

WEBVTT

NOTE duration:"00:58:07"

NOTE recognizability:0.824

NOTE language:en-us

NOTE Confidence: 0.846851832666667

00:00:04.120 --> 00:00:05.891 Maybe I'll just start just to stay

NOTE Confidence: 0.846851832666667

00:00:05.891 --> 00:00:07.838 for a minute or two and then I'll,

NOTE Confidence: 0.846851832666667

00:00:07.840 --> 00:00:10.986 I'm going to hand it to Akiko and

NOTE Confidence: 0.846851832666667

00:00:10.986 --> 00:00:15.264 maybe just five us can introduce

NOTE Confidence: 0.846851832666667

00:00:15.264 --> 00:00:17.232 ourselves just to say hello.

NOTE Confidence: 0.846851832666667

00:00:17.232 --> 00:00:18.600 Leslie, you want to? Sure.

NOTE Confidence: 0.846851832666667

00:00:18.600 --> 00:00:20.040 No, I just I'm, I'm here on

NOTE Confidence: 0.846851832666667

00:00:20.040 --> 00:00:21.480 behalf of Hugo Health and Kindred.

NOTE Confidence: 0.846851832666667

00:00:21.480 --> 00:00:22.950 I just want you to welcome

NOTE Confidence: 0.846851832666667

00:00:22.950 --> 00:00:24.600 everybody and appreciate

NOTE Confidence: 0.915135097

00:00:25.480 --> 00:00:26.581 everybody's engagement here.

NOTE Confidence: 0.915135097

00:00:26.581 --> 00:00:29.527 For those of you that came to our

NOTE Confidence: 0.915135097

00:00:29.527 --> 00:00:32.007 cafe last week that it was just an

NOTE Confidence: 0.915135097

00:00:32.007 --> 00:00:33.856 incredible exchange of ideas and
NOTE Confidence: 0.915135097

00:00:33.856 --> 00:00:35.776 and conversation and and really
NOTE Confidence: 0.915135097

00:00:35.776 --> 00:00:37.600 appreciate people that were there.
NOTE Confidence: 0.915135097

00:00:37.600 --> 00:00:40.075 You know, we, we're here to serve you guys.
NOTE Confidence: 0.915135097

00:00:40.080 --> 00:00:42.068 We want to have your, we want to be
NOTE Confidence: 0.915135097

00:00:42.068 --> 00:00:43.440 sure that your voices are heard,
NOTE Confidence: 0.915135097

00:00:43.440 --> 00:00:44.617 whether it's by participating,
NOTE Confidence: 0.915135097

00:00:44.617 --> 00:00:46.411 listen or joining some of the
NOTE Confidence: 0.915135097

00:00:46.411 --> 00:00:48.000 other activities that we're doing
NOTE Confidence: 0.915135097

00:00:48.000 --> 00:00:49.236 on the Kindred side.
NOTE Confidence: 0.915135097

00:00:49.240 --> 00:00:50.940 Talia is also here who's
NOTE Confidence: 0.915135097

00:00:50.940 --> 00:00:51.960 our community manager.
NOTE Confidence: 0.915135097

00:00:51.960 --> 00:00:54.128 She's been capturing people's
NOTE Confidence: 0.915135097

00:00:54.128 --> 00:00:56.368 stories and putting, you know,
NOTE Confidence: 0.915135097

00:00:56.368 --> 00:00:58.800 posting those stories on on the Kindred site.
NOTE Confidence: 0.915135097

00:00:58.800 --> 00:01:00.020 There's lots of great content

NOTE Confidence: 0.915135097

00:01:00.020 --> 00:01:00.996 that's showing up there.

NOTE Confidence: 0.915135097

00:01:01.000 --> 00:01:03.080 There'll be more coming.

NOTE Confidence: 0.915135097

00:01:03.080 --> 00:01:04.618 So please, please, you know,

NOTE Confidence: 0.915135097

00:01:04.618 --> 00:01:06.160 reach out to us if you need anything.

NOTE Confidence: 0.915135097

00:01:06.160 --> 00:01:06.880 And you know,

NOTE Confidence: 0.915135097

00:01:06.880 --> 00:01:07.600 as Harlan said,

NOTE Confidence: 0.915135097

00:01:07.600 --> 00:01:09.720 this is the first listen town hall meeting.

NOTE Confidence: 0.915135097

00:01:09.720 --> 00:01:11.323 I know they have plenty more that

NOTE Confidence: 0.915135097

00:01:11.323 --> 00:01:12.935 they'd like to do with those of you

NOTE Confidence: 0.915135097

00:01:12.935 --> 00:01:15.000 that have signed up for the study.

NOTE Confidence: 0.915135097

00:01:15.000 --> 00:01:16.638 So I'm going to pass it over to them.

NOTE Confidence: 0.915135097

00:01:16.640 --> 00:01:17.216 And again,

NOTE Confidence: 0.915135097

00:01:17.216 --> 00:01:19.232 thank you so much and we're really

NOTE Confidence: 0.915135097

00:01:19.232 --> 00:01:20.999 excited about what's coming forth.

NOTE Confidence: 0.915135097

00:01:21.000 --> 00:01:22.158 So I'll pass it on tomorrow.

NOTE Confidence: 0.67151049

00:01:22.160 --> 00:01:24.368 I'll just say just I should
NOTE Confidence: 0.67151049

00:01:24.368 --> 00:01:25.472 have introduced myself.
NOTE Confidence: 0.67151049

00:01:25.480 --> 00:01:26.600 So I'm Harlan Krumholz,
NOTE Confidence: 0.67151049

00:01:26.600 --> 00:01:28.600 I'm a professor of medicine at Yale.
NOTE Confidence: 0.67151049

00:01:28.600 --> 00:01:31.546 I'm a cardiologist and also Co
NOTE Confidence: 0.67151049

00:01:31.546 --> 00:01:34.470 founder of Hugo and and Leslie's
NOTE Confidence: 0.67151049

00:01:34.470 --> 00:01:37.425 husband which is probably one of
NOTE Confidence: 0.67151049

00:01:37.425 --> 00:01:41.000 the nicest things about me the
NOTE Confidence: 0.67151049

00:01:41.000 --> 00:01:43.128 and and we're here with Born Alley
NOTE Confidence: 0.67151049

00:01:43.128 --> 00:01:45.323 and Cesar who are key members of
NOTE Confidence: 0.67151049

00:01:45.323 --> 00:01:47.479 the Liston team and were part of
NOTE Confidence: 0.67151049

00:01:47.479 --> 00:01:49.408 the cafe last week and of course
NOTE Confidence: 0.67151049

00:01:49.408 --> 00:01:51.536 Akiko Iwasaki who is going to be
NOTE Confidence: 0.67151049

00:01:51.536 --> 00:01:52.912 presenting some information about
NOTE Confidence: 0.67151049

00:01:52.912 --> 00:01:54.649 a study that we recently completed.
NOTE Confidence: 0.67151049

00:01:54.649 --> 00:01:56.864 But I I just want to sit there for

NOTE Confidence: 0.67151049

00:01:56.864 --> 00:01:58.688 a moment that so we're this is all

NOTE Confidence: 0.67151049

00:01:58.741 --> 00:02:00.266 about trying to think differently

NOTE Confidence: 0.67151049

00:02:00.266 --> 00:02:02.155 about how the research is done.

NOTE Confidence: 0.67151049

00:02:02.155 --> 00:02:04.640 And like we said this is all

NOTE Confidence: 0.67151049

00:02:04.640 --> 00:02:06.271 iterative and maybe and I think

NOTE Confidence: 0.67151049

00:02:06.271 --> 00:02:07.370 next time it would be better for

NOTE Confidence: 0.67151049

00:02:07.412 --> 00:02:08.594 everyone to see everyone's face is

NOTE Confidence: 0.67151049

00:02:08.594 --> 00:02:09.920 to feel better since the community.

NOTE Confidence: 0.67151049

00:02:09.920 --> 00:02:12.050 But it's unusual for research

NOTE Confidence: 0.67151049

00:02:12.050 --> 00:02:13.940 study to say like, hey,

NOTE Confidence: 0.67151049

00:02:13.940 --> 00:02:14.840 let's run some town halls,

NOTE Confidence: 0.67151049

00:02:14.840 --> 00:02:15.878 let's have some back and forth,

NOTE Confidence: 0.67151049

00:02:15.880 --> 00:02:17.866 let's have Ask Us Anything sessions

NOTE Confidence: 0.67151049

00:02:17.866 --> 00:02:20.198 and also share ideas about the study.

NOTE Confidence: 0.67151049

00:02:20.200 --> 00:02:21.796 And to be able to listen,

NOTE Confidence: 0.67151049

00:02:21.800 --> 00:02:23.320 the states called listen,
NOTE Confidence: 0.67151049

00:02:23.320 --> 00:02:25.600 listen to all of our teammates,
NOTE Confidence: 0.67151049

00:02:25.600 --> 00:02:27.357 all of the people who are participating
NOTE Confidence: 0.67151049

00:02:27.357 --> 00:02:29.622 so that we can think about how we can
NOTE Confidence: 0.67151049

00:02:29.622 --> 00:02:31.730 do this better and how we can race
NOTE Confidence: 0.67151049

00:02:31.730 --> 00:02:33.775 faster towards progress that will
NOTE Confidence: 0.67151049

00:02:33.775 --> 00:02:35.640 impact positively people's lives.
NOTE Confidence: 0.67151049

00:02:35.640 --> 00:02:37.200 And so far,
NOTE Confidence: 0.67151049

00:02:37.200 --> 00:02:40.056 I mean we've enrolled largely
NOTE Confidence: 0.67151049

00:02:40.056 --> 00:02:41.080 by word of mouth.
NOTE Confidence: 0.67151049

00:02:41.080 --> 00:02:41.956 I mean, you know,
NOTE Confidence: 0.67151049

00:02:41.956 --> 00:02:43.560 we've promoted some stuff on social media.
NOTE Confidence: 0.67151049

00:02:43.560 --> 00:02:44.872 People will join Kindred.
NOTE Confidence: 0.67151049

00:02:44.872 --> 00:02:45.200 Kindred,
NOTE Confidence: 0.67151049

00:02:45.200 --> 00:02:46.375 a community where people can
NOTE Confidence: 0.67151049

00:02:46.375 --> 00:02:47.315 interact and get information,

NOTE Confidence: 0.67151049

00:02:47.320 --> 00:02:48.495 have the opportunity to link

NOTE Confidence: 0.67151049

00:02:48.495 --> 00:02:50.078 to their data and join studies.

NOTE Confidence: 0.67151049

00:02:50.078 --> 00:02:52.311 The promise of Hugo is that people

NOTE Confidence: 0.67151049

00:02:52.311 --> 00:02:54.592 can gain agency over their data and

NOTE Confidence: 0.67151049

00:02:54.592 --> 00:02:55.984 that the data won't move without

NOTE Confidence: 0.67151049

00:02:55.984 --> 00:02:57.240 anyone's permission or be kept safe.

NOTE Confidence: 0.67151049

00:02:57.240 --> 00:02:58.520 And it's up to people,

NOTE Confidence: 0.67151049

00:02:58.520 --> 00:03:00.040 as their data assets grow,

NOTE Confidence: 0.67151049

00:03:00.040 --> 00:03:01.783 whether they want to join studies and

NOTE Confidence: 0.67151049

00:03:01.783 --> 00:03:03.879 be able to help move things forward.

NOTE Confidence: 0.67151049

00:03:03.880 --> 00:03:05.670 The profiles within Kindred are

NOTE Confidence: 0.67151049

00:03:05.670 --> 00:03:07.976 meant to help match with studies

NOTE Confidence: 0.67151049

00:03:07.976 --> 00:03:09.320 and accelerate that.

NOTE Confidence: 0.67151049

00:03:09.320 --> 00:03:10.480 When we ask for stories,

NOTE Confidence: 0.67151049

00:03:10.480 --> 00:03:12.640 it's because we want to know like real life,

NOTE Confidence: 0.67151049

00:03:12.640 --> 00:03:12.905 like,
NOTE Confidence: 0.67151049

00:03:12.905 --> 00:03:14.760 how's it affecting you in ways that
NOTE Confidence: 0.67151049

00:03:14.760 --> 00:03:16.475 questionnaires may not be able to capture?
NOTE Confidence: 0.67151049

00:03:16.480 --> 00:03:18.035 And then if people connect
NOTE Confidence: 0.67151049

00:03:18.035 --> 00:03:19.279 to their data sources,
NOTE Confidence: 0.67151049

00:03:19.280 --> 00:03:20.980 their electronic health record and
NOTE Confidence: 0.67151049

00:03:20.980 --> 00:03:22.680 wearables and payers and others,
NOTE Confidence: 0.67151049

00:03:22.680 --> 00:03:24.647 it creates a rich source of data
NOTE Confidence: 0.67151049

00:03:24.647 --> 00:03:26.839 about them that they have agency over.
NOTE Confidence: 0.67151049

00:03:26.840 --> 00:03:28.576 And then if they consent to be in
NOTE Confidence: 0.67151049

00:03:28.576 --> 00:03:30.393 a study and they think that the
NOTE Confidence: 0.67151049

00:03:30.393 --> 00:03:31.958 study's worthy of them and then
NOTE Confidence: 0.67151049

00:03:31.958 --> 00:03:33.624 they can agree to have that data
NOTE Confidence: 0.67151049

00:03:33.624 --> 00:03:34.840 be used in the study.
NOTE Confidence: 0.67151049

00:03:34.840 --> 00:03:36.280 And it's up to us to try to make sure
NOTE Confidence: 0.67151049

00:03:36.319 --> 00:03:37.759 data doesn't move without permission.

NOTE Confidence: 0.67151049

00:03:37.760 --> 00:03:40.288 And in the studies that are offered are

NOTE Confidence: 0.67151049

00:03:40.288 --> 00:03:42.680 ones that will treat people as partners.

NOTE Confidence: 0.67151049

00:03:42.680 --> 00:03:44.440 And of course we're starting this first day,

NOTE Confidence: 0.67151049

00:03:44.440 --> 00:03:46.512 but but we hope that there may be

NOTE Confidence: 0.67151049

00:03:46.512 --> 00:03:47.756 many opportunities that come down

NOTE Confidence: 0.67151049

00:03:47.756 --> 00:03:49.768 the Pike that will be part of this.

NOTE Confidence: 0.67151049

00:03:49.768 --> 00:03:50.360 And again,

NOTE Confidence: 0.907811045

00:03:50.360 --> 00:03:53.816 part of it is trying to foster a

NOTE Confidence: 0.907811045

00:03:53.816 --> 00:03:55.760 sense and when I say sense it,

NOTE Confidence: 0.907811045

00:03:55.760 --> 00:03:57.380 I mean authentically convey

NOTE Confidence: 0.907811045

00:03:57.380 --> 00:03:59.000 that we're interested in.

NOTE Confidence: 0.907811045

00:03:59.000 --> 00:04:01.880 In and working directly with people

NOTE Confidence: 0.907811045

00:04:01.880 --> 00:04:03.950 and again other studies tend to

NOTE Confidence: 0.907811045

00:04:03.950 --> 00:04:06.176 go through sites and depend on a

NOTE Confidence: 0.907811045

00:04:06.176 --> 00:04:07.910 physician offering a study to someone

NOTE Confidence: 0.907811045

00:04:07.910 --> 00:04:10.293 or there there's lots of of people in
NOTE Confidence: 0.907811045

00:04:10.293 --> 00:04:12.103 the middle between the researchers
NOTE Confidence: 0.907811045

00:04:12.103 --> 00:04:13.799 and the people participating.
NOTE Confidence: 0.907811045

00:04:13.800 --> 00:04:15.210 We're trying to say what if
NOTE Confidence: 0.907811045

00:04:15.210 --> 00:04:16.960 it's a direct to consumer idea,
NOTE Confidence: 0.907811045

00:04:16.960 --> 00:04:18.340 what if it's decentralized
NOTE Confidence: 0.907811045

00:04:18.340 --> 00:04:19.720 and anybody can join.
NOTE Confidence: 0.907811045

00:04:19.720 --> 00:04:21.834 And what if we can talk directly
NOTE Confidence: 0.907811045

00:04:21.834 --> 00:04:23.600 with the group and and again
NOTE Confidence: 0.907811045

00:04:23.600 --> 00:04:24.800 listen to to questions,
NOTE Confidence: 0.907811045

00:04:24.800 --> 00:04:26.568 be able to interact and and then think
NOTE Confidence: 0.907811045

00:04:26.568 --> 00:04:28.438 about how we can make progress together.
NOTE Confidence: 0.925520482222222

00:04:30.520 --> 00:04:32.758 For me, one of the great
NOTE Confidence: 0.925520482222222

00:04:32.758 --> 00:04:34.064 privileges of this study.
NOTE Confidence: 0.925520482222222

00:04:34.064 --> 00:04:35.352 Now we'll just talk about the listen
NOTE Confidence: 0.925520482222222

00:04:35.352 --> 00:04:37.017 study and we're glad to answer a lot of

NOTE Confidence: 0.925520482222222
00:04:37.017 --> 00:04:38.119 questions about listen study as we go.
NOTE Confidence: 0.925520482222222
00:04:38.120 --> 00:04:40.148 But one of the great privileges
NOTE Confidence: 0.925520482222222
00:04:40.148 --> 00:04:42.533 of LISTEN study has been my my
NOTE Confidence: 0.925520482222222
00:04:42.533 --> 00:04:44.998 opportunity to work with Akiko,
NOTE Confidence: 0.925520482222222
00:04:45.000 --> 00:04:47.352 who is just the most remarkable
NOTE Confidence: 0.925520482222222
00:04:47.352 --> 00:04:49.364 scientist and also individual person
NOTE Confidence: 0.925520482222222
00:04:49.364 --> 00:04:51.975 who cares deeply about the people that
NOTE Confidence: 0.925520482222222
00:04:51.975 --> 00:04:53.947 she's trying to generate knowledge
NOTE Confidence: 0.925520482222222
00:04:53.947 --> 00:04:55.976 about to help them do better.
NOTE Confidence: 0.925520482222222
00:04:55.976 --> 00:04:57.860 And is also conducting science in
NOTE Confidence: 0.925520482222222
00:04:57.918 --> 00:05:00.006 a way with utmost integrity and
NOTE Confidence: 0.925520482222222
00:05:00.006 --> 00:05:01.895 leadership and trying to think in
NOTE Confidence: 0.925520482222222
00:05:01.895 --> 00:05:03.920 an innovative ways about how we can,
NOTE Confidence: 0.925520482222222
00:05:03.920 --> 00:05:05.198 how we can all work together.
NOTE Confidence: 0.925520482222222
00:05:05.200 --> 00:05:08.984 So and and the central idea here
NOTE Confidence: 0.925520482222222

00:05:08.984 --> 00:05:11.535 is that if we can be able to
NOTE Confidence: 0.925520482222222

00:05:11.535 --> 00:05:12.675 collect information about people,
NOTE Confidence: 0.925520482222222

00:05:12.680 --> 00:05:14.208 their lives, their journey,
NOTE Confidence: 0.925520482222222

00:05:14.208 --> 00:05:15.736 their experience and understand
NOTE Confidence: 0.925520482222222

00:05:15.736 --> 00:05:17.701 the diversity of ways in which
NOTE Confidence: 0.925520482222222

00:05:17.701 --> 00:05:19.840 they're affected and also include
NOTE Confidence: 0.925520482222222

00:05:19.840 --> 00:05:21.908 people who are control populations.
NOTE Confidence: 0.925520482222222

00:05:21.908 --> 00:05:23.686 And by the way we're talking about
NOTE Confidence: 0.925520482222222

00:05:23.686 --> 00:05:24.831 lists and we're talking about
NOTE Confidence: 0.925520482222222

00:05:24.831 --> 00:05:26.400 people who are in with long COVID.
NOTE Confidence: 0.925520482222222

00:05:26.400 --> 00:05:28.269 We're also have heard a lot from
NOTE Confidence: 0.925520482222222

00:05:28.269 --> 00:05:29.850 people who are reporting vaccine
NOTE Confidence: 0.925520482222222

00:05:29.850 --> 00:05:31.640 injury and have symptoms that
NOTE Confidence: 0.925520482222222

00:05:31.640 --> 00:05:33.520 often can sound very similar.
NOTE Confidence: 0.925520482222222

00:05:33.520 --> 00:05:35.542 And we're very interested in working
NOTE Confidence: 0.925520482222222

00:05:35.542 --> 00:05:37.255 with them respecting honoring the

NOTE Confidence: 0.925520482222222
00:05:37.255 --> 00:05:38.810 kind of experience that they're
NOTE Confidence: 0.925520482222222
00:05:38.810 --> 00:05:40.836 having and seeing whether or not we
NOTE Confidence: 0.925520482222222
00:05:40.836 --> 00:05:42.099 can reflect through the through,
NOTE Confidence: 0.925520482222222
00:05:42.099 --> 00:05:42.697 you know,
NOTE Confidence: 0.925520482222222
00:05:42.697 --> 00:05:44.192 what we're collecting about them
NOTE Confidence: 0.925520482222222
00:05:44.192 --> 00:05:45.953 and the biology try to breakthrough
NOTE Confidence: 0.925520482222222
00:05:45.953 --> 00:05:47.918 information on that side too.
NOTE Confidence: 0.925520482222222
00:05:47.920 --> 00:05:50.118 What we're working with Akiko for me
NOTE Confidence: 0.925520482222222
00:05:50.118 --> 00:05:51.850 is the opportunity to both profile
NOTE Confidence: 0.925520482222222
00:05:51.850 --> 00:05:53.830 people from their experience and then
NOTE Confidence: 0.925520482222222
00:05:53.830 --> 00:05:55.846 combine it with this deep immuno
NOTE Confidence: 0.925520482222222
00:05:55.846 --> 00:05:58.114 phenotyping that she's going to talk about.
NOTE Confidence: 0.925520482222222
00:05:58.120 --> 00:06:00.040 Really the very best science that
NOTE Confidence: 0.925520482222222
00:06:00.040 --> 00:06:01.000 we can imagine.
NOTE Confidence: 0.925520482222222
00:06:01.000 --> 00:06:02.920 And being able to generate lots
NOTE Confidence: 0.925520482222222

00:06:02.920 --> 00:06:04.200 of data about people,
NOTE Confidence: 0.9255204822222222

00:06:04.200 --> 00:06:06.222 their experience and how their bodies
NOTE Confidence: 0.9255204822222222

00:06:06.222 --> 00:06:08.672 are working in order to try to come
NOTE Confidence: 0.9255204822222222

00:06:08.672 --> 00:06:10.274 up with some insights about what's
NOTE Confidence: 0.9255204822222222

00:06:10.274 --> 00:06:12.213 causing this and where we can go
NOTE Confidence: 0.9255204822222222

00:06:12.213 --> 00:06:14.199 for diagnostics and therapeutics.
NOTE Confidence: 0.9255204822222222

00:06:14.200 --> 00:06:15.785 And most importantly to reflect
NOTE Confidence: 0.9255204822222222

00:06:15.785 --> 00:06:18.163 back to people that that you know we
NOTE Confidence: 0.9255204822222222

00:06:18.163 --> 00:06:20.257 believe you like we hear you we we
NOTE Confidence: 0.9255204822222222

00:06:20.257 --> 00:06:21.892 know that there's there's something
NOTE Confidence: 0.9255204822222222

00:06:21.892 --> 00:06:24.080 real going on and it's important for
NOTE Confidence: 0.9255204822222222

00:06:24.080 --> 00:06:25.880 us to work together to demonstrate
NOTE Confidence: 0.9255204822222222

00:06:25.936 --> 00:06:27.912 what that is and to be able to
NOTE Confidence: 0.9255204822222222

00:06:27.912 --> 00:06:29.051 provide evidence based guidance
NOTE Confidence: 0.9255204822222222

00:06:29.051 --> 00:06:31.417 about what people can do to help themselves.
NOTE Confidence: 0.9255204822222222

00:06:31.417 --> 00:06:33.510 And and anyway So what we'll we're

NOTE Confidence: 0.925520482222222
00:06:33.569 --> 00:06:35.312 going by the when people are like
NOTE Confidence: 0.925520482222222
00:06:35.312 --> 00:06:38.016 even I know a lot of people have had
NOTE Confidence: 0.925520482222222
00:06:38.016 --> 00:06:39.280 very difficult experiences where
NOTE Confidence: 0.925520482222222
00:06:39.280 --> 00:06:40.948 either they're being dismissed or or
NOTE Confidence: 0.925520482222222
00:06:40.948 --> 00:06:42.997 people doubt them or or wonder if
NOTE Confidence: 0.925520482222222
00:06:42.997 --> 00:06:44.755 it's really people doubt themselves even.
NOTE Confidence: 0.925520482222222
00:06:44.760 --> 00:06:46.824 And just to say that we're here to
NOTE Confidence: 0.925520482222222
00:06:46.824 --> 00:06:48.840 say that let's learn together and
NOTE Confidence: 0.925520482222222
00:06:48.840 --> 00:06:50.695 and again you know we're we're we
NOTE Confidence: 0.925520482222222
00:06:50.695 --> 00:06:52.247 hope people will consider us allies
NOTE Confidence: 0.925520482222222
00:06:52.247 --> 00:06:54.388 in this as we try to make progress
NOTE Confidence: 0.925520482222222
00:06:54.388 --> 00:06:56.550 together and help us be better better
NOTE Confidence: 0.925520482222222
00:06:56.550 --> 00:06:58.208 partners because we know that that
NOTE Confidence: 0.925520482222222
00:06:58.208 --> 00:06:59.696 you know there'll be places where
NOTE Confidence: 0.925520482222222
00:06:59.696 --> 00:07:01.482 we could do better maybe we we
NOTE Confidence: 0.925520482222222

00:07:01.482 --> 00:07:02.970 haven't been as sensitive as we
NOTE Confidence: 0.925520482222222

00:07:03.020 --> 00:07:04.358 could could be or should be
NOTE Confidence: 0.950195424166667

00:07:04.360 --> 00:07:05.674 and we're eager to learn about
NOTE Confidence: 0.950195424166667

00:07:05.674 --> 00:07:07.399 how we can be better partners.
NOTE Confidence: 0.950195424166667

00:07:07.400 --> 00:07:09.758 So with this, I want to turn it over
NOTE Confidence: 0.950195424166667

00:07:09.758 --> 00:07:12.440 to Kiko who's who's got a presentation
NOTE Confidence: 0.950195424166667

00:07:12.440 --> 00:07:14.211 planned and and I know people are
NOTE Confidence: 0.950195424166667

00:07:14.211 --> 00:07:16.400 putting in questions and we can try to,
NOTE Confidence: 0.950195424166667

00:07:16.400 --> 00:07:18.336 we got Bernali and Cesar who can either
NOTE Confidence: 0.950195424166667

00:07:18.336 --> 00:07:20.067 answer on their own or they can tee
NOTE Confidence: 0.950195424166667

00:07:20.067 --> 00:07:22.172 them up for us in the second part of
NOTE Confidence: 0.950195424166667

00:07:22.172 --> 00:07:23.736 the presentation where we can answer
NOTE Confidence: 0.950195424166667

00:07:23.736 --> 00:07:25.808 them and we're lucky to have them
NOTE Confidence: 0.950195424166667

00:07:25.808 --> 00:07:27.877 engaged and also part of the project.
NOTE Confidence: 0.950195424166667

00:07:27.880 --> 00:07:31.464 And let me hand this over to my dear friend,
NOTE Confidence: 0.950195424166667

00:07:31.464 --> 00:07:34.600 my colleague and partner in this project,

NOTE Confidence: 0.950195424166667
00:07:34.600 --> 00:07:36.442 Akiko to welcome you all and
NOTE Confidence: 0.950195424166667
00:07:36.442 --> 00:07:38.519 then talk a little bit about a,
NOTE Confidence: 0.950195424166667
00:07:38.520 --> 00:07:40.158 a study that we've recently done.
NOTE Confidence: 0.950195424166667
00:07:40.160 --> 00:07:41.480 So thank you so much.
NOTE Confidence: 0.840266468333333
00:07:42.440 --> 00:07:44.771 All right. Thank you so much Leslie
NOTE Confidence: 0.840266468333333
00:07:44.771 --> 00:07:47.040 and Harlan for the introductions.
NOTE Confidence: 0.840266468333333
00:07:47.040 --> 00:07:50.288 And you know, I, I feel equally
NOTE Confidence: 0.840266468333333
00:07:50.288 --> 00:07:53.048 honored and fortunate to be working
NOTE Confidence: 0.840266468333333
00:07:53.048 --> 00:07:55.664 with Harlan and Born Alley and
NOTE Confidence: 0.840266468333333
00:07:55.664 --> 00:07:58.352 Cesar and Leslie as a partner.
NOTE Confidence: 0.840266468333333
00:07:58.360 --> 00:08:00.704 So just a little bit of background about
NOTE Confidence: 0.840266468333333
00:08:00.704 --> 00:08:03.720 myself, I'm an immunologist at Yale.
NOTE Confidence: 0.840266468333333
00:08:03.720 --> 00:08:06.325 I've been studying infection with
NOTE Confidence: 0.840266468333333
00:08:06.325 --> 00:08:09.760 variety of viruses and immune responses
NOTE Confidence: 0.840266468333333
00:08:09.760 --> 00:08:13.092 and seeing how we can use that
NOTE Confidence: 0.840266468333333

00:08:13.092 --> 00:08:15.592 knowledge to improve people's health.
NOTE Confidence: 0.8402664683333333

00:08:15.592 --> 00:08:18.808 And mostly I'm basic immunologist so
NOTE Confidence: 0.8402664683333333

00:08:18.808 --> 00:08:22.456 I study basic mechanism of diseases
NOTE Confidence: 0.8402664683333333

00:08:22.456 --> 00:08:25.676 as well as vaccine developments.
NOTE Confidence: 0.8402664683333333

00:08:25.680 --> 00:08:28.506 We're currently working with the nasal
NOTE Confidence: 0.8402664683333333

00:08:28.506 --> 00:08:30.782 vaccine booster strategy that will
NOTE Confidence: 0.8402664683333333

00:08:30.782 --> 00:08:33.368 hopefully prevent any diseases like long
NOTE Confidence: 0.8402664683333333

00:08:33.368 --> 00:08:35.999 COVID from happening in the future.
NOTE Confidence: 0.8402664683333333

00:08:36.000 --> 00:08:38.200 So what I'd like to do today is
NOTE Confidence: 0.8402664683333333

00:08:38.200 --> 00:08:40.478 to first of all welcome everyone.
NOTE Confidence: 0.8402664683333333

00:08:40.480 --> 00:08:42.744 I see the names of attendees and you
NOTE Confidence: 0.8402664683333333

00:08:42.744 --> 00:08:44.519 know many of you have reached out
NOTE Confidence: 0.8402664683333333

00:08:44.519 --> 00:08:47.138 to me and I I I feel like I know
NOTE Confidence: 0.8402664683333333

00:08:47.138 --> 00:08:49.128 you and it's it's wonderful to see
NOTE Confidence: 0.8402664683333333

00:08:49.128 --> 00:08:51.116 your names at least on the list.
NOTE Confidence: 0.8402664683333333

00:08:51.120 --> 00:08:53.400 And some of you are superstars.

NOTE Confidence: 0.840266468333333
00:08:53.400 --> 00:08:55.820 You're advocates and I really
NOTE Confidence: 0.840266468333333
00:08:55.820 --> 00:08:57.756 appreciate everything you do.
NOTE Confidence: 0.840266468333333
00:08:57.760 --> 00:08:58.414 So I'm.
NOTE Confidence: 0.840266468333333
00:08:58.414 --> 00:09:00.703 I'm playing a small part in this
NOTE Confidence: 0.840266468333333
00:09:00.703 --> 00:09:03.084 whole equation of your lesson study,
NOTE Confidence: 0.840266468333333
00:09:03.084 --> 00:09:05.190 but essentially what I want to
NOTE Confidence: 0.840266468333333
00:09:05.264 --> 00:09:07.360 do today is to kind of give you
NOTE Confidence: 0.840266468333333
00:09:07.360 --> 00:09:09.604 an overview of a prototype study
NOTE Confidence: 0.840266468333333
00:09:09.604 --> 00:09:12.242 that we did in collaboration with
NOTE Confidence: 0.840266468333333
00:09:12.242 --> 00:09:15.422 Mount Sinai School of Medicine with
NOTE Confidence: 0.840266468333333
00:09:15.422 --> 00:09:17.345 David Petrino's group and give you
NOTE Confidence: 0.840266468333333
00:09:17.345 --> 00:09:19.360 a sense of what what we can do.
NOTE Confidence: 0.840266468333333
00:09:19.360 --> 00:09:21.360 By the way, this is the tip of the iceberg.
NOTE Confidence: 0.840266468333333
00:09:21.360 --> 00:09:23.072 We can do a lot more and we
NOTE Confidence: 0.840266468333333
00:09:23.072 --> 00:09:24.198 are doing a lot more.
NOTE Confidence: 0.840266468333333

00:09:24.200 --> 00:09:26.153 But we wanted to get this information
NOTE Confidence: 0.840266468333333

00:09:26.153 --> 00:09:28.553 out to people as soon as possible so that
NOTE Confidence: 0.840266468333333

00:09:28.553 --> 00:09:30.875 you can read about it and in fact it this,
NOTE Confidence: 0.840266468333333

00:09:30.880 --> 00:09:33.216 the study has already been posted in
NOTE Confidence: 0.840266468333333

00:09:33.216 --> 00:09:35.680 mid archive and has been picked up by,
NOTE Confidence: 0.840266468333333

00:09:35.680 --> 00:09:38.680 you know I think 80 media outlets already.
NOTE Confidence: 0.840266468333333

00:09:38.680 --> 00:09:40.000 So you've probably heard about it.
NOTE Confidence: 0.840266468333333

00:09:40.000 --> 00:09:42.248 But I want to tell you what how
NOTE Confidence: 0.840266468333333

00:09:42.248 --> 00:09:43.720 we interpret the results.
NOTE Confidence: 0.840266468333333

00:09:43.720 --> 00:09:45.834 So I'm going to share the screen.
NOTE Confidence: 0.75243578

00:09:48.600 --> 00:09:54.520 OK. All right. You can see this. Yes.
NOTE Confidence: 0.75243578

00:09:54.520 --> 00:09:57.864 OK. So yeah, today I want to talk
NOTE Confidence: 0.75243578

00:09:57.864 --> 00:10:01.237 about the immunology of long COVID.
NOTE Confidence: 0.75243578

00:10:01.240 --> 00:10:03.778 The reason we're studying the immune
NOTE Confidence: 0.75243578

00:10:03.778 --> 00:10:06.840 system in people with long COVID is
NOTE Confidence: 0.75243578

00:10:06.840 --> 00:10:10.184 because the immune system is it's

NOTE Confidence: 0.75243578

00:10:10.184 --> 00:10:14.080 it's like an amazing orchestration of

NOTE Confidence: 0.75243578

00:10:14.080 --> 00:10:17.846 molecules and cells and biological

NOTE Confidence: 0.75243578

00:10:17.846 --> 00:10:20.454 process that can tell us a lot about

NOTE Confidence: 0.75243578

00:10:20.454 --> 00:10:22.718 what's happening in in a person's body

NOTE Confidence: 0.75243578

00:10:22.720 --> 00:10:24.718 even just by collecting blood and

NOTE Confidence: 0.75243578

00:10:24.718 --> 00:10:27.038 looking at what's in inside of that.

NOTE Confidence: 0.75243578

00:10:27.040 --> 00:10:28.958 And so today I'm going to focus

NOTE Confidence: 0.75243578

00:10:28.958 --> 00:10:30.759 mostly on the blood analysis,

NOTE Confidence: 0.75243578

00:10:30.760 --> 00:10:33.937 but we can do a lot more by collecting

NOTE Confidence: 0.75243578

00:10:33.937 --> 00:10:35.964 tissues and mucosal surf secretions.

NOTE Confidence: 0.75243578

00:10:35.964 --> 00:10:38.876 So today's focus will be in the blood.

NOTE Confidence: 0.837456796666667

00:10:41.280 --> 00:10:43.278 Before I get into long COVID,

NOTE Confidence: 0.837456796666667

00:10:43.280 --> 00:10:45.653 I want to highlight the fact that

NOTE Confidence: 0.837456796666667

00:10:45.653 --> 00:10:48.439 there are many other infectious agents,

NOTE Confidence: 0.837456796666667

00:10:48.440 --> 00:10:51.730 many viruses as well as non viral

NOTE Confidence: 0.837456796666667

00:10:51.730 --> 00:10:54.635 pathogens that can induce long term
NOTE Confidence: 0.837456796666667

00:10:54.635 --> 00:10:57.070 symptoms of post acute infection
NOTE Confidence: 0.837456796666667

00:10:57.159 --> 00:11:00.296 syndrome of place that that we have
NOTE Confidence: 0.837456796666667

00:11:00.296 --> 00:11:04.386 summarized in a recent review with Jan
NOTE Confidence: 0.837456796666667

00:11:04.386 --> 00:11:07.638 Chotka that we we published together.
NOTE Confidence: 0.837456796666667

00:11:07.640 --> 00:11:10.040 And so Jan himself,
NOTE Confidence: 0.837456796666667

00:11:10.040 --> 00:11:13.800 he's suffers from MECFS and he has read
NOTE Confidence: 0.837456796666667

00:11:13.800 --> 00:11:16.666 every paper under the sun on this topic.
NOTE Confidence: 0.837456796666667

00:11:16.666 --> 00:11:19.638 And he I I kind of helped him with
NOTE Confidence: 0.837456796666667

00:11:19.638 --> 00:11:21.904 the strategy for this, this review.
NOTE Confidence: 0.837456796666667

00:11:21.904 --> 00:11:24.368 And essentially what you see are a
NOTE Confidence: 0.837456796666667

00:11:24.368 --> 00:11:26.799 lot of different viral pathogens,
NOTE Confidence: 0.837456796666667

00:11:26.800 --> 00:11:28.792 some of which has really no
NOTE Confidence: 0.837456796666667

00:11:28.792 --> 00:11:30.120 name for those diseases.
NOTE Confidence: 0.837456796666667

00:11:30.120 --> 00:11:34.000 But it's well known to have a sequela
NOTE Confidence: 0.837456796666667

00:11:34.000 --> 00:11:37.240 way after the initial infection process.

NOTE Confidence: 0.837456796666667
00:11:37.240 --> 00:11:40.576 Some of these post infection sequela
NOTE Confidence: 0.837456796666667
00:11:40.576 --> 00:11:43.800 can take decades to manifest,
NOTE Confidence: 0.837456796666667
00:11:43.800 --> 00:11:46.060 whereas others become apparent
NOTE Confidence: 0.837456796666667
00:11:46.060 --> 00:11:48.320 within days or weeks.
NOTE Confidence: 0.837456796666667
00:11:48.320 --> 00:11:50.315 So stars COVID to the long COVID.
NOTE Confidence: 0.837456796666667
00:11:50.320 --> 00:11:53.960 Obviously the CDC definition is
NOTE Confidence: 0.837456796666667
00:11:53.960 --> 00:11:57.159 symptoms that last for over 4 weeks
NOTE Confidence: 0.837456796666667
00:11:57.160 --> 00:11:59.056 and and that that is certainly
NOTE Confidence: 0.837456796666667
00:11:59.056 --> 00:12:00.640 true for stars COVID too.
NOTE Confidence: 0.837456796666667
00:12:00.640 --> 00:12:03.195 But other viruses have different
NOTE Confidence: 0.837456796666667
00:12:03.195 --> 00:12:06.578 onset of these types of post
NOTE Confidence: 0.837456796666667
00:12:06.578 --> 00:12:09.222 infection syndromes and there are
NOTE Confidence: 0.837456796666667
00:12:09.222 --> 00:12:10.798 other non viral pathogens,
NOTE Confidence: 0.837456796666667
00:12:10.800 --> 00:12:13.746 bacteria and parasites that can also
NOTE Confidence: 0.837456796666667
00:12:13.746 --> 00:12:15.416 cause post infectious syndrome at
NOTE Confidence: 0.837456796666667

00:12:15.416 --> 00:12:17.679 the the famous ones at the Q fever,

NOTE Confidence: 0.837456796666667

00:12:17.680 --> 00:12:20.879 fatigue syndrome and the post Lyme disease.

NOTE Confidence: 0.837456796666667

00:12:20.880 --> 00:12:22.998 But there are probably many others

NOTE Confidence: 0.837456796666667

00:12:22.998 --> 00:12:24.839 that are under recognized that

NOTE Confidence: 0.837456796666667

00:12:24.839 --> 00:12:26.689 many people are suffering from

NOTE Confidence: 0.837456796666667

00:12:26.689 --> 00:12:28.588 without really knowing what the

NOTE Confidence: 0.837456796666667

00:12:28.588 --> 00:12:30.000 causative agents might be.

NOTE Confidence: 0.787929984615384

00:12:32.080 --> 00:12:35.167 Just taking some of the examples of

NOTE Confidence: 0.787929984615384

00:12:35.167 --> 00:12:37.999 literature on say Epstein BA virus,

NOTE Confidence: 0.787929984615384

00:12:38.000 --> 00:12:40.408 this is a from the same review

NOTE Confidence: 0.787929984615384

00:12:40.408 --> 00:12:42.680 what we see it is studies.

NOTE Confidence: 0.787929984615384

00:12:42.680 --> 00:12:44.180 So different colors

NOTE Confidence: 0.787929984615384

00:12:44.180 --> 00:12:45.680 indicate different studies.

NOTE Confidence: 0.787929984615384

00:12:45.680 --> 00:12:48.137 We compile them into one graph and

NOTE Confidence: 0.787929984615384

00:12:48.137 --> 00:12:50.177 looking at time since mononucleosis

NOTE Confidence: 0.787929984615384

00:12:50.177 --> 00:12:53.369 which is caused by Epstein by virus

NOTE Confidence: 0.787929984615384
00:12:53.369 --> 00:12:55.529 infection and then the unrecovered
NOTE Confidence: 0.787929984615384
00:12:55.529 --> 00:12:57.559 participants on the Y axis.
NOTE Confidence: 0.787929984615384
00:12:57.560 --> 00:13:00.194 You see that there are large
NOTE Confidence: 0.787929984615384
00:13:00.194 --> 00:13:01.950 number of unrecovered participants
NOTE Confidence: 0.787929984615384
00:13:02.027 --> 00:13:04.397 within about two months post mono.
NOTE Confidence: 0.787929984615384
00:13:04.400 --> 00:13:07.166 But this percentage declines over time
NOTE Confidence: 0.787929984615384
00:13:07.166 --> 00:13:10.519 and the studies are pretty consistent.
NOTE Confidence: 0.787929984615384
00:13:10.520 --> 00:13:12.944 But even after 24 months this
NOTE Confidence: 0.787929984615384
00:13:12.944 --> 00:13:15.320 number does not go to zero.
NOTE Confidence: 0.787929984615384
00:13:15.320 --> 00:13:18.001 There are about 4% of the individuals
NOTE Confidence: 0.787929984615384
00:13:18.001 --> 00:13:21.076 who had mono are two years still
NOTE Confidence: 0.787929984615384
00:13:21.076 --> 00:13:22.916 suffering from various symptoms
NOTE Confidence: 0.787929984615384
00:13:22.916 --> 00:13:25.456 and many of these have turned
NOTE Confidence: 0.787929984615384
00:13:25.456 --> 00:13:28.918 into Chronic fatigue syndrome.
NOTE Confidence: 0.787929984615384
00:13:28.920 --> 00:13:32.928 Diagnosis service COVID 2 also
NOTE Confidence: 0.787929984615384

00:13:32.928 --> 00:13:35.400 has a similar type of curve.
NOTE Confidence: 0.787929984615384

00:13:35.400 --> 00:13:38.733 When you look at people who are
NOTE Confidence: 0.787929984615384

00:13:38.733 --> 00:13:41.470 having at least one of 12 common
NOTE Confidence: 0.787929984615384

00:13:41.560 --> 00:13:44.060 symptoms or self reported long
NOTE Confidence: 0.787929984615384

00:13:44.060 --> 00:13:45.912 COVID in days since COVID-19,
NOTE Confidence: 0.787929984615384

00:13:45.912 --> 00:13:48.442 you see that there is there is
NOTE Confidence: 0.787929984615384

00:13:48.442 --> 00:13:50.597 definitely decline in these numbers,
NOTE Confidence: 0.787929984615384

00:13:50.600 --> 00:13:53.560 but some of these are unfortunately
NOTE Confidence: 0.787929984615384

00:13:53.560 --> 00:13:55.160 quite persistent.
NOTE Confidence: 0.910620442307692

00:13:57.640 --> 00:14:00.937 And So what might be causing these
NOTE Confidence: 0.910620442307692

00:14:00.937 --> 00:14:04.039 long symptom after an acute infection
NOTE Confidence: 0.910620442307692

00:14:04.040 --> 00:14:07.712 we we think that there may be many
NOTE Confidence: 0.910620442307692

00:14:07.712 --> 00:14:09.972 different causes and it's not that
NOTE Confidence: 0.910620442307692

00:14:09.972 --> 00:14:11.916 one of these mechanisms are right,
NOTE Confidence: 0.910620442307692

00:14:11.920 --> 00:14:13.520 it's probably many of these
NOTE Confidence: 0.910620442307692

00:14:13.520 --> 00:14:15.120 things that are going on.

NOTE Confidence: 0.910620442307692
00:14:15.120 --> 00:14:17.283 In some people there might be multiple
NOTE Confidence: 0.910620442307692
00:14:17.283 --> 00:14:19.239 of these things going on at once.
NOTE Confidence: 0.910620442307692
00:14:19.240 --> 00:14:22.082 But some of the top hypothesis are
NOTE Confidence: 0.910620442307692
00:14:22.082 --> 00:14:24.767 viral reservoir or viral pathogen
NOTE Confidence: 0.910620442307692
00:14:24.767 --> 00:14:26.840 associated molecular patterns.
NOTE Confidence: 0.910620442307692
00:14:26.840 --> 00:14:28.905 These are sort of the RNA or
NOTE Confidence: 0.910620442307692
00:14:28.905 --> 00:14:31.956 the DNA of the viral genome that
NOTE Confidence: 0.910620442307692
00:14:31.956 --> 00:14:34.040 triggers innate immune responses.
NOTE Confidence: 0.910620442307692
00:14:34.040 --> 00:14:36.836 And also this persistent antigen can
NOTE Confidence: 0.910620442307692
00:14:36.836 --> 00:14:39.999 drive T cells and B cells to act
NOTE Confidence: 0.910620442307692
00:14:40.000 --> 00:14:42.916 for chronic in a chronic manner,
NOTE Confidence: 0.910620442307692
00:14:42.920 --> 00:14:46.439 stimulating chronic inflammation.
NOTE Confidence: 0.910620442307692
00:14:46.440 --> 00:14:48.512 Second hypothesis is autoimmunity.
NOTE Confidence: 0.910620442307692
00:14:48.512 --> 00:14:51.102 It's possible that you generate
NOTE Confidence: 0.910620442307692
00:14:51.102 --> 00:14:52.581 autoreactive antibody after
NOTE Confidence: 0.910620442307692

00:14:52.581 --> 00:14:53.919 an acute infection.
NOTE Confidence: 0.910620442307692

00:14:53.920 --> 00:14:56.097 This is a well known thing
NOTE Confidence: 0.910620442307692

00:14:56.097 --> 00:14:58.118 that happens after an infection.
NOTE Confidence: 0.910620442307692

00:14:58.118 --> 00:14:59.880 You generate these bystander
NOTE Confidence: 0.910620442307692

00:14:59.880 --> 00:15:02.400 activation of T cells and B cells,
NOTE Confidence: 0.910620442307692

00:15:02.400 --> 00:15:04.878 but if they persist that could
NOTE Confidence: 0.910620442307692

00:15:04.878 --> 00:15:07.320 also trigger long term symptoms.
NOTE Confidence: 0.910620442307692

00:15:07.320 --> 00:15:10.960 Now C is this dysbiosis of the microbiome,
NOTE Confidence: 0.910620442307692

00:15:10.960 --> 00:15:14.640 the commensal bacteria that live in the gut.
NOTE Confidence: 0.910620442307692

00:15:14.640 --> 00:15:16.560 Their composition changes over time
NOTE Confidence: 0.910620442307692

00:15:16.560 --> 00:15:19.482 and it's possible that the the bad type
NOTE Confidence: 0.910620442307692

00:15:19.482 --> 00:15:21.820 of bacteria may be replicating in in
NOTE Confidence: 0.910620442307692

00:15:21.889 --> 00:15:24.473 the gut to cause some of the symptoms.
NOTE Confidence: 0.910620442307692

00:15:24.480 --> 00:15:27.204 It's also possible that there is
NOTE Confidence: 0.910620442307692

00:15:27.204 --> 00:15:29.526 reactivation of latent viruses like
NOTE Confidence: 0.910620442307692

00:15:29.526 --> 00:15:32.082 the Epstein virus or other herpes

NOTE Confidence: 0.910620442307692
00:15:32.082 --> 00:15:35.010 virus family members that could become
NOTE Confidence: 0.910620442307692
00:15:35.010 --> 00:15:37.760 reactivated and cause some symptoms.
NOTE Confidence: 0.910620442307692
00:15:37.760 --> 00:15:39.944 And then it's also possible that there's
NOTE Confidence: 0.910620442307692
00:15:39.944 --> 00:15:41.807 tissue damage in various different
NOTE Confidence: 0.910620442307692
00:15:41.807 --> 00:15:44.399 organs that might contribute to inflammation.
NOTE Confidence: 0.913222427058824
00:15:46.440 --> 00:15:48.168 There are many, many studies that
NOTE Confidence: 0.913222427058824
00:15:48.168 --> 00:15:49.975 have been done and these are
NOTE Confidence: 0.913222427058824
00:15:49.975 --> 00:15:52.120 just handful of the examples that
NOTE Confidence: 0.913222427058824
00:15:52.120 --> 00:15:54.680 indicate possible viral reservoir.
NOTE Confidence: 0.913222427058824
00:15:54.680 --> 00:15:56.678 There is antigen, there is RNA,
NOTE Confidence: 0.913222427058824
00:15:56.680 --> 00:16:00.800 there's combination of these, sorry
NOTE Confidence: 0.78442684
00:16:03.320 --> 00:16:07.980 of these viral features that are found in
NOTE Confidence: 0.78442684
00:16:07.980 --> 00:16:13.200 people with COVID months after an infection.
NOTE Confidence: 0.78442684
00:16:13.200 --> 00:16:14.900 There's also EBV reactivation,
NOTE Confidence: 0.78442684
00:16:14.900 --> 00:16:18.133 the Epstein biovirus that I talked about just
NOTE Confidence: 0.78442684

00:16:18.133 --> 00:16:20.872 now that that was identified to be one of
NOTE Confidence: 0.78442684

00:16:20.872 --> 00:16:23.800 the four predictive factors for long COVID.
NOTE Confidence: 0.78442684

00:16:23.800 --> 00:16:27.190 There are also papers showing autoreactive
NOTE Confidence: 0.78442684

00:16:27.190 --> 00:16:30.389 antibodies against G protein couple receptors
NOTE Confidence: 0.78442684

00:16:30.389 --> 00:16:35.200 as well as Lupus related auto antibodies.
NOTE Confidence: 0.78442684

00:16:35.200 --> 00:16:38.130 And then we also published the mouse
NOTE Confidence: 0.78442684

00:16:38.130 --> 00:16:41.388 model in which central nervous system
NOTE Confidence: 0.78442684

00:16:41.388 --> 00:16:44.160 damage can be caused by an acute
NOTE Confidence: 0.78442684

00:16:44.237 --> 00:16:47.117 respiratory infection with SARS COV two.
NOTE Confidence: 0.78442684

00:16:47.120 --> 00:16:49.070 So there's evidence of all these
NOTE Confidence: 0.78442684

00:16:49.070 --> 00:16:51.558 things and and like I said long COVID,
NOTE Confidence: 0.78442684

00:16:51.560 --> 00:16:55.000 it it is definitely heterogeneous
NOTE Confidence: 0.78442684

00:16:55.000 --> 00:16:58.702 disease that encompasses probably many of
NOTE Confidence: 0.78442684

00:16:58.702 --> 00:17:03.760 these in combination of these features.
NOTE Confidence: 0.78442684

00:17:03.760 --> 00:17:06.912 Well this is one of my favorite studies
NOTE Confidence: 0.78442684

00:17:06.912 --> 00:17:09.972 where people have found that dogs that

NOTE Confidence: 0.78442684

00:17:09.972 --> 00:17:14.416 are trained to detect SARS COV to infected

NOTE Confidence: 0.78442684

00:17:14.416 --> 00:17:17.020 supernatant identified about half of the

NOTE Confidence: 0.78442684

00:17:17.020 --> 00:17:20.624 people with long COVID where 0% of the

NOTE Confidence: 0.78442684

00:17:20.624 --> 00:17:23.600 controls were identified by these dogs.

NOTE Confidence: 0.78442684

00:17:23.600 --> 00:17:26.540 This is a very unbiased way of

NOTE Confidence: 0.78442684

00:17:26.540 --> 00:17:29.735 detecting viral persistence I think in

NOTE Confidence: 0.78442684

00:17:29.735 --> 00:17:33.264 in people and it's it's a interesting

NOTE Confidence: 0.78442684

00:17:33.264 --> 00:17:35.594 indication of possible viral reservoir.

NOTE Confidence: 0.904272264285714

00:17:38.120 --> 00:17:41.400 So the study that came out earlier this

NOTE Confidence: 0.904272264285714

00:17:41.400 --> 00:17:45.192 year by Jim Heath's group demonstrated by

NOTE Confidence: 0.904272264285714

00:17:45.192 --> 00:17:48.855 studying people who had acquired COVID and

NOTE Confidence: 0.904272264285714

00:17:48.855 --> 00:17:50.640 following them for two to three months.

NOTE Confidence: 0.904272264285714

00:17:50.640 --> 00:17:52.975 They identify 4 anticipating risk

NOTE Confidence: 0.904272264285714

00:17:52.975 --> 00:17:56.570 factors at the time of initial diagnosis

NOTE Confidence: 0.904272264285714

00:17:56.570 --> 00:18:00.074 that predisposed people to long COVID.

NOTE Confidence: 0.904272264285714

00:18:00.080 --> 00:18:02.920 One is type 2 diabetes,
NOTE Confidence: 0.904272264285714

00:18:02.920 --> 00:18:05.517 second is SARS Co V2 RNA aemia,
NOTE Confidence: 0.904272264285714

00:18:05.520 --> 00:18:09.480 this is viral RNA found in the blood,
NOTE Confidence: 0.904272264285714

00:18:09.480 --> 00:18:10.498 Epstein biovirus,
NOTE Confidence: 0.904272264285714

00:18:10.498 --> 00:18:13.552 Viremia again ABBDNA found in the
NOTE Confidence: 0.904272264285714

00:18:13.552 --> 00:18:16.518 blood and then auto antibodies
NOTE Confidence: 0.904272264285714

00:18:16.518 --> 00:18:18.998 against lupus related antigens.
NOTE Confidence: 0.904272264285714

00:18:19.000 --> 00:18:20.835 These four factors could explain
NOTE Confidence: 0.904272264285714

00:18:20.835 --> 00:18:23.265 a lot of the risk associated
NOTE Confidence: 0.904272264285714

00:18:23.265 --> 00:18:25.835 with development of long COVID.
NOTE Confidence: 0.681030575714286

00:18:28.400 --> 00:18:31.760 So then talking, this is the background,
NOTE Confidence: 0.681030575714286

00:18:31.760 --> 00:18:34.397 just kind of give a sense of what's known,
NOTE Confidence: 0.681030575714286

00:18:34.400 --> 00:18:37.158 what's not known and what we've done.
NOTE Confidence: 0.681030575714286

00:18:37.160 --> 00:18:41.224 So we have carried out our first human
NOTE Confidence: 0.681030575714286

00:18:41.224 --> 00:18:44.360 long COVID studies and as I said,
NOTE Confidence: 0.681030575714286

00:18:44.360 --> 00:18:45.640 this is a prototype.

NOTE Confidence: 0.681030575714286
00:18:45.640 --> 00:18:49.580 We plan to do this hopefully with the
NOTE Confidence: 0.681030575714286
00:18:49.580 --> 00:18:52.340 real lesson cohort and asking distinct
NOTE Confidence: 0.681030575714286
00:18:52.340 --> 00:18:55.195 questions about the immune phenotypes and
NOTE Confidence: 0.681030575714286
00:18:55.195 --> 00:18:57.958 what's driving some of these symptoms.
NOTE Confidence: 0.681030575714286
00:18:57.958 --> 00:19:00.586 And I just wanted to introduce
NOTE Confidence: 0.681030575714286
00:19:00.586 --> 00:19:03.198 the team that we worked with,
NOTE Confidence: 0.681030575714286
00:19:03.200 --> 00:19:05.318 which is, as I mentioned earlier,
NOTE Confidence: 0.681030575714286
00:19:05.320 --> 00:19:07.920 David Petrino at Mount Sinai
NOTE Confidence: 0.681030575714286
00:19:07.920 --> 00:19:09.480 School of Medicine.
NOTE Confidence: 0.681030575714286
00:19:09.480 --> 00:19:13.038 He sees thousands of long haulers.
NOTE Confidence: 0.681030575714286
00:19:13.040 --> 00:19:16.585 He's an amazing human being as well and
NOTE Confidence: 0.681030575714286
00:19:16.585 --> 00:19:18.895 I have the fortune of collaborating
NOTE Confidence: 0.681030575714286
00:19:18.895 --> 00:19:21.788 with him and his team Jamie Wood,
NOTE Confidence: 0.681030575714286
00:19:21.788 --> 00:19:24.992 Laura Tabakov and Dana McCarthy and
NOTE Confidence: 0.681030575714286
00:19:24.992 --> 00:19:28.905 and others from his team who have been
NOTE Confidence: 0.681030575714286

00:19:28.905 --> 00:19:31.995 working for over 2 years together.
NOTE Confidence: 0.681030575714286

00:19:32.000 --> 00:19:35.360 I actually reached out to David when I
NOTE Confidence: 0.681030575714286

00:19:35.360 --> 00:19:38.546 first heard about long COVID during an
NOTE Confidence: 0.681030575714286

00:19:38.546 --> 00:19:41.717 interview with Ed Young from the Atlantic.
NOTE Confidence: 0.681030575714286

00:19:41.720 --> 00:19:43.728 He was asking me about what are what
NOTE Confidence: 0.681030575714286

00:19:43.728 --> 00:19:45.580 are your hypothesis about these long
NOTE Confidence: 0.681030575714286

00:19:45.580 --> 00:19:47.853 COVID And that was like really the
NOTE Confidence: 0.681030575714286

00:19:47.853 --> 00:19:50.186 first time I heard about these post
NOTE Confidence: 0.681030575714286

00:19:50.186 --> 00:19:54.328 acute sequela of COVID because it was
NOTE Confidence: 0.681030575714286

00:19:54.328 --> 00:19:56.932 summer of 2020, so pretty early on.
NOTE Confidence: 0.681030575714286

00:19:56.932 --> 00:20:00.083 But then in the same articles David
NOTE Confidence: 0.681030575714286

00:20:00.083 --> 00:20:03.352 Petrino was quoted and I realized that
NOTE Confidence: 0.681030575714286

00:20:03.352 --> 00:20:06.272 he he really cares about patients and
NOTE Confidence: 0.681030575714286

00:20:06.272 --> 00:20:08.032 he's very knowledgeable about the
NOTE Confidence: 0.681030575714286

00:20:08.032 --> 00:20:10.040 clinical features associated with long COVID.
NOTE Confidence: 0.681030575714286

00:20:10.040 --> 00:20:12.568 So I'm very happy that he responded to

NOTE Confidence: 0.681030575714286
00:20:12.568 --> 00:20:15.319 my e-mail and we started a collaboration.
NOTE Confidence: 0.681030575714286
00:20:15.320 --> 00:20:16.456 And so that's the,
NOTE Confidence: 0.681030575714286
00:20:16.456 --> 00:20:18.563 the work that I'm going to tell
NOTE Confidence: 0.681030575714286
00:20:18.563 --> 00:20:19.559 you about today.
NOTE Confidence: 0.681030575714286
00:20:19.560 --> 00:20:23.277 And of course I'm just a conduit of what?
NOTE Confidence: 0.681030575714286
00:20:23.280 --> 00:20:26.360 My team and others have done together,
NOTE Confidence: 0.681030575714286
00:20:26.360 --> 00:20:29.504 so these are really the heroes who carried
NOTE Confidence: 0.681030575714286
00:20:29.504 --> 00:20:32.764 out the studies and students and postdocs.
NOTE Confidence: 0.681030575714286
00:20:32.764 --> 00:20:36.320 And so John Klein is the first
NOTE Confidence: 0.681030575714286
00:20:36.320 --> 00:20:39.200 of the Co first authors.
NOTE Confidence: 0.681030575714286
00:20:39.200 --> 00:20:42.640 He's an MD PhD student in the lab.
NOTE Confidence: 0.681030575714286
00:20:42.640 --> 00:20:46.460 Jill J Cox is a MDPHD student in Aaron
NOTE Confidence: 0.681030575714286
00:20:46.460 --> 00:20:49.471 Rings Laboratory who is also a key
NOTE Confidence: 0.681030575714286
00:20:49.471 --> 00:20:51.956 collaborator in this home endeavor.
NOTE Confidence: 0.681030575714286
00:20:51.960 --> 00:20:57.284 Rahul is a postdoctoral fellow in David
NOTE Confidence: 0.681030575714286

00:20:57.284 --> 00:21:00.516 van Dyke's lab who is does the machine
NOTE Confidence: 0.681030575714286

00:21:00.516 --> 00:21:02.652 learning algorithm for the study.
NOTE Confidence: 0.681030575714286

00:21:02.652 --> 00:21:05.825 Jeff Sasha pay When are three other
NOTE Confidence: 0.681030575714286

00:21:05.825 --> 00:21:08.759 members of the laboratory who really
NOTE Confidence: 0.681030575714286

00:21:08.759 --> 00:21:11.919 work tirelessly to analyze the samples?
NOTE Confidence: 0.681030575714286

00:21:11.920 --> 00:21:15.146 And so this is I'm just presenting
NOTE Confidence: 0.681030575714286

00:21:15.146 --> 00:21:17.198 their work.
NOTE Confidence: 0.681030575714286

00:21:17.200 --> 00:21:21.608 So the Mount Sinai Yale my long COVID
NOTE Confidence: 0.681030575714286

00:21:21.608 --> 00:21:24.836 study was to really try to collect
NOTE Confidence: 0.681030575714286

00:21:24.836 --> 00:21:27.649 as many information as possible from
NOTE Confidence: 0.681030575714286

00:21:27.649 --> 00:21:30.918 people who have had long COVID it.
NOTE Confidence: 0.681030575714286

00:21:30.920 --> 00:21:32.678 So this is from Mount Sinai.
NOTE Confidence: 0.681030575714286

00:21:32.680 --> 00:21:35.102 So New York got its first wave
NOTE Confidence: 0.681030575714286

00:21:35.102 --> 00:21:37.120 pretty early during the pandemic.
NOTE Confidence: 0.681030575714286

00:21:37.120 --> 00:21:39.760 When we collected the sample samples,
NOTE Confidence: 0.681030575714286

00:21:39.760 --> 00:21:42.568 they were about at least a year out

NOTE Confidence: 0.681030575714286
00:21:42.568 --> 00:21:45.564 from their original infection and we
NOTE Confidence: 0.681030575714286
00:21:45.564 --> 00:21:48.366 we included people who are older than
NOTE Confidence: 0.681030575714286
00:21:48.366 --> 00:21:51.786 18 years of age and who fit The Who
NOTE Confidence: 0.681030575714286
00:21:51.786 --> 00:21:54.716 guideline criteria for COVID infection.
NOTE Confidence: 0.681030575714286
00:21:54.720 --> 00:21:57.125 And we excluded certain types
NOTE Confidence: 0.681030575714286
00:21:57.125 --> 00:21:59.530 of individuals because we didn't
NOTE Confidence: 0.681030575714286
00:21:59.608 --> 00:22:01.160 have a large number.
NOTE Confidence: 0.681030575714286
00:22:01.160 --> 00:22:02.848 As you can see,
NOTE Confidence: 0.681030575714286
00:22:02.848 --> 00:22:05.920 we have 99 long COVID in purple
NOTE Confidence: 0.681030575714286
00:22:05.920 --> 00:22:07.840 at the convalescent control.
NOTE Confidence: 0.964856972142857
00:22:07.840 --> 00:22:10.409 These are the people who got infected
NOTE Confidence: 0.964856972142857
00:22:10.409 --> 00:22:13.096 around the same time but completely
NOTE Confidence: 0.964856972142857
00:22:13.096 --> 00:22:15.600 recovered 39 people and healthy Control,
NOTE Confidence: 0.964856972142857
00:22:15.600 --> 00:22:19.000 these are 39 people who never had COVID.
NOTE Confidence: 0.964856972142857
00:22:19.000 --> 00:22:21.492 And then we also had a healthcare
NOTE Confidence: 0.964856972142857

00:22:21.492 --> 00:22:23.933 workers who provided samples for the
NOTE Confidence: 0.964856972142857

00:22:23.933 --> 00:22:26.108 antibody analysis and we conducted
NOTE Confidence: 0.964856972142857

00:22:26.108 --> 00:22:27.840 multiple immune phenotyping.
NOTE Confidence: 0.964856972142857

00:22:27.840 --> 00:22:30.633 One is a flow cytometry to look
NOTE Confidence: 0.964856972142857

00:22:30.633 --> 00:22:33.280 at cell cellular factors and
NOTE Confidence: 0.964856972142857

00:22:33.280 --> 00:22:36.000 composition and activation phenotype.
NOTE Confidence: 0.964856972142857

00:22:36.000 --> 00:22:39.010 We also did human exoprotium
NOTE Confidence: 0.964856972142857

00:22:39.010 --> 00:22:39.980 antibody analysis.
NOTE Confidence: 0.964856972142857

00:22:39.980 --> 00:22:43.594 This is also known as a rapid
NOTE Confidence: 0.964856972142857

00:22:43.594 --> 00:22:46.062 extracellular antigen profiling or
NOTE Confidence: 0.964856972142857

00:22:46.062 --> 00:22:48.876 REAP technology developed by Doctor
NOTE Confidence: 0.964856972142857

00:22:48.876 --> 00:22:53.200 Ring and SARS COV 2 antibody profiling.
NOTE Confidence: 0.964856972142857

00:22:53.200 --> 00:22:57.155 This is looking at virus specific antibodies.
NOTE Confidence: 0.964856972142857

00:22:57.160 --> 00:23:00.037 We also did a peptide display library.
NOTE Confidence: 0.964856972142857

00:23:00.040 --> 00:23:02.572 This is really looking at antibodies
NOTE Confidence: 0.964856972142857

00:23:02.572 --> 00:23:05.532 against virtually any epitope that we we

NOTE Confidence: 0.964856972142857
00:23:05.532 --> 00:23:07.556 were interested in plasma proteomics,
NOTE Confidence: 0.964856972142857
00:23:07.556 --> 00:23:10.202 so we'll get cytokines and hormones and
NOTE Confidence: 0.964856972142857
00:23:10.202 --> 00:23:12.680 then of course EMR and symptoms survey,
NOTE Confidence: 0.964856972142857
00:23:12.680 --> 00:23:16.238 we wanted to correlate people's symptoms
NOTE Confidence: 0.964856972142857
00:23:16.238 --> 00:23:19.130 to different immune features and
NOTE Confidence: 0.964856972142857
00:23:19.130 --> 00:23:22.360 that's how we did the study and this
NOTE Confidence: 0.964856972142857
00:23:22.360 --> 00:23:26.899 is in met archive, not by archive, OK.
NOTE Confidence: 0.964856972142857
00:23:26.899 --> 00:23:29.893 So the demographic of the population
NOTE Confidence: 0.964856972142857
00:23:29.893 --> 00:23:33.054 were similar between the long COVID
NOTE Confidence: 0.964856972142857
00:23:33.054 --> 00:23:35.158 and the convalescent controls.
NOTE Confidence: 0.964856972142857
00:23:35.160 --> 00:23:40.128 Median age was 45.8 versus 41.4
NOTE Confidence: 0.964856972142857
00:23:40.128 --> 00:23:41.760 female dominant.
NOTE Confidence: 0.964856972142857
00:23:41.760 --> 00:23:43.680 This is typical of long COVID,
NOTE Confidence: 0.964856972142857
00:23:43.680 --> 00:23:46.008 there are a lot more female
NOTE Confidence: 0.964856972142857
00:23:46.008 --> 00:23:47.560 patients than male patients.
NOTE Confidence: 0.964856972142857

00:23:47.560 --> 00:23:50.800 And then we have also most of the
NOTE Confidence: 0.964856972142857

00:23:50.800 --> 00:23:53.230 people were not hospitalized and then
NOTE Confidence: 0.964856972142857

00:23:53.230 --> 00:23:55.240 there were some that were hospitalized.
NOTE Confidence: 0.964856972142857

00:23:55.240 --> 00:23:57.772 But there was no significant difference
NOTE Confidence: 0.964856972142857

00:23:57.772 --> 00:24:00.180 between these groups and days from
NOTE Confidence: 0.964856972142857

00:24:00.180 --> 00:24:03.600 acute COVID as I mentioned the
NOTE Confidence: 0.964856972142857

00:24:03.600 --> 00:24:06.995 they're about at least a year out
NOTE Confidence: 0.964856972142857

00:24:06.995 --> 00:24:09.690 from their infection around the year
NOTE Confidence: 0.964856972142857

00:24:09.690 --> 00:24:12.650 to 18 months or so mean both the
NOTE Confidence: 0.964856972142857

00:24:12.650 --> 00:24:14.400 convalescent and long COVID groups,
NOTE Confidence: 0.834844043636364

00:24:17.280 --> 00:24:18.652 so long COVID patients.
NOTE Confidence: 0.834844043636364

00:24:18.652 --> 00:24:21.360 So we did all these different analysis.
NOTE Confidence: 0.834844043636364

00:24:21.360 --> 00:24:23.166 I'm just going to highlight some
NOTE Confidence: 0.834844043636364

00:24:23.166 --> 00:24:25.279 of the key things that we found.
NOTE Confidence: 0.834844043636364

00:24:25.280 --> 00:24:27.398 So again, just to Orient you,
NOTE Confidence: 0.834844043636364

00:24:27.400 --> 00:24:29.340 the healthy controls are

NOTE Confidence: 0.834844043636364
00:24:29.340 --> 00:24:31.280 already always in orange,
NOTE Confidence: 0.834844043636364
00:24:31.280 --> 00:24:34.465 the convalescent controls are in yellow and
NOTE Confidence: 0.834844043636364
00:24:34.465 --> 00:24:37.998 long long COVID participants are in purple.
NOTE Confidence: 0.834844043636364
00:24:38.000 --> 00:24:40.128 So of all the features that we
NOTE Confidence: 0.834844043636364
00:24:40.128 --> 00:24:42.000 looked at by flow cytometry,
NOTE Confidence: 0.834844043636364
00:24:42.000 --> 00:24:45.360 what we see is an elevated level
NOTE Confidence: 0.834844043636364
00:24:45.360 --> 00:24:48.478 of non conventional monocytes.
NOTE Confidence: 0.834844043636364
00:24:48.480 --> 00:24:48.970 These are.
NOTE Confidence: 0.834844043636364
00:24:48.970 --> 00:24:50.930 So I don't want to get into the
NOTE Confidence: 0.834844043636364
00:24:50.990 --> 00:24:52.800 details about these cell types,
NOTE Confidence: 0.834844043636364
00:24:52.800 --> 00:24:54.720 but essentially these are the cells that you,
NOTE Confidence: 0.834844043636364
00:24:54.720 --> 00:24:58.320 you know often find during a chronic viral
NOTE Confidence: 0.834844043636364
00:24:58.320 --> 00:25:01.397 infection and they seem to be activated.
NOTE Confidence: 0.834844043636364
00:25:01.400 --> 00:25:04.064 We also see reduction in these
NOTE Confidence: 0.834844043636364
00:25:04.064 --> 00:25:06.200 conventional dendritic cell type one,
NOTE Confidence: 0.834844043636364

00:25:06.200 --> 00:25:08.195 these are the cells that are known
NOTE Confidence: 0.834844043636364

00:25:08.195 --> 00:25:10.915 to stimulate antiviral T cells and
NOTE Confidence: 0.834844043636364

00:25:10.915 --> 00:25:13.920 they're kind of reducing the blood.
NOTE Confidence: 0.834844043636364

00:25:13.920 --> 00:25:16.758 We also see activated B cells,
NOTE Confidence: 0.834844043636364

00:25:16.760 --> 00:25:19.700 B cells are the cells that make
NOTE Confidence: 0.834844043636364

00:25:19.700 --> 00:25:22.700 antibodies and they they have this
NOTE Confidence: 0.834844043636364

00:25:22.700 --> 00:25:24.248 interesting activation phenotype
NOTE Confidence: 0.834844043636364

00:25:24.248 --> 00:25:27.720 in the long COVID patients and we
NOTE Confidence: 0.834844043636364

00:25:27.720 --> 00:25:30.120 also see double negative B cells.
NOTE Confidence: 0.834844043636364

00:25:30.120 --> 00:25:33.270 These are B cells that are thought to be
NOTE Confidence: 0.834844043636364

00:25:33.270 --> 00:25:35.046 involved in extra follicular activation.
NOTE Confidence: 0.834844043636364

00:25:35.046 --> 00:25:37.056 It's just too technical to
NOTE Confidence: 0.834844043636364

00:25:37.056 --> 00:25:39.118 get into what what they are.
NOTE Confidence: 0.834844043636364

00:25:39.120 --> 00:25:41.598 But essentially this was what we saw,
NOTE Confidence: 0.834844043636364

00:25:41.600 --> 00:25:45.198 what was these cells were also elevated
NOTE Confidence: 0.834844043636364

00:25:45.200 --> 00:25:48.116 and then when we looked at the T cells,

NOTE Confidence: 0.834844043636364
00:25:48.120 --> 00:25:50.824 so T cells are the ones that's that
NOTE Confidence: 0.834844043636364
00:25:50.824 --> 00:25:53.246 can detect virus infected cells and
NOTE Confidence: 0.834844043636364
00:25:53.246 --> 00:25:55.340 kill them and some of the other
NOTE Confidence: 0.834844043636364
00:25:55.340 --> 00:25:57.260 T cells are known as helper cells
NOTE Confidence: 0.834844043636364
00:25:57.260 --> 00:26:00.026 of CD4T cells or the helper cells
NOTE Confidence: 0.834844043636364
00:26:00.026 --> 00:26:02.040 that kind of remember different
NOTE Confidence: 0.834844043636364
00:26:02.040 --> 00:26:04.040 viruses and and stimulate it.
NOTE Confidence: 0.834844043636364
00:26:04.040 --> 00:26:06.296 They're like the the central control
NOTE Confidence: 0.834844043636364
00:26:06.296 --> 00:26:08.569 commander of the immune system and
NOTE Confidence: 0.834844043636364
00:26:08.569 --> 00:26:10.675 they play very important role in
NOTE Confidence: 0.834844043636364
00:26:10.675 --> 00:26:12.759 every aspect of the immune system.
NOTE Confidence: 0.834844043636364
00:26:12.760 --> 00:26:15.544 What we saw was that in a long
NOTE Confidence: 0.834844043636364
00:26:15.544 --> 00:26:16.240 COVID patients,
NOTE Confidence: 0.834844043636364
00:26:16.240 --> 00:26:19.076 what we call the the central memory
NOTE Confidence: 0.834844043636364
00:26:19.076 --> 00:26:22.184 cell population of T cells were
NOTE Confidence: 0.834844043636364

00:26:22.184 --> 00:26:25.094 reduced in circulation whereas the
NOTE Confidence: 0.834844043636364

00:26:25.094 --> 00:26:27.416 exhausted T cells were elevated both
NOTE Confidence: 0.834844043636364

00:26:27.416 --> 00:26:30.235 the CD four and the CD eight types.
NOTE Confidence: 0.834844043636364

00:26:30.240 --> 00:26:33.192 So exhausted T cells are interesting
NOTE Confidence: 0.834844043636364

00:26:33.192 --> 00:26:36.668 because they are only present when T
NOTE Confidence: 0.834844043636364

00:26:36.668 --> 00:26:39.898 cells detect the antigen over and over.
NOTE Confidence: 0.834844043636364

00:26:39.898 --> 00:26:41.236 So for instance,
NOTE Confidence: 0.834844043636364

00:26:41.240 --> 00:26:43.346 you find these cells during a
NOTE Confidence: 0.834844043636364

00:26:43.346 --> 00:26:44.399 chronic viral infection.
NOTE Confidence: 0.834844043636364

00:26:44.400 --> 00:26:45.960 You find these cells in a,
NOTE Confidence: 0.834844043636364

00:26:45.960 --> 00:26:47.628 in a tumor setting,
NOTE Confidence: 0.834844043636364

00:26:47.628 --> 00:26:51.080 people who have tumors that can't be removed.
NOTE Confidence: 0.834844043636364

00:26:51.080 --> 00:26:53.480 So the T cells that are specific to
NOTE Confidence: 0.834844043636364

00:26:53.480 --> 00:26:55.499 that specific antigen become exhausted
NOTE Confidence: 0.834844043636364

00:26:55.499 --> 00:26:58.199 because they've been stimulated too long.
NOTE Confidence: 0.834844043636364

00:26:58.200 --> 00:26:59.664 So that's elevated.

NOTE Confidence: 0.834844043636364
00:26:59.664 --> 00:27:00.640 That's interesting.
NOTE Confidence: 0.834844043636364
00:27:00.640 --> 00:27:02.632 We don't know what these T
NOTE Confidence: 0.834844043636364
00:27:02.632 --> 00:27:03.960 cells are actually detecting,
NOTE Confidence: 0.834844043636364
00:27:03.960 --> 00:27:07.216 but it means there's some kind of chronic
NOTE Confidence: 0.834844043636364
00:27:07.216 --> 00:27:09.998 antigen that's stimulating this response.
NOTE Confidence: 0.834844043636364
00:27:10.000 --> 00:27:12.510 We also found that cytokines
NOTE Confidence: 0.834844043636364
00:27:12.510 --> 00:27:15.020 that are secreted by these
NOTE Confidence: 0.834844043636364
00:27:15.120 --> 00:27:17.680 helper T cells are elevated.
NOTE Confidence: 0.834844043636364
00:27:17.680 --> 00:27:19.990 So cytokines are like the languages
NOTE Confidence: 0.834844043636364
00:27:19.990 --> 00:27:23.159 that the T cells speak to communicate,
NOTE Confidence: 0.834844043636364
00:27:23.160 --> 00:27:24.186 you know,
NOTE Confidence: 0.834844043636364
00:27:24.186 --> 00:27:26.968 different signals to other other leukocytes
NOTE Confidence: 0.834844043636364
00:27:26.968 --> 00:27:29.516 or other cell types in the body.
NOTE Confidence: 0.834844043636364
00:27:29.520 --> 00:27:30.609 They're very important.
NOTE Confidence: 0.834844043636364
00:27:30.609 --> 00:27:33.150 But what we're seeing here is that
NOTE Confidence: 0.834844043636364

00:27:33.216 --> 00:27:36.022 these types of cytokines Interleukin 2,
NOTE Confidence: 0.834844043636364

00:27:36.022 --> 00:27:39.942 four and six are elevated in the
NOTE Confidence: 0.834844043636364

00:27:39.942 --> 00:27:41.597 CD 4T cells of people,
NOTE Confidence: 0.904270678571429

00:27:41.600 --> 00:27:44.715 long COVID patients but not the others.
NOTE Confidence: 0.904270678571429

00:27:44.720 --> 00:27:46.372 So the convalescent controls,
NOTE Confidence: 0.904270678571429

00:27:46.372 --> 00:27:48.437 they were infected but recover,
NOTE Confidence: 0.904270678571429

00:27:48.440 --> 00:27:51.280 they don't have these features.
NOTE Confidence: 0.904270678571429

00:27:51.280 --> 00:27:52.757 And if you look at there are
NOTE Confidence: 0.904270678571429

00:27:52.757 --> 00:27:54.360 some T cells that secrete both
NOTE Confidence: 0.904270678571429

00:27:54.360 --> 00:27:55.875 Illinois four and Illinois 6.
NOTE Confidence: 0.904270678571429

00:27:55.880 --> 00:27:58.712 These double positive cells are pretty
NOTE Confidence: 0.904270678571429

00:27:58.712 --> 00:28:02.600 much only found in people with long COVID.
NOTE Confidence: 0.904270678571429

00:28:02.600 --> 00:28:03.872 So that's very interesting.
NOTE Confidence: 0.904270678571429

00:28:03.872 --> 00:28:06.164 We don't know what they're doing but
NOTE Confidence: 0.904270678571429

00:28:06.164 --> 00:28:07.799 they do correlate with something.
NOTE Confidence: 0.904270678571429

00:28:07.800 --> 00:28:10.000 I'm going to tell you what that is soon.

NOTE Confidence: 0.901164026363636
00:28:12.680 --> 00:28:15.949 The other features we looked at are
NOTE Confidence: 0.901164026363636
00:28:15.949 --> 00:28:19.244 antibodies against the virus and what we saw
NOTE Confidence: 0.901164026363636
00:28:19.244 --> 00:28:22.083 was that the long COVID patients have so,
NOTE Confidence: 0.901164026363636
00:28:22.083 --> 00:28:24.624 so we controlled for the number of
NOTE Confidence: 0.901164026363636
00:28:24.624 --> 00:28:27.017 vaccinations because of course the the more
NOTE Confidence: 0.901164026363636
00:28:27.017 --> 00:28:29.104 vaccines you receive the more antibody
NOTE Confidence: 0.901164026363636
00:28:29.104 --> 00:28:31.636 you generate against the spike protein.
NOTE Confidence: 0.901164026363636
00:28:31.640 --> 00:28:34.106 So we only took people who had two doses
NOTE Confidence: 0.901164026363636
00:28:34.106 --> 00:28:36.748 of vaccines and then asked what is
NOTE Confidence: 0.901164026363636
00:28:36.748 --> 00:28:38.919 their antibody level against the spike
NOTE Confidence: 0.901164026363636
00:28:38.920 --> 00:28:41.413 or the S1 region of the spike or the
NOTE Confidence: 0.901164026363636
00:28:41.413 --> 00:28:43.480 receptor binding domain of the spike.
NOTE Confidence: 0.901164026363636
00:28:43.480 --> 00:28:46.735 So the purple again the long COVID
NOTE Confidence: 0.901164026363636
00:28:46.735 --> 00:28:48.640 patients with two doses of vaccines,
NOTE Confidence: 0.901164026363636
00:28:48.640 --> 00:28:51.587 they had higher levels of antibodies and
NOTE Confidence: 0.901164026363636

00:28:51.587 --> 00:28:54.633 that that was really consistent among
NOTE Confidence: 0.901164026363636

00:28:54.633 --> 00:29:00.040 these participants against SS1 and RBD.
NOTE Confidence: 0.901164026363636

00:29:00.040 --> 00:29:03.990 And so this is interesting again it
NOTE Confidence: 0.901164026363636

00:29:03.990 --> 00:29:07.107 suggests that these B cells may be
NOTE Confidence: 0.901164026363636

00:29:07.107 --> 00:29:09.111 undergoing maturation process because
NOTE Confidence: 0.901164026363636

00:29:09.111 --> 00:29:12.433 they're seeing the antigen over and over.
NOTE Confidence: 0.901164026363636

00:29:12.433 --> 00:29:14.077 That's just a speculation.
NOTE Confidence: 0.901164026363636

00:29:14.080 --> 00:29:15.613 We don't know why they have higher
NOTE Confidence: 0.901164026363636

00:29:15.613 --> 00:29:17.197 levels but that could be one reason.
NOTE Confidence: 0.96612186

00:29:19.680 --> 00:29:21.920 The other thing that we looked at,
NOTE Confidence: 0.96612186

00:29:21.920 --> 00:29:24.342 I mean we we looked at actually
NOTE Confidence: 0.96612186

00:29:24.342 --> 00:29:26.215 thousands of factors from the
NOTE Confidence: 0.96612186

00:29:26.215 --> 00:29:28.512 blood of these participants and we
NOTE Confidence: 0.96612186

00:29:28.512 --> 00:29:30.864 asked what are the features that
NOTE Confidence: 0.96612186

00:29:30.864 --> 00:29:32.547 are most significantly different
NOTE Confidence: 0.96612186

00:29:32.547 --> 00:29:34.712 between people with long COVID

NOTE Confidence: 0.96612186

00:29:34.712 --> 00:29:36.920 and people without long COVID.

NOTE Confidence: 0.96612186

00:29:36.920 --> 00:29:39.360 And the number one factor,

NOTE Confidence: 0.96612186

00:29:39.360 --> 00:29:42.276 the most significant was the cortisol,

NOTE Confidence: 0.96612186

00:29:42.280 --> 00:29:43.705 plasma cortisol level.

NOTE Confidence: 0.96612186

00:29:43.705 --> 00:29:46.456 Now we didn't do a cortisol

NOTE Confidence: 0.96612186

00:29:46.456 --> 00:29:47.960 measurement throughout the day,

NOTE Confidence: 0.96612186

00:29:47.960 --> 00:29:49.976 which is what we're planning to

NOTE Confidence: 0.96612186

00:29:49.976 --> 00:29:53.297 do to find out if their pattern of

NOTE Confidence: 0.96612186

00:29:53.297 --> 00:29:55.197 cortisol secretion is different.

NOTE Confidence: 0.96612186

00:29:55.200 --> 00:29:58.184 But at the time when we collected the

NOTE Confidence: 0.96612186

00:29:58.184 --> 00:30:00.756 data most participants were collected,

NOTE Confidence: 0.96612186

00:30:00.756 --> 00:30:02.736 their blood was collected a

NOTE Confidence: 0.96612186

00:30:02.736 --> 00:30:04.640 similar time during the day.

NOTE Confidence: 0.96612186

00:30:04.640 --> 00:30:07.112 So let me go to that So the

NOTE Confidence: 0.96612186

00:30:07.112 --> 00:30:09.240 collection time for healthy Control,

NOTE Confidence: 0.96612186

00:30:09.240 --> 00:30:12.467 the Calm Blessing control or the long
NOTE Confidence: 0.96612186

00:30:12.467 --> 00:30:15.420 haulers were about similar time from the.
NOTE Confidence: 0.96612186

00:30:15.420 --> 00:30:15.920 So Kiko,
NOTE Confidence: 0.854755192222222

00:30:16.560 --> 00:30:19.332 let me let me ask you this just because
NOTE Confidence: 0.854755192222222

00:30:19.332 --> 00:30:22.196 you've got a lot of good amazing stuff here.
NOTE Confidence: 0.854755192222222

00:30:22.200 --> 00:30:25.493 So just because I'm thinking you
NOTE Confidence: 0.854755192222222

00:30:25.493 --> 00:30:27.824 know you've got it's such good detail
NOTE Confidence: 0.854755192222222

00:30:27.824 --> 00:30:30.690 but a lot of people will like I I
NOTE Confidence: 0.854755192222222

00:30:30.690 --> 00:30:32.650 think what we want them to take home
NOTE Confidence: 0.854755192222222

00:30:32.717 --> 00:30:35.140 from this is that you've got it what
NOTE Confidence: 0.854755192222222

00:30:35.140 --> 00:30:37.210 you your approach is let's measure
NOTE Confidence: 0.854755192222222

00:30:37.283 --> 00:30:39.239 thousands of different things,
NOTE Confidence: 0.854755192222222

00:30:39.240 --> 00:30:40.560 multiple different domains.
NOTE Confidence: 0.854755192222222

00:30:40.560 --> 00:30:42.600 I mean it's just for people listening.
NOTE Confidence: 0.854755192222222

00:30:42.600 --> 00:30:44.456 I mean look Akiko as you can tell
NOTE Confidence: 0.854755192222222

00:30:44.456 --> 00:30:46.519 is like at the top of the field and

NOTE Confidence: 0.854755192222222
00:30:46.520 --> 00:30:48.824 and you know and there are others of
NOTE Confidence: 0.854755192222222
00:30:48.824 --> 00:30:50.665 course who are thinking hard about
NOTE Confidence: 0.854755192222222
00:30:50.665 --> 00:30:52.890 this stuff but one of the central
NOTE Confidence: 0.854755192222222
00:30:52.890 --> 00:30:55.040 messages from the study was that
NOTE Confidence: 0.854755192222222
00:30:55.040 --> 00:30:56.840 that there was something there.
NOTE Confidence: 0.854755192222222
00:30:56.840 --> 00:30:58.886 So all these people generally had
NOTE Confidence: 0.854755192222222
00:30:58.886 --> 00:31:01.484 you know lots of other tests and I'm
NOTE Confidence: 0.854755192222222
00:31:01.484 --> 00:31:03.100 seeing in the and I I'm just going
NOTE Confidence: 0.854755192222222
00:31:03.153 --> 00:31:04.887 saying this because we're also getting
NOTE Confidence: 0.854755192222222
00:31:04.887 --> 00:31:06.717 questions that I want to be able to
NOTE Confidence: 0.854755192222222
00:31:06.720 --> 00:31:08.344 to get to but people are getting
NOTE Confidence: 0.854755192222222
00:31:08.344 --> 00:31:10.071 lots of tests we're all come back
NOTE Confidence: 0.854755192222222
00:31:10.071 --> 00:31:12.740 to normal And then with this vast
NOTE Confidence: 0.854755192222222
00:31:12.740 --> 00:31:16.443 array of testing many of it and very
NOTE Confidence: 0.854755192222222
00:31:16.443 --> 00:31:18.160 different you know kinds of things.
NOTE Confidence: 0.854755192222222

00:31:18.160 --> 00:31:19.445 Some looking for substances produced
NOTE Confidence: 0.854755192222222

00:31:19.445 --> 00:31:20.473 by the immune system.
NOTE Confidence: 0.854755192222222

00:31:20.480 --> 00:31:22.960 Some persons by antibody proteins
NOTE Confidence: 0.854755192222222

00:31:22.960 --> 00:31:24.672 something looking at evidence
NOTE Confidence: 0.854755192222222

00:31:24.672 --> 00:31:27.240 reactivation all this kind of stuff
NOTE Confidence: 0.854755192222222

00:31:27.240 --> 00:31:29.184 that that people who and this is just
NOTE Confidence: 0.854755192222222

00:31:29.184 --> 00:31:31.544 a long COVID we didn't have a vaccine
NOTE Confidence: 0.854755192222222

00:31:31.544 --> 00:31:33.472 injured that we're going to we're
NOTE Confidence: 0.854755192222222

00:31:33.472 --> 00:31:35.102 hopefully develop cohorts like that
NOTE Confidence: 0.854755192222222

00:31:35.102 --> 00:31:36.872 but people are different we're different.
NOTE Confidence: 0.854755192222222

00:31:36.872 --> 00:31:39.287 I mean and and I think that one of
NOTE Confidence: 0.854755192222222

00:31:39.287 --> 00:31:40.841 the central things I've been telling
NOTE Confidence: 0.854755192222222

00:31:40.841 --> 00:31:42.765 people is you know this is evidence
NOTE Confidence: 0.854755192222222

00:31:42.765 --> 00:31:44.714 that what people are saying I don't
NOTE Confidence: 0.854755192222222

00:31:44.714 --> 00:31:46.422 feel right and then people are doing
NOTE Confidence: 0.854755192222222

00:31:46.422 --> 00:31:48.758 a bunch of tests and they're saying I

NOTE Confidence: 0.854755192222222
00:31:48.758 --> 00:31:50.942 can't find anything wrong with you.
NOTE Confidence: 0.854755192222222
00:31:50.942 --> 00:31:53.000 Well, maybe that's not me,
NOTE Confidence: 0.854755192222222
00:31:53.000 --> 00:31:54.600 the person who's telling you
NOTE Confidence: 0.854755192222222
00:31:54.600 --> 00:31:55.240 something's wrong.
NOTE Confidence: 0.854755192222222
00:31:55.240 --> 00:31:57.480 Maybe it's the tests that you know,
NOTE Confidence: 0.854755192222222
00:31:57.480 --> 00:32:00.171 and we don't yet have the right tests that
NOTE Confidence: 0.854755192222222
00:32:00.171 --> 00:32:02.756 are detecting what it is in your body.
NOTE Confidence: 0.854755192222222
00:32:02.760 --> 00:32:04.412 That's not going right.
NOTE Confidence: 0.854755192222222
00:32:04.412 --> 00:32:07.799 At least it's different than it was before.
NOTE Confidence: 0.854755192222222
00:32:07.800 --> 00:32:08.976 That's causing you to feel a whole
NOTE Confidence: 0.854755192222222
00:32:08.976 --> 00:32:09.480 bunch of symptoms.
NOTE Confidence: 0.854755192222222
00:32:09.480 --> 00:32:11.055 And one of the things that you
NOTE Confidence: 0.854755192222222
00:32:11.055 --> 00:32:12.448 think about listen is, you know,
NOTE Confidence: 0.854755192222222
00:32:12.448 --> 00:32:14.484 with more than 600 people in listen
NOTE Confidence: 0.854755192222222
00:32:14.484 --> 00:32:16.039 and people haven't filled out,
NOTE Confidence: 0.854755192222222

00:32:16.040 --> 00:32:18.382 a lot of these profiles is that
NOTE Confidence: 0.854755192222222

00:32:18.382 --> 00:32:19.837 people are are severely affected.
NOTE Confidence: 0.854755192222222

00:32:19.840 --> 00:32:20.650 So you know,
NOTE Confidence: 0.854755192222222

00:32:20.650 --> 00:32:22.000 that remember that scale that
NOTE Confidence: 0.854755192222222

00:32:22.000 --> 00:32:23.437 was like was zero to 100.
NOTE Confidence: 0.854755192222222

00:32:23.440 --> 00:32:25.254 Like if you go out to the, you know,
NOTE Confidence: 0.854755192222222

00:32:25.254 --> 00:32:26.789 the United States general population
NOTE Confidence: 0.854755192222222

00:32:26.789 --> 00:32:28.879 for the age group that we've got,
NOTE Confidence: 0.854755192222222

00:32:28.880 --> 00:32:29.340 you know,
NOTE Confidence: 0.854755192222222

00:32:29.340 --> 00:32:30.720 people aren't perfect health or their,
NOTE Confidence: 0.854755192222222

00:32:30.720 --> 00:32:32.880 their numbers are something like 84 or 85.
NOTE Confidence: 0.854755192222222

00:32:32.880 --> 00:32:34.694 Something like that is a that's the
NOTE Confidence: 0.854755192222222

00:32:34.694 --> 00:32:35.936 average score that people will say
NOTE Confidence: 0.854755192222222

00:32:35.936 --> 00:32:37.238 when you say how's your health.
NOTE Confidence: 0.854755192222222

00:32:37.240 --> 00:32:41.202 And in this group it's 5050 and
NOTE Confidence: 0.854755192222222

00:32:41.202 --> 00:32:42.920 and many people were down.

NOTE Confidence: 0.854755192222222
00:32:42.920 --> 00:32:43.977 And I'm just telling you what you
NOTE Confidence: 0.854755192222222
00:32:43.977 --> 00:32:45.640 already know, 'cause you filled it out.
NOTE Confidence: 0.854755192222222
00:32:45.640 --> 00:32:47.656 Some people are down 30 and and
NOTE Confidence: 0.854755192222222
00:32:47.656 --> 00:32:48.520 and even lower
NOTE Confidence: 0.829325754666667
00:32:48.520 --> 00:32:49.678 and showing that,
NOTE Confidence: 0.829325754666667
00:32:49.678 --> 00:32:51.994 you know people are severely affected
NOTE Confidence: 0.829325754666667
00:32:51.994 --> 00:32:54.480 and lots of people are representing
NOTE Confidence: 0.829325754666667
00:32:54.480 --> 00:32:57.078 their previous lives as very healthy.
NOTE Confidence: 0.829325754666667
00:32:57.080 --> 00:32:58.120 I mean, and many people,
NOTE Confidence: 0.829325754666667
00:32:58.120 --> 00:32:59.639 marathon runners doing all sorts of things.
NOTE Confidence: 0.829325754666667
00:32:59.640 --> 00:33:01.860 So what the most important thing
NOTE Confidence: 0.829325754666667
00:33:01.860 --> 00:33:04.485 I think what what what Akiko is
NOTE Confidence: 0.829325754666667
00:33:04.485 --> 00:33:06.572 showing is that we actually she in
NOTE Confidence: 0.829325754666667
00:33:06.572 --> 00:33:08.392 her lab and all the people working
NOTE Confidence: 0.829325754666667
00:33:08.392 --> 00:33:10.525 with her I'll say I like to say we
NOTE Confidence: 0.829325754666667

00:33:10.581 --> 00:33:12.352 but really it's it's her and her
NOTE Confidence: 0.829325754666667

00:33:12.352 --> 00:33:14.875 lab you know are detecting very
NOTE Confidence: 0.829325754666667

00:33:14.875 --> 00:33:17.800 important changes that have occurred.
NOTE Confidence: 0.829325754666667

00:33:17.800 --> 00:33:19.295 We believe changes is cross-sectional
NOTE Confidence: 0.829325754666667

00:33:19.295 --> 00:33:21.515 but that you know that that that
NOTE Confidence: 0.829325754666667

00:33:21.515 --> 00:33:23.185 differentiate people who are reporting
NOTE Confidence: 0.829325754666667

00:33:23.185 --> 00:33:25.215 all these symptoms from people who
NOTE Confidence: 0.829325754666667

00:33:25.215 --> 00:33:26.835 aren't reporting all these symptoms.
NOTE Confidence: 0.829325754666667

00:33:26.840 --> 00:33:28.016 And it again, we think it's the
NOTE Confidence: 0.829325754666667

00:33:28.016 --> 00:33:29.199 first half of the first inning,
NOTE Confidence: 0.829325754666667

00:33:29.200 --> 00:33:30.975 it's just the beginning of
NOTE Confidence: 0.829325754666667

00:33:30.975 --> 00:33:32.395 unpacking all of this.
NOTE Confidence: 0.829325754666667

00:33:32.400 --> 00:33:35.240 But but like when you're seeing all this,
NOTE Confidence: 0.829325754666667

00:33:35.240 --> 00:33:36.053 these you know,
NOTE Confidence: 0.829325754666667

00:33:36.053 --> 00:33:37.679 numbers I know can be overwhelming
NOTE Confidence: 0.829325754666667

00:33:37.679 --> 00:33:38.719 amount of information.

NOTE Confidence: 0.829325754666667
00:33:38.720 --> 00:33:41.816 But I think we wanted to give you a sense of
NOTE Confidence: 0.829325754666667
00:33:41.816 --> 00:33:44.040 the substance of the work that's going on.
NOTE Confidence: 0.829325754666667
00:33:44.040 --> 00:33:46.680 But maybe I'm just thinking,
NOTE Confidence: 0.829325754666667
00:33:46.680 --> 00:33:48.040 Kiko, it's, you know,
NOTE Confidence: 0.829325754666667
00:33:48.040 --> 00:33:49.400 we got 20 minutes,
NOTE Confidence: 0.829325754666667
00:33:49.400 --> 00:33:50.420 maybe we can just start taking
NOTE Confidence: 0.829325754666667
00:33:50.420 --> 00:33:50.760 some questions.
NOTE Confidence: 0.829325754666667
00:33:50.760 --> 00:33:52.560 And a lot of these questions by the way,
NOTE Confidence: 0.829325754666667
00:33:52.560 --> 00:33:54.200 I I I think I'm interested in hearing
NOTE Confidence: 0.829325754666667
00:33:54.200 --> 00:33:55.640 what you have to say about them
NOTE Confidence: 0.829325754666667
00:33:55.640 --> 00:33:57.224 because a lot of them are really
NOTE Confidence: 0.829325754666667
00:33:57.224 --> 00:33:58.609 tuned towards people having already
NOTE Confidence: 0.829325754666667
00:33:58.609 --> 00:34:01.200 had other tests and stuff like that.
NOTE Confidence: 0.829325754666667
00:34:01.200 --> 00:34:03.512 And and I'm just thinking you know
NOTE Confidence: 0.829325754666667
00:34:03.512 --> 00:34:05.557 for some people this might be it's
NOTE Confidence: 0.829325754666667

00:34:05.557 --> 00:34:07.453 it's great to get the high level but

NOTE Confidence: 0.829325754666667

00:34:07.453 --> 00:34:09.745 but let's maybe just get into some of

NOTE Confidence: 0.829325754666667

00:34:09.745 --> 00:34:11.000 the questions that'd be all right.

NOTE Confidence: 0.781733205384615

00:34:11.880 --> 00:34:13.236 Of course, it's fine.

NOTE Confidence: 0.781733205384615

00:34:13.236 --> 00:34:16.280 I'm sorry if I went on and on but I

NOTE Confidence: 0.812606928

00:34:16.280 --> 00:34:17.240 can listen to you forever.

NOTE Confidence: 0.812606928

00:34:17.240 --> 00:34:18.400 But also I got a lot to learn

NOTE Confidence: 0.812606928

00:34:18.400 --> 00:34:19.519 even when I'm listening to you.

NOTE Confidence: 0.812606928

00:34:19.520 --> 00:34:21.284 I'm thinking you know I need there's

NOTE Confidence: 0.812606928

00:34:21.284 --> 00:34:23.819 more I would need to learn to get up

NOTE Confidence: 0.812606928

00:34:23.819 --> 00:34:27.088 to because it's so deep and broad.

NOTE Confidence: 0.812606928

00:34:27.088 --> 00:34:28.820 But. But it should give everyone

NOTE Confidence: 0.812606928

00:34:28.820 --> 00:34:30.639 a sense of of the depth here.

NOTE Confidence: 0.812606928

00:34:30.640 --> 00:34:32.117 You know that this isn't just like

NOTE Confidence: 0.812606928

00:34:32.117 --> 00:34:33.795 one test or another test but it's

NOTE Confidence: 0.812606928

00:34:33.795 --> 00:34:35.283 like it's a depth of information

NOTE Confidence: 0.812606928

00:34:35.335 --> 00:34:36.910 which she was sort of showing you

NOTE Confidence: 0.812606928

00:34:36.910 --> 00:34:38.104 that we're looking in this way.

NOTE Confidence: 0.812606928

00:34:38.104 --> 00:34:38.476 That way.

NOTE Confidence: 0.812606928

00:34:38.480 --> 00:34:39.796 I mean, the immune system is amazing.

NOTE Confidence: 0.812606928

00:34:39.800 --> 00:34:41.508 I mean it's and the body's amazing

NOTE Confidence: 0.812606928

00:34:41.508 --> 00:34:42.923 and there's so many different

NOTE Confidence: 0.812606928

00:34:42.923 --> 00:34:44.272 ways that we can look at this

NOTE Confidence: 0.812606928

00:34:44.272 --> 00:34:45.490 that are far beyond what our

NOTE Confidence: 0.812606928

00:34:45.490 --> 00:34:46.715 traditional tests people have done.

NOTE Confidence: 0.812606928

00:34:46.720 --> 00:34:51.632 So maybe we can just go on one does

NOTE Confidence: 0.812606928

00:34:51.632 --> 00:34:53.264 vascular endothelial inflammation fit

NOTE Confidence: 0.812606928

00:34:53.264 --> 00:34:54.920 with hypothesis be of autoimmunity?

NOTE Confidence: 0.812606928

00:34:54.920 --> 00:34:55.760 I don't know.

NOTE Confidence: 0.812606928

00:34:55.760 --> 00:34:57.956 If you want to Give your opinion about that,

NOTE Confidence: 0.89550411

00:34:58.680 --> 00:35:00.840 yeah. It could be autoimmunity.

NOTE Confidence: 0.89550411

00:35:00.840 --> 00:35:03.762 You can imagine antibodies that are
NOTE Confidence: 0.89550411

00:35:03.762 --> 00:35:06.498 binding to the vascular endothelial
NOTE Confidence: 0.89550411

00:35:06.498 --> 00:35:08.715 cells causing some inflammation.
NOTE Confidence: 0.89550411

00:35:08.715 --> 00:35:11.240 It could be complement deposition.
NOTE Confidence: 0.89550411

00:35:11.240 --> 00:35:14.015 It could be inflammation itself
NOTE Confidence: 0.89550411

00:35:14.015 --> 00:35:16.513 that's causing vascular damage. Yeah.
NOTE Confidence: 0.89550411

00:35:16.513 --> 00:35:18.424 So there are a lot of possibilities
NOTE Confidence: 0.89550411

00:35:18.424 --> 00:35:20.677 of how vascular damage could happen,
NOTE Confidence: 0.89550411

00:35:20.680 --> 00:35:22.276 but autoimmunity is one of them.
NOTE Confidence: 0.819304809

00:35:22.680 --> 00:35:24.120 And I'm going to just pepper you with
NOTE Confidence: 0.819304809

00:35:24.120 --> 00:35:25.356 these like, I'm just going to go fast.
NOTE Confidence: 0.819304809

00:35:25.360 --> 00:35:29.116 So if you don't mind put you on the hot seat.
NOTE Confidence: 0.819304809

00:35:29.120 --> 00:35:30.720 OK If you think I'm missing anything or
NOTE Confidence: 0.819304809

00:35:30.720 --> 00:35:32.585 you think there's something else but this
NOTE Confidence: 0.819304809

00:35:32.585 --> 00:35:34.000 regarding the theory viral reservoir.
NOTE Confidence: 0.819304809

00:35:34.000 --> 00:35:36.720 I'm vaccine injured and have had my COVID

NOTE Confidence: 0.819304809

00:35:36.720 --> 00:35:38.220 antibodies checked eight weeks from injury

NOTE Confidence: 0.819304809

00:35:38.220 --> 00:35:39.920 and had never had had the infection.

NOTE Confidence: 0.819304809

00:35:39.920 --> 00:35:41.756 The nucleic capsid antibodies were found

NOTE Confidence: 0.819304809

00:35:41.756 --> 00:35:44.160 so it's the an autoimmunity for us.

NOTE Confidence: 0.819304809

00:35:44.160 --> 00:35:46.360 I had immediate reaction dizziness

NOTE Confidence: 0.819304809

00:35:46.360 --> 00:35:49.002 within minutes of the shot and then

NOTE Confidence: 0.819304809

00:35:49.002 --> 00:35:50.549 someone else that you know they were

NOTE Confidence: 0.819304809

00:35:50.549 --> 00:35:52.269 sorry to hear that and that they had

NOTE Confidence: 0.819304809

00:35:52.269 --> 00:35:53.759 both post booster and post infection.

NOTE Confidence: 0.819304809

00:35:53.760 --> 00:35:55.840 long COVID after Pfizer booster.

NOTE Confidence: 0.819304809

00:35:55.840 --> 00:35:57.065 I could barely stay in the next

NOTE Confidence: 0.819304809

00:35:57.065 --> 00:35:58.400 5 days and barely walk straight

NOTE Confidence: 0.819304809

00:35:58.400 --> 00:35:59.675 for the following two weeks.

NOTE Confidence: 0.819304809

00:35:59.680 --> 00:36:01.892 Even now almost a year later I can't

NOTE Confidence: 0.819304809

00:36:01.892 --> 00:36:03.194 stand with eyes closed might bounce off.

NOTE Confidence: 0.819304809

00:36:03.200 --> 00:36:05.020 Let me just say what I'm saying
NOTE Confidence: 0.819304809

00:36:05.020 --> 00:36:06.280 these when we're talking about these
NOTE Confidence: 0.819304809

00:36:06.280 --> 00:36:07.280 things that people are suffering,
NOTE Confidence: 0.819304809

00:36:07.280 --> 00:36:09.498 I mean, my heart hurts to hear them,
NOTE Confidence: 0.819304809

00:36:09.498 --> 00:36:10.821 but let's we'll try to go through
NOTE Confidence: 0.819304809

00:36:10.821 --> 00:36:11.360 these quickly.
NOTE Confidence: 0.819304809

00:36:11.360 --> 00:36:12.872 But I want to say to each and
NOTE Confidence: 0.819304809

00:36:12.872 --> 00:36:14.073 everyone of you that I'm sorry
NOTE Confidence: 0.819304809

00:36:14.073 --> 00:36:14.917 for what you're experiencing.
NOTE Confidence: 0.819304809

00:36:14.920 --> 00:36:15.720 We're trying to move forward.
NOTE Confidence: 0.819304809

00:36:15.720 --> 00:36:17.584 But I think this was just a question
NOTE Confidence: 0.819304809

00:36:17.584 --> 00:36:19.936 of whether or not your thoughts about
NOTE Confidence: 0.819304809

00:36:19.936 --> 00:36:21.865 vaccine injury and are we going to
NOTE Confidence: 0.819304809

00:36:21.865 --> 00:36:23.390 take the same approach to look at it
NOTE Confidence: 0.819304809

00:36:23.390 --> 00:36:24.720 or are there special features to it?
NOTE Confidence: 0.851053011538461

00:36:26.320 --> 00:36:27.472 Yeah, great question.

NOTE Confidence: 0.851053011538461

00:36:27.472 --> 00:36:30.704 So I'm sorry I didn't get into the

NOTE Confidence: 0.851053011538461

00:36:30.704 --> 00:36:32.810 vaccine injured injury hypothesis,

NOTE Confidence: 0.851053011538461

00:36:32.810 --> 00:36:36.320 but other than the viral reservoir,

NOTE Confidence: 0.851053011538461

00:36:36.320 --> 00:36:39.554 which obviously isn't part of the vaccine,

NOTE Confidence: 0.851053011538461

00:36:39.560 --> 00:36:41.960 I think all of these hypothesis

NOTE Confidence: 0.851053011538461

00:36:41.960 --> 00:36:43.560 can still hold true.

NOTE Confidence: 0.851053011538461

00:36:43.560 --> 00:36:46.647 And that's why we're very excited to

NOTE Confidence: 0.851053011538461

00:36:46.647 --> 00:36:49.399 compare vaccine injury versus long COVID.

NOTE Confidence: 0.851053011538461

00:36:49.400 --> 00:36:53.160 We now have really a lot of insights

NOTE Confidence: 0.851053011538461

00:36:53.160 --> 00:36:55.225 which I was sharing with you about

NOTE Confidence: 0.851053011538461

00:36:55.225 --> 00:36:57.199 long COVID and immune phenotype.

NOTE Confidence: 0.851053011538461

00:36:57.200 --> 00:37:00.651 But for post vaccine and it it's

NOTE Confidence: 0.851053011538461

00:37:00.651 --> 00:37:02.870 possible that these four hypothesis

NOTE Confidence: 0.851053011538461

00:37:02.870 --> 00:37:04.920 except for the viral reservoir,

NOTE Confidence: 0.851053011538461

00:37:04.920 --> 00:37:07.385 I would replace that by

NOTE Confidence: 0.851053011538461

00:37:07.385 --> 00:37:09.357 potentially the antigen reservoir.
NOTE Confidence: 0.851053011538461

00:37:09.360 --> 00:37:10.960 But we don't know,
NOTE Confidence: 0.851053011538461

00:37:10.960 --> 00:37:13.888 we don't know whether the spike itself
NOTE Confidence: 0.851053011538461

00:37:13.888 --> 00:37:16.416 can be triggering the chronic sort
NOTE Confidence: 0.851053011538461

00:37:16.416 --> 00:37:19.360 of activation of T cells and B cells.
NOTE Confidence: 0.851053011538461

00:37:19.360 --> 00:37:21.292 And that we can tell by looking
NOTE Confidence: 0.851053011538461

00:37:21.292 --> 00:37:23.160 at the flow cytometry data.
NOTE Confidence: 0.851053011538461

00:37:23.160 --> 00:37:23.722 You know,
NOTE Confidence: 0.851053011538461

00:37:23.722 --> 00:37:25.408 I was showing you the activated
NOTE Confidence: 0.851053011538461

00:37:25.408 --> 00:37:26.718 B cells and T cells.
NOTE Confidence: 0.851053011538461

00:37:26.720 --> 00:37:29.485 This is a feature that we can
NOTE Confidence: 0.851053011538461

00:37:29.485 --> 00:37:31.715 immediately sort of decipher by doing
NOTE Confidence: 0.851053011538461

00:37:31.715 --> 00:37:34.120 a similar study on vaccine injury.
NOTE Confidence: 0.851053011538461

00:37:34.120 --> 00:37:36.820 So if the injury happens within
NOTE Confidence: 0.851053011538461

00:37:36.820 --> 00:37:39.400 minutes of the first vaccine,
NOTE Confidence: 0.851053011538461

00:37:39.400 --> 00:37:42.640 though it's unlikely to be driven

NOTE Confidence: 0.851053011538461
00:37:42.640 --> 00:37:44.800 by adaptive immune response
NOTE Confidence: 0.851053011538461
00:37:44.893 --> 00:37:47.637 because adaptive immunity takes
NOTE Confidence: 0.851053011538461
00:37:47.640 --> 00:37:49.540 couple weeks to develop.
NOTE Confidence: 0.851053011538461
00:37:49.540 --> 00:37:51.915 So if it's within minutes,
NOTE Confidence: 0.851053011538461
00:37:51.920 --> 00:37:54.620 you know you may be reacting
NOTE Confidence: 0.851053011538461
00:37:54.620 --> 00:37:57.621 to components of the vaccine in
NOTE Confidence: 0.851053011538461
00:37:57.621 --> 00:38:00.387 either sort of an allergic manner
NOTE Confidence: 0.851053011538461
00:38:00.387 --> 00:38:03.401 or it's possible that you may be
NOTE Confidence: 0.851053011538461
00:38:03.401 --> 00:38:05.931 reacting to the 3D native immune
NOTE Confidence: 0.851053011538461
00:38:05.931 --> 00:38:09.130 response to the to the vaccine that
NOTE Confidence: 0.851053011538461
00:38:09.224 --> 00:38:11.750 somehow cannot be repressed later.
NOTE Confidence: 0.851053011538461
00:38:11.750 --> 00:38:14.840 So but if it's happening after
NOTE Confidence: 0.851053011538461
00:38:14.840 --> 00:38:16.400 the booster dose,
NOTE Confidence: 0.851053011538461
00:38:16.400 --> 00:38:19.228 it may be driven by adaptive immune
NOTE Confidence: 0.851053011538461
00:38:19.228 --> 00:38:21.808 responses that you generate with the
NOTE Confidence: 0.851053011538461

00:38:21.808 --> 00:38:24.676 first primary series of the the vaccine.

NOTE Confidence: 0.851053011538461

00:38:24.680 --> 00:38:26.900 So I I think we have to be open minded

NOTE Confidence: 0.851053011538461

00:38:26.958 --> 00:38:29.114 about what might be causing those and

NOTE Confidence: 0.710876949411765

00:38:30.400 --> 00:38:32.094 and that's what we're trying to give

NOTE Confidence: 0.710876949411765

00:38:32.094 --> 00:38:33.764 as many people we're we're going

NOTE Confidence: 0.710876949411765

00:38:33.764 --> 00:38:35.204 to start implementing this part

NOTE Confidence: 0.710876949411765

00:38:35.204 --> 00:38:36.668 of selecting certain people to see

NOTE Confidence: 0.710876949411765

00:38:36.668 --> 00:38:38.085 whether they'd be willing to provide

NOTE Confidence: 0.710876949411765

00:38:38.085 --> 00:38:39.583 blood and and saliva so that we

NOTE Confidence: 0.710876949411765

00:38:39.627 --> 00:38:41.034 can run some of these same tests.

NOTE Confidence: 0.710876949411765

00:38:41.040 --> 00:38:42.004 So here's another one.

NOTE Confidence: 0.710876949411765

00:38:42.004 --> 00:38:43.762 Do you think it's possible for dogs

NOTE Confidence: 0.710876949411765

00:38:43.762 --> 00:38:45.252 to recognize injured vaccine vaccine

NOTE Confidence: 0.710876949411765

00:38:45.252 --> 00:38:47.196 injury and are they recognizing virus

NOTE Confidence: 0.710876949411765

00:38:47.196 --> 00:38:49.146 or the combination of the immune

NOTE Confidence: 0.710876949411765

00:38:49.146 --> 00:38:50.716 response present with the virus?

NOTE Confidence: 0.95050206

00:38:51.800 --> 00:38:52.940 Yeah. First of all,

NOTE Confidence: 0.95050206

00:38:52.940 --> 00:38:55.559 we don't know what the dogs are detecting,

NOTE Confidence: 0.95050206

00:38:55.560 --> 00:38:57.320 the volatile organic compounds

NOTE Confidence: 0.95050206

00:38:57.320 --> 00:38:59.960 that the the dogs are sensing.

NOTE Confidence: 0.95050206

00:38:59.960 --> 00:39:02.633 We we no one has identified what that is.

NOTE Confidence: 0.95050206

00:39:02.640 --> 00:39:04.092 So we don't know.

NOTE Confidence: 0.95050206

00:39:04.092 --> 00:39:06.752 It would be pretty amazing if the

NOTE Confidence: 0.95050206

00:39:06.752 --> 00:39:09.136 dogs can recognize the vaccine

NOTE Confidence: 0.95050206

00:39:09.136 --> 00:39:12.928 injury because that would very

NOTE Confidence: 0.95050206

00:39:12.928 --> 00:39:16.308 much suggest the spike, you know,

NOTE Confidence: 0.95050206

00:39:16.308 --> 00:39:18.192 because that's sort of the common

NOTE Confidence: 0.95050206

00:39:18.192 --> 00:39:20.538 thing that they've been trained with

NOTE Confidence: 0.95050206

00:39:20.538 --> 00:39:22.194 the viral infected supernatant.

NOTE Confidence: 0.95050206

00:39:22.200 --> 00:39:24.552 Unless it's something that's induced by the

NOTE Confidence: 0.95050206

00:39:24.552 --> 00:39:26.799 infection that's also induced by the vaccine,

NOTE Confidence: 0.95050206

00:39:26.800 --> 00:39:28.720 that has nothing to do with the spike.
NOTE Confidence: 0.95050206

00:39:28.720 --> 00:39:29.863 It's possible, right?
NOTE Confidence: 0.95050206

00:39:29.863 --> 00:39:31.768 But like logically spike would
NOTE Confidence: 0.95050206

00:39:31.768 --> 00:39:33.960 be the common feature there.
NOTE Confidence: 0.95050206

00:39:33.960 --> 00:39:34.578 So yeah,
NOTE Confidence: 0.95050206

00:39:34.578 --> 00:39:37.050 it would be great to see if the
NOTE Confidence: 0.95050206

00:39:37.131 --> 00:39:39.756 dogs can recognize vaccine injury.
NOTE Confidence: 0.816401695555556

00:39:41.240 --> 00:39:43.354 I thought there was another one that
NOTE Confidence: 0.816401695555556

00:39:43.354 --> 00:39:44.840 just disappeared, but I'll go this one.
NOTE Confidence: 0.816401695555556

00:39:44.840 --> 00:39:46.440 I was told by the Long Hawk COVID
NOTE Confidence: 0.816401695555556

00:39:46.440 --> 00:39:47.961 clinic at Johns Hopkins that
NOTE Confidence: 0.816401695555556

00:39:47.961 --> 00:39:49.381 Professor Pretorius is currently
NOTE Confidence: 0.816401695555556

00:39:49.381 --> 00:39:50.959 affiliating her research with Yale.
NOTE Confidence: 0.816401695555556

00:39:50.960 --> 00:39:51.956 Is this correct? And if so,
NOTE Confidence: 0.816401695555556

00:39:51.960 --> 00:39:54.662 we'd be following up with a micro
NOTE Confidence: 0.816401695555556

00:39:54.662 --> 00:39:56.679 clotting studies in potential testing.

NOTE Confidence: 0.871527932

00:39:57.640 --> 00:39:59.326 Yeah, definitely we.

NOTE Confidence: 0.871527932

00:39:59.326 --> 00:40:03.260 We've been in touch with Doctor Pretorius

NOTE Confidence: 0.871527932

00:40:03.357 --> 00:40:06.621 Group and we are learning how to do

NOTE Confidence: 0.871527932

00:40:06.621 --> 00:40:09.796 the micro clot analysis in the lab.

NOTE Confidence: 0.871527932

00:40:09.800 --> 00:40:12.110 You know we we have very limited

NOTE Confidence: 0.871527932

00:40:12.110 --> 00:40:14.384 number of people in the lab so

NOTE Confidence: 0.871527932

00:40:14.384 --> 00:40:16.330 we can't do everything but micro

NOTE Confidence: 0.871527932

00:40:16.330 --> 00:40:18.520 clot is certainly on the radar.

NOTE Confidence: 0.871527932

00:40:18.520 --> 00:40:20.800 It's not like the central focus right now,

NOTE Confidence: 0.871527932

00:40:20.800 --> 00:40:22.625 but it's something we'd like

NOTE Confidence: 0.871527932

00:40:22.625 --> 00:40:24.119 to do in the future.

NOTE Confidence: 0.7832380175

00:40:24.560 --> 00:40:26.870 Great. I I think maybe that's just

NOTE Confidence: 0.7832380175

00:40:26.870 --> 00:40:28.799 about the theories about vaccine,

NOTE Confidence: 0.7832380175

00:40:28.800 --> 00:40:31.264 but I think that you you covered

NOTE Confidence: 0.7832380175

00:40:31.264 --> 00:40:33.032 your thoughts about the the

NOTE Confidence: 0.7832380175

00:40:33.032 --> 00:40:34.760 vaccine injured hypothesis there.
NOTE Confidence: 0.7832380175

00:40:34.760 --> 00:40:37.040 There would be maybe even more
NOTE Confidence: 0.7832380175

00:40:37.040 --> 00:40:39.133 that you thought but let me go.
NOTE Confidence: 0.7832380175

00:40:39.133 --> 00:40:40.279 Will you be testing or looking
NOTE Confidence: 0.7832380175

00:40:40.279 --> 00:40:41.957 at immune mediated small fiber
NOTE Confidence: 0.7832380175

00:40:41.957 --> 00:40:43.037 neuropathy related antibodies,
NOTE Confidence: 0.83518526875

00:40:46.040 --> 00:40:48.301 TSHDSFG, FR3, MAG, many of us with
NOTE Confidence: 0.83518526875

00:40:48.301 --> 00:40:49.675 chronic neurologic vaccine reactions
NOTE Confidence: 0.83518526875

00:40:49.675 --> 00:40:51.748 test positive for small fiber neuropathy
NOTE Confidence: 0.83518526875

00:40:51.748 --> 00:40:53.488 via skin biopsies are sometimes
NOTE Confidence: 0.83518526875

00:40:53.488 --> 00:40:54.880 positive for these antibodies,
NOTE Confidence: 0.941365920909091

00:40:56.640 --> 00:41:00.102 absolutely. So there are two technologies
NOTE Confidence: 0.941365920909091

00:41:00.102 --> 00:41:03.682 that that would cover those the REAP
NOTE Confidence: 0.941365920909091

00:41:03.682 --> 00:41:06.570 that I was telling you about which is
NOTE Confidence: 0.941365920909091

00:41:06.657 --> 00:41:09.487 an human exoprotium antibody analysis
NOTE Confidence: 0.941365920909091

00:41:09.487 --> 00:41:12.317 that Doctor Ringslam has developed

NOTE Confidence: 0.941365920909091
00:41:12.320 --> 00:41:15.476 it it covers over 6000 proteins.
NOTE Confidence: 0.941365920909091
00:41:15.480 --> 00:41:18.264 So many of these are in that at
NOTE Confidence: 0.941365920909091
00:41:18.264 --> 00:41:20.000 least fragments are in there.
NOTE Confidence: 0.941365920909091
00:41:20.000 --> 00:41:22.436 So if you are developing auto antibodies,
NOTE Confidence: 0.941365920909091
00:41:22.440 --> 00:41:25.080 we would be picking them up.
NOTE Confidence: 0.941365920909091
00:41:25.080 --> 00:41:27.600 The other strategy that I mentioned is
NOTE Confidence: 0.941365920909091
00:41:27.600 --> 00:41:30.246 the phase display library that one can
NOTE Confidence: 0.941365920909091
00:41:30.246 --> 00:41:33.198 also pick up antibody against any episode.
NOTE Confidence: 0.941365920909091
00:41:33.200 --> 00:41:36.440 So we should be able to pick those up.
NOTE Confidence: 0.941365920909091
00:41:36.440 --> 00:41:38.316 So yeah, I mean whatever it is,
NOTE Confidence: 0.941365920909091
00:41:38.320 --> 00:41:39.760 we are going to find it.
NOTE Confidence: 0.814869894210526
00:41:42.400 --> 00:41:44.304 Someone asked why was it that injured
NOTE Confidence: 0.814869894210526
00:41:44.304 --> 00:41:46.484 folks like me who clearly have SFN
NOTE Confidence: 0.814869894210526
00:41:46.484 --> 00:41:48.114 are showing negative test results.
NOTE Confidence: 0.814869894210526
00:41:48.120 --> 00:41:52.360 I think that's that's a question, Yeah.
NOTE Confidence: 0.90954192

00:41:52.480 --> 00:41:55.477 So you know if we only did 10 tests,
NOTE Confidence: 0.90954192

00:41:55.480 --> 00:41:58.315 we would also not find much in long COVID.
NOTE Confidence: 0.90954192

00:41:58.320 --> 00:42:00.000 We did thousands of,
NOTE Confidence: 0.90954192

00:42:00.000 --> 00:42:03.025 we we tested thousands of parameters and
NOTE Confidence: 0.90954192

00:42:03.025 --> 00:42:06.441 and that's why we were able to identify
NOTE Confidence: 0.90954192

00:42:06.441 --> 00:42:08.718 distinguishing features for long COVID.
NOTE Confidence: 0.90954192

00:42:08.720 --> 00:42:12.736 I I think this wide net sort of approach
NOTE Confidence: 0.90954192

00:42:12.736 --> 00:42:15.820 that we're doing will reveal something
NOTE Confidence: 0.90954192

00:42:15.909 --> 00:42:18.528 common in a post vaccine injury.
NOTE Confidence: 0.90954192

00:42:18.528 --> 00:42:22.224 So I'm hopeful that we're going to
NOTE Confidence: 0.90954192

00:42:22.224 --> 00:42:24.564 find something but you know standard
NOTE Confidence: 0.90954192

00:42:24.564 --> 00:42:26.490 lab testing and will maybe not
NOTE Confidence: 0.90954192

00:42:26.556 --> 00:42:28.460 pick up the the the key features
NOTE Confidence: 0.90954192

00:42:28.460 --> 00:42:30.079 that we are able to pick
NOTE Confidence: 0.609652482941176

00:42:31.160 --> 00:42:33.170 up and Michelle Ash is there
NOTE Confidence: 0.609652482941176

00:42:33.170 --> 00:42:35.342 specific anti star COV 2 IgG test

NOTE Confidence: 0.609652482941176
00:42:35.342 --> 00:42:36.978 that we can take that will allow
NOTE Confidence: 0.609652482941176
00:42:36.978 --> 00:42:38.420 you to capture the same kinds of
NOTE Confidence: 0.609652482941176
00:42:38.468 --> 00:42:40.183 readings many of us have had antibody
NOTE Confidence: 0.609652482941176
00:42:40.183 --> 00:42:41.480 tests but different types Quest,
NOTE Confidence: 0.609652482941176
00:42:41.480 --> 00:42:44.930 LabCorp, Academic Centers, Radiance.
NOTE Confidence: 0.609652482941176
00:42:44.930 --> 00:42:47.080 So it's harder to compare,
NOTE Confidence: 0.76727949
00:42:48.680 --> 00:42:53.960 yeah. So in in our preprint we also
NOTE Confidence: 0.76727949
00:42:53.960 --> 00:42:57.492 found that people with long COVID
NOTE Confidence: 0.76727949
00:42:57.492 --> 00:43:00.107 make antibodies to specific epitope
NOTE Confidence: 0.76727949
00:43:00.107 --> 00:43:02.912 within the spike that that is not
NOTE Confidence: 0.76727949
00:43:02.912 --> 00:43:04.752 found in the convalescent controls.
NOTE Confidence: 0.76727949
00:43:04.760 --> 00:43:07.810 So it's something that's induced
NOTE Confidence: 0.76727949
00:43:07.810 --> 00:43:10.786 by the features, viral features
NOTE Confidence: 0.76727949
00:43:10.786 --> 00:43:13.960 associated with long COVID and it's
NOTE Confidence: 0.76727949
00:43:13.960 --> 00:43:16.825 not related to vaccine status because
NOTE Confidence: 0.76727949

00:43:16.825 --> 00:43:19.915 we compared people who are vaccinated.

NOTE Confidence: 0.76727949

00:43:19.920 --> 00:43:22.462 And so it's, it's possible that the

NOTE Confidence: 0.76727949

00:43:22.462 --> 00:43:24.572 molecular kind of analysis that

NOTE Confidence: 0.76727949

00:43:24.572 --> 00:43:27.280 we're doing will pick up unique

NOTE Confidence: 0.76727949

00:43:27.280 --> 00:43:29.156 features of your antibodies.

NOTE Confidence: 0.76727949

00:43:29.160 --> 00:43:31.170 Yeah. It's not a standard sort

NOTE Confidence: 0.76727949

00:43:31.170 --> 00:43:33.160 of quest type of testing.

NOTE Confidence: 0.76727949

00:43:33.160 --> 00:43:35.435 So, yeah, I'm not sure whether they're

NOTE Confidence: 0.76727949

00:43:35.435 --> 00:43:37.599 going to pick up any difference.

NOTE Confidence: 0.827512263809524

00:43:37.640 --> 00:43:38.816 Yeah. And I think you really

NOTE Confidence: 0.827512263809524

00:43:38.816 --> 00:43:39.890 have to have the laboratory

NOTE Confidence: 0.827512263809524

00:43:39.890 --> 00:43:41.570 research test to get the kind of

NOTE Confidence: 0.827512263809524

00:43:41.570 --> 00:43:43.052 things that you're you're doing,

NOTE Confidence: 0.827512263809524

00:43:43.052 --> 00:43:45.474 which again the reason for the study,

NOTE Confidence: 0.827512263809524

00:43:45.480 --> 00:43:46.745 the those antibody tests may

NOTE Confidence: 0.827512263809524

00:43:46.745 --> 00:43:47.757 give you some information,

NOTE Confidence: 0.827512263809524
00:43:47.760 --> 00:43:50.160 but not exactly what you're been looking at.
NOTE Confidence: 0.827512263809524
00:43:50.160 --> 00:43:51.480 Someone's asking based on your test,
NOTE Confidence: 0.827512263809524
00:43:51.480 --> 00:43:52.584 So the people should be going
NOTE Confidence: 0.827512263809524
00:43:52.584 --> 00:43:53.560 out and getting cortisol tests.
NOTE Confidence: 0.966236343333333
00:43:55.160 --> 00:43:57.356 Yeah. So that's the other thing.
NOTE Confidence: 0.966236343333333
00:43:57.360 --> 00:44:00.216 I don't want to, you know,
NOTE Confidence: 0.966236343333333
00:44:00.216 --> 00:44:02.512 first we need to do more research.
NOTE Confidence: 0.966236343333333
00:44:02.520 --> 00:44:03.892 You know, it's a limited number of
NOTE Confidence: 0.966236343333333
00:44:03.892 --> 00:44:05.113 people and it's, it's one site.
NOTE Confidence: 0.966236343333333
00:44:05.113 --> 00:44:05.957 And that's why this,
NOTE Confidence: 0.966236343333333
00:44:05.960 --> 00:44:07.308 listen study is great,
NOTE Confidence: 0.966236343333333
00:44:07.308 --> 00:44:09.193 'cause we can this, you know,
NOTE Confidence: 0.966236343333333
00:44:09.193 --> 00:44:10.357 in a decentralized manner,
NOTE Confidence: 0.966236343333333
00:44:10.360 --> 00:44:13.069 we can collect samples from many of
NOTE Confidence: 0.966236343333333
00:44:13.069 --> 00:44:16.800 you and test it, the standard sort of,
NOTE Confidence: 0.966236343333333

00:44:16.800 --> 00:44:19.084 you know, clinical cortisol test.
NOTE Confidence: 0.9662363433333333

00:44:19.084 --> 00:44:21.412 We don't know whether they're going
NOTE Confidence: 0.9662363433333333

00:44:21.412 --> 00:44:23.770 to pick up the difference if you're
NOTE Confidence: 0.9662363433333333

00:44:23.770 --> 00:44:25.360 doing it for some reason anyway,
NOTE Confidence: 0.9662363433333333

00:44:25.360 --> 00:44:26.134 yeah, why not?
NOTE Confidence: 0.9662363433333333

00:44:26.134 --> 00:44:27.940 But I I cannot promise you that
NOTE Confidence: 0.9662363433333333

00:44:28.002 --> 00:44:29.718 that's going to be a sensitive
NOTE Confidence: 0.9662363433333333

00:44:29.718 --> 00:44:31.600 way of detecting the differences.
NOTE Confidence: 0.9662363433333333

00:44:31.600 --> 00:44:32.012 So again,
NOTE Confidence: 0.9662363433333333

00:44:32.012 --> 00:44:33.454 we do have to do some head
NOTE Confidence: 0.9662363433333333

00:44:33.454 --> 00:44:34.560 to head comparison.
NOTE Confidence: 0.9662363433333333

00:44:34.560 --> 00:44:34.880 Yeah
NOTE Confidence: 0.7191637466666667

00:44:35.440 --> 00:44:37.141 Karen. So if you consider running the
NOTE Confidence: 0.7191637466666667

00:44:37.141 --> 00:44:39.160 same tests as a group of vaccine injured
NOTE Confidence: 0.7191637466666667

00:44:39.160 --> 00:44:40.798 that have long COVID type of symptoms,
NOTE Confidence: 0.7191637466666667

00:44:40.800 --> 00:44:42.348 I'd just say I can just pick that up

NOTE Confidence: 0.719163746666667
00:44:42.348 --> 00:44:44.034 say like that's on that's in the plan.
NOTE Confidence: 0.719163746666667
00:44:44.040 --> 00:44:45.600 Actually we're starting that now.
NOTE Confidence: 0.719163746666667
00:44:45.600 --> 00:44:46.680 We're already contacting a few
NOTE Confidence: 0.719163746666667
00:44:46.680 --> 00:44:48.000 people to get started on that.
NOTE Confidence: 0.719163746666667
00:44:48.000 --> 00:44:50.000 But that's exactly what we want to do.
NOTE Confidence: 0.719163746666667
00:44:50.000 --> 00:44:52.310 We want to demonstrate you know what
NOTE Confidence: 0.719163746666667
00:44:52.310 --> 00:44:54.624 what does what do People's Kiko Star
NOTE Confidence: 0.719163746666667
00:44:54.624 --> 00:44:55.984 calling these immune signatures you
NOTE Confidence: 0.719163746666667
00:44:55.984 --> 00:44:58.021 know what is it that looks like that's
NOTE Confidence: 0.719163746666667
00:44:58.021 --> 00:45:00.154 going on in their bodies and and can
NOTE Confidence: 0.719163746666667
00:45:00.154 --> 00:45:02.380 we learn from that so that that's
NOTE Confidence: 0.719163746666667
00:45:02.452 --> 00:45:04.923 that's definitely in the plan soon to
NOTE Confidence: 0.719163746666667
00:45:04.923 --> 00:45:08.344 be launched will there be translation
NOTE Confidence: 0.719163746666667
00:45:08.344 --> 00:45:10.074 these findings into clinical trials.
NOTE Confidence: 0.719163746666667
00:45:10.080 --> 00:45:11.844 So what's timeline been I I'll just
NOTE Confidence: 0.719163746666667

00:45:11.844 --> 00:45:13.988 say quickly that you know Kiko and I
NOTE Confidence: 0.719163746666667

00:45:13.988 --> 00:45:15.614 recognize that people are suffering and
NOTE Confidence: 0.719163746666667

00:45:15.614 --> 00:45:17.550 we can't wait for a full understanding of
NOTE Confidence: 0.719163746666667

00:45:17.550 --> 00:45:19.756 this condition in order to move forward.
NOTE Confidence: 0.719163746666667

00:45:19.760 --> 00:45:20.680 And and I'll give you,
NOTE Confidence: 0.719163746666667

00:45:20.680 --> 00:45:23.130 you know there are lots of situations
NOTE Confidence: 0.719163746666667

00:45:23.130 --> 00:45:24.325 in medicine where you may not
NOTE Confidence: 0.719163746666667

00:45:24.325 --> 00:45:24.997 fully understand some,
NOTE Confidence: 0.719163746666667

00:45:25.000 --> 00:45:27.184 but you have some hints that things that
NOTE Confidence: 0.719163746666667

00:45:27.184 --> 00:45:29.298 are worth trying and they actually can
NOTE Confidence: 0.719163746666667

00:45:29.298 --> 00:45:31.160 give insight into the underlying cause too.
NOTE Confidence: 0.719163746666667

00:45:31.160 --> 00:45:32.296 At the same time.
NOTE Confidence: 0.719163746666667

00:45:32.296 --> 00:45:34.616 So we we are eagerly moving forward to
NOTE Confidence: 0.719163746666667

00:45:34.616 --> 00:45:37.268 try to figure out how we can use this
NOTE Confidence: 0.719163746666667

00:45:37.268 --> 00:45:40.392 platform to to to run trials and to get
NOTE Confidence: 0.719163746666667

00:45:40.392 --> 00:45:42.877 candidates based on what we know already.

NOTE Confidence: 0.719163746666667
00:45:42.880 --> 00:45:44.560 We're in discussions actually
NOTE Confidence: 0.719163746666667
00:45:44.560 --> 00:45:47.080 there's a potential trial that could
NOTE Confidence: 0.719163746666667
00:45:47.152 --> 00:45:49.312 run as as soon as in a few months.
NOTE Confidence: 0.719163746666667
00:45:49.320 --> 00:45:51.352 And we're hoping that we'll have a bunch
NOTE Confidence: 0.719163746666667
00:45:51.352 --> 00:45:53.240 of people from this community ready,
NOTE Confidence: 0.719163746666667
00:45:53.240 --> 00:45:56.056 eager to go and we can enroll it
NOTE Confidence: 0.719163746666667
00:45:56.056 --> 00:45:57.740 within weeks, run it, you know,
NOTE Confidence: 0.719163746666667
00:45:57.740 --> 00:45:59.210 within a month and figure out
NOTE Confidence: 0.719163746666667
00:45:59.263 --> 00:46:00.877 the answer and then keep going.
NOTE Confidence: 0.719163746666667
00:46:00.880 --> 00:46:01.840 And then we're trying to,
NOTE Confidence: 0.719163746666667
00:46:01.840 --> 00:46:03.639 we're all the time talking to people
NOTE Confidence: 0.719163746666667
00:46:03.639 --> 00:46:05.837 who may have therapies that we can try.
NOTE Confidence: 0.719163746666667
00:46:05.840 --> 00:46:08.240 And if this group is up for it,
NOTE Confidence: 0.719163746666667
00:46:08.240 --> 00:46:08.852 then, you know,
NOTE Confidence: 0.719163746666667
00:46:08.852 --> 00:46:10.280 we'll be able to learn stuff rapidly.
NOTE Confidence: 0.719163746666667

00:46:10.280 --> 00:46:11.762 But I think it's essential that
NOTE Confidence: 0.719163746666667

00:46:11.762 --> 00:46:14.880 we do this in rigorous ways with
NOTE Confidence: 0.719163746666667

00:46:14.880 --> 00:46:18.319 trials just to bring in a few other
NOTE Confidence: 0.719163746666667

00:46:18.319 --> 00:46:19.434 people who haven't asked.
NOTE Confidence: 0.719163746666667

00:46:19.434 --> 00:46:20.719 Some of us not all,
NOTE Confidence: 0.719163746666667

00:46:20.720 --> 00:46:22.400 seem to get significantly worse
NOTE Confidence: 0.719163746666667

00:46:22.400 --> 00:46:24.080 immediately after steroids like Prednisone.
NOTE Confidence: 0.719163746666667

00:46:24.080 --> 00:46:26.342 Maybe it's because Prednisone also lowers
NOTE Confidence: 0.719163746666667

00:46:26.342 --> 00:46:29.156 cortisol for an already low cortisol subject.
NOTE Confidence: 0.719163746666667

00:46:29.160 --> 00:46:30.616 I'll just say I think it's
NOTE Confidence: 0.719163746666667

00:46:30.616 --> 00:46:32.142 important for this group to share
NOTE Confidence: 0.719163746666667

00:46:32.142 --> 00:46:33.557 experience about what triggers them,
NOTE Confidence: 0.719163746666667

00:46:33.560 --> 00:46:34.480 what makes things better,
NOTE Confidence: 0.719163746666667

00:46:34.480 --> 00:46:35.400 what makes things worse.
NOTE Confidence: 0.719163746666667

00:46:35.400 --> 00:46:36.996 We can continue to ask those kind
NOTE Confidence: 0.719163746666667

00:46:36.996 --> 00:46:38.319 of questions and collect that,

NOTE Confidence: 0.719163746666667
00:46:38.320 --> 00:46:39.695 share that information and figure
NOTE Confidence: 0.719163746666667
00:46:39.695 --> 00:46:41.070 out other clusters and people
NOTE Confidence: 0.719163746666667
00:46:41.123 --> 00:46:42.479 have the same kind of triggers.
NOTE Confidence: 0.719163746666667
00:46:42.480 --> 00:46:44.916 I don't think we know yet.
NOTE Confidence: 0.719163746666667
00:46:44.920 --> 00:46:47.080 You know have a strong enough
NOTE Confidence: 0.719163746666667
00:46:47.080 --> 00:46:49.455 evidence base to be able to say
NOTE Confidence: 0.719163746666667
00:46:49.455 --> 00:46:51.110 that reproducibly you know because
NOTE Confidence: 0.719163746666667
00:46:51.179 --> 00:46:53.300 some people are you know have even
NOTE Confidence: 0.719163746666667
00:46:53.300 --> 00:46:54.436 reported steroids helped them.
NOTE Confidence: 0.719163746666667
00:46:54.440 --> 00:46:56.638 Some people reported it's made them worse.
NOTE Confidence: 0.719163746666667
00:46:56.640 --> 00:46:58.120 It's it's hard to know but we need
NOTE Confidence: 0.719163746666667
00:46:58.120 --> 00:46:59.572 to like if we can get a bunch
NOTE Confidence: 0.719163746666667
00:46:59.572 --> 00:47:00.260 of people who are
NOTE Confidence: 0.957268263666667
00:47:00.308 --> 00:47:01.633 having different reactions then be
NOTE Confidence: 0.957268263666667
00:47:01.633 --> 00:47:03.520 able to compare them with many of
NOTE Confidence: 0.957268263666667

00:47:03.520 --> 00:47:05.530 the tests that that Kiko's running

NOTE Confidence: 0.957268263666667

00:47:05.530 --> 00:47:07.755 maybe that'll provide some insight.

NOTE Confidence: 0.957268263666667

00:47:07.760 --> 00:47:09.240 Can you talk about TNF?

NOTE Confidence: 0.957268263666667

00:47:09.240 --> 00:47:10.648 Mine was very high.

NOTE Confidence: 0.957268263666667

00:47:10.648 --> 00:47:12.056 Also there's overlap with

NOTE Confidence: 0.957268263666667

00:47:12.056 --> 00:47:12.760 reactivated viruses.

NOTE Confidence: 0.957268263666667

00:47:12.760 --> 00:47:13.600 Chronic Lyme.

NOTE Confidence: 0.957268263666667

00:47:13.600 --> 00:47:15.615 What's the spike protein and

NOTE Confidence: 0.957268263666667

00:47:15.615 --> 00:47:17.290 what have you attributed to

NOTE Confidence: 0.957268263666667

00:47:17.290 --> 00:47:18.952 other diseases and have you seen

NOTE Confidence: 0.957268263666667

00:47:18.952 --> 00:47:20.706 anemia in the long haul vaccine

NOTE Confidence: 0.957268263666667

00:47:20.706 --> 00:47:23.236 injured and positive Lyme IG N

NOTE Confidence: 0.957268263666667

00:47:23.236 --> 00:47:25.958 is has not converted to IG G

NOTE Confidence: 0.957268263666667

00:47:25.960 --> 00:47:27.118 you have any comments on that?

NOTE Confidence: 0.833130988333333

00:47:28.960 --> 00:47:31.198 Yeah. So we did measure TNF,

NOTE Confidence: 0.833130988333333

00:47:31.200 --> 00:47:34.080 it's one of our cytokine

NOTE Confidence: 0.833130988333333

00:47:34.080 --> 00:47:36.516 that we measured the and just

NOTE Confidence: 0.818540412941177

00:47:36.520 --> 00:47:38.192 to say to people just some people may

NOTE Confidence: 0.818540412941177

00:47:38.192 --> 00:47:39.986 not know a cytokine is a substance

NOTE Confidence: 0.818540412941177

00:47:39.986 --> 00:47:41.432 that's released in the course of

NOTE Confidence: 0.818540412941177

00:47:41.432 --> 00:47:42.800 a response for the immune system.

NOTE Confidence: 0.818540412941177

00:47:42.800 --> 00:47:44.760 I mean you can do better job definition,

NOTE Confidence: 0.818540412941177

00:47:44.760 --> 00:47:46.212 but it's just, I'm just assuming

NOTE Confidence: 0.818540412941177

00:47:46.212 --> 00:47:47.704 people like even that word might

NOTE Confidence: 0.818540412941177

00:47:47.704 --> 00:47:49.120 not be familiar to many people.

NOTE Confidence: 0.75626405

00:47:49.520 --> 00:47:51.408 Sorry. Yeah. Cytokines are,

NOTE Confidence: 0.75626405

00:47:51.408 --> 00:47:53.566 yeah, like I said, like you know

NOTE Confidence: 0.75626405

00:47:53.566 --> 00:47:55.060 language that does immune cells

NOTE Confidence: 0.75626405

00:47:55.060 --> 00:47:56.956 use to communicate with each other.

NOTE Confidence: 0.75626405

00:47:56.960 --> 00:47:59.081 TNF is one of the like loudest

NOTE Confidence: 0.75626405

00:47:59.081 --> 00:48:00.600 alarms you can imagine.

NOTE Confidence: 0.75626405

00:48:00.600 --> 00:48:02.520 TNF, Illinois 6, Illinois one,
NOTE Confidence: 0.75626405

00:48:02.520 --> 00:48:04.900 these are cytokines that is
NOTE Confidence: 0.75626405

00:48:04.900 --> 00:48:07.280 released during an acute infection,
NOTE Confidence: 0.75626405

00:48:07.280 --> 00:48:08.567 bacterial or viral.
NOTE Confidence: 0.75626405

00:48:08.567 --> 00:48:12.000 And if you have high levels of TNF,
NOTE Confidence: 0.75626405

00:48:12.000 --> 00:48:13.596 you're not going to feel well
NOTE Confidence: 0.75626405

00:48:13.600 --> 00:48:16.240 because it has many pleotropic
NOTE Confidence: 0.75626405

00:48:16.240 --> 00:48:18.640 impact throughout the body anyway.
NOTE Confidence: 0.75626405

00:48:18.640 --> 00:48:20.600 We did measure TNF and it's elevated
NOTE Confidence: 0.75626405

00:48:20.600 --> 00:48:22.399 in some people but not others.
NOTE Confidence: 0.75626405

00:48:22.400 --> 00:48:24.620 It wasn't one of the significantly
NOTE Confidence: 0.75626405

00:48:24.620 --> 00:48:25.360 different factors,
NOTE Confidence: 0.75626405

00:48:25.360 --> 00:48:26.540 but I wouldn't discount that
NOTE Confidence: 0.75626405

00:48:26.540 --> 00:48:28.826 as a part of the, you know,
NOTE Confidence: 0.75626405

00:48:28.826 --> 00:48:29.932 pathological process.
NOTE Confidence: 0.75626405

00:48:29.932 --> 00:48:33.250 And you know we did also

NOTE Confidence: 0.75626405

00:48:33.349 --> 00:48:36.131 look at antibody to many,

NOTE Confidence: 0.75626405

00:48:36.131 --> 00:48:38.919 many pathogens including Lyme

NOTE Confidence: 0.75626405

00:48:38.920 --> 00:48:42.420 antigens and we did not see any

NOTE Confidence: 0.75626405

00:48:42.420 --> 00:48:44.448 significant difference between the

NOTE Confidence: 0.75626405

00:48:44.448 --> 00:48:47.076 long haulers and non long haulers.

NOTE Confidence: 0.75626405

00:48:47.080 --> 00:48:49.670 But what I didn't get to my

NOTE Confidence: 0.75626405

00:48:49.670 --> 00:48:52.480 presentation is that we did see

NOTE Confidence: 0.75626405

00:48:52.480 --> 00:48:54.640 the Epstein biovirus reactivate

NOTE Confidence: 0.75626405

00:48:54.640 --> 00:48:56.584 reactivation feature in our antibody.

NOTE Confidence: 0.75626405

00:48:56.584 --> 00:48:59.120 So that that's one of the the highest

NOTE Confidence: 0.75626405

00:48:59.120 --> 00:49:01.720 feature after cortisol that is

NOTE Confidence: 0.75626405

00:49:01.720 --> 00:49:04.600 different in the long COVID patients.

NOTE Confidence: 0.790036772608696

00:49:08.320 --> 00:49:10.104 And and that's that was a great question

NOTE Confidence: 0.790036772608696

00:49:10.104 --> 00:49:11.994 a great answer just to confirm study

NOTE Confidence: 0.790036772608696

00:49:11.994 --> 00:49:13.730 found higher levels of cortisol long

NOTE Confidence: 0.790036772608696

00:49:13.730 --> 00:49:18.000 COVID actually it's a lower levels of
NOTE Confidence: 0.790036772608696

00:49:18.000 --> 00:49:22.599 cortisol in in the long COVID patients.
NOTE Confidence: 0.790036772608696

00:49:22.600 --> 00:49:23.872 This was nice professor sake even
NOTE Confidence: 0.790036772608696

00:49:23.872 --> 00:49:25.157 though I don't understand all the
NOTE Confidence: 0.790036772608696

00:49:25.157 --> 00:49:26.345 cell biology I find the president
NOTE Confidence: 0.790036772608696

00:49:26.345 --> 00:49:27.589 very engaging hope to hear from you
NOTE Confidence: 0.790036772608696

00:49:27.589 --> 00:49:29.096 more in the future that was just a
NOTE Confidence: 0.790036772608696

00:49:29.096 --> 00:49:30.720 a lovely and we recognized we need
NOTE Confidence: 0.790036772608696

00:49:30.777 --> 00:49:32.513 to work you know this is our first
NOTE Confidence: 0.790036772608696

00:49:32.513 --> 00:49:34.487 one and and we've got to figure out
NOTE Confidence: 0.790036772608696

00:49:34.487 --> 00:49:35.850 how to calibrate the communication.
NOTE Confidence: 0.790036772608696

00:49:35.850 --> 00:49:36.960 Just, you know,
NOTE Confidence: 0.790036772608696

00:49:36.960 --> 00:49:38.986 forgive us if we're still learning.
NOTE Confidence: 0.790036772608696

00:49:38.986 --> 00:49:40.897 This is about trying to figure out
NOTE Confidence: 0.790036772608696

00:49:40.897 --> 00:49:42.492 how we share information and we
NOTE Confidence: 0.790036772608696

00:49:42.492 --> 00:49:44.140 need to again continue to do better

NOTE Confidence: 0.790036772608696
00:49:44.140 --> 00:49:45.920 about how we how we communicate.
NOTE Confidence: 0.790036772608696
00:49:45.920 --> 00:49:47.645 Recognizing the people with very
NOTE Confidence: 0.790036772608696
00:49:47.645 --> 00:49:49.769 different levels of backgrounds and also
NOTE Confidence: 0.790036772608696
00:49:49.769 --> 00:49:51.947 many people still suffering brain fog
NOTE Confidence: 0.790036772608696
00:49:51.947 --> 00:49:54.357 and heart difficulty concentrating and
NOTE Confidence: 0.790036772608696
00:49:54.360 --> 00:49:56.040 it may be an hour presentation like this.
NOTE Confidence: 0.790036772608696
00:49:56.040 --> 00:49:57.706 You know we should just only be
NOTE Confidence: 0.790036772608696
00:49:57.706 --> 00:49:59.148 doing questions if people have can
NOTE Confidence: 0.790036772608696
00:49:59.148 --> 00:50:00.716 even put them up in in advance.
NOTE Confidence: 0.790036772608696
00:50:00.720 --> 00:50:03.240 We we want to be as helpful as possible.
NOTE Confidence: 0.790036772608696
00:50:03.240 --> 00:50:04.556 Realize that every time I get vaccinated
NOTE Confidence: 0.790036772608696
00:50:04.556 --> 00:50:05.998 I suffer many side effects for months.
NOTE Confidence: 0.790036772608696
00:50:06.000 --> 00:50:07.044 It's still ongoing.
NOTE Confidence: 0.790036772608696
00:50:07.044 --> 00:50:09.480 Nervous about getting the latest by Valent.
NOTE Confidence: 0.790036772608696
00:50:09.480 --> 00:50:11.106 I was told it's safer than
NOTE Confidence: 0.790036772608696

00:50:11.106 --> 00:50:11.919 actually getting COVID.
NOTE Confidence: 0.790036772608696

00:50:11.920 --> 00:50:12.760 What do you think?
NOTE Confidence: 0.777446981666667

00:50:15.600 --> 00:50:16.638 I'll take that as a clinician.
NOTE Confidence: 0.777446981666667

00:50:16.640 --> 00:50:17.480 I don't know if you have an idea,
NOTE Confidence: 0.777446981666667

00:50:17.480 --> 00:50:18.240 but I'm just saying like,
NOTE Confidence: 0.777446981666667

00:50:18.240 --> 00:50:20.760 I I don't know what to say in this case.
NOTE Confidence: 0.777446981666667

00:50:20.760 --> 00:50:22.596 I mean, I hear from a lot of people,
NOTE Confidence: 0.777446981666667

00:50:22.600 --> 00:50:23.888 they're, they're concerned about
NOTE Confidence: 0.777446981666667

00:50:23.888 --> 00:50:25.820 getting the vaccine because they've not
NOTE Confidence: 0.777446981666667

00:50:25.868 --> 00:50:27.632 had a great experience with the past.
NOTE Confidence: 0.777446981666667

00:50:27.632 --> 00:50:28.904 They're even more concerned
NOTE Confidence: 0.777446981666667

00:50:28.904 --> 00:50:29.880 about getting COVID.
NOTE Confidence: 0.777446981666667

00:50:29.880 --> 00:50:30.680 The vaccine, by the way,
NOTE Confidence: 0.777446981666667

00:50:30.680 --> 00:50:32.260 doesn't fully prevent COVID,
NOTE Confidence: 0.777446981666667

00:50:32.260 --> 00:50:34.235 as many of you know.
NOTE Confidence: 0.777446981666667

00:50:34.240 --> 00:50:35.780 It does mitigate the consequences

NOTE Confidence: 0.777446981666667
00:50:35.780 --> 00:50:37.946 of the COVID infection and it may
NOTE Confidence: 0.777446981666667
00:50:37.946 --> 00:50:39.668 decrease the infection rate by some
NOTE Confidence: 0.777446981666667
00:50:39.668 --> 00:50:41.119 percentage in in the same way,
NOTE Confidence: 0.777446981666667
00:50:41.120 --> 00:50:42.180 flu vaccine, you know,
NOTE Confidence: 0.777446981666667
00:50:42.180 --> 00:50:44.000 it doesn't keep everyone from getting flu,
NOTE Confidence: 0.777446981666667
00:50:44.000 --> 00:50:46.556 but it reduces the risk and
NOTE Confidence: 0.777446981666667
00:50:46.556 --> 00:50:47.834 reduces the consequence.
NOTE Confidence: 0.777446981666667
00:50:47.840 --> 00:50:49.716 This is just a really hard one.
NOTE Confidence: 0.777446981666667
00:50:49.720 --> 00:50:51.463 I don't think we want to be
NOTE Confidence: 0.777446981666667
00:50:51.463 --> 00:50:52.520 giving medical advice here,
NOTE Confidence: 0.777446981666667
00:50:52.520 --> 00:50:55.600 but just to acknowledge that that's a tough,
NOTE Confidence: 0.777446981666667
00:50:55.600 --> 00:50:56.736 tough one.
NOTE Confidence: 0.777446981666667
00:50:56.736 --> 00:50:59.544 There are a few questions
NOTE Confidence: 0.777446981666667
00:50:59.544 --> 00:51:01.200 regarding medical records.
NOTE Confidence: 0.777446981666667
00:51:01.200 --> 00:51:03.181 People are asking how like what is
NOTE Confidence: 0.777446981666667

00:51:03.181 --> 00:51:04.985 the timeline for them to connect
NOTE Confidence: 0.777446981666667

00:51:04.985 --> 00:51:06.779 medical records and what records do
NOTE Confidence: 0.777446981666667

00:51:06.779 --> 00:51:08.919 we like are we expecting from them.
NOTE Confidence: 0.777446981666667

00:51:08.920 --> 00:51:10.837 So the I think I'll just take this one.
NOTE Confidence: 0.777446981666667

00:51:10.840 --> 00:51:12.380 So the idea about for example the
NOTE Confidence: 0.777446981666667

00:51:12.380 --> 00:51:13.840 1st I'll just take the survey.
NOTE Confidence: 0.777446981666667

00:51:13.840 --> 00:51:15.550 So you've been asked to fill
NOTE Confidence: 0.777446981666667

00:51:15.550 --> 00:51:17.256 out surveys in Kindred and then
NOTE Confidence: 0.777446981666667

00:51:17.256 --> 00:51:18.684 come into into this.
NOTE Confidence: 0.777446981666667

00:51:18.684 --> 00:51:21.456 And though all those service help
NOTE Confidence: 0.777446981666667

00:51:21.456 --> 00:51:23.591 provide profiling information and
NOTE Confidence: 0.777446981666667

00:51:23.591 --> 00:51:25.457 we're likely to then augment that
NOTE Confidence: 0.777446981666667

00:51:25.457 --> 00:51:26.735 information with more information
NOTE Confidence: 0.777446981666667

00:51:26.735 --> 00:51:28.730 as we learn more about people in
NOTE Confidence: 0.777446981666667

00:51:28.730 --> 00:51:30.515 the study and figure out what we
NOTE Confidence: 0.777446981666667

00:51:30.515 --> 00:51:32.292 need to dig into more detail on.

NOTE Confidence: 0.777446981666667
00:51:32.292 --> 00:51:34.128 And one of the innovations of
NOTE Confidence: 0.777446981666667
00:51:34.128 --> 00:51:36.097 the study is that rather than
NOTE Confidence: 0.777446981666667
00:51:36.097 --> 00:51:38.041 having you give us permission and
NOTE Confidence: 0.777446981666667
00:51:38.105 --> 00:51:39.860 then going to every healthcare
NOTE Confidence: 0.777446981666667
00:51:39.860 --> 00:51:42.304 system and then believe it or not,
NOTE Confidence: 0.777446981666667
00:51:42.304 --> 00:51:44.380 faxing them consents and then get
NOTE Confidence: 0.777446981666667
00:51:44.453 --> 00:51:46.050 then you know waiting weeks before
NOTE Confidence: 0.777446981666667
00:51:46.050 --> 00:51:47.945 they give us like paper copies of
NOTE Confidence: 0.777446981666667
00:51:47.945 --> 00:51:49.737 the records and then having to go
NOTE Confidence: 0.777446981666667
00:51:49.737 --> 00:51:51.197 through them and abstract them.
NOTE Confidence: 0.777446981666667
00:51:51.200 --> 00:51:52.551 You know we're using this digital way
NOTE Confidence: 0.777446981666667
00:51:52.551 --> 00:51:54.158 and the way the digital way was work,
NOTE Confidence: 0.777446981666667
00:51:54.160 --> 00:51:55.915 you connect to your records
NOTE Confidence: 0.777446981666667
00:51:55.915 --> 00:51:57.319 or wearables or everywhere.
NOTE Confidence: 0.777446981666667
00:51:57.320 --> 00:51:59.080 You've got your data assets,
NOTE Confidence: 0.777446981666667

00:51:59.080 --> 00:52:01.384 your personal data assets grow comes

NOTE Confidence: 0.777446981666667

00:52:01.384 --> 00:52:03.960 into your own cloud based account.

NOTE Confidence: 0.777446981666667

00:52:03.960 --> 00:52:05.311 One day sometime in the future we'll

NOTE Confidence: 0.777446981666667

00:52:05.311 --> 00:52:06.787 be able to actually show a viewer

NOTE Confidence: 0.777446981666667

00:52:06.787 --> 00:52:08.280 where you can see what you've got.

NOTE Confidence: 0.777446981666667

00:52:08.280 --> 00:52:09.720 You don't have that yet and Hugo but

NOTE Confidence: 0.777446981666667

00:52:09.720 --> 00:52:11.240 it comes to your cloud based account.

NOTE Confidence: 0.777446981666667

00:52:11.240 --> 00:52:12.280 Then you with your permission,

NOTE Confidence: 0.777446981666667

00:52:12.280 --> 00:52:13.828 it's going into the study and

NOTE Confidence: 0.777446981666667

00:52:13.828 --> 00:52:15.849 the way it works is once you've

NOTE Confidence: 0.777446981666667

00:52:15.849 --> 00:52:17.715 connected to your records that way,

NOTE Confidence: 0.777446981666667

00:52:17.720 --> 00:52:19.448 it's being refreshed all the time

NOTE Confidence: 0.777446981666667

00:52:19.448 --> 00:52:21.399 in your secure cloud based account.

NOTE Confidence: 0.777446981666667

00:52:21.400 --> 00:52:22.405 And if you've given permission

NOTE Confidence: 0.777446981666667

00:52:22.405 --> 00:52:23.880 for it to go into the study,

NOTE Confidence: 0.777446981666667

00:52:23.880 --> 00:52:25.976 it moves into the study and and kind

NOTE Confidence: 0.777446981666667
00:52:25.976 --> 00:52:27.839 of keeps the study all updated.
NOTE Confidence: 0.777446981666667
00:52:27.840 --> 00:52:29.720 If you ever decide you want to stop,
NOTE Confidence: 0.777446981666667
00:52:29.720 --> 00:52:31.652 you can just stop it. It just stops.
NOTE Confidence: 0.777446981666667
00:52:31.652 --> 00:52:33.657 If you ever decide you want to delete
NOTE Confidence: 0.777446981666667
00:52:33.657 --> 00:52:35.439 your records, you can delete records.
NOTE Confidence: 0.777446981666667
00:52:35.440 --> 00:52:36.725 But meanwhile your data assets
NOTE Confidence: 0.777446981666667
00:52:36.725 --> 00:52:38.010 are growing and all we're
NOTE Confidence: 0.874443562
00:52:38.060 --> 00:52:39.726 encouraging is the more places you connect
NOTE Confidence: 0.874443562
00:52:39.726 --> 00:52:41.920 to do you connect to your health systems,
NOTE Confidence: 0.874443562
00:52:41.920 --> 00:52:43.570 the health systems where you've gotten
NOTE Confidence: 0.874443562
00:52:43.570 --> 00:52:45.716 who have who have electronic records
NOTE Confidence: 0.874443562
00:52:45.716 --> 00:52:48.110 where we can make this connection
NOTE Confidence: 0.874443562
00:52:48.181 --> 00:52:50.648 pharmacies like like you know Walmart,
NOTE Confidence: 0.874443562
00:52:50.648 --> 00:52:51.784 Walgreens, Kroger's,
NOTE Confidence: 0.874443562
00:52:51.784 --> 00:52:54.624 anywhere you've got large major
NOTE Confidence: 0.874443562

00:52:54.624 --> 00:52:57.199 pharmacies or labs or wearables.
NOTE Confidence: 0.874443562

00:52:57.200 --> 00:52:59.600 The more data assets are growing that can
NOTE Confidence: 0.874443562

00:52:59.600 --> 00:53:02.204 help the study to have more insight into
NOTE Confidence: 0.874443562

00:53:02.204 --> 00:53:04.640 your journey in what's going on with you.
NOTE Confidence: 0.874443562

00:53:04.640 --> 00:53:06.280 So we're just you know and part of
NOTE Confidence: 0.874443562

00:53:06.280 --> 00:53:07.879 this we're trying to learn together.
NOTE Confidence: 0.874443562

00:53:07.880 --> 00:53:09.056 You could come and tell us it's
NOTE Confidence: 0.874443562

00:53:09.056 --> 00:53:10.110 too burdensome, it's hard,
NOTE Confidence: 0.874443562

00:53:10.110 --> 00:53:12.240 or what you're encountering is challenges.
NOTE Confidence: 0.874443562

00:53:12.240 --> 00:53:13.680 And we want to be able to hear
NOTE Confidence: 0.874443562

00:53:13.680 --> 00:53:14.983 that and figure out how we
NOTE Confidence: 0.874443562

00:53:14.983 --> 00:53:16.315 can make it better and easier.
NOTE Confidence: 0.874443562

00:53:16.320 --> 00:53:18.445 But the alternative is a
NOTE Confidence: 0.874443562

00:53:18.445 --> 00:53:19.720 really labor intensive,
NOTE Confidence: 0.874443562

00:53:19.720 --> 00:53:21.460 difficult and delayed process where
NOTE Confidence: 0.874443562

00:53:21.460 --> 00:53:24.079 everybody goes out and tries to get records.

NOTE Confidence: 0.874443562

00:53:24.080 --> 00:53:25.313 Then I can go out and get your records,

NOTE Confidence: 0.874443562

00:53:25.320 --> 00:53:26.405 but then more things happen

NOTE Confidence: 0.874443562

00:53:26.405 --> 00:53:28.039 and we got to go out again.

NOTE Confidence: 0.874443562

00:53:28.040 --> 00:53:30.200 But with this digital process,

NOTE Confidence: 0.874443562

00:53:30.200 --> 00:53:31.672 we protect your privacy.

NOTE Confidence: 0.874443562

00:53:31.672 --> 00:53:33.480 We protect your records only.

NOTE Confidence: 0.874443562

00:53:33.480 --> 00:53:35.280 Everything moves with your permission

NOTE Confidence: 0.874443562

00:53:35.280 --> 00:53:37.128 and then but stuff is constantly

NOTE Confidence: 0.874443562

00:53:37.128 --> 00:53:39.057 being refreshed and the study can

NOTE Confidence: 0.874443562

00:53:39.057 --> 00:53:40.959 continue to follow people over time.

NOTE Confidence: 0.874443562

00:53:40.960 --> 00:53:42.904 Once you are connected,

NOTE Confidence: 0.874443562

00:53:42.904 --> 00:53:43.876 it's automated.

NOTE Confidence: 0.874443562

00:53:43.880 --> 00:53:45.637 But that's the way we're trying to

NOTE Confidence: 0.874443562

00:53:45.637 --> 00:53:47.799 to to do this as a new approach.

NOTE Confidence: 0.874443562

00:53:47.800 --> 00:53:49.280 You look like and I just want to add too,

NOTE Confidence: 0.874443562

00:53:49.280 --> 00:53:49.560 because
NOTE Confidence: 0.859749157777778

00:53:49.560 --> 00:53:50.625 I think people are concerned
NOTE Confidence: 0.859749157777778

00:53:50.625 --> 00:53:52.092 about the Kindred side of it and
NOTE Confidence: 0.859749157777778

00:53:52.092 --> 00:53:53.160 that is how Kindred is built.
NOTE Confidence: 0.859749157777778

00:53:53.160 --> 00:53:54.255 So there's nothing that will
NOTE Confidence: 0.859749157777778

00:53:54.255 --> 00:53:55.720 happen to your records in Kindred.
NOTE Confidence: 0.859749157777778

00:53:55.720 --> 00:53:57.670 We we assure you that nothing
NOTE Confidence: 0.859749157777778

00:53:57.670 --> 00:53:58.960 moves without your permission.
NOTE Confidence: 0.859749157777778

00:53:58.960 --> 00:54:00.196 The only place we're sharing it
NOTE Confidence: 0.859749157777778

00:54:00.196 --> 00:54:01.525 is with listen if that's what
NOTE Confidence: 0.859749157777778

00:54:01.525 --> 00:54:02.755 you've given us permission to do.
NOTE Confidence: 0.859749157777778

00:54:02.760 --> 00:54:05.000 But that that is,
NOTE Confidence: 0.859749157777778

00:54:05.000 --> 00:54:06.680 you know foundational
NOTE Confidence: 0.922599152857143

00:54:06.680 --> 00:54:08.680 to what we are doing on Kindred. You it's
NOTE Confidence: 0.7447879275

00:54:08.800 --> 00:54:10.280 they're your records and
NOTE Confidence: 0.720904106363636

00:54:11.680 --> 00:54:12.976 and that's the other things like

NOTE Confidence: 0.720904106363636
00:54:12.976 --> 00:54:14.080 Kinder doesn't own your data.
NOTE Confidence: 0.720904106363636
00:54:14.080 --> 00:54:16.192 Hugo doesn't own your data you own your
NOTE Confidence: 0.720904106363636
00:54:16.192 --> 00:54:18.102 data and and everything is permission
NOTE Confidence: 0.720904106363636
00:54:18.102 --> 00:54:20.304 based there's no back end selling nothing.
NOTE Confidence: 0.720904106363636
00:54:20.304 --> 00:54:22.804 It's it's it's a matter of trying to put
NOTE Confidence: 0.720904106363636
00:54:22.804 --> 00:54:24.673 people in a position where they gain
NOTE Confidence: 0.720904106363636
00:54:24.673 --> 00:54:26.709 agency over the data and then can be
NOTE Confidence: 0.720904106363636
00:54:26.709 --> 00:54:28.204 parts of studies where they're allowing
NOTE Confidence: 0.720904106363636
00:54:28.204 --> 00:54:30.038 that data to come into the study.
NOTE Confidence: 0.720904106363636
00:54:30.040 --> 00:54:32.677 But but that's the the way we're doing this.
NOTE Confidence: 0.720904106363636
00:54:32.680 --> 00:54:34.381 I I know we're we're we're at time and
NOTE Confidence: 0.720904106363636
00:54:34.381 --> 00:54:36.200 I know we could have probably done a
NOTE Confidence: 0.720904106363636
00:54:36.200 --> 00:54:38.185 lot of things better than what we did
NOTE Confidence: 0.720904106363636
00:54:38.185 --> 00:54:39.631 and there's lots of questions here.
NOTE Confidence: 0.720904106363636
00:54:39.631 --> 00:54:41.350 So I I think that we can be looking
NOTE Confidence: 0.720904106363636

00:54:41.397 --> 00:54:42.993 at these questions and kind of bring
NOTE Confidence: 0.720904106363636

00:54:42.993 --> 00:54:44.993 some of them together and then share
NOTE Confidence: 0.720904106363636

00:54:44.993 --> 00:54:48.777 them back through you know an e-mail or
NOTE Confidence: 0.720904106363636

00:54:48.777 --> 00:54:51.308 something to all the listen participants
NOTE Confidence: 0.720904106363636

00:54:51.308 --> 00:54:54.356 and they'll learn from these important
NOTE Confidence: 0.720904106363636

00:54:54.360 --> 00:54:57.360 questions that people have raised.
NOTE Confidence: 0.720904106363636

00:54:57.360 --> 00:54:59.380 I see lots of people here as I look down
NOTE Confidence: 0.720904106363636

00:54:59.433 --> 00:55:01.127 here that we have just so appreciative
NOTE Confidence: 0.720904106363636

00:55:01.127 --> 00:55:03.171 of all of you and that you're being
NOTE Confidence: 0.720904106363636

00:55:03.171 --> 00:55:05.652 part of this and helping us do better.
NOTE Confidence: 0.720904106363636

00:55:05.652 --> 00:55:08.480 And we can definitely answer these questions
NOTE Confidence: 0.720904106363636

00:55:08.551 --> 00:55:09.798 and and when we don't have answers,
NOTE Confidence: 0.720904106363636

00:55:09.800 --> 00:55:10.857 we can just be honest with you
NOTE Confidence: 0.720904106363636

00:55:10.857 --> 00:55:11.759 and say we don't know,
NOTE Confidence: 0.720904106363636

00:55:11.760 --> 00:55:14.400 you know and that we hope we will know soon.
NOTE Confidence: 0.720904106363636

00:55:14.400 --> 00:55:16.080 But I don't know, Kiko,

NOTE Confidence: 0.720904106363636
00:55:16.080 --> 00:55:18.336 if you I'm trying to just be respectful
NOTE Confidence: 0.720904106363636
00:55:18.336 --> 00:55:19.820 of your time and everyone's time.
NOTE Confidence: 0.720904106363636
00:55:19.820 --> 00:55:20.960 We have a lot more questions.
NOTE Confidence: 0.720904106363636
00:55:20.960 --> 00:55:23.040 Let me just say we're committed to getting
NOTE Confidence: 0.720904106363636
00:55:23.040 --> 00:55:24.840 information back to you with these questions.
NOTE Confidence: 0.720904106363636
00:55:24.840 --> 00:55:26.370 So don't think that we're
NOTE Confidence: 0.720904106363636
00:55:26.370 --> 00:55:27.594 going to ignore them.
NOTE Confidence: 0.720904106363636
00:55:27.600 --> 00:55:28.240 But Kiko,
NOTE Confidence: 0.720904106363636
00:55:28.240 --> 00:55:29.804 do you have anything you want
NOTE Confidence: 0.720904106363636
00:55:29.804 --> 00:55:30.514 to say at the end?
NOTE Confidence: 0.784089531666667
00:55:31.360 --> 00:55:32.440 Oh, yeah, absolutely.
NOTE Confidence: 0.784089531666667
00:55:32.440 --> 00:55:34.960 So I yeah, maybe I can do another
NOTE Confidence: 0.784089531666667
00:55:34.960 --> 00:55:37.280 one just to complete my presentation.
NOTE Confidence: 0.784089531666667
00:55:37.280 --> 00:55:38.429 If anyone's interested,
NOTE Confidence: 0.784089531666667
00:55:38.429 --> 00:55:41.400 I'm happy to come back and do it.
NOTE Confidence: 0.784089531666667

00:55:41.400 --> 00:55:42.938 The other thing is that, you know,
NOTE Confidence: 0.784089531666667

00:55:42.938 --> 00:55:44.672 we really don't know much about
NOTE Confidence: 0.784089531666667

00:55:44.672 --> 00:55:46.437 the vaccine injury and we're very
NOTE Confidence: 0.784089531666667

00:55:46.437 --> 00:55:48.360 eager to find out what's going on.
NOTE Confidence: 0.784089531666667

00:55:48.360 --> 00:55:51.132 So it's just a matter of starting
NOTE Confidence: 0.784089531666667

00:55:51.132 --> 00:55:53.346 the study and with your help
NOTE Confidence: 0.784089531666667

00:55:53.346 --> 00:55:54.714 understanding what's going on.
NOTE Confidence: 0.833271151666667

00:55:55.440 --> 00:55:57.400 And the idea generally is like we
NOTE Confidence: 0.833271151666667

00:55:57.400 --> 00:55:58.880 should have regular town halls.
NOTE Confidence: 0.833271151666667

00:55:58.880 --> 00:56:02.948 We should continue to you know interact with
NOTE Confidence: 0.833271151666667

00:56:02.948 --> 00:56:04.920 people who are you know you all of you.
NOTE Confidence: 0.833271151666667

00:56:04.920 --> 00:56:06.670 And and by the way you can reach out to
NOTE Confidence: 0.833271151666667

00:56:06.718 --> 00:56:08.582 us other times too like it's not just
NOTE Confidence: 0.833271151666667

00:56:08.582 --> 00:56:10.380 constrained by this what does it say?
NOTE Confidence: 0.833271151666667

00:56:10.380 --> 00:56:11.755 So listen study at yale.edu.
NOTE Confidence: 0.833271151666667

00:56:11.760 --> 00:56:14.399 Anybody can send us an e-mail at

NOTE Confidence: 0.833271151666667
00:56:14.399 --> 00:56:16.190 any time and you know the notion
NOTE Confidence: 0.833271151666667
00:56:16.190 --> 00:56:17.723 should be that we're we want to
NOTE Confidence: 0.833271151666667
00:56:17.723 --> 00:56:19.091 it's not like we're the researchers
NOTE Confidence: 0.833271151666667
00:56:19.091 --> 00:56:20.559 we don't want to hear from you.
NOTE Confidence: 0.833271151666667
00:56:20.560 --> 00:56:22.723 It's just exactly the opposite and
NOTE Confidence: 0.833271151666667
00:56:22.723 --> 00:56:24.550 we but we need to learn like how do
NOTE Confidence: 0.833271151666667
00:56:24.604 --> 00:56:26.476 we do this how do we make it better.
NOTE Confidence: 0.833271151666667
00:56:26.480 --> 00:56:28.000 How do we interact appropriately.
NOTE Confidence: 0.833271151666667
00:56:28.000 --> 00:56:29.600 How do we communicate clearly?
NOTE Confidence: 0.833271151666667
00:56:29.600 --> 00:56:30.920 And yeah, and Kiko,
NOTE Confidence: 0.833271151666667
00:56:30.920 --> 00:56:32.900 it's not like we've just regularly
NOTE Confidence: 0.833271151666667
00:56:32.970 --> 00:56:34.440 come back to this group.
NOTE Confidence: 0.833271151666667
00:56:34.440 --> 00:56:36.078 And if it's a ton of questions,
NOTE Confidence: 0.833271151666667
00:56:36.080 --> 00:56:38.120 then we can just spend the
NOTE Confidence: 0.833271151666667
00:56:38.120 --> 00:56:38.994 time answering questions.
NOTE Confidence: 0.833271151666667

00:56:38.994 --> 00:56:40.546 And I think also if we can figure
NOTE Confidence: 0.833271151666667

00:56:40.546 --> 00:56:42.309 this out where it looks more like a
NOTE Confidence: 0.833271151666667

00:56:42.309 --> 00:56:43.360 meeting where everyone's together,
NOTE Confidence: 0.833271151666667

00:56:43.360 --> 00:56:44.836 I think that'll make us all feel good too.
NOTE Confidence: 0.833271151666667

00:56:44.840 --> 00:56:46.984 That there's a a large group of people
NOTE Confidence: 0.833271151666667

00:56:46.984 --> 00:56:49.520 who are all part of this together.
NOTE Confidence: 0.833271151666667

00:56:49.520 --> 00:56:51.600 But just again, you know,
NOTE Confidence: 0.833271151666667

00:56:51.600 --> 00:56:53.100 I've said this to everyone and
NOTE Confidence: 0.833271151666667

00:56:53.100 --> 00:56:54.542 listened before, deep gratitude less.
NOTE Confidence: 0.833271151666667

00:56:54.542 --> 00:56:56.620 He's telling me there's 656 people.
NOTE Confidence: 0.833271151666667

00:56:56.620 --> 00:57:00.062 And listen now that's pretty good as a
NOTE Confidence: 0.833271151666667

00:57:00.062 --> 00:57:03.531 number of people growing by word of mouth,
NOTE Confidence: 0.833271151666667

00:57:03.531 --> 00:57:05.553 we've had you know I think
NOTE Confidence: 0.833271151666667

00:57:05.553 --> 00:57:07.586 80 some people on this call.
NOTE Confidence: 0.833271151666667

00:57:07.586 --> 00:57:08.678 That's pretty good percentage
NOTE Confidence: 0.833271151666667

00:57:08.678 --> 00:57:10.440 of people who are listening and

NOTE Confidence: 0.833271151666667
00:57:10.440 --> 00:57:12.519 we're we we're just open to ideas.
NOTE Confidence: 0.833271151666667
00:57:12.520 --> 00:57:13.584 What we really want to do is
NOTE Confidence: 0.833271151666667
00:57:13.584 --> 00:57:14.040 grow this community.
NOTE Confidence: 0.833271151666667
00:57:14.040 --> 00:57:16.002 We want to make it as big as possible
NOTE Confidence: 0.833271151666667
00:57:16.002 --> 00:57:17.438 bring in and more people get,
NOTE Confidence: 0.833271151666667
00:57:17.440 --> 00:57:19.688 the more we can learn from each other
NOTE Confidence: 0.833271151666667
00:57:19.688 --> 00:57:22.231 and also start really revving up this
NOTE Confidence: 0.833271151666667
00:57:22.231 --> 00:57:24.151 immuno phenotyping part for listen
NOTE Confidence: 0.833271151666667
00:57:24.160 --> 00:57:26.689 so that we can start to to have very
NOTE Confidence: 0.833271151666667
00:57:26.689 --> 00:57:28.653 detailed information that we can
NOTE Confidence: 0.833271151666667
00:57:28.653 --> 00:57:30.519 leverage to to bring some answers.
NOTE Confidence: 0.812033905
00:57:32.800 --> 00:57:36.480 So with that I I just like this isn't like,
NOTE Confidence: 0.812033905
00:57:36.480 --> 00:57:37.788 OK, we're over this is
NOTE Confidence: 0.812033905
00:57:37.788 --> 00:57:39.073 just like this hour's over.
NOTE Confidence: 0.812033905
00:57:39.080 --> 00:57:41.642 But we're going to continue to be
NOTE Confidence: 0.812033905

00:57:41.642 --> 00:57:43.765 involved in and and communicate

NOTE Confidence: 0.812033905

00:57:43.765 --> 00:57:46.480 and yeah thanks. Thanks Akiko.

NOTE Confidence: 0.812033905

00:57:46.480 --> 00:57:48.056 Great job and say something

NOTE Confidence: 0.812033905

00:57:48.056 --> 00:57:49.580 Bernali and and for everyone who's

NOTE Confidence: 0.812033905

00:57:49.629 --> 00:57:51.014 got questions and I'm looking

NOTE Confidence: 0.812033905

00:57:51.014 --> 00:57:52.399 at these questions is terrific.

NOTE Confidence: 0.812033905

00:57:52.400 --> 00:57:53.555 So this would be great for us

NOTE Confidence: 0.812033905

00:57:53.555 --> 00:57:54.599 to to get back to Bob.

NOTE Confidence: 0.812033905

00:57:54.600 --> 00:57:56.820 Thank you.

NOTE Confidence: 0.812033905

00:57:56.820 --> 00:57:58.200 Thank you everyone.