WEBVTT

NOTE duration:"01:05:56"

NOTE recognizability:0.849

NOTE language:en-us

NOTE Confidence: 0.893191

00:02:24.410 --> 00:02:27.700 Hey Jonathan, can you hear us? Let

NOTE Confidence: 0.852814161111111

00:02:27.700 --> 00:02:28.960 me introduce you to two

NOTE Confidence: 0.852814161111111

00:02:28.960 --> 00:02:29.968 people you've never seen.

NOTE Confidence: 0.852814161111111

00:02:29.970 --> 00:02:31.820 One is Doctor Jayme Mcpartland.

NOTE Confidence: 0.852814161111111

00:02:31.820 --> 00:02:33.142 Dr Taking what do you want to

NOTE Confidence: 0.852814161111111

00:02:33.142 --> 00:02:34.060 start talking with our speaker?

NOTE Confidence: 0.852814161111111

00:02:34.060 --> 00:02:36.084 We haven't let people into the room yet.

NOTE Confidence: 0.73317234

00:02:38.540 --> 00:02:41.020 Hey Jonathan, do you want to have a really

NOTE Confidence: 0.73317234

00:02:41.020 --> 00:02:45.230 publicly broadcast ketchup session?

NOTE Confidence: 0.73317234

00:02:45.230 --> 00:02:50.180 Sounds great. Good, you know.

NOTE Confidence: 0.73317234

00:02:50.180 --> 00:02:51.560 I had to admit I didn't notice

NOTE Confidence: 0.73317234

00:02:51.560 --> 00:02:52.685 telling your side just now.

NOTE Confidence: 0.73317234

00:02:52.690 --> 00:02:56.970 By the way, Jamie, Jamie eye contact.

NOTE Confidence: 0.73317234

00:02:56.970 --> 00:02:57.885 Yeah, that's correct.

NOTE Confidence: 0.73317234

00:02:57.885 --> 00:02:59.105 I didn't notice it.

NOTE Confidence: 0.73317234

00:02:59.110 --> 00:03:02.300 Said Duke University is that yeah.

NOTE Confidence: 0.73317234

00:03:02.300 --> 00:03:04.190 I mean he he doesn't know in autism.

NOTE Confidence: 0.73317234

00:03:04.190 --> 00:03:05.590 We don't make eye contact.

NOTE Confidence: 0.73317234

00:03:05.590 --> 00:03:08.040 Normally developing people would make typing.

NOTE Confidence: 0.73317234

00:03:08.040 --> 00:03:08.910 Yeah, I know,

NOTE Confidence: 0.73317234

00:03:08.910 --> 00:03:11.120 but as an autism eye contact specialist,

NOTE Confidence: 0.73317234

00:03:11.120 --> 00:03:13.424 we've ruled that eye contact being

NOTE Confidence: 0.73317234

00:03:13.424 --> 00:03:14.960 meaningful during zoom settings.

NOTE Confidence: 0.73317234

00:03:14.960 --> 00:03:16.298 So it's like saying I mean,

NOTE Confidence: 0.73317234

00:03:16.300 --> 00:03:17.925 in fact I can communicate

NOTE Confidence: 0.73317234

00:03:17.925 --> 00:03:18.900 effectively like this.

NOTE Confidence: 0.73317234

00:03:18.900 --> 00:03:20.250 And then when it's time,

NOTE Confidence: 0.73317234

00:03:20.250 --> 00:03:21.314 so when did you make the move?

NOTE Confidence: 0.944673286666667

00:03:22.670 --> 00:03:23.660 September 1st, so

NOTE Confidence: 0.85420315

00:03:23.670 --> 00:03:25.678 it's brand new. Congratulations

NOTE Confidence: 0.790038306666667

00:03:25.690 --> 00:03:28.580 very exciting. Are you physically there? Yeah

NOTE Confidence: 0.901335170476191

00:03:28.730 --> 00:03:31.096 yeah yeah I came down with my

NOTE Confidence: 0.901335170476191

00:03:31.096 --> 00:03:33.424 family over the summer so we could

NOTE Confidence: 0.901335170476191

00:03:33.424 --> 00:03:35.880 get our kids set up at school.

NOTE Confidence: 0.901335170476191

00:03:35.880 --> 00:03:37.774 Yeah yeah thanks yeah.

NOTE Confidence: 0.901335170476191

00:03:37.774 --> 00:03:39.380 And I'm I'm really excited about being here.

NOTE Confidence: 0.901335170476191

00:03:39.380 --> 00:03:40.448 It's been really great so far

NOTE Confidence: 0.817362745

00:03:41.140 --> 00:03:42.736 that is is really yeah I

NOTE Confidence: 0.817362745

00:03:42.736 --> 00:03:44.460 want to hear all about it.

NOTE Confidence: 0.817362745

00:03:44.460 --> 00:03:45.785 Yeah for sure not broadcasting

NOTE Confidence: 0.817362745

00:03:45.785 --> 00:03:47.490 to the entire Child Study Center,

NOTE Confidence: 0.97949517

00:03:48.530 --> 00:03:51.720 right? How are your kids doing?

NOTE Confidence: 0.790921223333333

00:03:51.840 --> 00:03:55.560 I'm good that great school is in person.

NOTE Confidence: 0.790921223333333

00:03:55.560 --> 00:03:57.750 They're happy, started high school in,

NOTE Confidence: 0.790921223333333

00:03:57.750 --> 00:03:58.690 started high school this year.

NOTE Confidence: 0.790921223333333

00:03:58.690 --> 00:04:01.758 So so far, so good. Now you did you.

NOTE Confidence: 0.790921223333333

00:04:01.758 --> 00:04:05.020 Are you still on CPD? Yes I am I

NOTE Confidence: 0.93709229

00:04:05.180 --> 00:04:06.419 I'm done. I

NOTE Confidence: 0.81192046

00:04:06.430 --> 00:04:08.248 know you graduated. You will be.

NOTE Confidence: 0.81192046

00:04:08.250 --> 00:04:09.360 You will be greatly missed.

NOTE Confidence: 0.907771194545455

00:04:11.500 --> 00:04:12.838 I will enjoy the break but

NOTE Confidence: 0.907771194545455

00:04:12.838 --> 00:04:14.830 I will miss it too, yeah.

NOTE Confidence: 0.775194766

00:04:16.270 --> 00:04:19.510 Oh, you're you finished up.

NOTE Confidence: 0.775194766

00:04:19.510 --> 00:04:22.155 You were you were on the Zoom study

NOTE Confidence: 0.775194766

00:04:22.155 --> 00:04:23.565 section for one or two sessions.

NOTE Confidence: 0.720800048

00:04:23.580 --> 00:04:25.080 Is that right? Yeah, yeah.

NOTE Confidence: 0.88708730125

00:04:26.470 --> 00:04:27.877 For the time being, we're continuing on

NOTE Confidence: 0.88708730125

00:04:27.877 --> 00:04:30.397 zoom, which is, I find, a bit painful.

NOTE Confidence: 0.82464582625

00:04:31.040 --> 00:04:33.410 It is it makes for a very long day.

NOTE Confidence: 0.82464582625

00:04:33.410 --> 00:04:35.518 Yeah, yeah, I thought you're gonna

NOTE Confidence: 0.82464582625

00:04:35.518 --> 00:04:37.291 say my timing was good because they

NOTE Confidence: 0.82464582625

00:04:37.291 --> 00:04:38.816 did away with continuous submission.

NOTE Confidence: 0.82464582625

00:04:38.820 --> 00:04:40.290 So I actually meant to thread

NOTE Confidence: 0.82464582625

00:04:40.290 --> 00:04:41.780 the needle in terms of period

NOTE Confidence: 0.706404016

00:04:41.790 --> 00:04:43.080 of time for continuous submission.

NOTE Confidence: 0.910050278181818

00:04:45.690 --> 00:04:46.852 I I didn't know that they got

NOTE Confidence: 0.910050278181818

00:04:46.852 --> 00:04:47.710 rid of continuous emission.

NOTE Confidence: 0.85796992

00:04:48.100 --> 00:04:49.696 If I if I'm not mistaken,

NOTE Confidence: 0.85796992

00:04:49.700 --> 00:04:51.550 I thought they changed the policy.

NOTE Confidence: 0.862715706

00:04:52.650 --> 00:04:55.470 OK, I didn't really thought. But

NOTE Confidence: 0.7756736325

00:04:55.480 --> 00:04:57.696 now I'm going to inquire about some protocol.

NOTE Confidence: 0.7756736325

00:04:57.700 --> 00:04:59.176 So what Andres, what's the what's

NOTE Confidence: 0.7756736325

00:04:59.176 --> 00:05:00.929 the is when we want to start?

NOTE Confidence: 0.619038413333333

00:05:14.080 --> 00:05:14.869 Where's your schooling?

NOTE Confidence: 0.6375469

00:05:46.660 --> 00:05:47.310 Kids.

NOTE Confidence: 0.70134735

00:05:53.850 --> 00:05:54.580 The people.

NOTE Confidence: 0.82347906

00:05:56.810 --> 00:05:57.588 They can only hear it.

NOTE Confidence: 0.9349607

00:06:03.520 --> 00:06:03.910 Sure.

NOTE Confidence: 0.773254823333333

00:06:05.630 --> 00:06:08.840 Remember the test. Unless.

NOTE Confidence: 0.48675525

00:06:21.520 --> 00:06:22.350 OK, silly.

NOTE Confidence: 0.5347798

00:06:25.140 --> 00:06:25.410 Epic.

NOTE Confidence: 0.79999044

00:06:27.920 --> 00:06:28.970 And I can see your cat.

NOTE Confidence: 0.780722062222222

00:06:31.290 --> 00:06:32.973 Do you want me to start letting people in?

NOTE Confidence: 0.82041457

00:06:35.890 --> 00:06:38.490 While he's talking just because,

NOTE Confidence: 0.82041457

00:06:38.490 --> 00:06:42.802 well, who is wow? Yeah,

NOTE Confidence: 0.82041457

00:06:42.802 --> 00:06:45.255 just because critics are perfect

NOTE Confidence: 0.82041457

00:06:45.255 --> 00:06:47.280 is over there with translating,

NOTE Confidence: 0.82041457

00:06:47.280 --> 00:06:48.260 but right now we're going

NOTE Confidence: 0.82041457

00:06:48.260 --> 00:06:49.920 to start with it. Yes, OK?

NOTE Confidence: 0.79548198

00:06:53.960 --> 00:06:54.400 Yeah, it's.

NOTE Confidence: 0.899253055

00:07:05.230 --> 00:07:07.180 Very sophisticated plan for managing

NOTE Confidence: 0.899253055

00:07:07.180 --> 00:07:09.130 your question and answer session.

NOTE Confidence: 0.899253055

00:07:09.130 --> 00:07:10.614 I promised that I will screw it

NOTE Confidence: 0.899253055

00:07:10.614 --> 00:07:12.500 up and so I apologize in advance.

NOTE Confidence: 0.6930787675

00:07:14.510 --> 00:07:15.518 Make room for Kyle.

NOTE Confidence: 0.8296549

00:07:19.130 --> 00:07:19.580 Sharp

NOTE Confidence: 0.9001707

00:07:21.610 --> 00:07:23.590 so did people type their questions

NOTE Confidence: 0.9001707

00:07:23.590 --> 00:07:25.120 into the chat function today?

NOTE Confidence: 0.9001707

00:07:25.920 --> 00:07:28.776 They will get to ask and they will

NOTE Confidence: 0.9001707

00:07:28.776 --> 00:07:31.330 be able to ask in person. Yeah.

NOTE Confidence: 0.85953856

00:07:40.290 --> 00:07:40.760 That's.

NOTE Confidence: 0.8600879

00:07:43.750 --> 00:07:46.688 Rights. Oh, because I asked.

NOTE Confidence: 0.7747644

00:08:01.770 --> 00:08:02.350 Introduction.

NOTE Confidence: 0.9177995

00:08:22.240 --> 00:08:22.670 Yes.

NOTE Confidence: 0.8331322225

00:08:34.930 --> 00:08:37.350 I think we're good. Well,

NOTE Confidence: 0.928458386666667

00:08:37.360 --> 00:08:40.708 everyone. Welcome to today's grand rounds.

NOTE Confidence: 0.928458386666667

00:08:40.710 --> 00:08:41.670 My name is Mike Crowley.

NOTE Confidence: 0.928458386666667

00:08:41.670 --> 00:08:43.914 I'm a member of our Grand rounds committee.

NOTE Confidence: 0.928458386666667

00:08:43.914 --> 00:08:46.206 Last week we heard from Carol,

NOTE Confidence: 0.928458386666667

00:08:46.210 --> 00:08:48.094 I just want to remind everyone

NOTE Confidence: 0.928458386666667

00:08:48.094 --> 00:08:49.595 before I introduce Dr.

NOTE Confidence: 0.928458386666667

00:08:49.595 --> 00:08:52.053 Mcpartland that I that we have

NOTE Confidence: 0.928458386666667

00:08:52.053 --> 00:08:53.458 compassionate care grand rounds next

NOTE Confidence: 0.928458386666667

00:08:53.458 --> 00:08:55.474 week and the title of that grand

NOTE Confidence: 0.928458386666667

00:08:55.474 --> 00:08:56.879 rounds is refractory providers and

NOTE Confidence: 0.928458386666667

00:08:56.929 --> 00:08:58.896 systems come together to care for a

NOTE Confidence: 0.928458386666667

00:08:58.896 --> 00:09:00.622 severely depressed and suicidal youth.

NOTE Confidence: 0.928458386666667

00:09:00.622 --> 00:09:02.386 So out further ado.

NOTE Confidence: 0.928458386666667

00:09:02.390 --> 00:09:03.260 Doctor mcpartlin.

NOTE Confidence: 0.684049

00:09:07.940 --> 00:09:09.474 Hey welcome everyone.

NOTE Confidence: 0.684049

00:09:09.474 --> 00:09:13.005 Today it's my pleasure to introduce Doctor.

NOTE Confidence: 0.684049

00:09:13.005 --> 00:09:15.663 Jonathan Posner is a child and

NOTE Confidence: 0.684049

00:09:15.663 --> 00:09:16.716 adolescent psychiatrist and

NOTE Confidence: 0.684049

00:09:16.716 --> 00:09:18.815 vice chair for research in the

NOTE Confidence: 0.684049

00:09:18.815 --> 00:09:20.405 Department of Psychiatry at Duke,

NOTE Confidence: 0.684049

00:09:20.410 --> 00:09:23.164 which is news hot off the

NOTE Confidence: 0.684049

00:09:23.164 --> 00:09:25.470 presses as of September 1st.

NOTE Confidence: 0.684049

00:09:25.470 --> 00:09:27.555 He directs pediatric brain imaging

NOTE Confidence: 0.684049

00:09:27.555 --> 00:09:29.223 laboratory that has maintained

NOTE Confidence: 0.684049

00:09:29.223 --> 00:09:30.641 consistent NIH funding since

NOTE Confidence: 0.684049

00:09:30.641 --> 00:09:32.216 founding over ten years ago.

NOTE Confidence: 0.684049

00:09:32.220 --> 00:09:33.820 His research focuses on neuro

NOTE Confidence: 0.684049

00:09:33.820 --> 00:09:35.420 development with an emphasis on

NOTE Confidence: 0.684049

00:09:35.473 --> 00:09:37.253 imaging approaches to studying

NOTE Confidence: 0.684049

00:09:37.253 --> 00:09:39.033 neurobiological correlates of mental.

NOTE Confidence: 0.684049

00:09:39.040 --> 00:09:41.668 Illness and cognitive development

NOTE Confidence: 0.684049

00:09:41.668 --> 00:09:44.856 is Pi on 312 N family based

NOTE Confidence: 0.684049

00:09:44.856 --> 00:09:46.072 studies aimed at understanding

NOTE Confidence: 0.684049

00:09:46.072 --> 00:09:47.598 the influence of family history.

NOTE Confidence: 0.684049

00:09:47.600 --> 00:09:49.064 Psychosocial adversity in prenatal

NOTE Confidence: 0.684049

00:09:49.064 --> 00:09:51.260 exposures on the development of neural

NOTE Confidence: 0.684049

00:09:51.313 --> 00:09:53.368 circuits involved in executive functions.

NOTE Confidence: 0.684049

00:09:53.370 --> 00:09:54.630 In emotion regulation.

NOTE Confidence: 0.684049

00:09:54.630 --> 00:09:56.414 You know, having reviewed the CD,

NOTE Confidence: 0.684049

00:09:56.414 --> 00:09:57.594 he's a piece of many,

NOTE Confidence: 0.684049

00:09:57.600 --> 00:10:00.148 many more grants than that he's an

NOTE Confidence: 0.684049

00:10:00.148 --> 00:10:01.240 extremely productive researcher.

NOTE Confidence: 0.684049

00:10:01.240 --> 00:10:03.298 His work has been published in leading

NOTE Confidence: 0.684049

00:10:03.298 --> 00:10:04.750 journals including JAMA Psychiatry,

NOTE Confidence: 0.684049

00:10:04.750 --> 00:10:06.121 John Pediatrics, Pediatrics,

NOTE Confidence: 0.684049

00:10:06.121 --> 00:10:08.406 Lance Psychiatry in The Lancet.

NOTE Confidence: 0.684049

00:10:08.410 --> 00:10:09.034 He's a.

NOTE Confidence: 0.684049

00:10:09.034 --> 00:10:11.530 A very engaged mentor and educator and has

NOTE Confidence: 0.684049

00:10:11.598 --> 00:10:14.160 served mentor to many new junior faculty,

NOTE Confidence: 0.684049

00:10:14.160 --> 00:10:14.596 postdocs,

NOTE Confidence: 0.684049

00:10:14.596 --> 00:10:18.540 and psychic residents who've done well.

NOTE Confidence: 0.684049

00:10:18.540 --> 00:10:19.272 Came to know,

NOTE Confidence: 0.684049

00:10:19.272 --> 00:10:19.516 gentlemen,

NOTE Confidence: 0.684049

00:10:19.516 --> 00:10:21.920 through our mutual serving on

NOTE Confidence: 0.684049

00:10:21.920 --> 00:10:22.940 a study section,

NOTE Confidence: 0.684049

00:10:22.940 --> 00:10:25.140 childhood safe theology and

NOTE Confidence: 0.684049

00:10:25.140 --> 00:10:26.240 developmental disorders,

NOTE Confidence: 0.684049

00:10:26.240 --> 00:10:28.235 and one of the things that I

NOTE Confidence: 0.684049

00:10:28.235 --> 00:10:29.770 recognized by Jonathan isn't in

NOTE Confidence: 0.684049

00:10:29.833 --> 00:10:31.768 addition to having deep technical

NOTE Confidence: 0.684049

00:10:31.768 --> 00:10:33.316 knowledge of his methods.

NOTE Confidence: 0.684049

00:10:33.320 --> 00:10:35.552 He also has very strong clinical

NOTE Confidence: 0.684049

00:10:35.552 --> 00:10:37.860 sense and is extremely thoughtful.

NOTE Confidence: 0.684049

00:10:37.860 --> 00:10:39.491 And so I'm really looking forward to

NOTE Confidence: 0.684049

00:10:39.491 --> 00:10:41.103 hearing what he has to say because

NOTE Confidence: 0.684049

00:10:41.103 --> 00:10:42.393 I I think it's gonna actually

NOTE Confidence: 0.684049

00:10:42.445 --> 00:10:44.626 even be more rewarding with his

NOTE Confidence: 0.684049

00:10:44.626 --> 00:10:45.958 comments during study section.

NOTE Confidence: 0.684049

00:10:45.960 --> 00:10:47.458 If you can believe it or not,

NOTE Confidence: 0.684049

00:10:47.460 --> 00:10:48.825 and he's going to be talking about.

NOTE Confidence: 0.684049

00:10:48.830 --> 00:10:50.470 Kind of depression and

NOTE Confidence: 0.684049

00:10:50.470 --> 00:10:51.290 antidepressant exposure,

NOTE Confidence: 0.684049

00:10:51.290 --> 00:10:53.002 and how that influences

NOTE Confidence: 0.684049

00:10:53.002 --> 00:10:53.858 neurodevelopmental trajectories.

NOTE Confidence: 0.684049

00:10:53.860 --> 00:10:55.060 Thank you so much,

NOTE Confidence: 0.684049

00:10:55.060 --> 00:10:55.360 Jonathan.

NOTE Confidence: 0.7606064

00:10:57.160 --> 00:10:58.990 Thank you so much Jamie. UM,

NOTE Confidence: 0.94188295

00:10:58.990 --> 00:11:01.830 really appreciate that introduction.

NOTE Confidence: 0.94188295

00:11:01.830 --> 00:11:03.729 And I just wanted to mention that it's a.

NOTE Confidence: 0.94188295

00:11:03.730 --> 00:11:05.614 It's such an honor to be

NOTE Confidence: 0.94188295

00:11:05.614 --> 00:11:07.689 presenting to you all as a child,

NOTE Confidence: 0.94188295

00:11:07.690 --> 00:11:11.101 not a lesson psychiatrist I I never did any

NOTE Confidence: 0.94188295

00:11:11.101 --> 00:11:14.786 of my own training at at Yale Child study,

NOTE Confidence: 0.94188295

00:11:14.790 --> 00:11:16.638 but so many of the the mentors

NOTE Confidence: 0.94188295

00:11:16.638 --> 00:11:18.727 who taught me so much about child

NOTE Confidence: 0.94188295

00:11:18.727 --> 00:11:20.569 psychiatry all grew up at Yale,

NOTE Confidence: 0.94188295

00:11:20.570 --> 00:11:22.688 so the Child Study Center is

NOTE Confidence: 0.94188295

00:11:22.688 --> 00:11:24.928 always loom very large in my mind,

NOTE Confidence: 0.94188295

00:11:24.930 --> 00:11:26.820 so the real treat to be

NOTE Confidence: 0.94188295

00:11:26.820 --> 00:11:28.570 presenting to you all today.

NOTE Confidence: 0.94188295

00:11:28.570 --> 00:11:32.217 Uhm, so I'm going to be talking

NOTE Confidence: 0.94188295

00:11:32.217 --> 00:11:35.732 today about the safety of

NOTE Confidence: 0.94188295

00:11:35.732 --> 00:11:38.724 antidepressant use during pregnancy.

NOTE Confidence: 0.94188295

00:11:38.730 --> 00:11:41.026 And specifically the use

NOTE Confidence: 0.94188295

00:11:41.026 --> 00:11:42.748 of SSRI antidepressants.

NOTE Confidence: 0.94188295

00:11:42.750 --> 00:11:45.278 Uhm, and this is a topic that I

NOTE Confidence: 0.94188295

00:11:45.278 --> 00:11:47.728 I really find quite interesting

NOTE Confidence: 0.94188295

00:11:47.730 --> 00:11:50.720 because on the one hand it's it's

NOTE Confidence: 0.94188295

00:11:50.720 --> 00:11:52.460 a question that we want very,

NOTE Confidence: 0.94188295

00:11:52.460 --> 00:11:54.469 very badly to know the answer to.

NOTE Confidence: 0.94188295

00:11:54.470 --> 00:11:56.577 We want to know whether we can

NOTE Confidence: 0.94188295

00:11:56.577 --> 00:11:58.220 safely prescribe these medications.

NOTE Confidence: 0.94188295

00:11:58.220 --> 00:12:00.495 And yet we are somewhat hamstrung in

NOTE Confidence: 0.94188295

00:12:00.495 --> 00:12:03.337 how we how we approach this question,

NOTE Confidence: 0.94188295

00:12:03.340 --> 00:12:05.445 because the most rigorous methodology

NOTE Confidence: 0.94188295

00:12:05.445 --> 00:12:08.913 that we would have to answer this would

NOTE Confidence: 0.94188295

00:12:08.913 --> 00:12:12.821 be a randomized clinical trial and for both.

NOTE Confidence: 0.94188295

00:12:12.821 --> 00:12:13.408 Uh,

NOTE Confidence: 0.94188295

00:12:13.408 --> 00:12:15.169 and pragmatic regions.

NOTE Confidence: 0.94188295

00:12:15.170 --> 00:12:16.306 It would be very,

NOTE Confidence: 0.94188295

00:12:16.306 --> 00:12:18.800 very difficult to to use that methodology,

NOTE Confidence: 0.94188295

00:12:18.800 --> 00:12:20.510 so we're left in this situation

NOTE Confidence: 0.94188295

00:12:20.510 --> 00:12:22.810 where we want a definitive answer.

NOTE Confidence: 0.94188295

00:12:22.810 --> 00:12:26.130 And yet our our approach is somewhat limited.

NOTE Confidence: 0.94188295

00:12:26.130 --> 00:12:28.210 I'm going to be talking to you today

NOTE Confidence: 0.94188295

00:12:28.210 --> 00:12:30.265 about how we're trying to tackle this

NOTE Confidence: 0.94188295

00:12:30.265 --> 00:12:32.480 problem in lieu of those limitations.

NOTE Confidence: 0.826617504285714

00:12:36.360 --> 00:12:39.335 Uh, so some some disclosures to mention.

NOTE Confidence: 0.826617504285714

00:12:39.340 --> 00:12:41.782 So I have received research support

NOTE Confidence: 0.826617504285714

00:12:41.782 --> 00:12:45.120 from Shire which is now part of the

NOTE Confidence: 0.826617504285714

00:12:45.120 --> 00:12:47.562 Cada Avino mix and Innovation sciences.

NOTE Confidence: 0.826617504285714

00:12:47.570 --> 00:12:50.768 But none of that research support

NOTE Confidence: 0.826617504285714

00:12:50.770 --> 00:12:52.506 was related to the data that I'm

NOTE Confidence: 0.826617504285714

00:12:52.506 --> 00:12:54.107 gonna be presenting to you all today.

NOTE Confidence: 0.71086062

00:12:56.480 --> 00:12:59.396 Uhm, so uh before getting started,

NOTE Confidence: 0.71086062

00:12:59.400 --> 00:13:03.593 uhm, I first wanted to discuss two

NOTE Confidence: 0.71086062

00:13:03.593 --> 00:13:07.670 foundational concepts that really guide my.

NOTE Confidence: 0.71086062

00:13:07.670 --> 00:13:10.730 And the first is the

NOTE Confidence: 0.71086062

00:13:10.730 --> 00:13:12.566 centrality of development,

NOTE Confidence: 0.71086062

00:13:12.570 --> 00:13:17.407 and I was essentially axiomatic that most,

NOTE Confidence: 0.71086062

00:13:17.410 --> 00:13:20.870 if not all mental illness.

NOTE Confidence: 0.71086062

00:13:20.870 --> 00:13:23.366 Has it had development to origins

NOTE Confidence: 0.71086062

00:13:23.366 --> 00:13:26.579 or or to put that another way

NOTE Confidence: 0.71086062

00:13:26.580 --> 00:13:29.468 that I think if we really want to

NOTE Confidence: 0.71086062

00:13:29.468 --> 00:13:31.619 understand the etiology of psych.

NOTE Confidence: 0.71086062

00:13:31.620 --> 00:13:34.460 We have to understand development,

NOTE Confidence: 0.71086062

00:13:34.460 --> 00:13:37.832 but development is of course difficult.

NOTE Confidence: 0.71086062

00:13:37.832 --> 00:13:40.648 Not only now are we are we trying

NOTE Confidence: 0.71086062

00:13:40.648 --> 00:13:42.580 to understand this incredibly

NOTE Confidence: 0.71086062

00:13:42.580 --> 00:13:45.580 complex organ in the human brain,

NOTE Confidence: 0.71086062

00:13:45.580 --> 00:13:48.779 but when we take a developmental perspective,

NOTE Confidence: 0.71086062

00:13:48.780 --> 00:13:51.734 we're now chasing after a moving target.

NOTE Confidence: 0.71086062

00:13:51.740 --> 00:13:53.738 As the brand grows and matures.

NOTE Confidence: 0.922397037272727

00:13:56.660 --> 00:13:58.520 The second principle that guides

NOTE Confidence: 0.922397037272727

00:13:58.520 --> 00:14:00.640 my work is the importance of.

NOTE Confidence: 0.922397037272727

00:14:00.640 --> 00:14:03.298 It's all of our approaches to

NOTE Confidence: 0.922397037272727

00:14:03.298 --> 00:14:05.070 understanding the brain and

NOTE Confidence: 0.922397037272727

00:14:05.151 --> 00:14:07.639 mental illness have limitations.

NOTE Confidence: 0.922397037272727

00:14:07.640 --> 00:14:11.420 Whether it be preclinical models for example.

NOTE Confidence: 0.717979953333333

00:14:16.610 --> 00:14:18.380 Relation based research

NOTE Confidence: 0.717979953333333

00:14:18.380 --> 00:14:20.150 epidemiology that have.

NOTE Confidence: 0.873331743333333

00:14:22.550 --> 00:14:25.542 Clinical samples may have

NOTE Confidence: 0.873331743333333

00:14:25.542 --> 00:14:27.038 limited generalizability.

NOTE Confidence: 0.873331743333333

00:14:27.040 --> 00:14:28.488 But when translational science

NOTE Confidence: 0.873331743333333

00:14:28.488 --> 00:14:30.660 is really working at its best,

NOTE Confidence: 0.873331743333333

00:14:30.660 --> 00:14:33.500 we're able to triangulate across

NOTE Confidence: 0.873331743333333

00:14:33.500 --> 00:14:35.824 these domains, and that's when I

NOTE Confidence: 0.873331743333333

00:14:35.824 --> 00:14:37.600 think we can really make progress,

NOTE Confidence: 0.873331743333333

00:14:37.600 --> 00:14:40.150 and my hope is that.

NOTE Confidence: 0.873331743333333

00:14:40.150 --> 00:14:41.548 By the end of this talk,

NOTE Confidence: 0.873331743333333

00:14:41.550 --> 00:14:44.538 I've convinced you.

NOTE Confidence: 0.873331743333333

00:14:44.540 --> 00:14:46.634 That the story of prenatal SSRI

NOTE Confidence: 0.873331743333333

00:14:46.634 --> 00:14:48.860 exposure is 1 where this trend?

NOTE Confidence: 0.885836240416667

00:14:54.920 --> 00:14:58.007 By giving you some background on depression

NOTE Confidence: 0.885836240416667

00:14:58.007 --> 00:15:00.815 during pregnancy to provide some context

NOTE Confidence: 0.885836240416667

00:15:00.815 --> 00:15:03.160 for why antidepressant use during

NOTE Confidence: 0.885836240416667

00:15:03.160 --> 00:15:05.857 pregnancy is such an important topic.

NOTE Confidence: 0.885836240416667

00:15:05.860 --> 00:15:08.665 So to begin, UM, depression

NOTE Confidence: 0.885836240416667

00:15:08.665 --> 00:15:10.257 during pregnancy common,

NOTE Confidence: 0.885836240416667

00:15:10.257 --> 00:15:12.592 it's estimated that anywhere from

NOTE Confidence: 0.885836240416667

00:15:12.592 --> 00:15:16.455 10 to 20% of women will experience

NOTE Confidence: 0.885836240416667

00:15:16.455 --> 00:15:18.210 depression during pregnancy,

NOTE Confidence: 0.885836240416667

00:15:18.210 --> 00:15:21.050 and then there are a host of associated

NOTE Confidence: 0.885836240416667

00:15:21.050 --> 00:15:23.190 risks that go along with that.

NOTE Confidence: 0.885836240416667

00:15:23.190 --> 00:15:25.392 So, first and foremost is the

NOTE Confidence: 0.885836240416667

00:15:25.392 --> 00:15:26.860 depressed and anxious mood.

NOTE Confidence: 0.885836240416667

00:15:26.860 --> 00:15:29.380 But the suffering of the depression

NOTE Confidence: 0.885836240416667

00:15:29.380 --> 00:15:32.269 experience by the by the individual.

NOTE Confidence: 0.885836240416667

00:15:32.270 --> 00:15:34.643 But then there are a host of

NOTE Confidence: 0.885836240416667

00:15:34.643 --> 00:15:35.660 other potential complications.

NOTE Confidence: 0.885836240416667

00:15:35.660 --> 00:15:37.660 So one is that, UM,

NOTE Confidence: 0.885836240416667

00:15:37.660 --> 00:15:39.800 prenatal depression is associated

NOTE Confidence: 0.885836240416667

00:15:39.800 --> 00:15:41.940 with worse prenatal care,

NOTE Confidence: 0.885836240416667

00:15:41.940 --> 00:15:44.280 poor nutrition.

NOTE Confidence: 0.885836240416667

00:15:44.280 --> 00:15:46.440 An increased risk for substance

NOTE Confidence: 0.885836240416667

00:15:46.440 --> 00:15:47.736 abuse and suicide.

NOTE Confidence: 0.885836240416667

00:15:47.740 --> 00:15:50.205 There's also concerns about premature

NOTE Confidence: 0.885836240416667

00:15:50.205 --> 00:15:52.670 delivery and low birth weight.

NOTE Confidence: 0.885836240416667

00:15:52.670 --> 00:15:56.258 A another growing concern is that

NOTE Confidence: 0.885836240416667

00:15:56.258 --> 00:15:58.436 prenatal depression may increase

NOTE Confidence: 0.885836240416667

00:15:58.436 --> 00:16:01.364 stress hormones and have trickle down

NOTE Confidence: 0.885836240416667

00:16:01.364 --> 00:16:04.757 effects on the fetus by altering

NOTE Confidence: 0.885836240416667

00:16:04.757 --> 00:16:06.506 the intrauterine environment.

NOTE Confidence: 0.885836240416667

00:16:06.510 --> 00:16:08.764 And then last but certainly not least,

NOTE Confidence: 0.885836240416667

00:16:08.770 --> 00:16:10.636 is that prenatal depression is really

NOTE Confidence: 0.885836240416667

00:16:10.636 --> 00:16:13.310 a set up for postpartum depression,

NOTE Confidence: 0.885836240416667

00:16:13.310 --> 00:16:16.274 which can have negative effects on

NOTE Confidence: 0.885836240416667

00:16:16.274 --> 00:16:18.645 the parent infant interaction with

NOTE Confidence: 0.885836240416667

00:16:18.645 --> 00:16:20.620 downstream effects on neural development.

NOTE Confidence: 0.72025746

00:16:23.640 --> 00:16:26.660 So if a pregnant woman develops

NOTE Confidence: 0.72025746

00:16:26.660 --> 00:16:28.162 depression and discuss his

NOTE Confidence: 0.72025746

00:16:28.162 --> 00:16:29.498 treatment with her doctor,

NOTE Confidence: 0.72025746

00:16:29.500 --> 00:16:31.530 it's really important to keep

NOTE Confidence: 0.72025746

00:16:31.530 --> 00:16:33.560 in mind that this decision,

NOTE Confidence: 0.72025746

00:16:33.560 --> 00:16:34.796 the treatment decision,

NOTE Confidence: 0.72025746

00:16:34.796 --> 00:16:36.856 is really a balancing act.

NOTE Confidence: 0.72025746

00:16:36.860 --> 00:16:39.182 The the physician and the pregnant

NOTE Confidence: 0.72025746

00:16:39.182 --> 00:16:41.857 woman are trying on the one hand

NOTE Confidence: 0.72025746

00:16:41.857 --> 00:16:43.963 to weigh the negative effects of

NOTE Confidence: 0.72025746

00:16:43.963 --> 00:16:46.685 the depression while at the same

NOTE Confidence: 0.72025746

00:16:46.685 --> 00:16:48.980 time considering potential risks of

NOTE Confidence: 0.72025746

00:16:48.980 --> 00:16:49.979 prenatal antidepressant exposure.

NOTE Confidence: 0.72025746

00:16:49.979 --> 00:16:52.310 And when I say enter the present.

NOTE Confidence: 0.72025746

00:16:52.310 --> 00:16:54.285 Oh sure, I'm referring primarily

NOTE Confidence: 0.72025746

00:16:54.285 --> 00:16:55.470 to SSRI exposure,

NOTE Confidence: 0.72025746

00:16:55.470 --> 00:16:58.606 and I'll show you later that's the

NOTE Confidence: 0.72025746

00:16:58.606 --> 00:17:00.940 primary medication class that's used.

NOTE Confidence: 0.72025746

00:17:00.940 --> 00:17:02.544 Uhm, and the SSRI.

NOTE Confidence: 0.72025746

00:17:02.544 --> 00:17:06.000 Exposure to the fetus really is not trivial.

NOTE Confidence: 0.72025746

00:17:06.000 --> 00:17:07.533 These medications readily

NOTE Confidence: 0.72025746

00:17:07.533 --> 00:17:09.577 pass through the placenta,

NOTE Confidence: 0.72025746

00:17:09.580 --> 00:17:12.905 and it's estimated that their levels in

NOTE Confidence: 0.72025746

00:17:12.905 --> 00:17:15.483 fetal circulation are anywhere from 70

NOTE Confidence: 0.72025746

00:17:15.483 --> 00:17:19.908 to 80% of that of the maternal levels.

NOTE Confidence: 0.72025746

00:17:19.910 --> 00:17:23.837 Safety concerns have come up over the

NOTE Confidence: 0.72025746

00:17:23.837 --> 00:17:28.328 years with a variety of FDA warnings.

NOTE Confidence: 0.72025746

00:17:28.330 --> 00:17:30.035 But most of these concerns

NOTE Confidence: 0.72025746

00:17:30.035 --> 00:17:31.740 have been put to rest,

NOTE Confidence: 0.72025746

00:17:31.740 --> 00:17:33.804 or at least these concerns have

NOTE Confidence: 0.72025746

00:17:33.804 --> 00:17:35.611 seemed far less significant than

NOTE Confidence: 0.72025746

00:17:35.611 --> 00:17:37.456 the risk of untreated depression.

NOTE Confidence: 0.8983368

00:17:39.930 --> 00:17:43.308 And as these safety concerns have subsided,

NOTE Confidence: 0.8983368

00:17:43.310 --> 00:17:45.490 prenatal SSRI use in EU.

NOTE Confidence: 0.8983368

00:17:45.490 --> 00:17:47.270 S has steadily increased.

NOTE Confidence: 0.8983368

00:17:47.270 --> 00:17:50.356 So what I'm showing here is the

NOTE Confidence: 0.8983368

00:17:50.356 --> 00:17:52.430 percentage of pregnant women taking

NOTE Confidence: 0.8983368

00:17:52.430 --> 00:17:54.612 an antidepressant in EU. S. Overtime.

NOTE Confidence: 0.8983368

00:17:54.612 --> 00:17:57.209 Then you can see this steady increase.

NOTE Confidence: 0.8983368

00:17:57.210 --> 00:17:58.922 The top line here.

NOTE Confidence: 0.8983368

00:17:58.922 --> 00:18:01.062 Is any antidepressant and the

NOTE Confidence: 0.8983368

00:18:01.062 --> 00:18:03.360 next line down is of those.

NOTE Confidence: 0.8983368

00:18:03.360 --> 00:18:04.992 The percentage of SSR eyes and

NOTE Confidence: 0.8983368

00:18:04.992 --> 00:18:07.439 so you can see that the Lions

NOTE Confidence: 0.8983368

00:18:07.439 --> 00:18:09.159 sharing enter depressant prescribed

NOTE Confidence: 0.8983368

00:18:09.159 --> 00:18:10.940 during pregnancy are indeed.

NOTE Confidence: 0.8983368

00:18:10.940 --> 00:18:14.120 SSRI, enter the presence.

NOTE Confidence: 0.8983368

00:18:14.120 --> 00:18:17.480 And so we're now at a point where

NOTE Confidence: 0.8983368

00:18:17.480 --> 00:18:20.736 SSR eyes are used by anywhere from 4

NOTE Confidence: 0.8983368

00:18:20.736 --> 00:18:23.860 to 8% of pregnant women in the US,

NOTE Confidence: 0.8983368

00:18:23.860 --> 00:18:26.458 and that translates to anywhere from

NOTE Confidence: 0.8983368

00:18:26.460 --> 00:18:31.280 160 to 320,000 babies born each year.

NOTE Confidence: 0.8983368

00:18:31.280 --> 00:18:31.990 In EU.

NOTE Confidence: 0.8983368

00:18:31.990 --> 00:18:34.670 S who have been prenatally exposed to SSRI's.

NOTE Confidence: 0.902139433529412

00:18:38.950 --> 00:18:41.050 So now that I've I've given you

NOTE Confidence: 0.902139433529412

00:18:41.050 --> 00:18:43.077 some of the clinical context

NOTE Confidence: 0.902139433529412

00:18:43.077 --> 00:18:45.717 regarding SSRI use during pregnancy,

NOTE Confidence: 0.902139433529412

00:18:45.720 --> 00:18:48.024 I want to shift to the second part

NOTE Confidence: 0.902139433529412

00:18:48.024 --> 00:18:50.888 of my talk where we move from the

NOTE Confidence: 0.902139433529412

00:18:50.888 --> 00:18:53.372 clinical setting to the bench or

NOTE Confidence: 0.902139433529412

00:18:53.372 --> 00:18:55.850 do basic neuroscience research and

NOTE Confidence: 0.902139433529412

00:18:55.850 --> 00:18:59.450 starting in the early 2000s Neuro

NOTE Confidence: 0.902139433529412

00:18:59.450 --> 00:19:02.189 Neuro scientists started trying to

NOTE Confidence: 0.902139433529412

00:19:02.189 --> 00:19:05.118 use preclinical models to understand

NOTE Confidence: 0.902139433529412

00:19:05.118 --> 00:19:08.253 how SSR eyes are effective.

NOTE Confidence: 0.902139433529412

00:19:08.260 --> 00:19:11.410 And at the most proxamol level,

NOTE Confidence: 0.902139433529412

00:19:11.410 --> 00:19:14.240 we have a pretty good sense of how they work,

NOTE Confidence: 0.902139433529412

00:19:14.240 --> 00:19:16.916 so you have your presynaptic and

NOTE Confidence: 0.902139433529412

00:19:16.916 --> 00:19:18.715 postsynaptic neurons and SSRI's

NOTE Confidence: 0.902139433529412

00:19:18.715 --> 00:19:20.990 block the transporter that reabsorb

NOTE Confidence: 0.902139433529412

00:19:20.990 --> 00:19:23.269 serotonin from the synaptic cleft

NOTE Confidence: 0.902139433529412

00:19:23.269 --> 00:19:24.829 from the synaptic cleft.

NOTE Confidence: 0.87764699

00:19:27.040 --> 00:19:29.614 So one approach that was used

NOTE Confidence: 0.87764699

00:19:29.614 --> 00:19:32.882 early on to try to understand how

NOTE Confidence: 0.87764699

00:19:32.882 --> 00:19:36.037 SSRI's work was the transporter,

NOTE Confidence: 0.87764699

00:19:36.040 --> 00:19:38.500 knockout mouse and the idea here.

NOTE Confidence: 0.87764699

00:19:38.500 --> 00:19:40.714 And this was work done in

NOTE Confidence: 0.87764699

00:19:40.714 --> 00:19:43.100 large part by J Gingrich.

NOTE Confidence: 0.87764699

00:19:43.100 --> 00:19:45.992 The idea here was that it's

NOTE Confidence: 0.87764699

00:19:45.992 --> 00:19:47.920 SSRI lock the transporter,

NOTE Confidence: 0.87764699

00:19:47.920 --> 00:19:50.920 then simply removing the transporter

NOTE Confidence: 0.87764699

00:19:50.920 --> 00:19:53.674 should mimic those SSRI effects and

NOTE Confidence: 0.87764699

00:19:53.674 --> 00:19:55.941 essentially creating a highly resilient

NOTE Confidence: 0.87764699

00:19:55.941 --> 00:19:58.765 mouse or or a type of mighty mouse.

NOTE Confidence: 0.944829727692308

00:20:00.780 --> 00:20:03.270 And what's quite interesting is that

NOTE Confidence: 0.944829727692308

00:20:03.270 --> 00:20:06.159 that's not at all what was found.

NOTE Confidence: 0.944829727692308

00:20:06.160 --> 00:20:09.254 Uhm, instead of a less anxious mouse,

NOTE Confidence: 0.944829727692308

00:20:09.260 --> 00:20:12.620 the knockout mouse actually displays more

NOTE Confidence: 0.944829727692308

00:20:12.620 --> 00:20:16.316 anxious like behavior and an example of

NOTE Confidence: 0.944829727692308

00:20:16.316 --> 00:20:20.320 that is using the latency to feed paradigm.

NOTE Confidence: 0.944829727692308

00:20:20.320 --> 00:20:22.525 So what you see here is a mouse in

NOTE Confidence: 0.944829727692308

00:20:22.525 --> 00:20:24.730 a cage with a tasty food pellet

NOTE Confidence: 0.944829727692308

00:20:24.730 --> 00:20:26.669 in the middle of the cage,

NOTE Confidence: 0.944829727692308

00:20:26.670 --> 00:20:28.194 and the investigators measure

NOTE Confidence: 0.944829727692308

00:20:28.194 --> 00:20:30.970 how long it takes for the mouse.

NOTE Confidence: 0.944829727692308

00:20:30.970 --> 00:20:33.265 To get up the courage to go into the

NOTE Confidence: 0.944829727692308

00:20:33.265 --> 00:20:35.289 middle of the cage and and eat the

NOTE Confidence: 0.944829727692308

00:20:35.289 --> 00:20:37.850 treat and so first you see the latency

NOTE Confidence: 0.944829727692308

00:20:37.850 --> 00:20:40.769 to feed in the the wild type mouse.

NOTE Confidence: 0.944829727692308

00:20:40.770 --> 00:20:43.875 Uhm and then come with a mouse have been

NOTE Confidence: 0.944829727692308

00:20:43.875 --> 00:20:46.117 pretreated with the necessary you see,

NOTE Confidence: 0.944829727692308

00:20:46.120 --> 00:20:48.164 a decrease in the latency to feed.

NOTE Confidence: 0.944829727692308

00:20:48.170 --> 00:20:50.690 So in other words the mouse gets up the

NOTE Confidence: 0.944829727692308

00:20:50.690 --> 00:20:52.677 courage sooner and it goes into the

NOTE Confidence: 0.944829727692308

00:20:52.677 --> 00:20:55.029 middle of the cage and eats the pellet.

NOTE Confidence: 0.944829727692308

00:20:55.030 --> 00:20:57.767 Uhm, but with the knockout mouse you

NOTE Confidence: 0.944829727692308

00:20:57.767 --> 00:21:00.320 actually see this increased latency.

NOTE Confidence: 0.944829727692308

00:21:00.320 --> 00:21:01.128 So surprisingly,

NOTE Confidence: 0.944829727692308

00:21:01.128 --> 00:21:03.148 it actually takes that in-house,

NOTE Confidence: 0.944829727692308

00:21:03.150 --> 00:21:06.696 longer to get up the courage to go and

NOTE Confidence: 0.944829727692308

00:21:06.696 --> 00:21:09.754 explore the middle of the of the cage.

NOTE Confidence: 0.30717582

00:21:12.630 --> 00:21:16.300 Uhm? And I realized that I'm being

NOTE Confidence: 0.30717582

00:21:16.300 --> 00:21:18.528 a bit loose in my my language here.

NOTE Confidence: 0.30717582

00:21:18.530 --> 00:21:19.804 When I when I say I'm out

NOTE Confidence: 0.30717582

00:21:19.804 --> 00:21:20.760 getting up the courage.

NOTE Confidence: 0.30717582

00:21:20.760 --> 00:21:23.418 Obviously I'm not meeting that literally.

NOTE Confidence: 0.30717582

00:21:23.420 --> 00:21:26.508 What I mean really is anxious like behaviors.

NOTE Confidence: 0.30717582

00:21:26.510 --> 00:21:28.838 Uhm? And so this finding has

NOTE Confidence: 0.30717582

00:21:28.838 --> 00:21:30.002 actually been replicated.

NOTE Confidence: 0.30717582

00:21:30.010 --> 00:21:32.684 Now many, many times what I'm showing

NOTE Confidence: 0.30717582

00:21:32.684 --> 00:21:37.480 the slides here on the left these are.

NOTE Confidence: 0.30717582

00:21:37.480 --> 00:21:39.466 Brain slices that are staying for

NOTE Confidence: 0.30717582

00:21:39.466 --> 00:21:41.196 this for the serotonin transporter

NOTE Confidence: 0.30717582

00:21:41.196 --> 00:21:43.940 and the wild type you see that the

NOTE Confidence: 0.30717582

00:21:43.940 --> 00:21:45.495 transporter is relatively ubiquitous

NOTE Confidence: 0.30717582

00:21:45.495 --> 00:21:47.415 across the the mouse brain,

NOTE Confidence: 0.30717582

00:21:47.420 --> 00:21:49.460 and then on the slide on the right

NOTE Confidence: 0.30717582

00:21:49.460 --> 00:21:51.180 it's entirely absent, so the the

NOTE Confidence: 0.30717582

00:21:51.180 --> 00:21:52.740 knockout process does indeed do it.

NOTE Confidence: 0.30717582

00:21:52.740 --> 00:21:54.320 It's supposed to do.

NOTE Confidence: 0.30717582

00:21:54.320 --> 00:21:59.190 And then, in terms of behavioral phenotypes.

NOTE Confidence: 0.30717582

00:21:59.190 --> 00:22:00.620 What I described previously was

NOTE Confidence: 0.30717582

00:22:00.620 --> 00:22:02.050 to increase latency to feed,

NOTE Confidence: 0.30717582

00:22:02.050 --> 00:22:04.165 but there's also increased anxiety

NOTE Confidence: 0.30717582

00:22:04.165 --> 00:22:07.130 like behaviors on an open field test,

NOTE Confidence: 0.30717582

00:22:07.130 --> 00:22:09.370 there's increased stress responsivity,

NOTE Confidence: 0.30717582

00:22:09.370 --> 00:22:11.050 increased social avoidance,

NOTE Confidence: 0.30717582

00:22:11.050 --> 00:22:12.499 and increased sensitivity

NOTE Confidence: 0.30717582

00:22:12.499 --> 00:22:14.914 to alcohol and to cocaine.

NOTE Confidence: 0.98018676

00:22:18.610 --> 00:22:21.124 Now, this finding of increased

NOTE Confidence: 0.98018676

00:22:21.124 --> 00:22:23.929 anxiety and depressive like behaviors

NOTE Confidence: 0.98018676

00:22:23.929 --> 00:22:27.218 is somewhat paradoxical because if

NOTE Confidence: 0.98018676

00:22:27.220 --> 00:22:29.440 SSRI's or disabling the transporter,

NOTE Confidence: 0.98018676

00:22:29.440 --> 00:22:31.450 then why should it be that

NOTE Confidence: 0.98018676

00:22:31.450 --> 00:22:32.790 removing the transporter should

NOTE Confidence: 0.98018676

00:22:32.855 --> 00:22:36.020 actually have the opposite effect?

NOTE Confidence: 0.98018676

00:22:36.020 --> 00:22:39.684 And to answer this is where having a

NOTE Confidence: 0.98018676

00:22:39.684 --> 00:22:42.890 developmental perspective is so so critical.

NOTE Confidence: 0.98018676

00:22:42.890 --> 00:22:44.240 So if we think of the,

NOTE Confidence: 0.98018676

00:22:44.240 --> 00:22:46.646 the knockout mouse is having the

NOTE Confidence: 0.98018676

00:22:46.646 --> 00:22:48.720 transporter removed from the gecko,

NOTE Confidence: 0.98018676

00:22:48.720 --> 00:22:50.728 so there's increased serotonin

NOTE Confidence: 0.98018676

00:22:50.728 --> 00:22:52.934 signaling from conception all

NOTE Confidence: 0.98018676

00:22:52.934 --> 00:22:55.206 the way through development.

NOTE Confidence: 0.98018676

00:22:55.210 --> 00:22:56.230 And what the FINA?

NOTE Confidence: 0.98018676

00:22:56.230 --> 00:22:57.250 The behavioral phenotype that

NOTE Confidence: 0.98018676

00:22:57.250 --> 00:22:58.914 we see is increased, anxious,

NOTE Confidence: 0.98018676

00:22:58.914 --> 00:23:00.930 and depressive like behaviors.

NOTE Confidence: 0.98018676

00:23:00.930 --> 00:23:03.260 The story is quite different

NOTE Confidence: 0.98018676

00:23:03.260 --> 00:23:07.240 with an SSRI treated.

NOTE Confidence: 0.98018676

00:23:07.240 --> 00:23:09.319 A mouse where you expose the mouse

NOTE Confidence: 0.98018676

00:23:09.319 --> 00:23:11.752 to an SSRI later in development

NOTE Confidence: 0.98018676

00:23:11.752 --> 00:23:14.197 and therefore only have increased

NOTE Confidence: 0.98018676

00:23:14.197 --> 00:23:16.182 serotonin signaling on a much

NOTE Confidence: 0.98018676

00:23:16.182 --> 00:23:18.048 more mature brain and see a

NOTE Confidence: 0.98018676

00:23:18.048 --> 00:23:19.470 different behavioral phenotype.

NOTE Confidence: 0.97753

00:23:22.570 --> 00:23:26.182 So this, UM, this sort of developmental

NOTE Confidence: 0.97753

00:23:26.182 --> 00:23:29.340 insight LED Mark answer Key and

NOTE Confidence: 0.97753

00:23:29.340 --> 00:23:31.840 others to conduct a really elegant

NOTE Confidence: 0.97753

00:23:31.840 --> 00:23:33.910 series of experiments where they

NOTE Confidence: 0.97753

00:23:33.985 --> 00:23:36.553 asked what would happen if you

NOTE Confidence: 0.97753

00:23:36.553 --> 00:23:38.903 block the serotonin transporter over

NOTE Confidence: 0.97753

00:23:38.903 --> 00:23:41.167 distinct periods during development.

NOTE Confidence: 0.97753

00:23:41.170 --> 00:23:45.022 And so using an SSRI in this case Prozac,

NOTE Confidence: 0.97753

00:23:45.030 --> 00:23:47.406 they blocked the transporter in mice

NOTE Confidence: 0.97753

00:23:47.406 --> 00:23:48.990 at different developmental stages,

NOTE Confidence: 0.97753

00:23:48.990 --> 00:23:51.210 and then probed the anxious and

NOTE Confidence: 0.97753

00:23:51.210 --> 00:23:52.690 depressive like behaviors in

NOTE Confidence: 0.97753

00:23:52.753 --> 00:23:54.477 these mice during adulthood.

NOTE Confidence: 0.8245571116

00:23:56.810 --> 00:23:58.946 And what they found was that

NOTE Confidence: 0.8245571116

00:23:58.946 --> 00:24:00.887 if they blocked the transporter

NOTE Confidence: 0.8245571116

00:24:00.887 --> 00:24:03.515 during the adult period during post

NOTE Confidence: 0.8245571116

00:24:03.515 --> 00:24:06.390 day to post Natal Day 90 to 190,

NOTE Confidence: 0.8245571116

00:24:06.390 --> 00:24:08.994 they did not see this increased in

NOTE Confidence: 0.8245571116

00:24:08.994 --> 00:24:11.200 anxious or depressed like behaviors.

NOTE Confidence: 0.8245571116

00:24:11.200 --> 00:24:15.268 Similarly, post data 21 to 41.

NOTE Confidence: 0.8245571116

00:24:15.270 --> 00:24:18.189 And it was only in this relatively

NOTE Confidence: 0.8245571116

00:24:18.189 --> 00:24:21.435 narrow window window that they saw that

NOTE Confidence: 0.8245571116

00:24:21.435 --> 00:24:23.825 adult phenotypes increased anxiety from

NOTE Confidence: 0.8245571116

00:24:23.825 --> 00:24:27.520 post Natal Day two to post Natal Day 11.

NOTE Confidence: 0.73137486

00:24:31.360 --> 00:24:37.696 So. Uhm? If we now translate that

NOTE Confidence: 0.73137486

00:24:37.696 --> 00:24:40.004 period into the human analogue.

NOTE Confidence: 0.73137486

00:24:40.004 --> 00:24:42.680 That period of post Natal Day

NOTE Confidence: 0.73137486

00:24:42.762 --> 00:24:45.240 two through post Natal Day 11,

NOTE Confidence: 0.73137486

00:24:45.240 --> 00:24:47.368 translates into the third

NOTE Confidence: 0.73137486

00:24:47.368 --> 00:24:49.496 trimester gestation in humans.

NOTE Confidence: 0.73137486

00:24:49.500 --> 00:24:50.920 So the prenatal period.

NOTE Confidence: 0.902990575714286

00:24:54.150 --> 00:24:56.614 Mark and others then went on to show

NOTE Confidence: 0.902990575714286

00:24:56.614 --> 00:24:59.344 that this early increase in serotonin

NOTE Confidence: 0.902990575714286

00:24:59.344 --> 00:25:01.384 signaling caused abnormalities in

NOTE Confidence: 0.902990575714286

00:25:01.384 --> 00:25:03.680 morphology and electrophysiology,

NOTE Confidence: 0.902990575714286

00:25:03.680 --> 00:25:08.384 and the informit cortex as well as.

NOTE Confidence: 0.902990575714286

00:25:08.390 --> 00:25:10.250 Alterations in theater learning.

NOTE Confidence: 0.9142392752

00:25:15.080 --> 00:25:17.460 So now, uhm. The question that we

NOTE Confidence: 0.9142392752

00:25:17.460 --> 00:25:20.701 need to ask is why should serotonin

NOTE Confidence: 0.9142392752

00:25:20.701 --> 00:25:23.381 signaling have such different effects

NOTE Confidence: 0.9142392752

00:25:23.381 --> 00:25:26.188 depending on the stage and development?

NOTE Confidence: 0.936306277272727

00:25:29.110 --> 00:25:31.774 It occurs the answer to this

NOTE Confidence: 0.936306277272727

00:25:31.774 --> 00:25:34.280 question is still somewhat unknown,

NOTE Confidence: 0.936306277272727

00:25:34.280 --> 00:25:36.170 but it likely relates to the

NOTE Confidence: 0.936306277272727

00:25:36.170 --> 00:25:37.856 functional role of serotonin changing

NOTE Confidence: 0.936306277272727

00:25:37.856 --> 00:25:39.696 over the course of development.

NOTE Confidence: 0.936306277272727

00:25:39.700 --> 00:25:42.055 So in adulthood, serotonin acts

NOTE Confidence: 0.936306277272727

00:25:42.055 --> 00:25:43.939 like a canonical neurotransmitter,

NOTE Confidence: 0.936306277272727

00:25:43.940 --> 00:25:46.202 but during the fetal period serotonin

NOTE Confidence: 0.936306277272727

00:25:46.202 --> 00:25:49.635 seems to act more like growth factor

NOTE Confidence: 0.936306277272727

00:25:49.635 --> 00:25:51.486 influencing neuronal proliferation,

NOTE Confidence: 0.936306277272727

00:25:51.490 --> 00:25:54.360 migration as well as the

NOTE Confidence: 0.936306277272727

00:25:54.360 --> 00:26:00.079 organization of early neurons and.

NOTE Confidence: 0.936306277272727

00:26:00.080 --> 00:26:01.890 My favorite example of this

NOTE Confidence: 0.936306277272727

00:26:01.890 --> 00:26:04.048 comes from Pat Leavitt's lab,

NOTE Confidence: 0.936306277272727

00:26:04.048 --> 00:26:07.252 where they found that the actual

NOTE Confidence: 0.936306277272727

00:26:07.252 --> 00:26:10.722 direction of axonal growth and can

NOTE Confidence: 0.936306277272727

00:26:10.722 --> 00:26:13.034 actually be reversed depending

NOTE Confidence: 0.936306277272727

00:26:13.034 --> 00:26:15.620 on serotonin concentrations.

NOTE Confidence: 0.936306277272727

00:26:15.620 --> 00:26:17.760 The mechanisms underlying how serotonin

NOTE Confidence: 0.936306277272727

00:26:17.760 --> 00:26:19.472 function changes over development

NOTE Confidence: 0.936306277272727

00:26:19.472 --> 00:26:21.353 are still being worked out and

NOTE Confidence: 0.936306277272727

00:26:21.353 --> 00:26:23.359 not within the scope of this talk,

NOTE Confidence: 0.936306277272727

00:26:23.360 --> 00:26:25.904 but there is a lot of really interesting

NOTE Confidence: 0.936306277272727

00:26:25.904 --> 00:26:27.730 work being done in this area,

NOTE Confidence: 0.936306277272727

00:26:27.730 --> 00:26:28.882 and I provide a reference here

NOTE Confidence: 0.936306277272727

00:26:28.882 --> 00:26:30.130 for those who are interested.

NOTE Confidence: 0.909897368333333

00:26:34.250 --> 00:26:37.130 So I now want to take you to

NOTE Confidence: 0.909897368333333

00:26:37.130 --> 00:26:39.320 the next part of the talk,

NOTE Confidence: 0.909897368333333

00:26:39.320 --> 00:26:42.080 so we've gone from the clinic where we

NOTE Confidence: 0.909897368333333

00:26:42.159 --> 00:26:44.919 talked about the increase in the use of

NOTE Confidence: 0.909897368333333

00:26:44.919 --> 00:26:48.244 SSR eyes during pregnancy to the bench,

NOTE Confidence: 0.909897368333333

00:26:48.244 --> 00:26:50.584 where we learned that at

NOTE Confidence: 0.909897368333333

00:26:50.584 --> 00:26:53.618 least in a preclinical model.

NOTE Confidence: 0.909897368333333

00:26:53.620 --> 00:26:56.536 Prenatal exposure to accessorize seemed to

NOTE Confidence: 0.909897368333333

00:26:56.536 --> 00:27:00.080 have long lasting our development effects,

NOTE Confidence: 0.909897368333333

00:27:00.080 --> 00:27:01.990 but the question now is,

NOTE Confidence: 0.909897368333333

00:27:01.990 --> 00:27:04.916 does this have any relevance to humans?

NOTE Confidence: 0.909897368333333

00:27:04.920 --> 00:27:06.500 And to answer this question,

NOTE Confidence: 0.909897368333333

00:27:06.500 --> 00:27:10.326 we're going to move from the bench to

NOTE Confidence: 0.909897368333333

00:27:10.326 --> 00:27:14.430 population studies or epidemiology.

NOTE Confidence: 0.909897368333333

00:27:14.430 --> 00:27:17.877 So I'm going to take you on a trip

NOTE Confidence: 0.909897368333333

00:27:17.877 --> 00:27:20.607 across the Atlantic to Finland.

NOTE Confidence: 0.909897368333333

00:27:20.610 --> 00:27:23.394 And Finland is really an extraordinary

NOTE Confidence: 0.909897368333333

00:27:23.394 --> 00:27:25.690 place to do epidemiologic work,

NOTE Confidence: 0.909897368333333

00:27:25.690 --> 00:27:27.778 because their health system

NOTE Confidence: 0.909897368333333

00:27:27.778 --> 00:27:29.866 tracks their health system,

NOTE Confidence: 0.909897368333333

00:27:29.870 --> 00:27:33.118 has a national registry where they can

NOTE Confidence: 0.909897368333333

00:27:33.118 --> 00:27:36.547 track all citizens from from birth forward,

NOTE Confidence: 0.909897368333333

00:27:36.550 --> 00:27:39.755 allowing investigators such like Andre

NOTE Confidence: 0.909897368333333

00:27:39.755 --> 00:27:43.110 surrender to look at the effects

NOTE Confidence: 0.909897368333333

00:27:43.110 --> 00:27:46.570 of exposures at a population level.

NOTE Confidence: 0.909897368333333

00:27:46.570 --> 00:27:49.600 So using this finish register registry,

NOTE Confidence: 0.909897368333333

00:27:49.600 --> 00:27:52.270 Andre and his colleagues were able

NOTE Confidence: 0.909897368333333

00:27:52.270 --> 00:27:54.450 to identify 60,000 infants who

NOTE Confidence: 0.909897368333333

00:27:54.450 --> 00:27:57.306 were born between 1996 to 2010.

NOTE Confidence: 0.909897368333333

00:27:57.306 --> 00:28:00.438 And then they stratified that sample

NOTE Confidence: 0.909897368333333

00:28:00.438 --> 00:28:02.976 into 33,000 who were born to healthy,

NOTE Confidence: 0.909897368333333

00:28:02.980 --> 00:28:04.050 nondepressed mothers.

NOTE Confidence: 0.909897368333333

00:28:04.050 --> 00:28:06.725 10,000 born to mothers with

NOTE Confidence: 0.909897368333333

00:28:06.725 --> 00:28:09.340 a diagnosis of depression.

NOTE Confidence: 0.909897368333333

00:28:09.340 --> 00:28:12.892 And then another 17,000 born to

NOTE Confidence: 0.909897368333333

00:28:12.892 --> 00:28:15.125 mothers who had a psychiatric illness

NOTE Confidence: 0.909897368333333

00:28:15.125 --> 00:28:17.450 and used an SSRI during pregnancy.

NOTE Confidence: 0.887326894

00:28:20.460 --> 00:28:22.170 And here's what they what

NOTE Confidence: 0.887326894

00:28:22.170 --> 00:28:23.880 they found and this slide.

NOTE Confidence: 0.887326894

00:28:23.880 --> 00:28:25.280 I realize it's a. It's a bit busy,

NOTE Confidence: 0.887326894

00:28:25.280 --> 00:28:28.220 so let me walk you through it.

NOTE Confidence: 0.887326894

00:28:28.220 --> 00:28:30.284 So what we're looking at here

NOTE Confidence: 0.887326894

00:28:30.284 --> 00:28:32.010 are four different outcomes in

NOTE Confidence: 0.887326894

00:28:32.010 --> 00:28:33.720 the children and the top left.

NOTE Confidence: 0.887326894

00:28:33.720 --> 00:28:35.104 The outcome is depression,

NOTE Confidence: 0.887326894

00:28:35.104 --> 00:28:37.180 and these are the percentage of

NOTE Confidence: 0.887326894

00:28:37.241 --> 00:28:39.149 children who develop depression,

NOTE Confidence: 0.887326894

00:28:39.150 --> 00:28:41.094 and these are the ages of the children.

NOTE Confidence: 0.887326894

00:28:41.100 --> 00:28:42.766 So as you move from from birth

NOTE Confidence: 0.887326894

00:28:42.766 --> 00:28:44.813 all the way up to 14 and you

NOTE Confidence: 0.887326894

00:28:44.813 --> 00:28:46.088 see there's this increase in

NOTE Confidence: 0.887326894

00:28:46.146 --> 00:28:47.790 the prevalence of depression.

NOTE Confidence: 0.887326894

00:28:47.790 --> 00:28:51.006 The top line has the infants

NOTE Confidence: 0.887326894

00:28:51.006 --> 00:28:53.470 who were exposed prenatally to

NOTE Confidence: 0.887326894

00:28:53.470 --> 00:28:56.445 SSRI's and you can see that that

NOTE Confidence: 0.887326894

00:28:56.445 --> 00:28:58.491 group is significantly higher

NOTE Confidence: 0.887326894

00:28:58.491 --> 00:29:01.046 than all the other groups.

NOTE Confidence: 0.887326894

00:29:01.050 --> 00:29:04.115 The other groups that they looked at were

NOTE Confidence: 0.887326894

00:29:04.115 --> 00:29:07.580 infants who were exposed to a maternal

NOTE Confidence: 0.887326894

00:29:07.580 --> 00:29:09.989 psychiatric illness during pregnancy,

NOTE Confidence: 0.887326894

00:29:09.990 --> 00:29:11.554 but with no medication.

NOTE Confidence: 0.887326894

00:29:11.554 --> 00:29:15.006 You see that in blue and yellow

NOTE Confidence: 0.887326894

00:29:15.006 --> 00:29:18.746 you have mothers who discontinued.

NOTE Confidence: 0.887326894

00:29:18.750 --> 00:29:23.370 SSRI before becoming pregnant.

NOTE Confidence: 0.887326894

00:29:23.370 --> 00:29:26.394 Uhm and and and then the black.

NOTE Confidence: 0.887326894

00:29:26.400 --> 00:29:29.838 You have a healthy control group.

NOTE Confidence: 0.887326894

00:29:29.840 --> 00:29:33.107 So there's a few things to note about this,

NOTE Confidence: 0.887326894

00:29:33.110 --> 00:29:36.275 so one is that the effects surprisingly

NOTE Confidence: 0.887326894

00:29:36.275 --> 00:29:37.950 seems to be somewhat specific,

NOTE Confidence: 0.887326894

00:29:37.950 --> 00:29:40.225 and that we see the effects of.

NOTE Confidence: 0.887326894

00:29:40.230 --> 00:29:42.477 On depression outcome but we don't see

NOTE Confidence: 0.887326894

00:29:42.477 --> 00:29:44.530 those effects for anxiety disorders,

NOTE Confidence: 0.887326894

00:29:44.530 --> 00:29:45.961 autism or ADHD.

NOTE Confidence: 0.887326894

00:29:45.961 --> 00:29:49.300 We don't see separation across the groups.

NOTE Confidence: 0.887326894

00:29:49.300 --> 00:29:54.487 And also the stratification that they use.

NOTE Confidence: 0.887326894

00:29:54.490 --> 00:29:57.268 Controls for the the presence of

NOTE Confidence: 0.887326894

00:29:57.268 --> 00:29:59.750 psychiatric illness in the mother.

NOTE Confidence: 0.887326894

00:29:59.750 --> 00:30:03.978 So it's unlikely to be attributable to.

NOTE Confidence: 0.887326894

00:30:03.980 --> 00:30:05.780 Prenatal psychiatric illness alone.

NOTE Confidence: 0.877406196875

00:30:08.750 --> 00:30:11.375 Uhm? So this finish epidemiologic

NOTE Confidence: 0.877406196875

00:30:11.375 --> 00:30:14.000 study is consistent with the

NOTE Confidence: 0.877406196875

00:30:14.093 --> 00:30:17.399 preclinical findings that I showed you.

NOTE Confidence: 0.877406196875

00:30:17.400 --> 00:30:19.818 But there really are some critical

NOTE Confidence: 0.877406196875

00:30:19.818 --> 00:30:21.845 limitations that are that are

NOTE Confidence: 0.877406196875

00:30:21.845 --> 00:30:23.580 important to be mindful of.

NOTE Confidence: 0.877406196875

00:30:23.580 --> 00:30:25.056 First and foremost,

NOTE Confidence: 0.877406196875

00:30:25.056 --> 00:30:28.008 there's a problem of what's called

NOTE Confidence: 0.877406196875

00:30:28.008 --> 00:30:30.930 surveillance bias and what that refers to is.

NOTE Confidence: 0.877406196875

00:30:30.930 --> 00:30:33.858 The idea that if they if a pregnant

NOTE Confidence: 0.877406196875

00:30:33.858 --> 00:30:35.411 woman developed depression goes

NOTE Confidence: 0.877406196875

00:30:35.411 --> 00:30:37.649 to her doctor and decides to

NOTE Confidence: 0.877406196875

00:30:37.649 --> 00:30:39.619 take an anti depressant.

NOTE Confidence: 0.877406196875

00:30:39.620 --> 00:30:40.268 That woman,

NOTE Confidence: 0.877406196875

00:30:40.268 --> 00:30:42.536 when she becomes a mother may be

NOTE Confidence: 0.877406196875

00:30:42.536 --> 00:30:44.487 more likely to notice depression

NOTE Confidence: 0.877406196875

00:30:44.487 --> 00:30:46.827 and her offspring and bring her

NOTE Confidence: 0.877406196875

00:30:46.895 --> 00:30:50.770 offspring to see a a physician

NOTE Confidence: 0.877406196875

00:30:50.770 --> 00:30:52.936 rather than relative to a woman

NOTE Confidence: 0.877406196875

00:30:52.936 --> 00:30:54.834 who who's depressed but does

NOTE Confidence: 0.877406196875

00:30:54.834 --> 00:30:56.358 not seek SSRI treatment.

NOTE Confidence: 0.856944297142857

00:30:59.280 --> 00:31:03.046 The second issue is post Natal factors.

NOTE Confidence: 0.856944297142857

00:31:03.050 --> 00:31:05.342 So the finish study really did

NOTE Confidence: 0.856944297142857

00:31:05.342 --> 00:31:07.450 not address post Natal issues,

NOTE Confidence: 0.856944297142857

00:31:07.450 --> 00:31:09.000 so it's possible, for example,

NOTE Confidence: 0.856944297142857

00:31:09.000 --> 00:31:11.622 that the SSRI exposed group also

NOTE Confidence: 0.856944297142857

00:31:11.622 --> 00:31:13.370 experienced more negative post

NOTE Confidence: 0.856944297142857

00:31:13.447 --> 00:31:16.153 data exposures and these post Natal

NOTE Confidence: 0.856944297142857

00:31:16.153 --> 00:31:18.396 exposures were really driving the

NOTE Confidence: 0.856944297142857

00:31:18.396 --> 00:31:20.944 outcomes rather than the SSRI per say.

NOTE Confidence: 0.940411072

00:31:23.940 --> 00:31:25.610 And then the third limitation,

NOTE Confidence: 0.940411072

00:31:25.610 --> 00:31:27.494 and this is really a critical

NOTE Confidence: 0.940411072

00:31:27.494 --> 00:31:29.520 one in a really difficult.

NOTE Confidence: 0.940411072

00:31:29.520 --> 00:31:30.580 It's called one to address.

NOTE Confidence: 0.940411072

00:31:30.580 --> 00:31:33.448 This is called confounding by indication,

NOTE Confidence: 0.940411072

00:31:33.450 --> 00:31:35.664 and this is an issue that I'm going to

NOTE Confidence: 0.940411072

00:31:35.664 --> 00:31:37.535 continue to refer to later in the talk.

NOTE Confidence: 0.940411072

00:31:37.540 --> 00:31:39.448 This compound refers to the idea

NOTE Confidence: 0.940411072

00:31:39.448 --> 00:31:41.237 that there could be something

NOTE Confidence: 0.940411072

00:31:41.237 --> 00:31:43.025 systematically different about the

NOTE Confidence: 0.940411072

00:31:43.025 --> 00:31:45.940 mothers who took SSRI during pregnancy.

NOTE Confidence: 0.940411072

00:31:45.940 --> 00:31:47.059 So, for example,

NOTE Confidence: 0.940411072

00:31:47.059 --> 00:31:49.297 there might be some reason why

NOTE Confidence: 0.940411072

00:31:49.297 --> 00:31:51.358 those mothers were prescribed

NOTE Confidence: 0.940411072

00:31:51.360 --> 00:31:53.430 SSRI's versus the mothers who had

NOTE Confidence: 0.940411072

00:31:53.430 --> 00:31:55.540 depression and were not prescribed.

NOTE Confidence: 0.940411072

00:31:55.540 --> 00:31:56.500 Perhaps, for example,

NOTE Confidence: 0.940411072

00:31:56.500 --> 00:31:58.420 they had a more severe depression,

NOTE Confidence: 0.940411072

00:31:58.420 --> 00:31:59.585 and that's really what was

NOTE Confidence: 0.940411072

00:31:59.585 --> 00:32:00.284 driving the finding.

NOTE Confidence: 0.893974804285714

00:32:04.250 --> 00:32:07.034 So to try to address these

NOTE Confidence: 0.893974804285714

00:32:07.034 --> 00:32:08.478 limitations, I'm going to.

NOTE Confidence: 0.893974804285714

00:32:08.478 --> 00:32:11.079 I'm going to take you back to the

NOTE Confidence: 0.893974804285714

00:32:11.079 --> 00:32:13.017 clinic to a clinic based study

NOTE Confidence: 0.893974804285714

00:32:13.017 --> 00:32:14.934 that that we recently completed

NOTE Confidence: 0.893974804285714

00:32:14.934 --> 00:32:17.745 where we tried to address at least

NOTE Confidence: 0.893974804285714

00:32:17.745 --> 00:32:19.617 these first two limitations.

NOTE Confidence: 0.855215685

00:32:22.590 --> 00:32:26.254 So this is a an infant MRI study

NOTE Confidence: 0.855215685

00:32:26.254 --> 00:32:29.266 that we completed at New York

NOTE Confidence: 0.855215685

00:32:29.266 --> 00:32:31.347 Presbyterian Hospital where we

NOTE Confidence: 0.855215685

00:32:31.347 --> 00:32:34.448 recruited pregnant women from the OBGY

NOTE Confidence: 0.855215685

00:32:34.448 --> 00:32:38.216 and clinics at New York Presbyterian.

NOTE Confidence: 0.855215685

00:32:38.220 --> 00:32:41.485 We then conducted prenatal diagnostic

NOTE Confidence: 0.855215685

00:32:41.485 --> 00:32:44.750 and medication assessments and anywhere

NOTE Confidence: 0.855215685

00:32:44.843 --> 00:32:47.895 from 19 weeks to 39 weeks gestation.

NOTE Confidence: 0.855215685

00:32:47.900 --> 00:32:49.815 And then we stratified the

NOTE Confidence: 0.855215685

00:32:49.815 --> 00:32:51.347 women into three groups.

NOTE Confidence: 0.855215685

00:32:51.350 --> 00:32:53.384 So we had our healthy control

NOTE Confidence: 0.855215685

00:32:53.384 --> 00:32:55.300 group with no psychiatric illness.

NOTE Confidence: 0.855215685

00:32:55.300 --> 00:32:57.844 Are group of women who developed

NOTE Confidence: 0.855215685

00:32:57.844 --> 00:32:59.540 who are experienced depression

NOTE Confidence: 0.855215685

00:32:59.614 --> 00:33:02.152 during pregnancy but did not take

NOTE Confidence: 0.855215685

00:33:02.152 --> 00:33:05.286 medication and and then our SSRI group?

NOTE Confidence: 0.848795159

00:33:07.660 --> 00:33:11.783 We then obtained MRI scans on their

NOTE Confidence: 0.848795159

00:33:11.783 --> 00:33:15.310 babies at about 3 1/2 weeks of age.

NOTE Confidence: 0.848795159

00:33:15.310 --> 00:33:17.995 These were non sedated infants

NOTE Confidence: 0.848795159

00:33:17.995 --> 00:33:20.143 naturally put to sleep.

NOTE Confidence: 0.848795159

00:33:20.150 --> 00:33:23.365 And we covariate for intersex

NOTE Confidence: 0.848795159

00:33:23.365 --> 00:33:27.040 agents can birth weight and any

NOTE Confidence: 0.848795159

00:33:27.040 --> 00:33:30.008 post Natal depressive symptoms.

NOTE Confidence: 0.848795159

00:33:30.010 --> 00:33:32.887 So the strength of doing MRI scanning

NOTE Confidence: 0.848795159

00:33:32.887 --> 00:33:36.836 so early in life is that it limits the

NOTE Confidence: 0.848795159

00:33:36.836 --> 00:33:39.510 possibility of post Natal exposures.

NOTE Confidence: 0.848795159

00:33:39.510 --> 00:33:41.554 So we're essentially phenotyping

NOTE Confidence: 0.848795159

00:33:41.554 --> 00:33:43.940 the brain prior to the infant

NOTE Confidence: 0.848795159

00:33:43.940 --> 00:33:45.640 having many post Natal exposures

NOTE Confidence: 0.848795159

00:33:45.640 --> 00:33:47.530 by virtue of the young age.

NOTE Confidence: 0.805480718

00:33:51.270 --> 00:33:53.190 And this is work that was

NOTE Confidence: 0.805480718

00:33:53.190 --> 00:33:54.470 spearheaded by Claudia Lugo.

NOTE Confidence: 0.805480718

00:33:54.470 --> 00:33:57.170 Condo lesson juchau that they

NOTE Confidence: 0.805480718

00:33:57.170 --> 00:34:00.410 published in JAMA Pediatrics in 2018.

NOTE Confidence: 0.805480718

00:34:00.410 --> 00:34:02.840 So what do we find?

NOTE Confidence: 0.805480718

00:34:02.840 --> 00:34:05.290 So there's a couple findings that I

NOTE Confidence: 0.805480718

00:34:05.290 --> 00:34:08.219 I want to draw your attention to.

NOTE Confidence: 0.805480718

00:34:08.220 --> 00:34:10.492 Using structural MRI and

NOTE Confidence: 0.805480718

00:34:10.492 --> 00:34:13.332 looking across the whole brain,

NOTE Confidence: 0.805480718

00:34:13.340 --> 00:34:16.480 we found that the prenatally

NOTE Confidence: 0.805480718

00:34:16.480 --> 00:34:18.364 exposed babies had.

NOTE Confidence: 0.918001133333333

00:34:21.080 --> 00:34:23.100 Really two important findings.

NOTE Confidence: 0.918001133333333

00:34:23.100 --> 00:34:25.206 One was an increase in the

NOTE Confidence: 0.918001133333333

00:34:25.206 --> 00:34:26.576 volume of the right amygdala,

NOTE Confidence: 0.918001133333333

00:34:26.580 --> 00:34:28.316 and that was above and beyond what

NOTE Confidence: 0.918001133333333

00:34:28.316 --> 00:34:30.538 we saw in the depressed only group,

NOTE Confidence: 0.918001133333333

00:34:30.540 --> 00:34:32.780 and the healthy controls.

NOTE Confidence: 0.918001133333333

00:34:32.780 --> 00:34:35.006 And then similarly we saw a volume

NOTE Confidence: 0.918001133333333

00:34:35.006 --> 00:34:36.979 increase in the right amygdala,

NOTE Confidence: 0.918001133333333

00:34:36.980 --> 00:34:39.368 again in the SSRI group above,

NOTE Confidence: 0.918001133333333

00:34:39.370 --> 00:34:41.104 and beyond what we saw in

NOTE Confidence: 0.918001133333333

00:34:41.104 --> 00:34:42.260 our two comparison groups.

NOTE Confidence: 0.873931452727273

00:34:45.430 --> 00:34:48.573 We then looked at a diffusion tractography

NOTE Confidence: 0.873931452727273

00:34:48.573 --> 00:34:51.560 to look at white matter connectivity

NOTE Confidence: 0.873931452727273

00:34:51.560 --> 00:34:55.179 and again here we looked across the

NOTE Confidence: 0.873931452727273

00:34:55.267 --> 00:34:57.451 whole brain and unbiased approach.

NOTE Confidence: 0.873931452727273

00:34:57.451 --> 00:35:00.984 And and we found that there were four

NOTE Confidence: 0.873931452727273

00:35:00.984 --> 00:35:03.674 white matter connections that were

NOTE Confidence: 0.873931452727273

00:35:03.674 --> 00:35:06.740 increased differentially in the SSRI group.

NOTE Confidence: 0.873931452727273

00:35:06.740 --> 00:35:11.942 And what was most striking and that is that.

NOTE Confidence: 0.873931452727273

00:35:11.950 --> 00:35:15.394 The similar to the structural MRI findings

NOTE Confidence: 0.873931452727273

00:35:15.394 --> 00:35:18.107 we found increased connectivity between

NOTE Confidence: 0.873931452727273

00:35:18.107 --> 00:35:21.344 the right amygdala and the right insula,

NOTE Confidence: 0.873931452727273

00:35:21.344 --> 00:35:23.192 and that's displayed here in the

NOTE Confidence: 0.873931452727273

00:35:23.192 --> 00:35:25.126 violin plot again in the SSRI group,

NOTE Confidence: 0.873931452727273

00:35:25.130 --> 00:35:27.335 but not in our two comparison groups.

NOTE Confidence: 0.878474449473684

00:35:30.440 --> 00:35:32.546 So while these findings are consistent

NOTE Confidence: 0.878474449473684

00:35:32.546 --> 00:35:35.063 with what we would expect from the

NOTE Confidence: 0.878474449473684

00:35:35.063 --> 00:35:37.157 preclinical data that I showed you,

NOTE Confidence: 0.878474449473684

00:35:37.160 --> 00:35:38.965 as well as the population

NOTE Confidence: 0.878474449473684

00:35:38.965 --> 00:35:40.409 based study in Finland,

NOTE Confidence: 0.878474449473684

00:35:40.410 --> 00:35:43.750 they're not without important limitations.

NOTE Confidence: 0.878474449473684

00:35:43.750 --> 00:35:44.906 So first and foremost,

NOTE Confidence: 0.878474449473684

00:35:44.906 --> 00:35:46.640 our sample size was quite small.

NOTE Confidence: 0.878474449473684

00:35:46.640 --> 00:35:49.167 We only had 16 babies who were

NOTE Confidence: 0.878474449473684

00:35:49.167 --> 00:35:50.942 prenatally exposed tests, or I.

NOTE Confidence: 0.878474449473684

00:35:50.942 --> 00:35:53.018 Second, we still haven't addressed this

NOTE Confidence: 0.878474449473684

00:35:53.018 --> 00:35:55.449 issue of confounding by indication,

NOTE Confidence: 0.878474449473684

00:35:55.450 --> 00:35:56.350 which again I'm going to.

NOTE Confidence: 0.878474449473684

00:35:56.350 --> 00:35:58.712 I'm going to come back to 3rd.

NOTE Confidence: 0.878474449473684

00:35:58.712 --> 00:36:00.164 We had no in this study.

NOTE Confidence: 0.878474449473684

00:36:00.170 --> 00:36:01.690 We had no behavioral follow-ups,

NOTE Confidence: 0.878474449473684

00:36:01.690 --> 00:36:04.518 and we really don't know the behavioral

NOTE Confidence: 0.878474449473684

00:36:04.518 --> 00:36:06.700 significance of our MRI findings.

NOTE Confidence: 0.878474449473684

00:36:06.700 --> 00:36:08.944 And then, third importantly,

NOTE Confidence: 0.878474449473684

00:36:08.944 --> 00:36:11.749 there were really striking demographic

NOTE Confidence: 0.878474449473684

00:36:11.749 --> 00:36:13.739 differences across our samples.

NOTE Confidence: 0.878474449473684

00:36:13.740 --> 00:36:16.540 So if we looked at the SSRI group

NOTE Confidence: 0.878474449473684

00:36:16.540 --> 00:36:19.547 versus the depressed but no SSRI group,

NOTE Confidence: 0.878474449473684

00:36:19.550 --> 00:36:23.588 the SSRI group was significantly wealthier.

NOTE Confidence: 0.878474449473684

00:36:23.590 --> 00:36:25.806 We can't know for sure why that happened,

NOTE Confidence: 0.878474449473684

00:36:25.810 --> 00:36:29.464 but we assume it relates to access to care,

NOTE Confidence: 0.878474449473684

00:36:29.470 --> 00:36:31.101 and we of course tried to control

NOTE Confidence: 0.878474449473684

00:36:31.101 --> 00:36:32.509 for this and our analysis.

NOTE Confidence: 0.878474449473684

00:36:32.510 --> 00:36:34.028 But when the when the difference

NOTE Confidence: 0.878474449473684

00:36:34.028 --> 00:36:34.787 is that stark,

NOTE Confidence: 0.878474449473684

00:36:34.790 --> 00:36:37.086 there's a limit to what you can control.

NOTE Confidence: 0.878474449473684

00:36:37.090 --> 00:36:38.500 Or just statistically?

NOTE Confidence: 0.93774384

00:36:41.830 --> 00:36:45.560 OK. So this brings me to our

NOTE Confidence: 0.93774384

00:36:45.560 --> 00:36:48.156 our current ongoing study which

NOTE Confidence: 0.93774384

00:36:48.156 --> 00:36:50.644 were conducting in Sherbrooke,

NOTE Confidence: 0.93774384

00:36:50.650 --> 00:36:54.066 QC and this is a collaborative project

NOTE Confidence: 0.93774384

00:36:54.066 --> 00:36:57.309 that we're doing with Larissa Taxor,

NOTE Confidence: 0.93774384

00:36:57.310 --> 00:36:58.996 who's a professor at the University

NOTE Confidence: 0.93774384

00:36:58.996 --> 00:37:00.520 of Sherbrooke and Adi Talati,

NOTE Confidence: 0.93774384

00:37:00.520 --> 00:37:02.850 who is an associate professor

NOTE Confidence: 0.93774384

00:37:02.850 --> 00:37:04.248 at Columbia University.

NOTE Confidence: 0.93774384

00:37:04.250 --> 00:37:06.482 And the first question that I

NOTE Confidence: 0.93774384

00:37:06.482 --> 00:37:08.331 always get when presenting this

NOTE Confidence: 0.93774384

00:37:08.331 --> 00:37:10.333 work is why are we doing this

NOTE Confidence: 0.93774384

00:37:10.333 --> 00:37:12.639 study in Sherbrooke and in Quebec?

NOTE Confidence: 0.93774384

00:37:12.640 --> 00:37:15.734 And there's a few reasons for that.

NOTE Confidence: 0.93774384

00:37:15.740 --> 00:37:19.100 One is that as many of you know,

NOTE Confidence: 0.93774384

00:37:19.100 --> 00:37:21.550 Canada has universal health care,

NOTE Confidence: 0.93774384

00:37:21.550 --> 00:37:24.014 so that issue that I described before

NOTE Confidence: 0.93774384

00:37:24.014 --> 00:37:25.813 having the demographic differences that

NOTE Confidence: 0.93774384

00:37:25.813 --> 00:37:28.533 we think we're related to access to care.

NOTE Confidence: 0.93774384

00:37:28.540 --> 00:37:30.276 We're hoping that by doing this study

NOTE Confidence: 0.93774384

00:37:30.276 --> 00:37:32.419 in an area with universal healthcare,

NOTE Confidence: 0.93774384

00:37:32.420 --> 00:37:34.712 that should no longer be an

NOTE Confidence: 0.93774384

00:37:34.712 --> 00:37:36.780 issue in our follow-up study.

NOTE Confidence: 0.93774384

00:37:36.780 --> 00:37:38.670 The second Sherbrooke,

NOTE Confidence: 0.93774384

00:37:38.670 --> 00:37:40.560 being in Quebec,

NOTE Confidence: 0.93774384

00:37:40.560 --> 00:37:43.255 is Quebec is the only French speaking

NOTE Confidence: 0.93774384

00:37:43.255 --> 00:37:45.722 province in Canada and as a result

NOTE Confidence: 0.93774384

00:37:45.722 --> 00:37:48.314 people who are born in Quebec tend to

NOTE Confidence: 0.93774384

00:37:48.314 --> 00:37:50.624 stay in Quebec and for anyone who's

NOTE Confidence: 0.93774384

00:37:50.624 --> 00:37:53.590 ever done birth cohort brief research,

NOTE Confidence: 0.93774384

00:37:53.590 --> 00:37:54.885 you really don't want people

NOTE Confidence: 0.93774384

00:37:54.885 --> 00:37:56.768 moving out of area and makes it

NOTE Confidence: 0.93774384

00:37:56.768 --> 00:37:58.370 much much harder to do followups,

NOTE Confidence: 0.93774384

00:37:58.370 --> 00:37:59.942 so doing this type of study

NOTE Confidence: 0.93774384

00:37:59.942 --> 00:38:01.850 in in Quebec is advantageous,

NOTE Confidence: 0.93774384

00:38:01.850 --> 00:38:04.185 and our collaborator lyrics attacks

NOTE Confidence: 0.93774384

00:38:04.185 --> 00:38:07.340 are Rana prior birth cohort study and.

NOTE Confidence: 0.93774384

00:38:07.340 --> 00:38:09.956 At 90% retention up into adolescence,

NOTE Confidence: 0.93774384

00:38:09.960 --> 00:38:12.190 which is really remarkable for

NOTE Confidence: 0.93774384

00:38:12.190 --> 00:38:13.974 that type of study.

NOTE Confidence: 0.93774384

00:38:13.980 --> 00:38:15.315 And then third,

NOTE Confidence: 0.93774384

00:38:15.315 --> 00:38:17.095 although Sherbrooke is a

NOTE Confidence: 0.93774384

00:38:17.095 --> 00:38:18.430 relatively small city,

NOTE Confidence: 0.93774384

00:38:18.430 --> 00:38:20.320 it has about 200,000 people.

NOTE Confidence: 0.93774384

00:38:20.320 --> 00:38:22.310 It's the tertiary Center for

NOTE Confidence: 0.93774384

00:38:22.310 --> 00:38:23.902 all of eastern Quebec,

NOTE Confidence: 0.93774384

00:38:23.910 --> 00:38:25.345 so their volume of deliveries

NOTE Confidence: 0.93774384

00:38:25.345 --> 00:38:26.493 is actually quite high.

NOTE Confidence: 0.93774384

00:38:26.500 --> 00:38:29.048 They get about 2000 deliveries per year.

NOTE Confidence: 0.910686649444445

00:38:32.170 --> 00:38:34.634 So in this new study we are going

NOTE Confidence: 0.910686649444445

00:38:34.634 --> 00:38:37.015 to be recruiting women during

NOTE Confidence: 0.910686649444445

00:38:37.015 --> 00:38:39.825 the first trimester of pregnancy,

NOTE Confidence: 0.910686649444445

00:38:39.830 --> 00:38:42.260 following them over the course of

NOTE Confidence: 0.910686649444445

00:38:42.260 --> 00:38:44.424 gestation while tracking their depressive

NOTE Confidence: 0.910686649444445

00:38:44.424 --> 00:38:46.799 symptoms and their medication use.

NOTE Confidence: 0.910686649444445

00:38:46.800 --> 00:38:48.780 Will then be scanning their babies

NOTE Confidence: 0.910686649444445

00:38:48.780 --> 00:38:51.432 with MRI at about one month of age

NOTE Confidence: 0.910686649444445

00:38:51.432 --> 00:38:53.334 and then continuing to follow the

NOTE Confidence: 0.910686649444445

00:38:53.401 --> 00:38:56.510 babies for the 1st 24 months of life.

NOTE Confidence: 0.910686649444445

00:38:56.510 --> 00:38:59.030 And there's really three aims

NOTE Confidence: 0.910686649444445

00:38:59.030 --> 00:39:01.550 that we're trying to tackle.

NOTE Confidence: 0.910686649444445

00:39:01.550 --> 00:39:04.028 The first is can we replicate

NOTE Confidence: 0.910686649444445

00:39:04.028 --> 00:39:06.350 our prior infant MRI studies

NOTE Confidence: 0.910686649444445

00:39:06.350 --> 00:39:09.290 regarding the amygdala and insula?

NOTE Confidence: 0.910686649444445

00:39:09.290 --> 00:39:11.858 Uhm, the second ummites determine whether

NOTE Confidence: 0.910686649444445

00:39:11.858 --> 00:39:14.160 there are any behavioral effects.

NOTE Confidence: 0.910686649444445

00:39:14.160 --> 00:39:16.652 So we'll be doing will be looking

NOTE Confidence: 0.910686649444445

00:39:16.652 --> 00:39:18.513 at behavioral effects related to

NOTE Confidence: 0.910686649444445

00:39:18.513 --> 00:39:20.323 emotion regulation in the babies

NOTE Confidence: 0.910686649444445

00:39:20.323 --> 00:39:22.389 at 12 months and 24 months,

NOTE Confidence: 0.910686649444445

00:39:22.390 --> 00:39:24.290 testing whether there's any effect

NOTE Confidence: 0.910686649444445

00:39:24.290 --> 00:39:26.190 of SSRI on those behaviors,

NOTE Confidence: 0.910686649444445

00:39:26.190 --> 00:39:28.812 and whether that relates to the

NOTE Confidence: 0.910686649444445

00:39:28.812 --> 00:39:31.799 MRI findings and then third,

NOTE Confidence: 0.910686649444445

00:39:31.799 --> 00:39:36.342 will be testing for post Natal modifyers.

NOTE Confidence: 0.910686649444445

00:39:36.342 --> 00:39:39.800 So, for example, does the parent.

NOTE Confidence: 0.910686649444445

00:39:39.800 --> 00:39:42.260 Infant interaction during the foot needle

NOTE Confidence: 0.910686649444445

00:39:42.260 --> 00:39:44.500 period does that alter our outcomes?

NOTE Confidence: 0.836298476923077

00:39:47.850 --> 00:39:50.786 So I want to return again to this

NOTE Confidence: 0.836298476923077

00:39:50.786 --> 00:39:53.879 issue of confounding by indication,

NOTE Confidence: 0.836298476923077

00:39:53.880 --> 00:39:56.160 because this is an issue that

NOTE Confidence: 0.836298476923077

00:39:56.160 --> 00:39:58.120 we really struggled with in

NOTE Confidence: 0.836298476923077

00:39:58.120 --> 00:39:59.940 trying to design this study.

NOTE Confidence: 0.836298476923077

00:39:59.940 --> 00:40:01.560 Uhm, and the you know,

NOTE Confidence: 0.836298476923077

00:40:01.560 --> 00:40:05.448 the only way to fully address this confound.

NOTE Confidence: 0.836298476923077

00:40:05.450 --> 00:40:06.971 If through randomization

NOTE Confidence: 0.836298476923077

00:40:06.971 --> 00:40:10.013 randomizing or a group of depressed

NOTE Confidence: 0.836298476923077

00:40:10.013 --> 00:40:12.367 women to either SSRI or SIBO.

NOTE Confidence: 0.836298476923077

00:40:12.370 --> 00:40:14.794 But we we felt that that

NOTE Confidence: 0.836298476923077

00:40:14.794 --> 00:40:16.410 would not be feasible,

NOTE Confidence: 0.836298476923077

00:40:16.410 --> 00:40:18.811 and the ethics of that would be

NOTE Confidence: 0.836298476923077

00:40:18.811 --> 00:40:20.820 would be somewhat questionable.

NOTE Confidence: 0.836298476923077

00:40:20.820 --> 00:40:23.135 So in lieu of randomization, uh,

NOTE Confidence: 0.836298476923077

00:40:23.135 --> 00:40:25.560 we're trying to carefully phenotype

NOTE Confidence: 0.836298476923077

00:40:25.560 --> 00:40:29.280 the the nature of the depression and

NOTE Confidence: 0.836298476923077

00:40:29.280 --> 00:40:32.100 the SSRI use throughout gestation,

NOTE Confidence: 0.836298476923077

00:40:32.100 --> 00:40:34.865 so we will be through remote tracking,

NOTE Confidence: 0.836298476923077

00:40:34.870 --> 00:40:36.865 will be tracking the pregnant

NOTE Confidence: 0.836298476923077

00:40:36.865 --> 00:40:38.461 woman's mood symptoms every

NOTE Confidence: 0.836298476923077

00:40:38.461 --> 00:40:40.698 two weeks throughout gestation.

NOTE Confidence: 0.836298476923077

00:40:40.700 --> 00:40:42.520 Beginning in the first trimester,

NOTE Confidence: 0.836298476923077

00:40:42.520 --> 00:40:45.922 and will also be quantifying SSRI

NOTE Confidence: 0.836298476923077

00:40:45.922 --> 00:40:48.190 exposure through pharmacy records.

NOTE Confidence: 0.836298476923077

00:40:48.190 --> 00:40:49.878 So I want to give you an example

NOTE Confidence: 0.836298476923077

00:40:49.878 --> 00:40:51.488 of how we're thinking about.

NOTE Confidence: 0.836298476923077

00:40:51.490 --> 00:40:53.824 That's so if you take this

NOTE Confidence: 0.836298476923077

00:40:53.824 --> 00:40:55.380 case as one example,

NOTE Confidence: 0.836298476923077

00:40:55.380 --> 00:40:57.256 if you have a a pregnant woman

NOTE Confidence: 0.836298476923077

00:40:57.256 --> 00:40:58.690 during the first trimester,

NOTE Confidence: 0.836298476923077

00:40:58.690 --> 00:41:01.018 her level of depressive symptoms are

NOTE Confidence: 0.836298476923077

00:41:01.018 --> 00:41:03.730 low and she's not taking an SSRI.

NOTE Confidence: 0.836298476923077

00:41:03.730 --> 00:41:05.510 Then during the second trimester

NOTE Confidence: 0.836298476923077

00:41:05.510 --> 00:41:06.934 her depressive symptoms increase.

NOTE Confidence: 0.836298476923077

00:41:06.940 --> 00:41:07.324 Still,

NOTE Confidence: 0.836298476923077

00:41:07.324 --> 00:41:08.092 no SSRI.

NOTE Confidence: 0.836298476923077

00:41:08.092 --> 00:41:10.780 And then during the surgery master she

NOTE Confidence: 0.836298476923077

00:41:10.860 --> 00:41:13.122 has high depressive symptoms and no

NOTE Confidence: 0.836298476923077

00:41:13.122 --> 00:41:15.920 SSRI that will be one case example.

NOTE Confidence: 0.836298476923077

00:41:15.920 --> 00:41:18.160 And then you might have another pregnant

NOTE Confidence: 0.836298476923077

00:41:18.160 --> 00:41:20.698 woman woman wear during the first trimester.

NOTE Confidence: 0.836298476923077

00:41:20.700 --> 00:41:22.758 She has both high levels of depressive

NOTE Confidence: 0.836298476923077

00:41:22.758 --> 00:41:24.983 symptoms and is taking a high dose of

NOTE Confidence: 0.836298476923077

00:41:24.983 --> 00:41:26.870 an SSRI during the second trimester.

NOTE Confidence: 0.836298476923077

00:41:26.870 --> 00:41:28.900 The depressive symptoms remain high.

NOTE Confidence: 0.836298476923077

00:41:28.900 --> 00:41:31.692 SSR eyes drop a bit third trimester.

NOTE Confidence: 0.836298476923077

00:41:31.692 --> 00:41:33.316 Her depressive symptoms drop

NOTE Confidence: 0.836298476923077

00:41:33.316 --> 00:41:35.539 and her SSRI use goes up.

NOTE Confidence: 0.909883598

00:41:37.770 --> 00:41:40.514 What we can do with with that level

NOTE Confidence: 0.909883598

00:41:40.514 --> 00:41:42.632 of granularity then is essentially

NOTE Confidence: 0.909883598

00:41:42.632 --> 00:41:44.444 create individualized areas under

NOTE Confidence: 0.909883598

00:41:44.444 --> 00:41:47.191 the curve to quantify the degree

NOTE Confidence: 0.909883598

00:41:47.191 --> 00:41:49.386 of exposure to depressive symptoms

NOTE Confidence: 0.909883598

00:41:49.386 --> 00:41:52.310 that that the fetus has as well

NOTE Confidence: 0.909883598

00:41:52.310 --> 00:41:55.310 as the degree of SSRI exposure.

NOTE Confidence: 0.909883598

00:41:55.310 --> 00:41:58.061 Uhm, and what we're hoping is that

NOTE Confidence: 0.909883598

00:41:58.061 --> 00:42:00.413 this approach should minimize the

NOTE Confidence: 0.909883598

00:42:00.413 --> 00:42:03.143 likelihood that there are systematic

NOTE Confidence: 0.909883598

00:42:03.143 --> 00:42:05.334 differences in the maternal depression

NOTE Confidence: 0.909883598

00:42:05.334 --> 00:42:06.978 across our different groups,

NOTE Confidence: 0.909883598

00:42:06.980 --> 00:42:08.612 or to the extent that there

NOTE Confidence: 0.909883598

00:42:08.612 --> 00:42:09.428 are systematic differences,

NOTE Confidence: 0.909883598

00:42:09.430 --> 00:42:11.074 will be able to quantify those

NOTE Confidence: 0.909883598

00:42:11.074 --> 00:42:12.460 differences and account for them.

NOTE Confidence: 0.97873497

00:42:17.610 --> 00:42:21.215 So this is a an R1 funded study

NOTE Confidence: 0.97873497

00:42:21.215 --> 00:42:23.565 that we launched in 2019.

NOTE Confidence: 0.97873497

00:42:23.565 --> 00:42:27.520 In our original plan was to have

NOTE Confidence: 0.97873497

00:42:27.520 --> 00:42:30.033 recruitment of about 350 women

NOTE Confidence: 0.97873497

00:42:30.033 --> 00:42:32.980 for the first 2.5 years of the

NOTE Confidence: 0.97873497

00:42:32.980 --> 00:42:35.195 study and then have our final

NOTE Confidence: 0.97873497

00:42:35.195 --> 00:42:37.500 assessments four to five years later.

NOTE Confidence: 0.97873497

00:42:37.500 --> 00:42:39.168 That timeline has unfortunately

NOTE Confidence: 0.97873497

00:42:39.168 --> 00:42:40.419 been significantly altered

NOTE Confidence: 0.97873497

00:42:40.419 --> 00:42:42.558 due to COVID where we were.

NOTE Confidence: 0.97873497

00:42:42.560 --> 00:42:44.348 We were shut down for a

NOTE Confidence: 0.97873497

00:42:44.348 --> 00:42:45.540 significant period of time,

NOTE Confidence: 0.97873497

00:42:45.540 --> 00:42:48.572 but our overall strategy.

NOTE Confidence: 0.97873497

00:42:48.572 --> 00:42:50.846 Remains the same.

NOTE Confidence: 0.97873497

00:42:50.850 --> 00:42:53.202 And another point that I want to

NOTE Confidence: 0.97873497

00:42:53.202 --> 00:42:56.197 make is that our our hope and our

NOTE Confidence: 0.97873497

00:42:56.197 --> 00:42:58.519 expectation from this study is not

NOTE Confidence: 0.97873497

00:42:58.519 --> 00:43:00.940 that will find that prenatal SSRI

NOTE Confidence: 0.97873497

00:43:00.940 --> 00:43:04.230 use is harmful or on the other

NOTE Confidence: 0.97873497

00:43:04.326 --> 00:43:07.296 hand that it's entirely benign,

NOTE Confidence: 0.97873497

00:43:07.300 --> 00:43:09.750 but rather that our study can aid

NOTE Confidence: 0.97873497

00:43:09.750 --> 00:43:11.821 women and clinicians when they're

NOTE Confidence: 0.97873497

00:43:11.821 --> 00:43:14.191 making decisions about whether to

NOTE Confidence: 0.97873497

00:43:14.191 --> 00:43:16.330 use antidepressants during pregnancy.

NOTE Confidence: 0.97873497

00:43:16.330 --> 00:43:17.718 So currently that decision

NOTE Confidence: 0.97873497

00:43:17.718 --> 00:43:19.106 as I mentioned before,

NOTE Confidence: 0.97873497

00:43:19.110 --> 00:43:21.675 really is a balancing act

NOTE Confidence: 0.97873497

00:43:21.675 --> 00:43:23.727 between various risk factors,

NOTE Confidence: 0.97873497

00:43:23.730 --> 00:43:25.420 but we really aren't clear

NOTE Confidence: 0.97873497

00:43:25.420 --> 00:43:27.602 about what those risks are and

NOTE Confidence: 0.97873497

00:43:27.602 --> 00:43:29.286 what those ramifications are.

NOTE Confidence: 0.97873497

00:43:29.290 --> 00:43:32.230 The decisions being made simply

NOTE Confidence: 0.97873497

00:43:32.230 --> 00:43:35.170 with far too many unknowns.

NOTE Confidence: 0.97873497

00:43:35.170 --> 00:43:37.684 And we think that whether or

NOTE Confidence: 0.97873497

00:43:37.684 --> 00:43:39.360 not we find neurodevelopmental

NOTE Confidence: 0.97873497

00:43:39.438 --> 00:43:41.891 effects of prenatal SSRI use these

NOTE Confidence: 0.97873497

00:43:41.891 --> 00:43:44.657 results will be helpful either way.

NOTE Confidence: 0.97873497

00:43:44.660 --> 00:43:45.575 So, for example,

NOTE Confidence: 0.97873497

00:43:45.575 --> 00:43:48.109 if we have find that the effects of

NOTE Confidence: 0.97873497

00:43:48.109 --> 00:43:50.765 the SSRI really are minimal on the offspring,

NOTE Confidence: 0.97873497

00:43:50.770 --> 00:43:52.695 this will allow clinicians to

NOTE Confidence: 0.97873497

00:43:52.695 --> 00:43:54.235 more confidently prescribe SSR

NOTE Confidence: 0.97873497

00:43:54.235 --> 00:43:56.189 eyes and will allow pregnant women

NOTE Confidence: 0.97873497

00:43:56.189 --> 00:43:58.509 to use them with with much less

NOTE Confidence: 0.97873497

00:43:58.509 --> 00:44:00.009 anxiety about their effects.

NOTE Confidence: 0.97873497

00:44:00.010 --> 00:44:00.404 Alternatively,

NOTE Confidence: 0.97873497

00:44:00.404 --> 00:44:03.162 if we find that there are significant

NOTE Confidence: 0.97873497

00:44:03.162 --> 00:44:05.692 effects or significant concerns that.

NOTE Confidence: 0.97873497

00:44:05.692 --> 00:44:08.224 This will steer the field towards

NOTE Confidence: 0.97873497

00:44:08.224 --> 00:44:10.630 towards other treatments for depression

NOTE Confidence: 0.97873497

00:44:10.630 --> 00:44:12.766 treatments such as psychotherapy

NOTE Confidence: 0.97873497

00:44:12.766 --> 00:44:14.902 or non serotonin antidepressants.

NOTE Confidence: 0.894071368518519

00:44:17.900 --> 00:44:21.421 Before concluding, I also I wanted to

NOTE Confidence: 0.894071368518519

00:44:21.421 --> 00:44:24.589 briefly mention some of the methodological

NOTE Confidence: 0.894071368518519

00:44:24.589 --> 00:44:28.236 challenges of doing infant MRI work as

NOTE Confidence: 0.894071368518519

00:44:28.325 --> 00:44:31.538 this was quite relevant to our study.

NOTE Confidence: 0.894071368518519

00:44:31.540 --> 00:44:34.596 So up here on the left hand corner

NOTE Confidence: 0.894071368518519

00:44:34.596 --> 00:44:37.200 I'm showing you infant MRI scans,

NOTE Confidence: 0.894071368518519

00:44:37.200 --> 00:44:39.744 T2 weighted MRI scans from the same child

NOTE Confidence: 0.894071368518519

00:44:39.744 --> 00:44:42.100 when the child was three weeks old,

NOTE Confidence: 0.894071368518519

00:44:42.100 --> 00:44:44.620 and then again when the child was 16

NOTE Confidence: 0.894071368518519

00:44:44.620 --> 00:44:46.798 months old and what I want to point

NOTE Confidence: 0.894071368518519

00:44:46.798 --> 00:44:49.074 out is that this was the same MRI

NOTE Confidence: 0.894071368518519

00:44:49.074 --> 00:44:51.306 pulse sequence and yet you can see

NOTE Confidence: 0.894071368518519

00:44:51.306 --> 00:44:53.652 the contrast in the brain differs

NOTE Confidence: 0.894071368518519

00:44:53.652 --> 00:44:55.451 quite dramatically and the reason

NOTE Confidence: 0.894071368518519

00:44:55.451 --> 00:44:57.810 for that is that the water content

NOTE Confidence: 0.894071368518519

00:44:57.884 --> 00:45:00.154 of the brain changes substantially

NOTE Confidence: 0.894071368518519

00:45:00.154 --> 00:45:02.424 over the course of development.

NOTE Confidence: 0.894071368518519

00:45:02.430 --> 00:45:05.952 And that causes major challenges when

NOTE Confidence: 0.894071368518519

00:45:05.952 --> 00:45:08.921 doing infant MRI research because

NOTE Confidence: 0.894071368518519

00:45:08.921 --> 00:45:11.774 most of our existing pipeline and

NOTE Confidence: 0.894071368518519

00:45:11.774 --> 00:45:13.684 approaches for doing MRI analysis

NOTE Confidence: 0.894071368518519

00:45:13.684 --> 00:45:15.870 are based on a mature brain.

NOTE Confidence: 0.894071368518519

00:45:15.870 --> 00:45:18.006 And so if you change the

NOTE Confidence: 0.894071368518519

00:45:18.006 --> 00:45:18.718 contrast dramatically,

NOTE Confidence: 0.894071368518519

00:45:18.720 --> 00:45:20.104 those approaches are going

NOTE Confidence: 0.894071368518519

00:45:20.104 --> 00:45:21.834 to become much less accurate.

NOTE Confidence: 0.803022016666667

00:45:24.140 --> 00:45:26.918 So this is one UM example,

NOTE Confidence: 0.803022016666667

00:45:26.920 --> 00:45:30.808 where an existing pipeline in MRI

NOTE Confidence: 0.803022016666667

00:45:30.808 --> 00:45:34.402 pipeline and automated software is used

NOTE Confidence: 0.803022016666667

00:45:34.402 --> 00:45:37.180 to segment the amygdala and infant brand.

NOTE Confidence: 0.803022016666667

00:45:37.180 --> 00:45:39.266 So each one of these pictures is

NOTE Confidence: 0.803022016666667

00:45:39.266 --> 00:45:40.832 a different amygdala that's been

NOTE Confidence: 0.803022016666667

00:45:40.832 --> 00:45:42.960 segmented from an infant MRI scan and

NOTE Confidence: 0.803022016666667

00:45:42.960 --> 00:45:44.944 what I want to draw your attention

NOTE Confidence: 0.803022016666667

00:45:44.944 --> 00:45:46.690 to is that there's the overall

NOTE Confidence: 0.803022016666667

00:45:46.690 --> 00:45:48.670 curvature does look like the amygdala,

NOTE Confidence: 0.803022016666667

00:45:48.670 --> 00:45:51.015 but there's bumps and ridges in this

NOTE Confidence: 0.803022016666667

00:45:51.015 --> 00:45:53.169 that are clearly not representing.

NOTE Confidence: 0.803022016666667

00:45:53.170 --> 00:45:56.260 Anatomy and are just in accuracies

NOTE Confidence: 0.803022016666667

00:45:56.260 --> 00:45:58.320 and in the processing.

NOTE Confidence: 0.803022016666667

00:45:58.320 --> 00:46:02.256 So we are trying to leverage

NOTE Confidence: 0.803022016666667

00:46:02.256 --> 00:46:04.880 artificial intelligence to improve

NOTE Confidence: 0.803022016666667

00:46:04.988 --> 00:46:07.280 upon these techniques,

NOTE Confidence: 0.803022016666667

00:46:07.280 --> 00:46:09.680 and so these are the results

NOTE Confidence: 0.803022016666667

00:46:09.680 --> 00:46:11.280 from our AI approach.

NOTE Confidence: 0.803022016666667

00:46:11.280 --> 00:46:13.020 Segmenting the amygdala

NOTE Confidence: 0.803022016666667

00:46:13.020 --> 00:46:15.920 in from infant MRI scans,

NOTE Confidence: 0.803022016666667

00:46:15.920 --> 00:46:17.816 and you can see it's it's

NOTE Confidence: 0.803022016666667

00:46:17.816 --> 00:46:18.764 certainly not perfect,

NOTE Confidence: 0.803022016666667

00:46:18.770 --> 00:46:21.018 but these types of bumps are are much,

NOTE Confidence: 0.803022016666667

00:46:21.020 --> 00:46:24.107 much less common in in our segmentation

NOTE Confidence: 0.803022016666667

00:46:24.107 --> 00:46:26.640 relative to the standard case.

NOTE Confidence: 0.803022016666667

00:46:26.640 --> 00:46:28.276 Another huge.

NOTE Confidence: 0.803022016666667

00:46:28.276 --> 00:46:30.730 Advantage of UM,

NOTE Confidence: 0.803022016666667

00:46:30.730 --> 00:46:32.750 that this artificial intelligence

NOTE Confidence: 0.803022016666667

00:46:32.750 --> 00:46:35.275 approaches the the computational time.

NOTE Confidence: 0.803022016666667

00:46:35.280 --> 00:46:37.535 So segmenting a infant brand

NOTE Confidence: 0.803022016666667

00:46:37.535 --> 00:46:38.888 using standard software,

NOTE Confidence: 0.803022016666667

00:46:38.890 --> 00:46:42.895 it takes up to 8 hours per MRI scan,

NOTE Confidence: 0.803022016666667

00:46:42.900 --> 00:46:43.970 and if you're working with,

NOTE Confidence: 0.803022016666667

00:46:43.970 --> 00:46:46.400 you know large datasets that can

NOTE Confidence: 0.803022016666667

00:46:46.400 --> 00:46:48.020 be incredibly cumbersome for

NOTE Confidence: 0.803022016666667

00:46:48.092 --> 00:46:49.508 artificial intelligence which

NOTE Confidence: 0.803022016666667

00:46:49.508 --> 00:46:52.340 can do the same operation about

NOTE Confidence: 0.803022016666667

00:46:52.340 --> 00:46:54.008 literally about 10 seconds.

NOTE Confidence: 0.803022016666667

00:46:54.010 --> 00:46:56.308 We've also measured the accuracy of

NOTE Confidence: 0.803022016666667

00:46:56.308 --> 00:46:59.194 our AI AI approach against a gold

NOTE Confidence: 0.803022016666667

00:46:59.194 --> 00:47:01.750 standard human tracing of the amygdala,

NOTE Confidence: 0.803022016666667

00:47:01.750 --> 00:47:06.250 and ours outperforms the standard techniques,

NOTE Confidence: 0.803022016666667

00:47:06.250 --> 00:47:07.804 and this is work that's being

NOTE Confidence: 0.803022016666667

00:47:07.804 --> 00:47:09.728 spearheaded by Yun Wang and Claudia Lugo.

NOTE Confidence: 0.803022016666667

00:47:09.730 --> 00:47:10.220 Can Dallas.

NOTE Confidence: 0.646800202

00:47:13.480 --> 00:47:17.160 Uhm? So in summary, UM,

NOTE Confidence: 0.646800202

00:47:17.160 --> 00:47:20.106 some of the lessons that we've

NOTE Confidence: 0.646800202

00:47:20.106 --> 00:47:22.640 learned in doing this work.

NOTE Confidence: 0.646800202

00:47:22.640 --> 00:47:25.270 I realize this is probably preaching,

NOTE Confidence: 0.646800202

00:47:25.270 --> 00:47:26.678 preaching to the choir,

NOTE Confidence: 0.646800202

00:47:26.678 --> 00:47:29.354 but first is the the the importance

NOTE Confidence: 0.646800202

00:47:29.354 --> 00:47:31.774 of development and not forgetting

NOTE Confidence: 0.646800202

00:47:31.774 --> 00:47:35.000 that the infant brain is is not only

NOTE Confidence: 0.646800202

00:47:35.000 --> 00:47:37.196 is not an adult brain, only small,

NOTE Confidence: 0.646800202

00:47:37.196 --> 00:47:39.254 or that the Physiology of the

NOTE Confidence: 0.646800202

00:47:39.254 --> 00:47:41.294 infant brain of the developing

NOTE Confidence: 0.646800202

00:47:41.294 --> 00:47:43.444 brain really can differ quite

NOTE Confidence: 0.646800202

00:47:43.444 --> 00:47:45.068 substantially from the adult brain.

NOTE Confidence: 0.879532114

00:47:47.430 --> 00:47:50.286 The second is the importance of

NOTE Confidence: 0.879532114

00:47:50.286 --> 00:47:52.794 translational research that all of

NOTE Confidence: 0.879532114

00:47:52.794 --> 00:47:54.906 our approaches have limitations,

NOTE Confidence: 0.879532114

00:47:54.910 --> 00:47:58.094 and what we really should be shooting for

NOTE Confidence: 0.879532114

00:47:58.094 --> 00:48:00.609 is triangulation across those modalities.

NOTE Confidence: 0.879532114

00:48:00.610 --> 00:48:02.518 Uhm, and speaking to that point,

NOTE Confidence: 0.879532114

00:48:02.520 --> 00:48:05.742 I I want to conclude with a quote from

NOTE Confidence: 0.879532114

00:48:05.742 --> 00:48:08.246 Michael Rutter who said it would be a

NOTE Confidence: 0.879532114

00:48:08.246 --> 00:48:10.137 great mistake to see translation simply

NOTE Confidence: 0.879532114

00:48:10.137 --> 00:48:12.790 in terms of applying at the bedside.

NOTE Confidence: 0.879532114

00:48:12.790 --> 00:48:14.730 The findings of basic science.

NOTE Confidence: 0.879532114

00:48:14.730 --> 00:48:17.089 Many of the pathways start with clinical

NOTE Confidence: 0.879532114

00:48:17.089 --> 00:48:19.584 studies and not with basic science and

NOTE Confidence: 0.879532114

00:48:19.584 --> 00:48:21.714 an even greater proportion involve a

NOTE Confidence: 0.879532114

00:48:21.779 --> 00:48:24.425 complex iterative interplay between the two.

NOTE Confidence: 0.879532114

00:48:24.430 --> 00:48:25.865 And it's that iterative interplay

NOTE Confidence: 0.879532114

00:48:25.865 --> 00:48:27.946 that I think we're we're really after

NOTE Confidence: 0.879532114

00:48:27.946 --> 00:48:29.728 in in many questions of psychiatry,

NOTE Confidence: 0.879532114

00:48:29.730 --> 00:48:31.078 but certainly.

NOTE Confidence: 0.879532114

00:48:31.078 --> 00:48:34.588 The safety of SS variety during pregnancy.

NOTE Confidence: 0.898881361538461

00:48:36.680 --> 00:48:38.661 So I want to acknowledge that the

NOTE Confidence: 0.898881361538461

00:48:38.661 --> 00:48:40.709 people that have supported this work,

NOTE Confidence: 0.898881361538461

00:48:40.710 --> 00:48:45.570 UM, NIH, UM, the Webster Foundation,

NOTE Confidence: 0.898881361538461

00:48:45.570 --> 00:48:47.520 several others, and really wanted to

NOTE Confidence: 0.898881361538461

00:48:47.520 --> 00:48:49.888 thank you for your time and attention

NOTE Confidence: 0.898881361538461

00:48:49.888 --> 00:48:51.898 and happy to take any questions.

NOTE Confidence: 0.9781951

00:49:05.280 --> 00:49:06.500 Thank you Jonathan. I don't

NOTE Confidence: 0.9781951

00:49:06.500 --> 00:49:07.910 know how it worked on zoom,

NOTE Confidence: 0.829200617692308

00:49:07.910 --> 00:49:09.163 but if you were here in real

NOTE Confidence: 0.829200617692308

00:49:09.163 --> 00:49:10.258 life people just clap for you.

NOTE Confidence: 0.829200617692308

00:49:10.260 --> 00:49:11.538 I want you to know that.

NOTE Confidence: 0.829200617692308

00:49:11.540 --> 00:49:13.649 No, thank you.

NOTE Confidence: 0.829200617692308

00:49:13.650 --> 00:49:16.100 But really excellent and elegant

NOTE Confidence: 0.829200617692308

00:49:16.100 --> 00:49:19.150 program of research you described for me.

NOTE Confidence: 0.829200617692308

00:49:19.150 --> 00:49:20.896 Really cool to see the kind

NOTE Confidence: 0.829200617692308

00:49:20.896 --> 00:49:22.730 of bringing together at the.

NOTE Confidence: 0.829200617692308

00:49:22.730 --> 00:49:24.430 From everything from very basic kind

NOTE Confidence: 0.829200617692308

00:49:24.430 --> 00:49:26.216 of animal work to stuff that's very

NOTE Confidence: 0.829200617692308

00:49:26.216 --> 00:49:29.160 very relevant and applied one second

NOTE Confidence: 0.829200617692308

00:49:29.170 --> 00:49:30.496 while we changed the view here.

NOTE Confidence: 0.9052639

00:49:34.450 --> 00:49:38.570 Jonathan, could you stop sharing? Sure yes.

NOTE Confidence: 0.8612262

00:49:42.540 --> 00:49:44.390 He sent over a share. OK,

NOTE Confidence: 0.87108328

00:49:44.390 --> 00:49:44.918 here you go,

NOTE Confidence: 0.89606836

00:49:45.460 --> 00:49:46.740 Jonathan. There we go.

NOTE Confidence: 0.96044344

00:49:49.410 --> 00:49:51.700 OK, so now my understanding is

NOTE Confidence: 0.96044344

00:49:51.700 --> 00:49:53.620 that people in the audience

NOTE Confidence: 0.921597535333333

00:49:53.697 --> 00:49:56.080 can actually ask a question with

NOTE Confidence: 0.921597535333333

00:49:56.080 --> 00:49:58.240 their own mouths if they would like.

NOTE Confidence: 0.921597535333333

00:49:58.240 --> 00:50:00.292 If they unmute, I don't.

NOTE Confidence: 0.921597535333333

00:50:00.292 --> 00:50:01.989 I don't know that anyone's unmuted yet,

NOTE Confidence: 0.921597535333333

00:50:01.989 --> 00:50:03.419 but I can go ahead and

NOTE Confidence: 0.916782215

00:50:03.630 --> 00:50:04.930 start with a question

NOTE Confidence: 0.859210690344828

00:50:06.030 --> 00:50:08.505 so. I thought it was really cool to see

NOTE Confidence: 0.859210690344828

00:50:08.505 --> 00:50:10.930 to get an understanding of the mechanism

NOTE Confidence: 0.859210690344828

00:50:10.930 --> 00:50:13.586 of how SSR eyes could be affecting

NOTE Confidence: 0.859210690344828

00:50:13.586 --> 00:50:15.986 prenatal brain growth from the mice,

NOTE Confidence: 0.859210690344828

00:50:15.990 --> 00:50:19.854 and it's really cool to see the differences

NOTE Confidence: 0.859210690344828

00:50:19.860 --> 00:50:22.597 that you saw in the the neonates.

NOTE Confidence: 0.859210690344828

00:50:22.600 --> 00:50:24.790 And I guess my questions are,

NOTE Confidence: 0.859210690344828

00:50:24.790 --> 00:50:26.325 I mean, another thing interesting

NOTE Confidence: 0.859210690344828

00:50:26.325 --> 00:50:27.860 is if I understood correctly,

NOTE Confidence: 0.859210690344828

00:50:27.860 --> 00:50:29.558 like the the mechanisms of what

NOTE Confidence: 0.859210690344828

00:50:29.558 --> 00:50:30.690 the authorized we're doing.

NOTE Confidence: 0.859210690344828

00:50:30.690 --> 00:50:33.630 It's not simply like there's just and

NOTE Confidence: 0.859210690344828

00:50:33.630 --> 00:50:35.910 there's too little, too little serotonin.

NOTE Confidence: 0.859210690344828

00:50:35.910 --> 00:50:37.270 It's a different structure,

NOTE Confidence: 0.859210690344828

00:50:37.270 --> 00:50:38.554 it's affecting around migration.

NOTE Confidence: 0.859210690344828

00:50:38.554 --> 00:50:40.480 So I guess my question is,

NOTE Confidence: 0.859210690344828

00:50:40.480 --> 00:50:42.096 is do the mice,

NOTE Confidence: 0.859210690344828

00:50:42.096 --> 00:50:45.670 the differences you see in the mice brains.

NOTE Confidence: 0.859210690344828

00:50:45.670 --> 00:50:46.876 I know that the structure is

NOTE Confidence: 0.859210690344828

00:50:46.876 --> 00:50:47.680 going to be different,

NOTE Confidence: 0.859210690344828

00:50:47.680 --> 00:50:49.600 but are they at least consistent

NOTE Confidence: 0.859210690344828

00:50:49.600 --> 00:50:51.791 with the differences that you see in

NOTE Confidence: 0.859210690344828

00:50:51.791 --> 00:50:53.483 infant brains and an infant brains?

NOTE Confidence: 0.859210690344828

00:50:53.490 --> 00:50:55.338 Is the pattern of kind of insula,

NOTE Confidence: 0.859210690344828

00:50:55.340 --> 00:50:57.248 amygdala enlargement and

NOTE Confidence: 0.859210690344828

00:50:57.248 --> 00:50:58.520 connectivity differences?

NOTE Confidence: 0.859210690344828

00:50:58.520 --> 00:51:00.725 Is that an established kind of neural

NOTE Confidence: 0.859210690344828

00:51:00.725 --> 00:51:02.543 phenotype for people with major

NOTE Confidence: 0.859210690344828

00:51:02.543 --> 00:51:04.050 depressive disorder in adulthood?

NOTE Confidence: 0.772280854

00:51:06.210 --> 00:51:07.660 Those are great great questions.

NOTE Confidence: 0.772280854

00:51:07.660 --> 00:51:09.736 Jamie. Thanks so much for that.

NOTE Confidence: 0.772280854

00:51:09.740 --> 00:51:12.911 Yeah, you know I. I think it's

NOTE Confidence: 0.772280854

00:51:12.911 --> 00:51:15.319 really fascinating to think that.

NOTE Confidence: 0.772280854

00:51:15.320 --> 00:51:17.408 The, UM, the Physiology of serotonin

NOTE Confidence: 0.772280854

00:51:17.408 --> 00:51:21.048 or or it's a it's a fax on the brain

NOTE Confidence: 0.772280854

00:51:21.048 --> 00:51:23.051 can differ so substantially depending

NOTE Confidence: 0.772280854

00:51:23.051 --> 00:51:25.907 on the developmental period that you're

NOTE Confidence: 0.772280854

00:51:25.907 --> 00:51:28.230 you're looking at and you know one of

NOTE Confidence: 0.772280854

00:51:28.230 --> 00:51:29.859 the things that I I didn't mention.

NOTE Confidence: 0.772280854

00:51:29.860 --> 00:51:33.662 Also is that expression of the

NOTE Confidence: 0.772280854

00:51:33.662 --> 00:51:36.038 serotonin transporter also changes

NOTE Confidence: 0.772280854

00:51:36.038 --> 00:51:37.820 substantially across development.

NOTE Confidence: 0.772280854

00:51:37.820 --> 00:51:40.420 So in the adult or mature brain the

NOTE Confidence: 0.772280854

00:51:40.420 --> 00:51:42.670 expression is somewhat circumscribed,

NOTE Confidence: 0.772280854

00:51:42.670 --> 00:51:45.778 whereas in the fetal and infant brain.

NOTE Confidence: 0.772280854

00:51:45.780 --> 00:51:47.048 It's it's rather ubiquitous,

NOTE Confidence: 0.772280854

00:51:47.048 --> 00:51:48.316 so it's it's expressed,

NOTE Confidence: 0.772280854

00:51:48.320 --> 00:51:51.158 although for the brain, and interestingly,

NOTE Confidence: 0.772280854

00:51:51.160 --> 00:51:54.016 it's also it's not in the adult brain,

NOTE Confidence: 0.772280854

00:51:54.020 --> 00:51:56.205 its expression is limited to

NOTE Confidence: 0.772280854

00:51:56.205 --> 00:51:57.516 serotine ergic neurons,

NOTE Confidence: 0.772280854

00:51:57.520 --> 00:51:58.166 which would,

NOTE Confidence: 0.772280854

00:51:58.166 --> 00:52:00.427 which would make sense given its role.

NOTE Confidence: 0.772280854

00:52:00.430 --> 00:52:02.332 But in the fetal brain it's

NOTE Confidence: 0.772280854

00:52:02.332 --> 00:52:04.119 expressed in neurons that that

NOTE Confidence: 0.772280854

00:52:04.119 --> 00:52:05.939 don't actually release serotonin.

NOTE Confidence: 0.772280854

00:52:05.940 --> 00:52:08.676 Again, speaking to the more plausible

NOTE Confidence: 0.772280854

00:52:08.676 --> 00:52:11.778 role of serotonin as a neurotrophic

NOTE Confidence: 0.772280854

00:52:11.778 --> 00:52:14.758 factor rather than a neurotransmitter.

NOTE Confidence: 0.772280854

00:52:14.760 --> 00:52:18.042 Uhm, but to answer the other

NOTE Confidence: 0.772280854

00:52:18.042 --> 00:52:20.230 part of your question.

NOTE Confidence: 0.772280854

00:52:20.230 --> 00:52:23.050 So I I guess I would say yes and no,

NOTE Confidence: 0.772280854

00:52:23.050 --> 00:52:24.850 UM, so certainly,

NOTE Confidence: 0.772280854

00:52:24.850 --> 00:52:25.450 UM,

NOTE Confidence: 0.772280854

00:52:25.450 --> 00:52:28.450 the the behavioral phenotype that

NOTE Confidence: 0.772280854

00:52:28.450 --> 00:52:32.106 they're seeing in the rodent models

NOTE Confidence: 0.772280854

00:52:32.106 --> 00:52:34.739 relate to emotion regulation and

NOTE Confidence: 0.772280854

00:52:34.739 --> 00:52:36.552 what we saw in our Internet MRI

NOTE Confidence: 0.772280854

00:52:36.552 --> 00:52:38.580 scans the effects and the amygdala.

NOTE Confidence: 0.772280854

00:52:38.580 --> 00:52:39.638 The campus,

NOTE Confidence: 0.772280854

00:52:39.638 --> 00:52:41.754 certainly those are heavily

NOTE Confidence: 0.772280854

00:52:41.754 --> 00:52:43.870 implicated in emotional responses

NOTE Confidence: 0.772280854

00:52:43.950 --> 00:52:46.602 or emotional responses in how we

NOTE Confidence: 0.772280854

00:52:46.602 --> 00:52:49.030 respond to various emotional stimuli.

NOTE Confidence: 0.772280854

00:52:49.030 --> 00:52:51.070 So there's there's consistency.

NOTE Confidence: 0.772280854

00:52:51.070 --> 00:52:51.580 There.

NOTE Confidence: 0.772280854

00:52:51.580 --> 00:52:52.028 Uhm,

NOTE Confidence: 0.772280854

00:52:52.028 --> 00:52:53.372 where there's less,

NOTE Confidence: 0.772280854

00:52:53.372 --> 00:52:55.612 consistency is the the specific

NOTE Confidence: 0.772280854

00:52:55.612 --> 00:52:56.930 brain substrates.

NOTE Confidence: 0.772280854

00:52:56.930 --> 00:53:00.288 So in the rodent models the lion's

NOTE Confidence: 0.772280854

00:53:00.288 --> 00:53:02.172 share the lion's share of the

NOTE Confidence: 0.772280854

00:53:02.172 --> 00:53:04.111 findings were hippocampal based in,

NOTE Confidence: 0.772280854

00:53:04.111 --> 00:53:05.416 at least in our hands.

NOTE Confidence: 0.772280854

00:53:05.420 --> 00:53:06.428 We we did not.

NOTE Confidence: 0.772280854

00:53:06.428 --> 00:53:07.940 We did not see the effects

NOTE Confidence: 0.772280854

00:53:08.001 --> 00:53:09.229 and that the campus.

NOTE Confidence: 0.863689304

00:53:11.430 --> 00:53:12.992 But I you know I, I don't.

NOTE Confidence: 0.863689304

00:53:12.992 --> 00:53:14.586 I don't know that, UM,

NOTE Confidence: 0.863689304

00:53:14.586 --> 00:53:16.874 we should expect to see sort of a

NOTE Confidence: 0.863689304

00:53:16.874 --> 00:53:19.047 one to one correspondence in terms

NOTE Confidence: 0.863689304

00:53:19.047 --> 00:53:21.700 of in terms of neural substrates.

NOTE Confidence: 0.863689304

00:53:21.700 --> 00:53:24.528 You know, I think the fact that

NOTE Confidence: 0.863689304

00:53:24.530 --> 00:53:27.138 analogous brain circuits are

NOTE Confidence: 0.863689304

00:53:27.138 --> 00:53:30.236 involved is probably enough to

NOTE Confidence: 0.863689304

00:53:30.236 --> 00:53:33.280 motivate further work in humans. And

NOTE Confidence: 0.754957276315789

00:53:33.290 --> 00:53:35.719 what about babies to adults is like

NOTE Confidence: 0.754957276315789

00:53:35.719 --> 00:53:38.262 the insular amygdala and a kind of

NOTE Confidence: 0.754957276315789

00:53:38.262 --> 00:53:40.052 depressive neural phenotype in adults.

NOTE Confidence: 0.883281646842105

00:53:41.420 --> 00:53:44.156 Yeah, for sure, and I'm sorry that I

NOTE Confidence: 0.883281646842105

00:53:44.156 --> 00:53:47.084 I didn't mention that so alterations

NOTE Confidence: 0.883281646842105

00:53:47.084 --> 00:53:49.789 in connectivity between the amygdala

NOTE Confidence: 0.883281646842105

00:53:49.790 --> 00:53:52.785 and insula have been implicated

NOTE Confidence: 0.883281646842105

00:53:52.785 --> 00:53:55.780 in anxiety disorders in adults,

NOTE Confidence: 0.883281646842105

00:53:55.780 --> 00:53:57.920 and have also been implicated

NOTE Confidence: 0.883281646842105

00:53:57.920 --> 00:54:00.060 in trait levels of anxiety.

NOTE Confidence: 0.883281646842105

00:54:00.060 --> 00:54:02.944 So not just the disorder per say,

NOTE Confidence: 0.883281646842105

00:54:02.950 --> 00:54:04.898 it's more implicated in

NOTE Confidence: 0.883281646842105

00:54:04.898 --> 00:54:06.359 anxiety than depression,

NOTE Confidence: 0.883281646842105

00:54:06.360 --> 00:54:09.438 but I think probably trying to

NOTE Confidence: 0.883281646842105

00:54:09.438 --> 00:54:11.490 parse anxiety from depression.

NOTE Confidence: 0.883281646842105

00:54:11.490 --> 00:54:13.750 Particularly at that early stage,

NOTE Confidence: 0.883281646842105

00:54:13.750 --> 00:54:16.054 it may be asking too much of the data.

NOTE Confidence: 0.957484

00:54:17.270 --> 00:54:18.698 Thank you. Other

NOTE Confidence: 0.9347991375

00:54:18.710 --> 00:54:20.038 questions, either in the

NOTE Confidence: 0.9347991375

00:54:20.038 --> 00:54:21.366 room or in cyberspace.

NOTE Confidence: 0.75332487

00:54:27.490 --> 00:54:28.726 I'll explain my position

NOTE Confidence: 0.75332487

00:54:28.726 --> 00:54:30.386 and then I'm also curious,

NOTE Confidence: 0.75332487

00:54:30.390 --> 00:54:32.295 given that kind of breath.

NOTE Confidence: 0.75332487

00:54:32.295 --> 00:54:34.786 I guess you describe it as kind of civic,

NOTE Confidence: 0.75332487

00:54:34.790 --> 00:54:36.145 but the the breadth of

NOTE Confidence: 0.75332487

00:54:36.145 --> 00:54:37.229 disruptions that you see.

NOTE Confidence: 0.75332487

00:54:37.230 --> 00:54:38.845 It's interesting to me that you

NOTE Confidence: 0.75332487

00:54:38.845 --> 00:54:40.836 the epidemiological effects you see

NOTE Confidence: 0.75332487

00:54:40.836 --> 00:54:43.670 are really specific to depression,

NOTE Confidence: 0.75332487

00:54:43.670 --> 00:54:45.070 which I guess isn't really a question,

NOTE Confidence: 0.75332487

00:54:45.070 --> 00:54:47.620 but that's just some striking to me.

NOTE Confidence: 0.911520398

00:54:47.890 --> 00:54:52.100 It is it is striking, yeah.

NOTE Confidence: 0.911520398

00:54:52.100 --> 00:54:54.140 And and it is striking.

NOTE Confidence: 0.911520398

00:54:54.140 --> 00:54:55.106 And all honestly,

NOTE Confidence: 0.911520398

00:54:55.106 --> 00:54:57.959 I don't quite know what to make of that.

NOTE Confidence: 0.911520398

00:54:57.960 --> 00:54:59.230 I I certainly would have

NOTE Confidence: 0.911520398

00:54:59.230 --> 00:55:00.500 predicted that if there were,

NOTE Confidence: 0.911520398

00:55:00.500 --> 00:55:03.158 in effect on depression, you would

NOTE Confidence: 0.911520398

00:55:03.158 --> 00:55:06.269 also see that affecting on anxiety II.

NOTE Confidence: 0.911520398

00:55:06.269 --> 00:55:09.203 Suppose one possibility for that is

NOTE Confidence: 0.911520398

00:55:09.203 --> 00:55:12.678 that the anxiety effects were elevated,

NOTE Confidence: 0.911520398

00:55:12.680 --> 00:55:14.890 they just weren't elevated above

NOTE Confidence: 0.911520398

00:55:14.890 --> 00:55:17.100 and beyond the other groups.

NOTE Confidence: 0.911520398

00:55:17.100 --> 00:55:22.077 So it it may be that the because the.

NOTE Confidence: 0.911520398

00:55:22.080 --> 00:55:24.368 The prenatal maternal illness

NOTE Confidence: 0.911520398

00:55:24.368 --> 00:55:26.656 is also increasing anxiety.

NOTE Confidence: 0.911520398

00:55:26.660 --> 00:55:30.260 We're not seeing a differential effect.

NOTE Confidence: 0.911520398

00:55:30.260 --> 00:55:31.968 And for whatever reason,

NOTE Confidence: 0.911520398

00:55:31.968 --> 00:55:33.676 that differential effect is

NOTE Confidence: 0.911520398

00:55:33.676 --> 00:55:35.714 only located in depression in,

NOTE Confidence: 0.911520398

00:55:35.714 --> 00:55:37.298 you know, I realize that's not

NOTE Confidence: 0.911520398

00:55:37.298 --> 00:55:39.830 a very satisfying answer, but.

NOTE Confidence: 0.911520398

00:55:39.830 --> 00:55:41.600 If others have thoughts on that,

NOTE Confidence: 0.911520398

00:55:41.600 --> 00:55:43.510 I would I would love to hear your your views.

NOTE Confidence: 0.816405828888889

00:55:46.070 --> 00:55:48.415 I'm less good at Andres than making

NOTE Confidence: 0.816405828888889

00:55:48.415 --> 00:55:50.604 vague threats to people on zoom

NOTE Confidence: 0.816405828888889

00:55:50.604 --> 00:55:52.459 who aren't and drink questions,

NOTE Confidence: 0.816405828888889

00:55:52.460 --> 00:55:56.088 and we've gotten in vivo question.

NOTE Confidence: 0.816405828888889

00:55:56.090 --> 00:55:57.458 But we've got to run the mic to you,

NOTE Confidence: 0.94892085

00:55:58.570 --> 00:55:58.920 OK.

NOTE Confidence: 0.85835877

00:56:17.040 --> 00:56:20.120 Can you on me? Yeah, can someone on the

NOTE Confidence: 0.865155961818182

00:56:20.130 --> 00:56:22.110 zoom give me a thumbs up if you can hear me

NOTE Confidence: 0.51753913

00:56:22.350 --> 00:56:25.264 Linda or Faye? Yes, I can hear you.

NOTE Confidence: 0.51753913

00:56:25.264 --> 00:56:27.460 I can hear you well understood you well

NOTE Confidence: 0.826954717142857

00:56:27.680 --> 00:56:29.059 and we can hear you as well.

NOTE Confidence: 0.826954717142857

00:56:29.060 --> 00:56:29.612 So that's good.

NOTE Confidence: 0.826954717142857

00:56:29.612 --> 00:56:30.348 Hold on one second.

NOTE Confidence: 0.826954717142857

00:56:30.350 --> 00:56:31.262 We have a question.

NOTE Confidence: 0.826954717142857

00:56:31.262 --> 00:56:33.900 It just say your name.

NOTE Confidence: 0.681494775

00:56:33.900 --> 00:56:35.226 Hi, I'm Cassie.

NOTE Confidence: 0.681494775

00:56:35.226 --> 00:56:38.320 I'm a postdoc or post graduate trainee.

NOTE Confidence: 0.681494775

00:56:38.320 --> 00:56:40.610 UM and I've had two.

NOTE Confidence: 0.681494775

00:56:40.610 --> 00:56:42.038 There's sort of half baked questions,

NOTE Confidence: 0.681494775

00:56:42.040 --> 00:56:44.680 but one of the things I was thinking

NOTE Confidence: 0.681494775

00:56:44.680 --> 00:56:46.725 about is I was wondering like what

NOTE Confidence: 0.681494775

00:56:46.725 --> 00:56:48.502 kinds of sort of subjective self

NOTE Confidence: 0.681494775

00:56:48.502 --> 00:56:50.152 report information you might be

NOTE Confidence: 0.681494775

00:56:50.152 --> 00:56:51.895 getting from others during their

NOTE Confidence: 0.681494775

00:56:51.895 --> 00:56:53.730 pregnancies and thinking about like.

NOTE Confidence: 0.681494775

00:56:53.730 --> 00:56:56.448 What kind of I guess I've met anxiety they

NOTE Confidence: 0.681494775

00:56:56.448 --> 00:56:59.467 might be having about being on an SSRI

NOTE Confidence: 0.681494775

00:56:59.467 --> 00:57:01.298 and potential developmental effects if

NOTE Confidence: 0.681494775

00:57:01.298 --> 00:57:05.444 these are women who are of High SC accident.

NOTE Confidence: 0.681494775

00:57:05.450 --> 00:57:07.160 I don't know, just like putting

NOTE Confidence: 0.681494775

00:57:07.160 --> 00:57:08.870 myself in that potential situation,

NOTE Confidence: 0.681494775

00:57:08.870 --> 00:57:10.995 I could imagine not only

NOTE Confidence: 0.681494775

00:57:10.995 --> 00:57:12.332 be anxious in general,

NOTE Confidence: 0.681494775

00:57:12.332 --> 00:57:14.019 but like having anxiety about my anxiety

NOTE Confidence: 0.681494775

00:57:14.019 --> 00:57:15.652 and knowing that that might have an

NOTE Confidence: 0.681494775

00:57:15.652 --> 00:57:17.110 effect on my child's development.

NOTE Confidence: 0.681494775

00:57:17.110 --> 00:57:19.371 So I was curious about what kinds

NOTE Confidence: 0.681494775

00:57:19.371 --> 00:57:21.094 of subjective self report stuff

NOTE Confidence: 0.681494775

00:57:21.094 --> 00:57:23.146 you might be getting from moms,

NOTE Confidence: 0.681494775

00:57:23.150 --> 00:57:24.047 and then honestly,

NOTE Confidence: 0.681494775

00:57:24.047 --> 00:57:26.140 my seeking questions is keeping me so.

NOTE Confidence: 0.681494775

00:57:26.140 --> 00:57:28.956 I guess I'll just leave it at that.

NOTE Confidence: 0.681494775

00:57:28.960 --> 00:57:29.450 Yeah,

NOTE Confidence: 0.871668101111111

00:57:29.460 --> 00:57:31.080 I, I think it's I think it's a really,

NOTE Confidence: 0.871668101111111

00:57:31.080 --> 00:57:32.616 really great question and I and

NOTE Confidence: 0.871668101111111

00:57:32.616 --> 00:57:34.742 I I think that also you know it

NOTE Confidence: 0.871668101111111

00:57:34.742 --> 00:57:36.308 speaks it Harkins back to this

NOTE Confidence: 0.871668101111111

00:57:36.371 --> 00:57:38.316 issue of confounding by indication.

NOTE Confidence: 0.871668101111111

00:57:38.320 --> 00:57:40.138 So you know, if you have a a group

NOTE Confidence: 0.871668101111111

00:57:40.138 --> 00:57:42.263 of women who are depressed and not

NOTE Confidence: 0.871668101111111

00:57:42.263 --> 00:57:43.852 taking necessary versus a group

NOTE Confidence: 0.871668101111111

00:57:43.852 --> 00:57:45.556 of women who are depressed and

NOTE Confidence: 0.871668101111111

00:57:45.556 --> 00:57:47.085 taking this try is there some?

NOTE Confidence: 0.871668101111111

00:57:47.085 --> 00:57:48.435 Is there some reason for that?

NOTE Confidence: 0.871668101111111

00:57:48.440 --> 00:57:50.888 Is there some reason why one

NOTE Confidence: 0.871668101111111

00:57:50.888 --> 00:57:52.990 group was prescribed and SSRI?

NOTE Confidence: 0.871668101111111

00:57:52.990 --> 00:57:55.578 And uhm. You know,

NOTE Confidence: 0.871668101111111

00:57:55.578 --> 00:57:57.519 really definitively answering

NOTE Confidence: 0.871668101111111

00:57:57.519 --> 00:58:01.440 that is is really difficult.

NOTE Confidence: 0.871668101111111

00:58:01.440 --> 00:58:04.457 You know our our approach was to

NOTE Confidence: 0.871668101111111

00:58:04.457 --> 00:58:07.273 enroll early on pregnancy so we

NOTE Confidence: 0.871668101111111

00:58:07.273 --> 00:58:10.605 could start assessing from the get go

NOTE Confidence: 0.871668101111111

00:58:10.610 --> 00:58:12.495 throughout the course of pregnancy

NOTE Confidence: 0.871668101111111

00:58:12.495 --> 00:58:15.150 and then to assess quite frequently,

NOTE Confidence: 0.871668101111111

00:58:15.150 --> 00:58:17.158 so we'd have multiple data points so we

NOTE Confidence: 0.871668101111111

00:58:17.158 --> 00:58:19.127 could look at things like trajectories.

NOTE Confidence: 0.871668101111111

00:58:19.130 --> 00:58:20.260 You know,

NOTE Confidence: 0.871668101111111

00:58:20.260 --> 00:58:23.085 changing the depression symptoms overtime.

NOTE Confidence: 0.871668101111111

00:58:23.090 --> 00:58:25.382 Uh, the differences across

NOTE Confidence: 0.871668101111111

00:58:25.382 --> 00:58:26.528 various trimesters,

NOTE Confidence: 0.871668101111111

00:58:26.530 --> 00:58:29.170 which which likely have an

NOTE Confidence: 0.871668101111111

00:58:29.170 --> 00:58:31.810 effect on on fetal development.

NOTE Confidence: 0.871668101111111

00:58:31.810 --> 00:58:34.802 The the the cost in doing that in

NOTE Confidence: 0.871668101111111

00:58:34.802 --> 00:58:37.207 doing this very frequent assessments

NOTE Confidence: 0.871668101111111

00:58:37.207 --> 00:58:41.710 is that our we didn't want to send

NOTE Confidence: 0.871668101111111

00:58:41.710 --> 00:58:43.296 women no extensive questionnaires

NOTE Confidence: 0.871668101111111

00:58:43.296 --> 00:58:45.288 every two weeks to fill out.

NOTE Confidence: 0.871668101111111

00:58:45.290 --> 00:58:47.050 We just didn't think that would be feasible.

NOTE Confidence: 0.871668101111111

00:58:47.050 --> 00:58:48.790 That people understandably would get

NOTE Confidence: 0.871668101111111

00:58:48.790 --> 00:58:50.530 frustrated and stop completing them.

NOTE Confidence: 0.871668101111111

00:58:50.530 --> 00:58:53.148 So our our assessments are are somewhat

NOTE Confidence: 0.871668101111111

00:58:53.148 --> 00:58:55.480 cursory and that we're using that.

NOTE Confidence: 0.871668101111111

00:58:55.480 --> 00:58:58.540 The PHQ 9 and GAD,

NOTE Confidence: 0.871668101111111

00:58:58.540 --> 00:59:00.493 which is a I can't remember a

NOTE Confidence: 0.871668101111111

00:59:00.493 --> 00:59:02.639 seven or nine item questionnaire.

NOTE Confidence: 0.871668101111111

00:59:02.640 --> 00:59:04.860 Self Report questionnaire about anxiety.

NOTE Confidence: 0.871668101111111

00:59:04.860 --> 00:59:06.910 And then we're also assessing

NOTE Confidence: 0.871668101111111

00:59:06.910 --> 00:59:08.140 any substance use,

NOTE Confidence: 0.871668101111111

00:59:08.140 --> 00:59:09.784 so we're assessing frequently

NOTE Confidence: 0.871668101111111

00:59:09.784 --> 00:59:12.250 over a long period of time,

NOTE Confidence: 0.871668101111111

00:59:12.250 --> 00:59:14.842 but the type of granularity that

NOTE Confidence: 0.871668101111111

00:59:14.842 --> 00:59:17.001 you're talking about in terms

NOTE Confidence: 0.871668101111111

00:59:17.001 --> 00:59:18.736 of the nature of the.

NOTE Confidence: 0.871668101111111

00:59:18.740 --> 00:59:21.340 Anxious feelings I think it's going to be.

NOTE Confidence: 0.871668101111111

00:59:21.340 --> 00:59:23.896 It's going to be difficult to to tease apart,

NOTE Confidence: 0.871668101111111

00:59:23.900 --> 00:59:25.468 but I I think you I think you

NOTE Confidence: 0.871668101111111

00:59:25.468 --> 00:59:26.529 raised a great point.

NOTE Confidence: 0.829588065555556

00:59:28.550 --> 00:59:29.970 Thanks Jonathan and we have

NOTE Confidence: 0.829588065555556

00:59:29.970 --> 00:59:31.106 a question from Malia.

NOTE Confidence: 0.829588065555556

00:59:31.110 --> 00:59:32.604 Hi, thank you so much for

NOTE Confidence: 0.829588065555556

00:59:32.604 --> 00:59:33.475 this great presentation.

NOTE Confidence: 0.829588065555556

00:59:33.475 --> 00:59:35.440 Such important work

NOTE Confidence: 0.838637573333333

00:59:35.440 --> 00:59:37.688 as we try to tease apart all day,

NOTE Confidence: 0.838637573333333

00:59:37.688 --> 00:59:38.870 probably some outcomes.

NOTE Confidence: 0.931027451428571

00:59:40.410 --> 00:59:42.336 And I'm really excited to see

NOTE Confidence: 0.931027451428571

00:59:42.336 --> 00:59:44.031 your your longitudinal findings,

NOTE Confidence: 0.931027451428571

00:59:44.031 --> 00:59:45.850 because my understanding at least,

NOTE Confidence: 0.931027451428571

00:59:45.850 --> 00:59:47.948 is that sometimes you know

NOTE Confidence: 0.931027451428571

00:59:47.948 --> 00:59:48.973 cross sectionally and infancy.

NOTE Confidence: 0.931027451428571

00:59:48.973 --> 00:59:51.220 You may see some of these changes, but later

NOTE Confidence: 0.99242799

00:59:51.230 --> 00:59:53.382 on the differences are not

NOTE Confidence: 0.99242799

00:59:53.382 --> 00:59:55.790 significant any longer, so I'm

NOTE Confidence: 0.99242799

00:59:55.790 --> 00:59:57.018 curious if you could comment a little

NOTE Confidence: 0.969354883333333

00:59:57.030 --> 00:59:57.918 bit about that

NOTE Confidence: 0.862401806923077

00:59:58.380 --> 01:00:01.460 and and additionally I was wondering in

NOTE Confidence: 0.862401806923077

01:00:01.460 --> 01:00:06.320 your studies or other studies that you know

NOTE Confidence: 0.8114958475

01:00:06.330 --> 01:00:07.458 about or you present

NOTE Confidence: 0.891289912857143

01:00:07.470 --> 01:00:09.794 it if of course, not with mice,

NOTE Confidence: 0.891289912857143

01:00:09.800 --> 01:00:13.928 but with with. Humans.

NOTE Confidence: 0.891289912857143

01:00:13.930 --> 01:00:16.945 How do you also control for other

NOTE Confidence: 0.891289912857143

01:00:16.945 --> 01:00:18.835 therapies that a lot of these

NOTE Confidence: 0.873414583333333

01:00:18.870 --> 01:00:20.800 mothers may be exposed to

NOTE Confidence: 0.956561023333333

01:00:21.060 --> 01:00:23.136 and thinking about the fact that

NOTE Confidence: 0.96575722

01:00:23.150 --> 01:00:26.570 some of these non pharmacologic

NOTE Confidence: 0.96575722

01:00:26.570 --> 01:00:28.510 treatments also have effects on

NOTE Confidence: 0.96575722

01:00:28.510 --> 01:00:30.880 brain morphology and connectivity?

NOTE Confidence: 0.845120078571428

01:00:32.240 --> 01:00:35.094 Yeah, you know, I think that the both really,

NOTE Confidence: 0.845120078571428

01:00:35.094 --> 01:00:36.360 really great question.

NOTE Confidence: 0.845120078571428

01:00:36.360 --> 01:00:37.800 So the first question about

NOTE Confidence: 0.845120078571428

01:00:37.800 --> 01:00:39.819 sort of the post Natal effect I.

NOTE Confidence: 0.845120078571428

01:00:39.820 --> 01:00:44.486 I think that is hugely important and you

NOTE Confidence: 0.845120078571428

01:00:44.486 --> 01:00:47.594 know, in a human longitudinal study.

NOTE Confidence: 0.845120078571428

01:00:47.600 --> 01:00:49.605 It's you know, the postnatal

NOTE Confidence: 0.845120078571428

01:00:49.605 --> 01:00:51.209 environment is really complicated,

NOTE Confidence: 0.845120078571428

01:00:51.210 --> 01:00:52.967 and so to be able to assess

NOTE Confidence: 0.845120078571428

01:00:52.967 --> 01:00:53.960 every aspect of it.

NOTE Confidence: 0.845120078571428

01:00:53.960 --> 01:00:58.176 Of course it's not not feasible, but we are.

NOTE Confidence: 0.845120078571428

01:00:58.176 --> 01:00:59.796 We're trying to really

NOTE Confidence: 0.845120078571428

01:00:59.796 --> 01:01:01.228 get a comprehensive view,

NOTE Confidence: 0.845120078571428

01:01:01.230 --> 01:01:04.614 and so the strategy that we're taking is

NOTE Confidence: 0.845120078571428

01:01:04.614 --> 01:01:07.618 that they'll be four post Natal visits.

NOTE Confidence: 0.845120078571428

01:01:07.620 --> 01:01:09.396 Two of them will be in the home

NOTE Confidence: 0.845120078571428

01:01:09.396 --> 01:01:11.334 where will have researchers go and

NOTE Confidence: 0.845120078571428

01:01:11.334 --> 01:01:13.129 actually assess the home environment,

NOTE Confidence: 0.845120078571428

01:01:13.130 --> 01:01:17.440 and two of them will be in the in the lab.

NOTE Confidence: 0.845120078571428

01:01:17.440 --> 01:01:20.550 There were quite, uhm, we.

NOTE Confidence: 0.845120078571428

01:01:20.550 --> 01:01:21.518 We think that's very,

NOTE Confidence: 0.845120078571428

01:01:21.518 --> 01:01:22.970 very important to have a good

NOTE Confidence: 0.845120078571428

01:01:23.019 --> 01:01:24.631 characterization of the parent

NOTE Confidence: 0.845120078571428

01:01:24.631 --> 01:01:25.437 infant interactions.

NOTE Confidence: 0.845120078571428

01:01:25.440 --> 01:01:27.464 So we're actually collaborating

NOTE Confidence: 0.845120078571428

01:01:27.464 --> 01:01:28.808 with accident investigator,

NOTE Confidence: 0.845120078571428

01:01:28.808 --> 01:01:32.160 who I believe has an affiliation with Yale.

NOTE Confidence: 0.845120078571428

01:01:32.160 --> 01:01:33.036 Ruth Feldman,

NOTE Confidence: 0.845120078571428

01:01:33.036 --> 01:01:35.664 who developed a coding scheme to

NOTE Confidence: 0.845120078571428

01:01:35.664 --> 01:01:38.149 to code parent interactions and

NOTE Confidence: 0.845120078571428

01:01:38.149 --> 01:01:41.141 will be assessing those at anywhere

NOTE Confidence: 0.845120078571428

01:01:41.141 --> 01:01:43.847 from two to three time points,

NOTE Confidence: 0.845120078571428

01:01:43.850 --> 01:01:48.114 will also continue to assess the the mothers.

NOTE Confidence: 0.845120078571428

01:01:48.120 --> 01:01:50.800 For for psychiatric symptoms,

NOTE Confidence: 0.845120078571428

01:01:50.800 --> 01:01:52.946 postnatally so postpartum depression

NOTE Confidence: 0.845120078571428

01:01:52.946 --> 01:01:55.767 anxiety and we are also this is

NOTE Confidence: 0.845120078571428

01:01:55.767 --> 01:01:58.018 going to be more of a challenge,

NOTE Confidence: 0.845120078571428

01:01:58.020 --> 01:02:00.057 but our goal is to also incorporate

NOTE Confidence: 0.845120078571428

01:02:00.057 --> 01:02:02.074 fathers into that assessment to be

NOTE Confidence: 0.845120078571428

01:02:02.074 --> 01:02:04.246 able to assess psychiatric symptoms and

NOTE Confidence: 0.845120078571428

01:02:04.246 --> 01:02:06.207 substance use in the father's as well.

NOTE Confidence: 0.7721796775

01:02:08.400 --> 01:02:11.895 You know, I I. I, I think that we're

NOTE Confidence: 0.7721796775

01:02:11.895 --> 01:02:14.215 doing our darndest to get a good

NOTE Confidence: 0.7721796775

01:02:14.215 --> 01:02:16.375 characterization of the postman environment,

NOTE Confidence: 0.7721796775

01:02:16.380 --> 01:02:18.627 but I I fully acknowledge that there's,

NOTE Confidence: 0.7721796775

01:02:18.630 --> 01:02:20.340 you know, the environment complicated,

NOTE Confidence: 0.7721796775

01:02:20.340 --> 01:02:21.412 and there's there's a.

NOTE Confidence: 0.7721796775

01:02:21.412 --> 01:02:23.020 There's a limit to what we

NOTE Confidence: 0.7721796775

01:02:23.083 --> 01:02:24.398 could do in that regard.

NOTE Confidence: 0.7721796775

01:02:24.400 --> 01:02:25.877 But I I agree with your point.

NOTE Confidence: 0.7721796775

01:02:25.880 --> 01:02:28.680 That's it. Very well could be the

NOTE Confidence: 0.7721796775

01:02:28.680 --> 01:02:31.335 case that there are initial post

NOTE Confidence: 0.7721796775

01:02:31.335 --> 01:02:34.154 Natal effects that are fully moderated

NOTE Confidence: 0.7721796775

01:02:34.154 --> 01:02:37.136 by the the post Natal environment.

NOTE Confidence: 0.7721796775

01:02:37.140 --> 01:02:40.150 Uhm? And your second question.

NOTE Confidence: 0.7721796775

01:02:40.150 --> 01:02:41.287 Other other treatments?

NOTE Confidence: 0.7721796775

01:02:41.287 --> 01:02:44.309 Yeah, I think that's I think that's a

NOTE Confidence: 0.7721796775

01:02:44.309 --> 01:02:46.709 great point in our our short book study.

NOTE Confidence: 0.7721796775

01:02:46.710 --> 01:02:49.420 We will have information about

NOTE Confidence: 0.7721796775

01:02:49.420 --> 01:02:50.504 other treatments.

NOTE Confidence: 0.7721796775

01:02:50.510 --> 01:02:53.720 It won't be as granular as I might

NOTE Confidence: 0.7721796775

01:02:53.720 --> 01:02:55.962 like it to be, so we'll know if,

NOTE Confidence: 0.7721796775

01:02:55.962 --> 01:02:56.598 for example,

NOTE Confidence: 0.7721796775

01:02:56.600 --> 01:02:59.225 if a pregnant woman received

NOTE Confidence: 0.7721796775

01:02:59.225 --> 01:03:00.800 psychotherapy for depression,

NOTE Confidence: 0.7721796775

01:03:00.800 --> 01:03:03.104 but will have limited information about

NOTE Confidence: 0.7721796775

01:03:03.104 --> 01:03:05.689 the nature of that psychotherapy and

NOTE Confidence: 0.7721796775

01:03:05.689 --> 01:03:08.144 the duration of that psychotherapy

NOTE Confidence: 0.7721796775

01:03:08.150 --> 01:03:09.100 in Sherbrooke.

NOTE Confidence: 0.7721796775

01:03:09.100 --> 01:03:11.000 The access to psychotherapy

NOTE Confidence: 0.7721796775

01:03:11.000 --> 01:03:12.425 is relatively limited,

NOTE Confidence: 0.7721796775

01:03:12.430 --> 01:03:13.924 so we we don't think that's

NOTE Confidence: 0.7721796775

01:03:13.924 --> 01:03:15.310 going to be particularly common,

NOTE Confidence: 0.7721796775

01:03:15.310 --> 01:03:17.880 but certainly could be there

NOTE Confidence: 0.7721796775

01:03:17.880 --> 01:03:20.995 another way to look at that is.

NOTE Confidence: 0.7721796775

01:03:21.000 --> 01:03:23.625 You arguably there could be a direct

NOTE Confidence: 0.7721796775

01:03:23.625 --> 01:03:26.860 effect of the psychotherapy on the fetus,

NOTE Confidence: 0.7721796775

01:03:26.860 --> 01:03:28.980 but I think more likely it would be

NOTE Confidence: 0.7721796775

01:03:28.980 --> 01:03:31.336 an indirect effect through the mother

NOTE Confidence: 0.7721796775

01:03:31.336 --> 01:03:33.410 psychiatric symptoms, and so we will be.

NOTE Confidence: 0.7721796775

01:03:33.410 --> 01:03:34.590 We will be capturing us.

NOTE Confidence: 0.911648773333333

01:03:36.350 --> 01:03:37.675 And we have one last

NOTE Confidence: 0.911648773333333

01:03:37.675 --> 01:03:38.735 question from the audience.

NOTE Confidence: 0.949214

01:03:41.770 --> 01:03:42.502 Thank you Jonathan.

NOTE Confidence: 0.949214

01:03:42.502 --> 01:03:44.340 Loved your talk. Just wonderful.

NOTE Confidence: 0.949214

01:03:44.340 --> 01:03:48.044 The question is in terms of getting a

NOTE Confidence: 0.949214

01:03:48.044 --> 01:03:51.480 cause and the impact of SSRI exposure.

NOTE Confidence: 0.949214

01:03:51.480 --> 01:03:53.237 I'm wondering do you have any more

NOTE Confidence: 0.949214

01:03:53.237 --> 01:03:55.610 granular data or senior Sherbrooke study

NOTE Confidence: 0.909933132

01:03:55.790 --> 01:03:58.130 in terms of the dosages

NOTE Confidence: 0.840535916

01:03:58.140 --> 01:03:59.490 that the moms are getting?

NOTE Confidence: 0.808356766666667

01:03:59.720 --> 01:04:01.229 Or maybe the

NOTE Confidence: 0.90349588

01:04:01.240 --> 01:04:03.660 timing of the doses that might be able

NOTE Confidence: 0.90349588

01:04:03.660 --> 01:04:05.237 to tell a little bit more about costs.

NOTE Confidence: 0.935707334

01:04:07.030 --> 01:04:08.584 Yeah, absolutely so.

NOTE Confidence: 0.935707334

01:04:08.584 --> 01:04:11.408 So timing, I think it's going to be

NOTE Confidence: 0.935707334

01:04:11.408 --> 01:04:13.942 hard to to get at a. We will have.

NOTE Confidence: 0.935707334

01:04:13.942 --> 01:04:16.000 We will have access to the medical

NOTE Confidence: 0.935707334

01:04:16.064 --> 01:04:18.054 records and the pharmacy records

NOTE Confidence: 0.935707334

01:04:18.054 --> 01:04:20.044 so we'll know what's prescribed.

NOTE Confidence: 0.935707334

01:04:20.050 --> 01:04:22.200 Although the dose prescribed and

NOTE Confidence: 0.935707334

01:04:22.200 --> 01:04:24.940 we'll know what's what was filled.

NOTE Confidence: 0.935707334

01:04:24.940 --> 01:04:27.936 Uhm, and so we can we can,

NOTE Confidence: 0.935707334

01:04:27.940 --> 01:04:30.873 you know from that we can calculate

NOTE Confidence: 0.935707334

01:04:30.873 --> 01:04:32.130 the net exposure.

NOTE Confidence: 0.935707334

01:04:32.130 --> 01:04:34.092 Will know if the doctor prescribed

NOTE Confidence: 0.935707334

01:04:34.092 --> 01:04:35.785 it for morning intake versus

NOTE Confidence: 0.935707334

01:04:35.785 --> 01:04:38.032 evening and take the extent to which

NOTE Confidence: 0.935707334

01:04:38.032 --> 01:04:39.910 the patient follows that advice.

NOTE Confidence: 0.935707334

01:04:39.910 --> 01:04:43.529 We won't be able to determine that.

NOTE Confidence: 0.935707334

01:04:43.530 --> 01:04:44.715 You know another thing that

NOTE Confidence: 0.935707334

01:04:44.715 --> 01:04:45.663 I I should mention,

NOTE Confidence: 0.935707334

01:04:45.670 --> 01:04:47.815 which is somewhat tangential and

NOTE Confidence: 0.935707334

01:04:47.815 --> 01:04:50.661 that's why I didn't bring it up

NOTE Confidence: 0.935707334

01:04:50.661 --> 01:04:52.845 before is that we will also have

NOTE Confidence: 0.935707334

01:04:52.850 --> 01:04:56.630 very a very extensive biorepository,

NOTE Confidence: 0.935707334

01:04:56.630 --> 01:04:59.395 so act deliberately delivery will

NOTE Confidence: 0.935707334

01:04:59.395 --> 01:05:01.607 be collecting placenta cord.

NOTE Confidence: 0.935707334

01:05:01.610 --> 01:05:03.865 Blood during pregnancy will have

NOTE Confidence: 0.935707334

01:05:03.865 --> 01:05:05.930 maternal blood, which if we wanted to,

NOTE Confidence: 0.935707334

01:05:05.930 --> 01:05:06.466 for example,

NOTE Confidence: 0.935707334

01:05:06.466 --> 01:05:08.074 we could test for SSRI levels

NOTE Confidence: 0.935707334

01:05:08.074 --> 01:05:09.490 in the maternal blood.

NOTE Confidence: 0.935707334

01:05:09.490 --> 01:05:10.690 It would be one snapshot,

NOTE Confidence: 0.935707334

01:05:10.690 --> 01:05:12.951 but it would be at least some

NOTE Confidence: 0.935707334

01:05:12.951 --> 01:05:14.380 quantification of of level.

NOTE Confidence: 0.935707334

01:05:14.380 --> 01:05:16.756 Uhm, and then we'll also be looking at,

NOTE Confidence: 0.935707334

01:05:16.760 --> 01:05:19.294 UM, some post Natal biospecimens as well.

NOTE Confidence: 0.935707334

01:05:19.300 --> 01:05:22.198 Things like breast milk and and how

NOTE Confidence: 0.935707334

01:05:22.200 --> 01:05:24.090 there are potential transmissions there.

NOTE Confidence: 0.942432285

01:05:27.050 --> 01:05:28.711 Alright, perfect timing and that

NOTE Confidence: 0.942432285

01:05:28.711 --> 01:05:30.230 we're at the top of the hour

NOTE Confidence: 0.882989192916667

01:05:30.279 --> 01:05:31.845 so everybody can hear actually stand

NOTE Confidence: 0.882989192916667

01:05:31.845 --> 01:05:33.830 up and walk like the old days work.

NOTE Confidence: 0.882989192916667

01:05:33.830 --> 01:05:35.490 Just click, leave meeting and

NOTE Confidence: 0.882989192916667

01:05:35.490 --> 01:05:37.195 then enter your next meeting.

NOTE Confidence: 0.882989192916667

01:05:37.195 --> 01:05:38.660 But Jonathan, thank you very

NOTE Confidence: 0.881811784285714

01:05:38.670 --> 01:05:41.260 much for spending your party afternoon with

NOTE Confidence: 0.840394032

01:05:41.270 --> 01:05:42.476 us as an outstanding talk and

NOTE Confidence: 0.840394032

01:05:42.476 --> 01:05:43.640 it's clear from the questions

NOTE Confidence: 0.840394032

01:05:43.640 --> 01:05:44.916 everybody found it enjoyable,

NOTE Confidence: 0.840394032

01:05:44.920 --> 01:05:46.270 engaging, so and personally it's

NOTE Confidence: 0.840394032

01:05:46.270 --> 01:05:48.008 nice to see you and I'll look

NOTE Confidence: 0.840394032

01:05:48.008 --> 01:05:49.560 forward to seeing you as a real 3

NOTE Confidence: 0.840394032

01:05:49.560 --> 01:05:51.040 dimensional movie sometime soon.

NOTE Confidence: 0.928824262

01:05:52.020 --> 01:05:52.980 Wonderful, thank you so much.

NOTE Confidence: 0.928824262

01:05:52.980 --> 01:05:53.790 Really a pleasure.