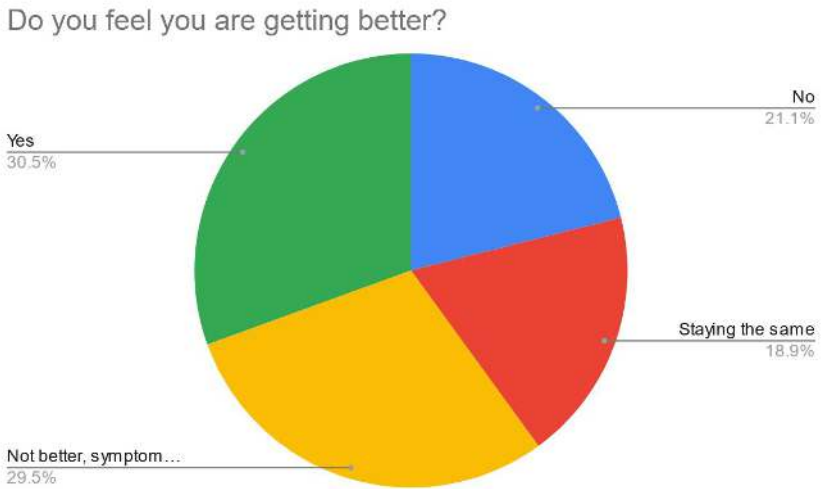
6 = "I am unable to work and bedridden most days"
5 = "I am unable to work but still doing chores"
4 = "I work or do chores but can't exercise"
3 = "I work or do chores and do light exercise"
2 = "I work and I am exercising normally"
1 = "I can live life like i did before"

*Severity data missing for 50 participants

Surveyees are more pessimistic than the first survey

Improving fell from 35% to 30.5%
Getting worse rose from 15% to 21.1%
This might reflect healthy people returning to ‘normal’ life with chronic patients continuing to participate in surveys.

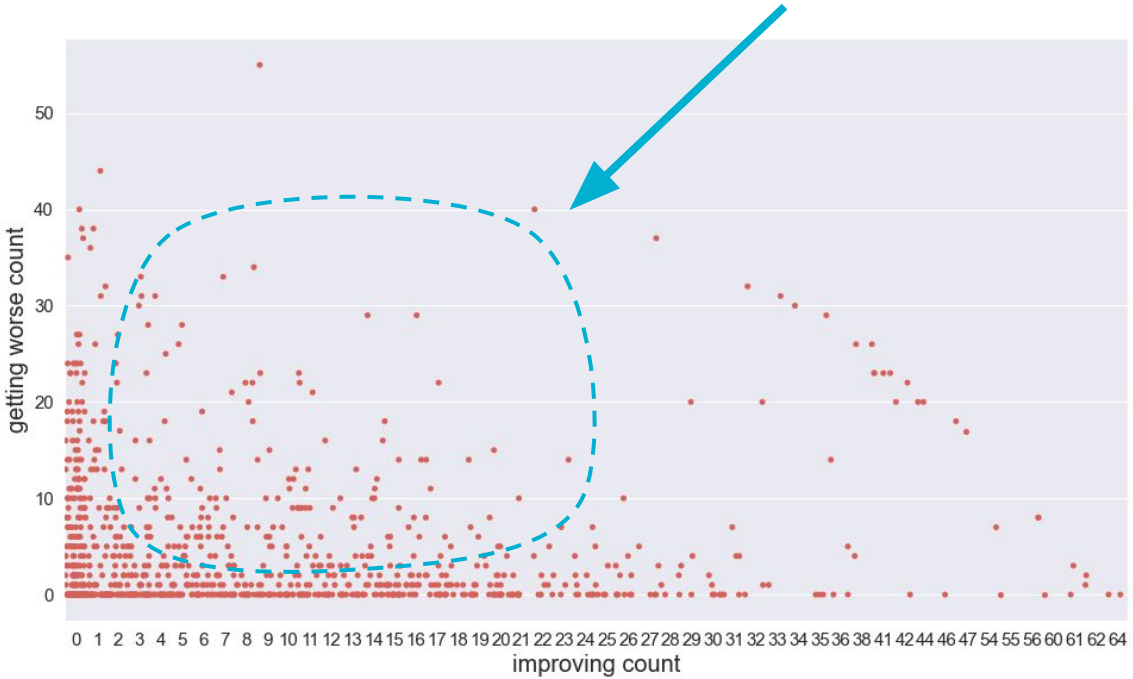




https://www.react19.org/post/persistent-neurological-symptoms-patient-survey

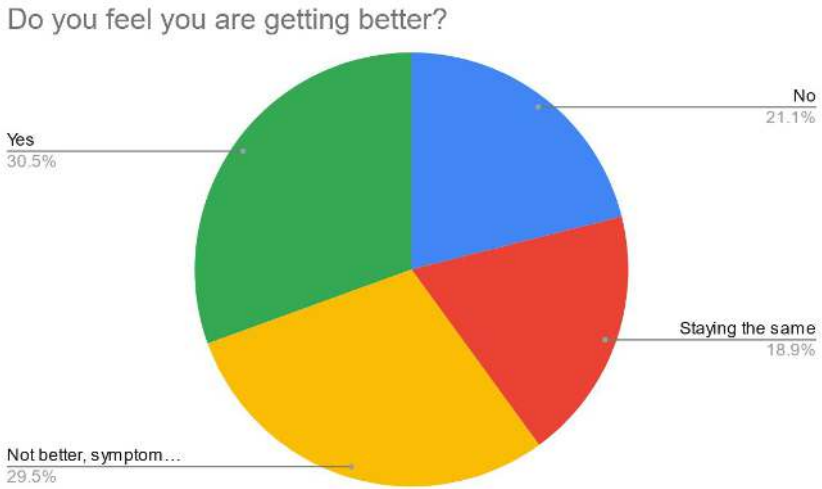
The rotating cast of villains

Some patients find that they develop new symptoms over time as old symptoms go away. This can be seen in the patients who report symptoms that are improving **AND** symptoms that are getting worse, as seen in the middle portion of the chart below.



The rotating cast of villains (continued)

29.5% of surveyees reported that they are “Not better, symptoms evolving”.



This suggests that cumulative symptom count can go up over time even if severity does not change. More research is needed to understand symptom count measurements to avoid distortions from this effect.

The etiology (cause) of COVID vaccine injury

The ‘rotating cast of villains’ phenomenon is incongruent with two popular theories concerning vaccine injury and/or long COVID: microclots and hyperimmunity. Those particular theories would not predict the evolution of symptoms over time, e.g. the improvement of some symptoms with the simultaneous worsening of others.

One theory for vaccine injury is that the microbiome is responsible for the diverse array of symptoms. Constant changes in the microbiome are well-defined for the gut microbiome and would explain fluctuations in illness. A pathogenic microbiome would also explain high rates of auto-antibodies as persistent dysbiosis can cause the body to produce auto-antibodies.

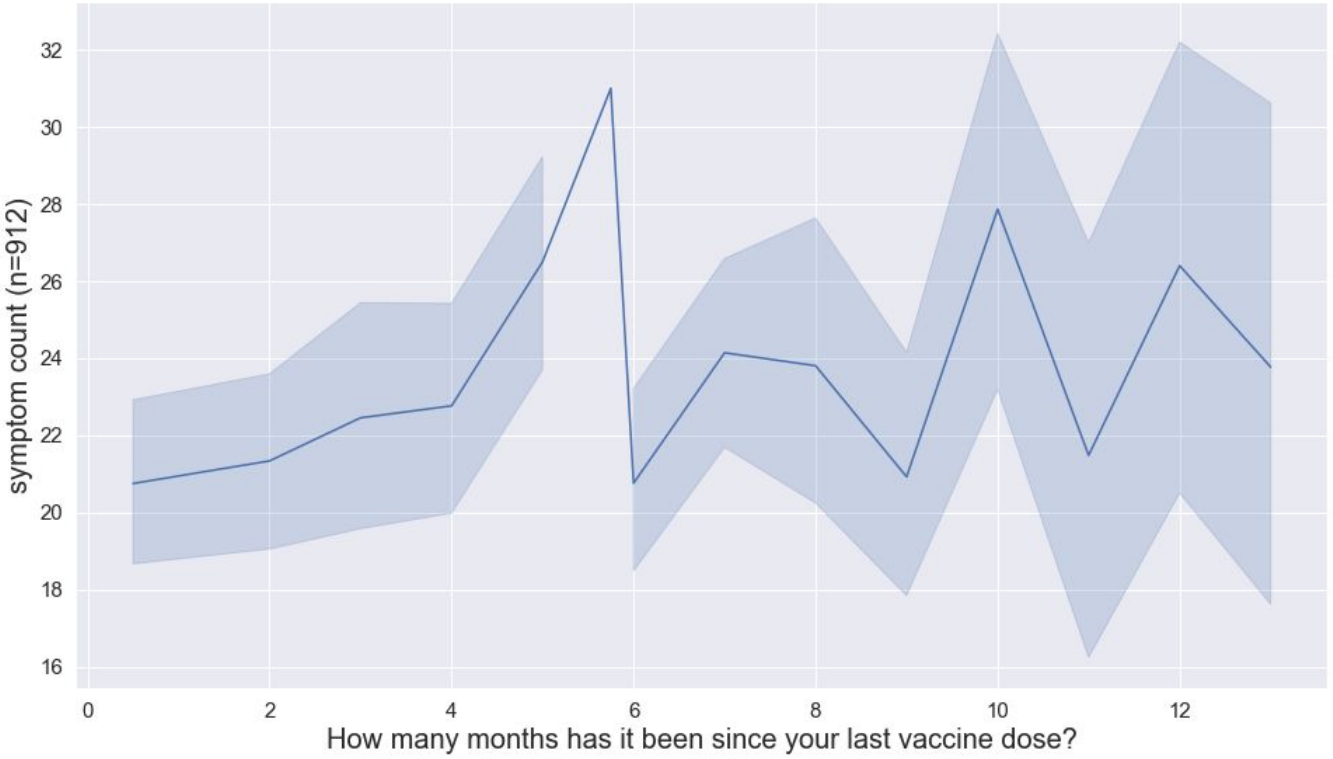
Microclots: See Pretorius et al. *Persistent clotting protein pathology in Long COVID/Post-Acute Sequelae of COVID-19 (PASC) is accompanied by increased levels of antiplasmin* https://doi.org/10.1186/s12933-021-01359-7

‘Hyperimmunity’ (abnormal overstimulation of the immune system or hyperactive nonclassical monocytes): See Patterson et al. *Immune-Based Prediction of COVID-19 Severity and Chronicity Decoded Using Machine Learning* https://doi.org/10.3389/fimmu.2021.700782

Persistent infection / microbiome dysbiosis: See Proal et al. *Long COVID or Post-acute Sequelae of COVID-19 (PASC): An Overview of Biological Factors That May Contribute to Persistent Symptoms* https://doi.org/10.3389/fmicb.2021.698169

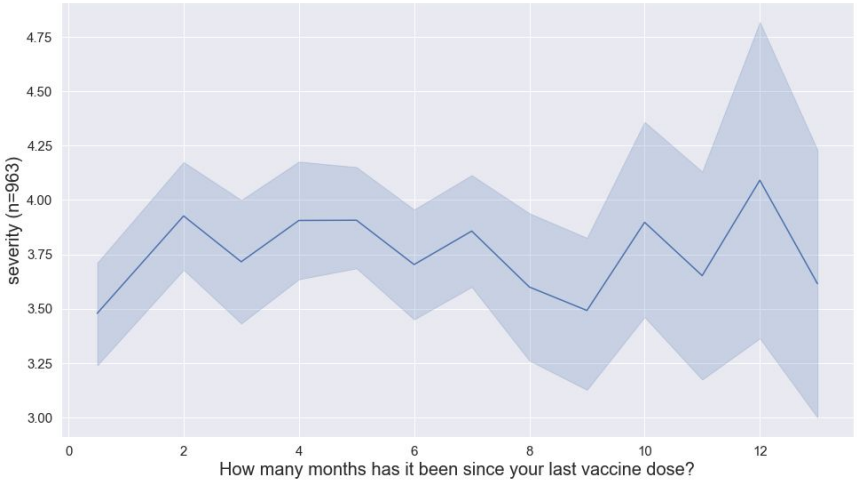
Trends over time

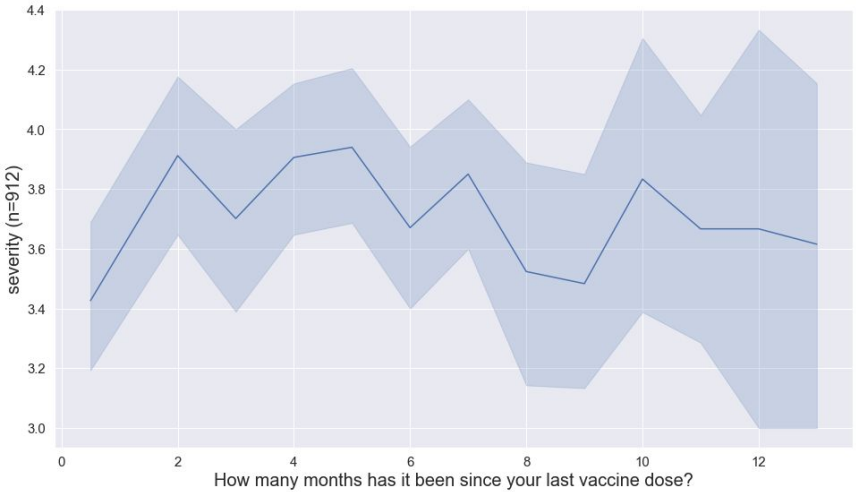
Symptom count may (or may not) trend slightly higher over time.
(Participants that reported all 64 symptoms were removed from this analysis.)



Trends over time (continued)

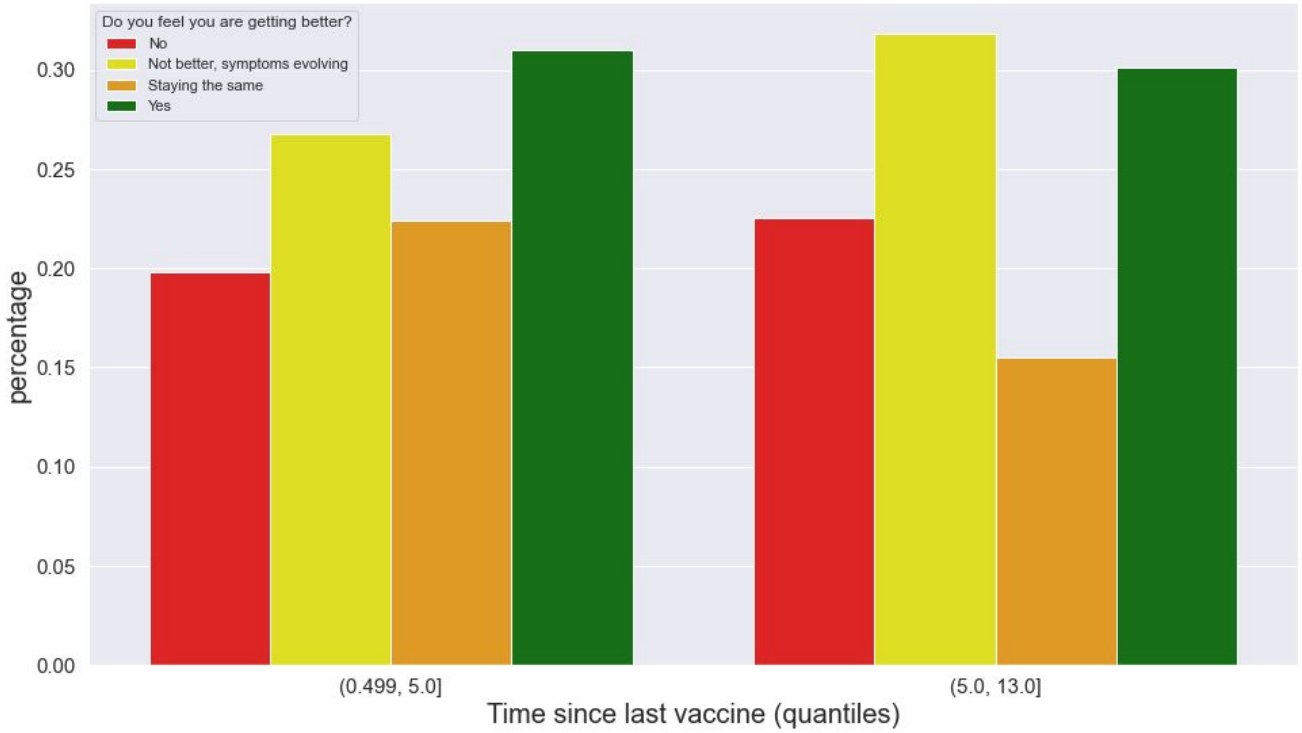
Severity does not seem to exhibit a clear trend over time.
(Participants that reported all 64 symptoms were removed from the chart on the right but not the chart on the left.)





Trends over time (continued)

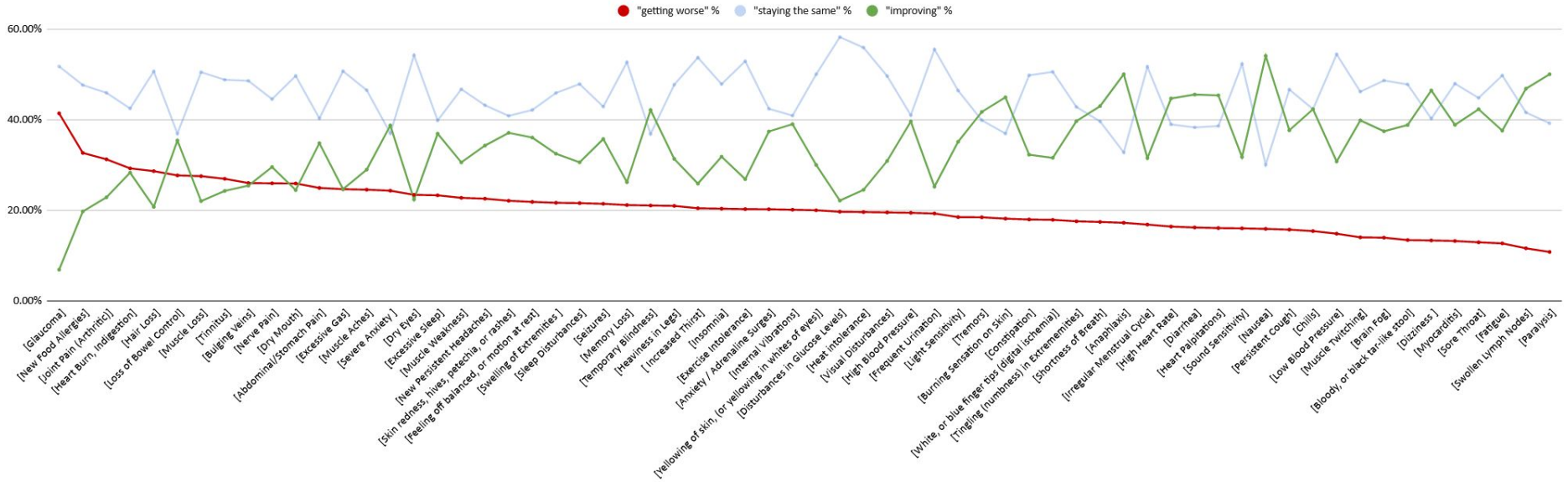
Getting better/worse was roughly the same between <=5 months and >5 months. However, >5 months surveyees were more likely to report evolving symptoms.



Symptoms getting better or worse

Symptoms varied in terms of getting better or worse. Overall, there is a slight trend towards reporting improvement rather than getting worse.

Survey question: "Please indicate which symptoms are Improving, staying the same, getting worse, or not applicable"
912 participants had valid data. 51 participants were excluded because they "had" every symptom, 4 participants were removed for other reasons (e.g. unvaccinated / no vax injury)



Part 5: Other findings

Symptom prevalence list

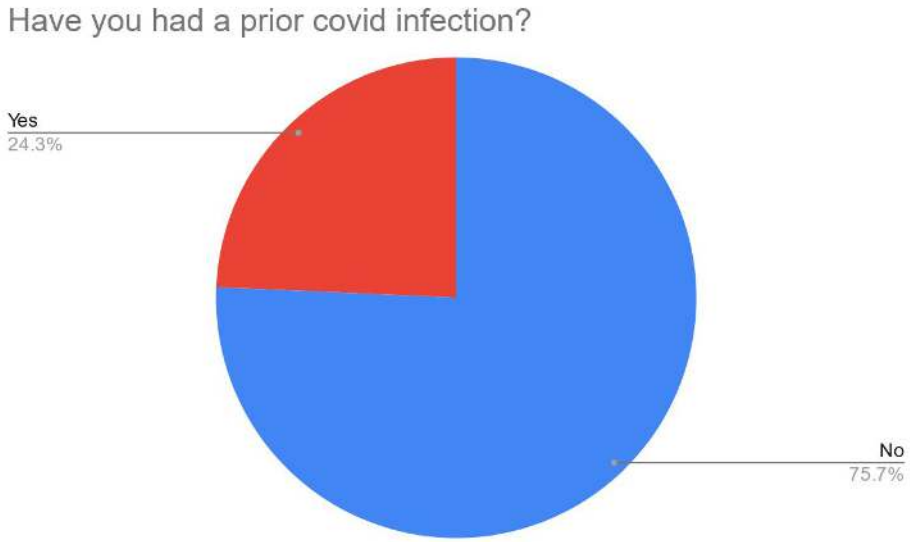
Top 10 most common	
[Fatigue]	82.0%
[Exercise Intolerance]	76.3%
[Brain Fog]	71.5%
[Heart Palpitations]	64.8%
[Muscle Weakness]	63.2%
[Tingling (numbness) in Extremities]	63.0%
[Dizziness]	60.0%
[Muscle Aches]	59.4%
[Sleep Disturbances]	58.4%
[Joint Pain (Arthritic)]	57.6%

[Fatigue] - 82.0%
[Exercise Intolerance] - 76.3%
[Brain Fog] - 71.5%
[Heart Palpitations] - 64.8%
[Muscle Weakness] - 63.2%
[Tingling (numbness) in Extrememities] - 63.0%
[Dizziness] - 60.0%
[Muscle Aches] - 59.4%
[Sleep Disturbances] - 58.4%
[Joint Pain (Arthritic)] - 57.6%
[Anxiety / Adrenaline Surges] - 56.9%
[High Heart Rate] - 55.5%
[Insomnia] - 55.5%
[Shortness of Breath] - 55.4%
[Nerve Pain] - 52.0%
[New Persistent Headaches] - 50.5%
[Feeling off balanced, or motion at rest] - 48.7%
[Muscle Twitching] - 48.5%
[Heaviness in Legs] - 47.6%
[Memory Loss] - 45.6%
[Tinnitus] - 45.2%
[Severe Anxiety] - 44.2%
[Visual Disturbances] - 41.6%
[Abdominal/Stomach Pain] - 40.0%
[Sound Sensitivity] - 39.0%
[Nausea] - 37.9%
[Frequent Urination] - 37.0%
[Chills] - 36.3%
[Muscle Loss] - 35.9%
[Burning Sensation on Skin] - 35.6%
[Light Sensitivity] - 35.0%
[Heart Burn, Indigestion] - 34.9%

[Internal Vibrations] - 34.9%
[Increased Thirst] - 34.3%
[Excessive Sleep] - 33.9%
[Heat intolerance] - 33.6%
[Dry Eyes] - 32.8%
[Diarrhea] - 31.8%
[High Blood Pressure] - 31.6%
[Dry Mouth] - 30.0%
[Tremors] - 29.7%
[Swollen Lymph Nodes] - 29.3%
[Skin redness, hives, petechia, or rashes] - 29.3%
[Hair Loss] - 26.4%
[Excessive Gas] - 24.0%
[Constipation] - 23.8%
[Sore Throat] - 22.0%
[Swelling of Extremities] - 21.3%
[Irregular Menstrual Cycle] - 20.2%
[Low Blood Pressure] - 20.0%
[Persistent Cough] - 19.5%
[Bulging Veins] - 19.0%
[New Food Allergies] - 16.1%
[Disturbances in Glucose Levels] - 13.4%
[Myocarditis] - 13.3%
[White, or blue finger tips (digital ischemia)] - 10.4%
[Paralysis] - 8.1%
[Bloody, or black tar-like stool] - 7.3%
[Loss of Bowel Control] - 7.1%
[Anaphlaxis] - 6.4%
[Yellowing of skin, (or yellowing in whites of eyes)] - 5.5%
[Temporary Blindness] - 4.2%
[Glaucoma] - 3.2%
[Seizures] - 3.1%

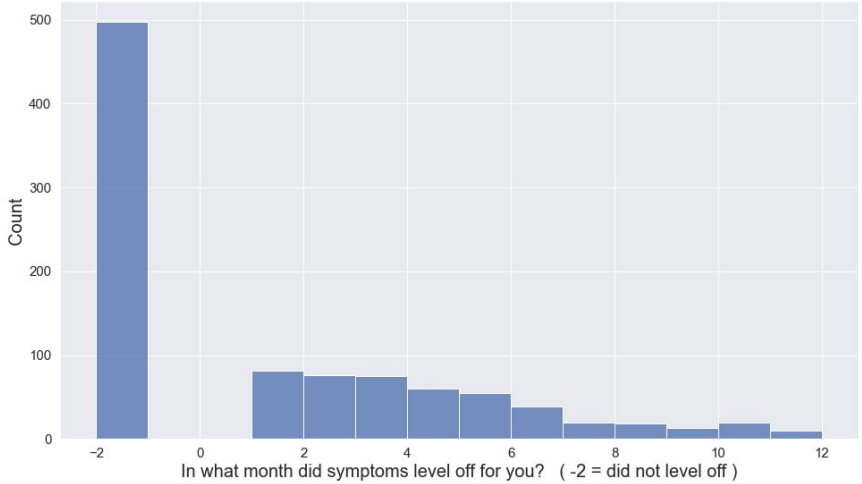
Previously COVID infected and now vaccine injured

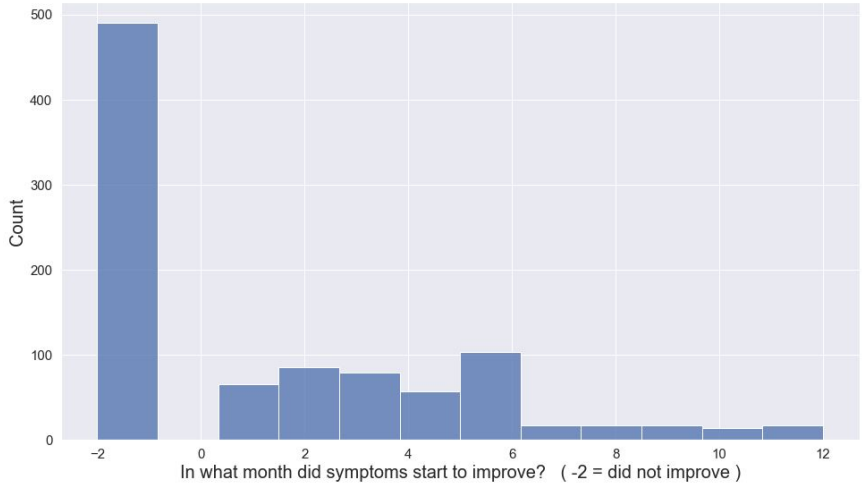
Roughly a quarter of the surveyees self-identified as previously COVID infected. However, due to the lack of testing at the beginning of the pandemic, it is unclear if the self-identification is correct.



When did symptoms level off and when did they start to improve?

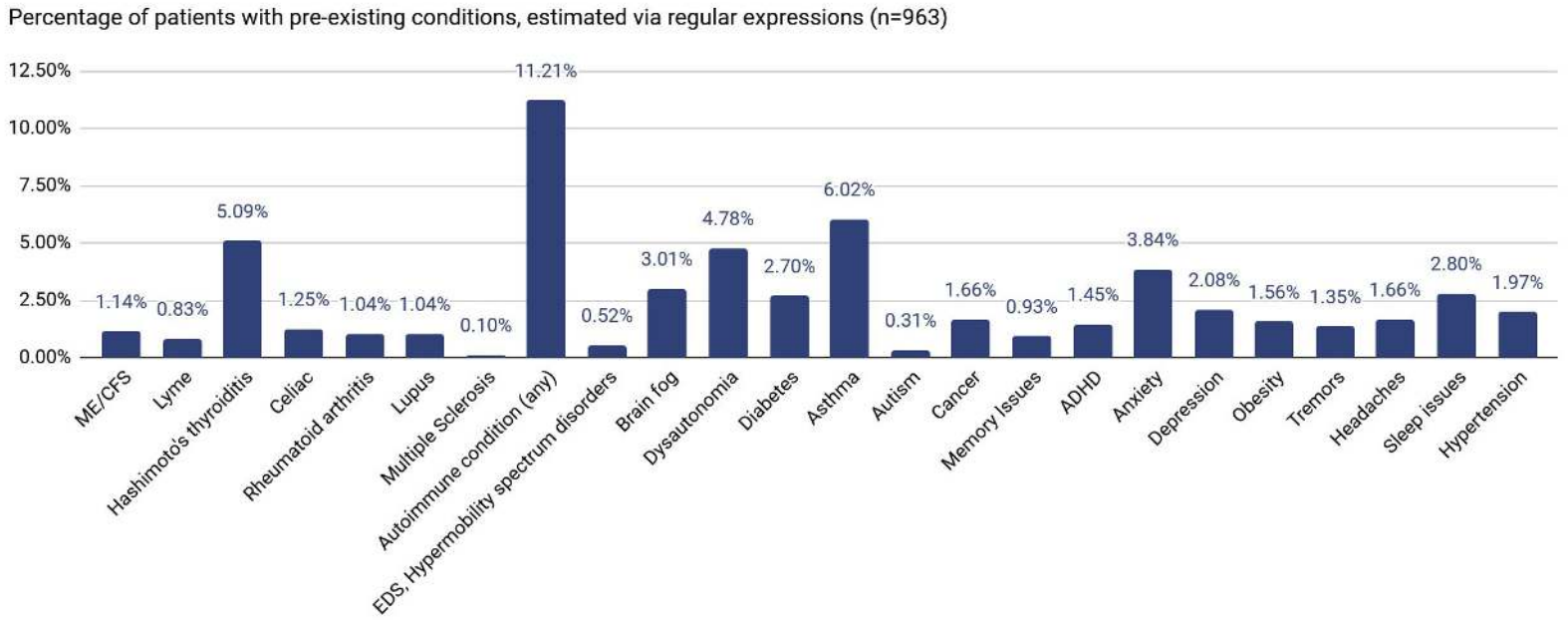
Many surveyees reported that their symptoms never leveled off. For those whose symptoms did, levelling off usually occurred in the early months.





Pre-existing conditions

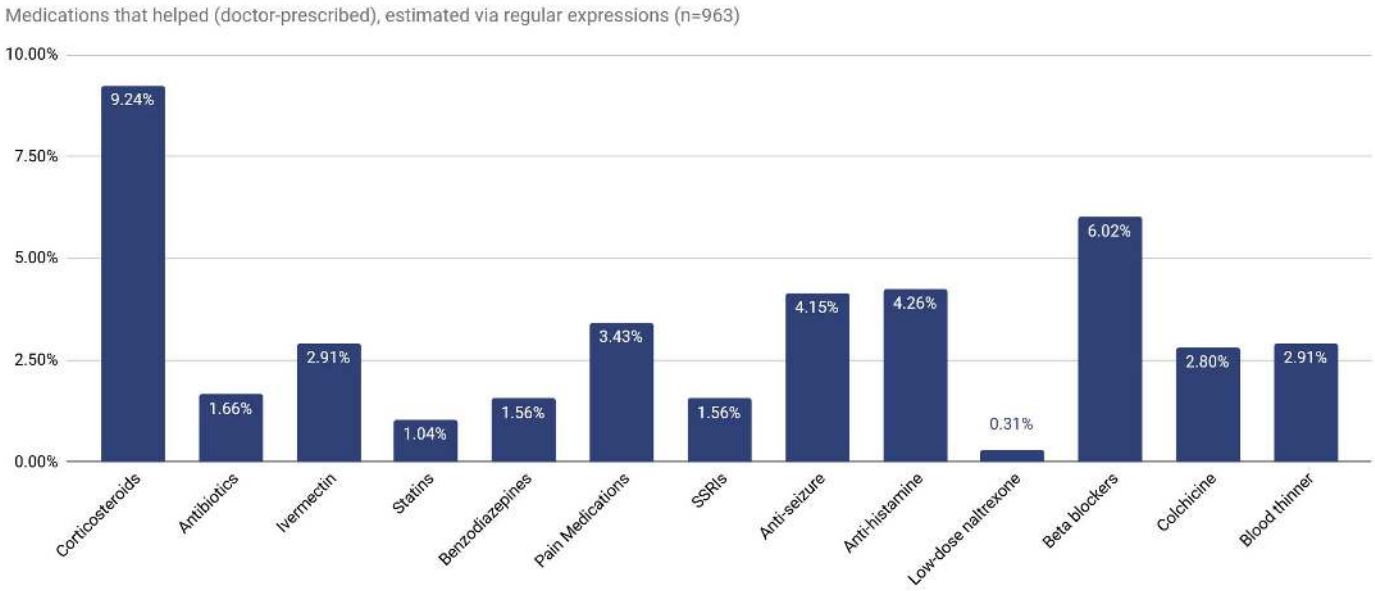
Pre-existing autoimmunity was fairly common among surveyees (**11.2%** or 108/963). Hashimoto's thyroiditis and hypothyroidism were reported by **5.1%** (49/963).
Autoimmunity may be a risk factor for COVID vaccine injury.



*Free-form poll responses were analyzed via Python regular expressions, which are less accurate than manual analysis by a human.

Medications that helped (doctor-prescribed)

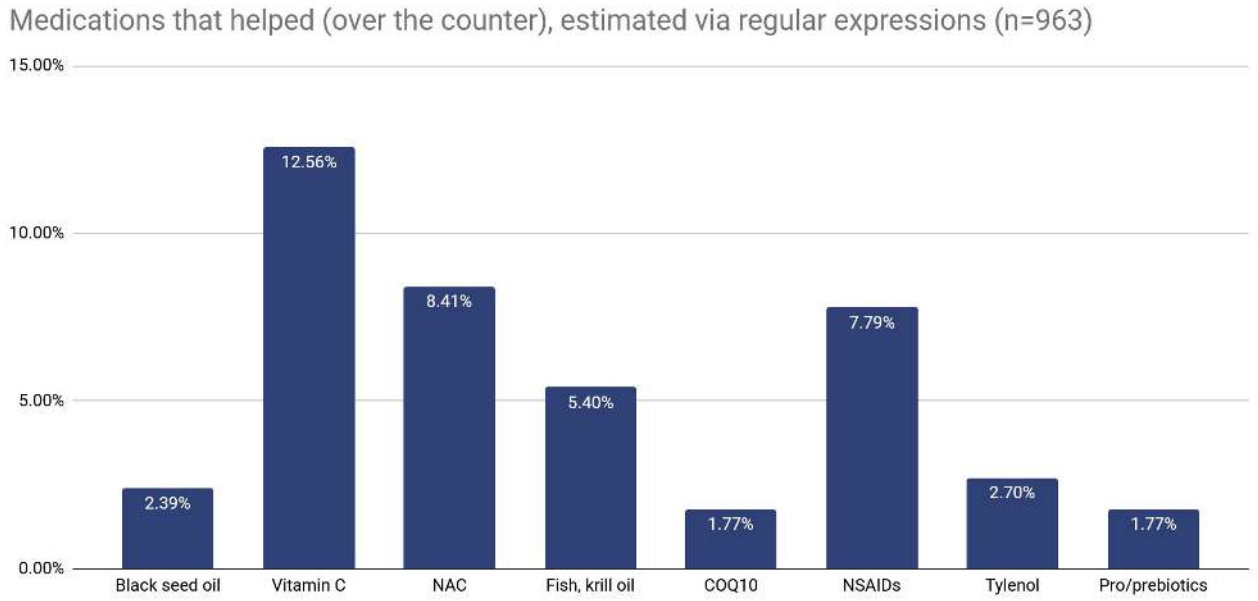
The survey asked participants to list which drugs helped, which biases the data towards drugs that are prescribed often.
45% of survey participants (438/963) reported that none of their doctor-prescribed medications helped (not shown).



*Free-form poll responses were analyzed via Python regular expressions, which are less accurate than manual analysis by a human.

Over-the-counter medications that helped, part 1

The survey asked participants to list which drugs helped, which biases the data towards drugs that are tried often.
46% of survey participants (442/963) reported that none of their over the counter medications helped (not shown).



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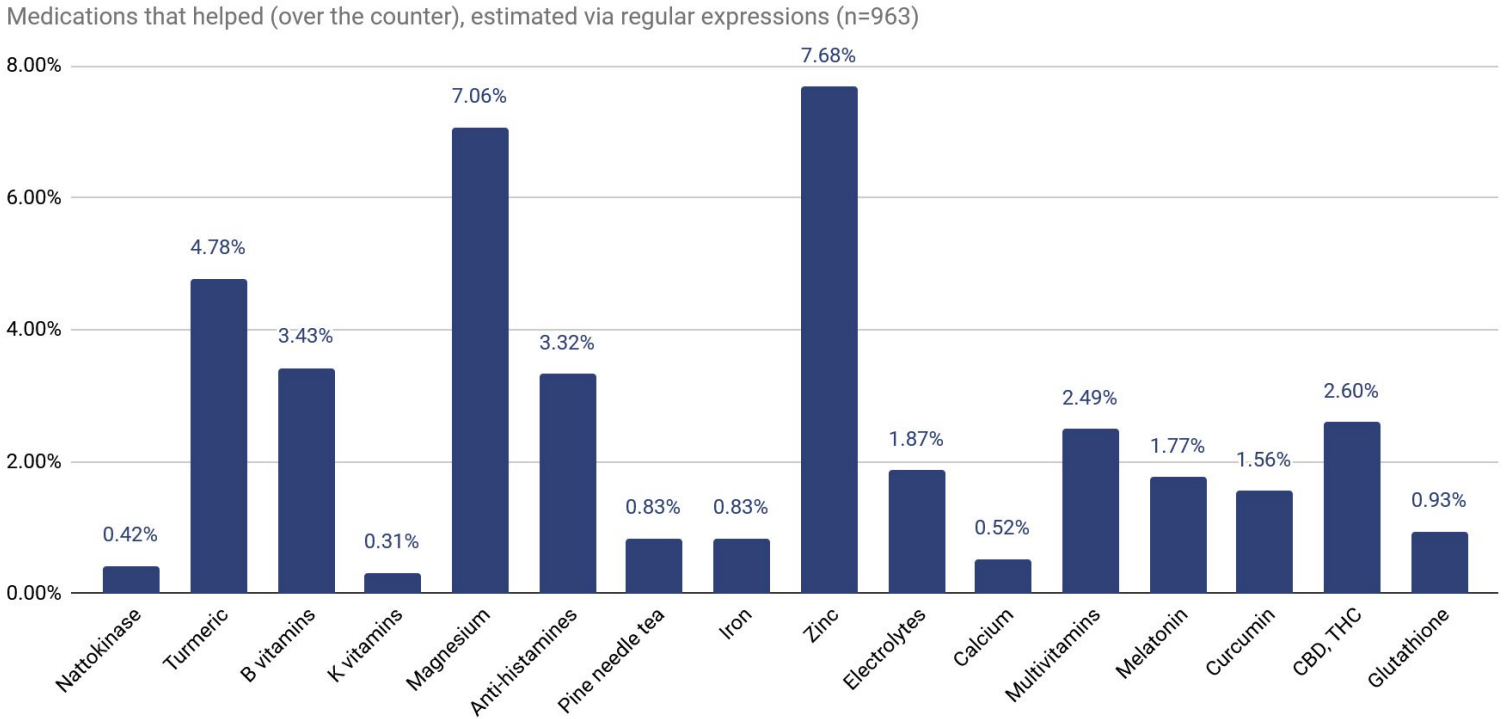
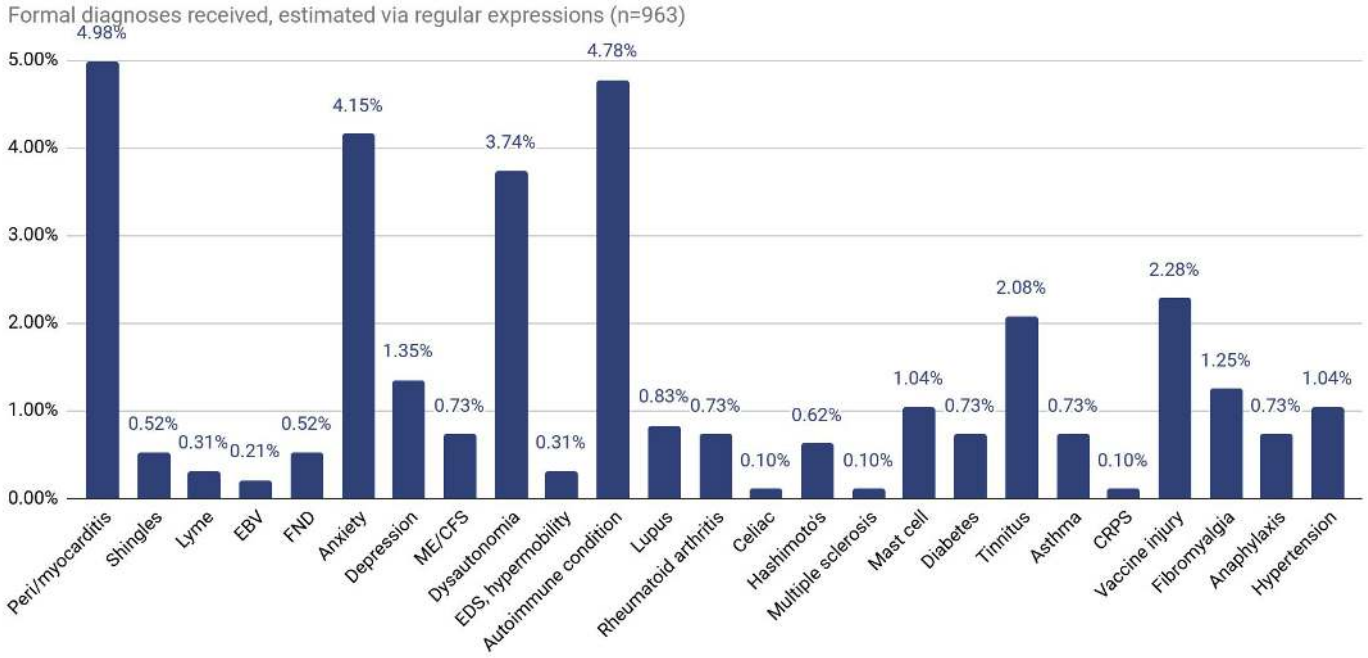
Over-the-counter medications that helped, part 2



*Free-form poll responses were analyzed via Python regular expressions, which are less accurate than manual analysis by a human.

Formal diagnoses received

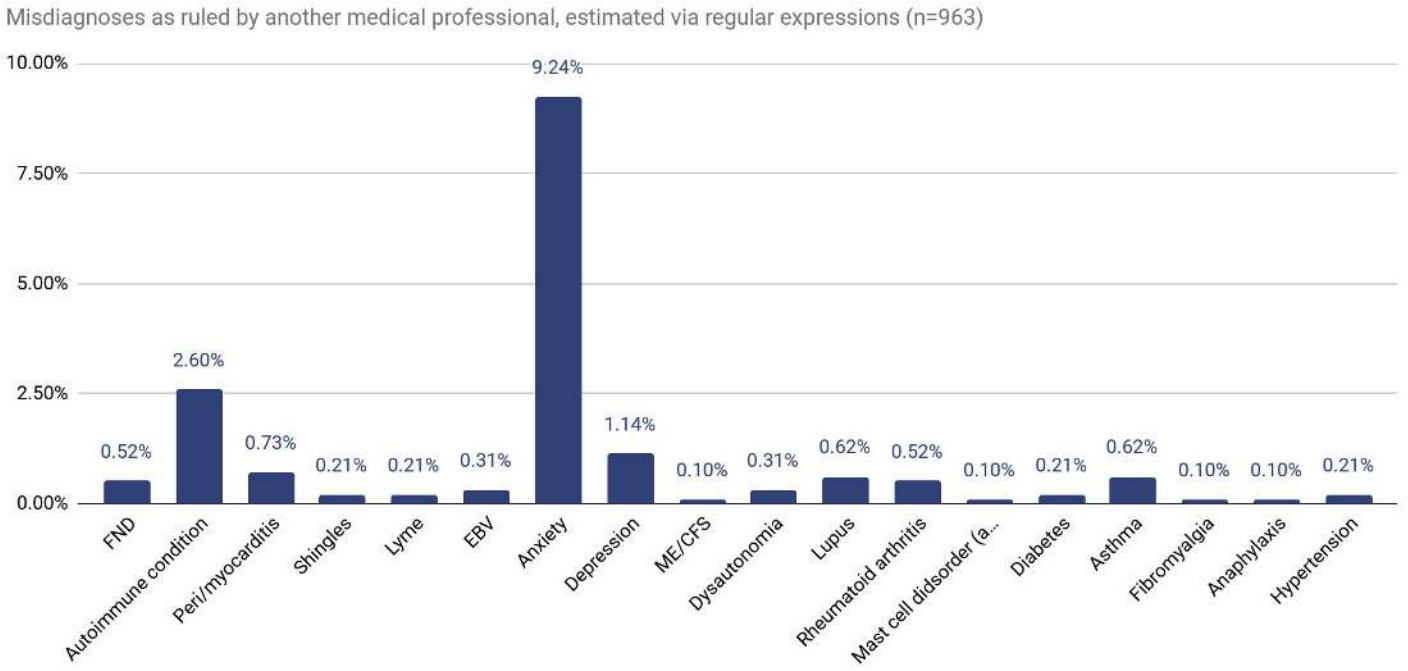
While FND diagnoses were rare, many surveyees reported being diagnosed with anxiety and depression. Vaccine injury diagnoses were somewhat less common than other diagnoses.



*Free-form poll responses were analyzed via Python regular expressions, which are less accurate than manual analysis by a human.

Misdiagnoses (as determined by a medical professional)

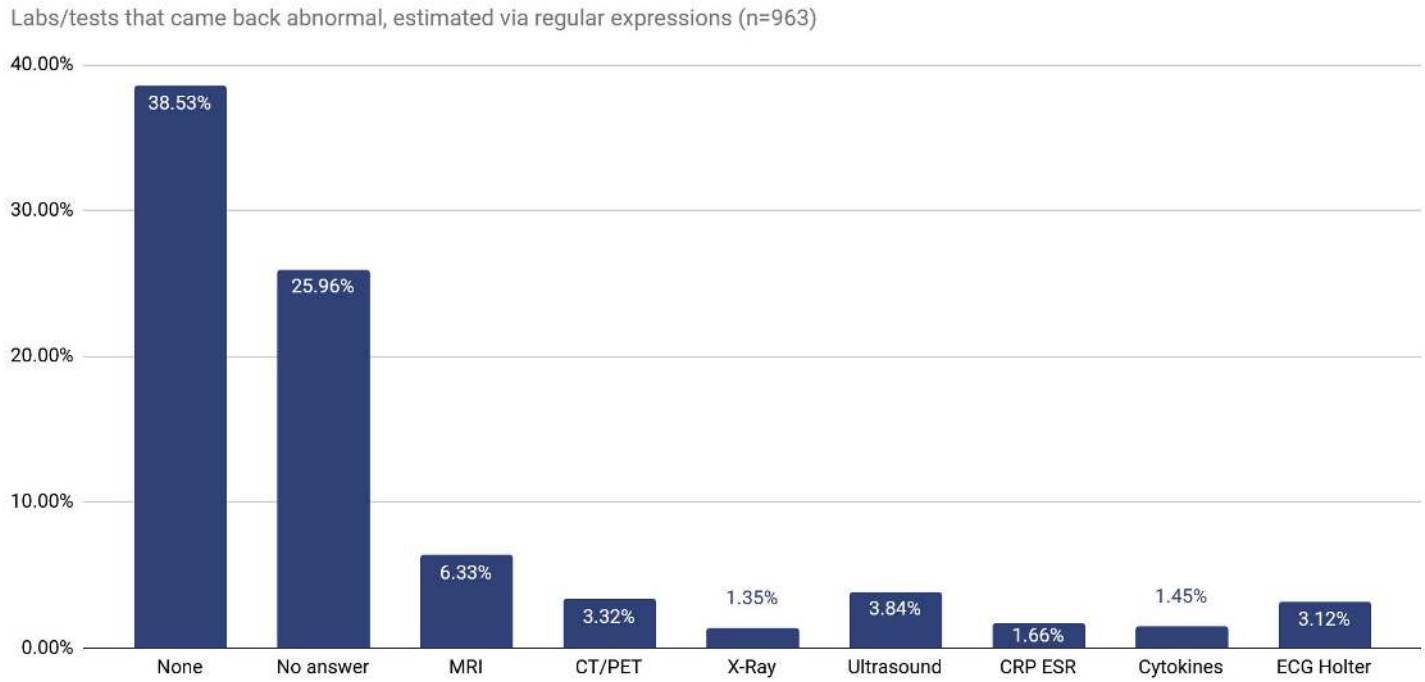
Anxiety was the most common misdiagnosis, followed by autoimmune conditions.



*Free-form poll responses were analyzed via Python regular expressions, which are less accurate than manual analysis by a human.

Abnormal lab results

Many surveyees reported that none of their tests found anything unusual.
*The survey data is likely biased towards medical tests that are widely deployed.



*Free-form poll responses were analyzed via Python regular expressions, which are less accurate than manual analysis by a human.

Collaborators

Survey Design

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