

WEBVTT

NOTE duration:"01:00:47"

NOTE recognizability:0.824

NOTE language:en-us

NOTE Confidence: 0.894668615882353

00:00:00.000 --> 00:00:01.232 Good afternoon. Once again,

NOTE Confidence: 0.894668615882353

00:00:01.232 --> 00:00:03.416 it's a pleasure to welcome you here

NOTE Confidence: 0.894668615882353

00:00:03.416 --> 00:00:05.054 to Grand Rounds in the Cohen.

NOTE Confidence: 0.894668615882353

00:00:05.060 --> 00:00:09.160 No, oh, there we go.

NOTE Confidence: 0.894668615882353

00:00:09.160 --> 00:00:10.390 Is that a little bit better?

NOTE Confidence: 0.78138117625

00:00:12.780 --> 00:00:14.620 Where is IT support when you need it?

NOTE Confidence: 0.8925019965

00:00:16.660 --> 00:00:17.960 And good afternoon, everyone.

NOTE Confidence: 0.8925019965

00:00:17.960 --> 00:00:20.596 I see some new faces in the audience

NOTE Confidence: 0.8925019965

00:00:20.596 --> 00:00:23.092 and some new faces joining us on zoom.

NOTE Confidence: 0.8925019965

00:00:23.100 --> 00:00:24.396 And for those of you who don't know me,

NOTE Confidence: 0.8925019965

00:00:24.400 --> 00:00:26.386 I'm Kieran O'Donnell and it's my

NOTE Confidence: 0.8925019965

00:00:26.386 --> 00:00:28.861 pleasure to Co-chair the Grand Rounds

NOTE Confidence: 0.8925019965

00:00:28.861 --> 00:00:31.395 committee here in the Child Study Center.

NOTE Confidence: 0.8925019965

00:00:31.400 --> 00:00:33.560 And now just a little note about next
NOTE Confidence: 0.8925019965

00:00:33.560 --> 00:00:35.799 week we'll be continuing our in person
NOTE Confidence: 0.8925019965

00:00:35.799 --> 00:00:37.830 Grand Round series with Doctor Pasco
NOTE Confidence: 0.8925019965

00:00:37.830 --> 00:00:40.272 Fearon will be joining us from
NOTE Confidence: 0.8925019965

00:00:40.272 --> 00:00:42.248 the University College London and
NOTE Confidence: 0.8925019965

00:00:42.248 --> 00:00:43.960 with sharing his perspective on
NOTE Confidence: 0.8925019965

00:00:43.960 --> 00:00:45.760 attachment theory with the rest
NOTE Confidence: 0.8925019965

00:00:45.760 --> 00:00:47.665 Perspective analysis and then a
NOTE Confidence: 0.8925019965

00:00:47.665 --> 00:00:49.189 forward-looking perspective on attachment.
NOTE Confidence: 0.8925019965

00:00:49.190 --> 00:00:51.596 And so moving to our distinguished
NOTE Confidence: 0.8925019965

00:00:51.596 --> 00:00:52.799 international scholar that's
NOTE Confidence: 0.8925019965

00:00:52.799 --> 00:00:53.769 joining us today,
NOTE Confidence: 0.8925019965

00:00:53.770 --> 00:00:55.265 it's my pleasure to introduce
NOTE Confidence: 0.8925019965

00:00:55.265 --> 00:00:57.104 and to welcome Doctor Liisa Galea
NOTE Confidence: 0.8925019965

00:00:57.104 --> 00:00:58.529 to the Child Study Center.
NOTE Confidence: 0.8925019965

00:00:58.530 --> 00:01:00.378 We have tried to make this talk happen

NOTE Confidence: 0.8925019965

00:01:00.378 --> 00:01:02.341 for over a year now through various

NOTE Confidence: 0.8925019965

00:01:02.341 --> 00:01:04.092 different phases of the pandemic and

NOTE Confidence: 0.8925019965

00:01:04.092 --> 00:01:05.592 it really is wonderful that you've

NOTE Confidence: 0.8925019965

00:01:05.592 --> 00:01:07.506 been able to join us in person.

NOTE Confidence: 0.8925019965

00:01:07.506 --> 00:01:09.754 And today now when I was tasked

NOTE Confidence: 0.8925019965

00:01:09.754 --> 00:01:11.530 with introducing Dr Galea,

NOTE Confidence: 0.8925019965

00:01:11.530 --> 00:01:13.474 I was planning to print out her bio,

NOTE Confidence: 0.8925019965

00:01:13.480 --> 00:01:15.196 but then I was worried about

NOTE Confidence: 0.8925019965

00:01:15.196 --> 00:01:16.054 the environmental impact.

NOTE Confidence: 0.8925019965

00:01:16.060 --> 00:01:17.940 Printing such a large document.

NOTE Confidence: 0.8925019965

00:01:17.940 --> 00:01:19.820 And so I thought I would share just

NOTE Confidence: 0.8925019965

00:01:19.820 --> 00:01:22.299 a few of the highlights and from

NOTE Confidence: 0.8925019965

00:01:22.299 --> 00:01:23.855 Doctor Galea's illustrious career.

NOTE Confidence: 0.8925019965

00:01:23.860 --> 00:01:25.702 She is a professor of psychology

NOTE Confidence: 0.8925019965

00:01:25.702 --> 00:01:27.460 and University of British Columbia,

NOTE Confidence: 0.8925019965

00:01:27.460 --> 00:01:28.930 where she also serves as a health
NOTE Confidence: 0.8925019965

00:01:28.930 --> 00:01:30.213 adviser to the vice President
NOTE Confidence: 0.8925019965

00:01:30.213 --> 00:01:31.723 for Research and Innovation and
NOTE Confidence: 0.8925019965

00:01:31.723 --> 00:01:33.292 the scientific advisor for the
NOTE Confidence: 0.8925019965

00:01:33.292 --> 00:01:34.520 Women's Health Research Institute.
NOTE Confidence: 0.8925019965

00:01:34.520 --> 00:01:36.100 And also currently leads the
NOTE Confidence: 0.8925019965

00:01:36.100 --> 00:01:37.364 Women's Health Research cluster,
NOTE Confidence: 0.8925019965

00:01:37.370 --> 00:01:39.650 which has 280 members worldwide.
NOTE Confidence: 0.8925019965

00:01:39.650 --> 00:01:41.498 And I think maybe you'll share some
NOTE Confidence: 0.8925019965

00:01:41.498 --> 00:01:42.919 information about how others perhaps
NOTE Confidence: 0.8925019965

00:01:42.919 --> 00:01:44.653 join this initiative in the future.
NOTE Confidence: 0.8925019965

00:01:44.660 --> 00:01:46.444 And she is a fellow with the Cavalli.
NOTE Confidence: 0.8925019965

00:01:46.450 --> 00:01:49.140 Foundation and with the International
NOTE Confidence: 0.8925019965

00:01:49.140 --> 00:01:51.292 Behavioral Neuroscience Society and
NOTE Confidence: 0.8925019965

00:01:51.292 --> 00:01:54.406 is the chief Editor of Frontiers in
NOTE Confidence: 0.8925019965

00:01:54.406 --> 00:01:56.720 your endocrinology and the incoming

NOTE Confidence: 0.8925019965

00:01:56.720 --> 00:01:58.244 president-elect of the organization

NOTE Confidence: 0.8925019965

00:01:58.244 --> 00:02:00.530 for the Study of sex differences,

NOTE Confidence: 0.8925019965

00:02:00.530 --> 00:02:02.728 which I think we'll hear a little

NOTE Confidence: 0.8925019965

00:02:02.728 --> 00:02:04.719 bit more about later on today.

NOTE Confidence: 0.8925019965

00:02:04.720 --> 00:02:07.660 But just to mention that Doctor

NOTE Confidence: 0.8925019965

00:02:07.660 --> 00:02:11.260 Galea as of the end of October,

NOTE Confidence: 0.8925019965

00:02:11.260 --> 00:02:14.144 I believe will be the incoming inaugural

NOTE Confidence: 0.8925019965

00:02:14.144 --> 00:02:16.469 chair in women's mental health.

NOTE Confidence: 0.8925019965

00:02:16.470 --> 00:02:18.130 This interfere addiction and mental

NOTE Confidence: 0.8925019965

00:02:18.130 --> 00:02:20.788 health and also known as Cam H in Toronto,

NOTE Confidence: 0.8925019965

00:02:20.790 --> 00:02:22.834 which is one of the world's leading

NOTE Confidence: 0.8925019965

00:02:22.834 --> 00:02:24.481 mental health research centres and

NOTE Confidence: 0.8925019965

00:02:24.481 --> 00:02:25.913 indeed Canada's largest teaching

NOTE Confidence: 0.8925019965

00:02:25.913 --> 00:02:27.850 hospital for mental health research.

NOTE Confidence: 0.8925019965

00:02:27.850 --> 00:02:29.776 And I think these leadership positions,

NOTE Confidence: 0.8925019965

00:02:29.780 --> 00:02:32.054 these honors are just a testament
NOTE Confidence: 0.8925019965

00:02:32.054 --> 00:02:33.908 to the tremendous contribution that
NOTE Confidence: 0.8925019965

00:02:33.908 --> 00:02:35.854 doctor Gillian her lab has made to
NOTE Confidence: 0.8925019965

00:02:35.854 --> 00:02:38.188 sex and gender based health research,
NOTE Confidence: 0.8925019965

00:02:38.190 --> 00:02:40.350 which we're very excited to learn
NOTE Confidence: 0.8925019965

00:02:40.350 --> 00:02:41.430 more about today.
NOTE Confidence: 0.8925019965

00:02:41.430 --> 00:02:43.614 So please join me in thanking Dr Galea
NOTE Confidence: 0.8925019965

00:02:43.614 --> 00:02:45.669 for joining us today for Grand Rounds.
NOTE Confidence: 0.852982068888889

00:02:52.690 --> 00:02:54.862 Well, thank you so much for
NOTE Confidence: 0.852982068888889

00:02:54.862 --> 00:02:55.948 that kind introduction.
NOTE Confidence: 0.852982068888889

00:02:55.950 --> 00:02:57.366 My bio is not that big.
NOTE Confidence: 0.852982068888889

00:02:57.370 --> 00:02:59.570 It's 250 words, so it's not that bad.
NOTE Confidence: 0.852982068888889

00:02:59.570 --> 00:03:01.470 But, but thank you nonetheless.
NOTE Confidence: 0.852982068888889

00:03:01.470 --> 00:03:03.118 So I also thank you for the opportunity
NOTE Confidence: 0.852982068888889

00:03:03.118 --> 00:03:04.550 to talk about what I'm really,
NOTE Confidence: 0.852982068888889

00:03:04.550 --> 00:03:05.862 really passionate about saying,

NOTE Confidence: 0.852982068888889
00:03:05.862 --> 00:03:08.272 to talk for the first half about
NOTE Confidence: 0.852982068888889
00:03:08.272 --> 00:03:10.167 sex and mostly sex differences
NOTE Confidence: 0.852982068888889
00:03:10.167 --> 00:03:11.683 and major depressive disorder.
NOTE Confidence: 0.852982068888889
00:03:11.690 --> 00:03:14.034 And then I'm going to pivot to talk
NOTE Confidence: 0.852982068888889
00:03:14.034 --> 00:03:15.295 about Women's Health and how that
NOTE Confidence: 0.852982068888889
00:03:15.295 --> 00:03:16.620 should play a role in forming.
NOTE Confidence: 0.852982068888889
00:03:16.620 --> 00:03:19.500 About perinatal depression,
NOTE Confidence: 0.852982068888889
00:03:19.500 --> 00:03:20.988 I want to begin by just
NOTE Confidence: 0.852982068888889
00:03:20.988 --> 00:03:21.980 acknowledging that I live,
NOTE Confidence: 0.852982068888889
00:03:21.980 --> 00:03:23.340 work and play in Vancouver,
NOTE Confidence: 0.852982068888889
00:03:23.340 --> 00:03:25.713 which is part of the unseated traditional
NOTE Confidence: 0.852982068888889
00:03:25.713 --> 00:03:27.376 and ancestral territories of the
NOTE Confidence: 0.852982068888889
00:03:27.376 --> 00:03:28.856 Coast Salish peoples and Musqueam,
NOTE Confidence: 0.852982068888889
00:03:28.860 --> 00:03:31.695 Squamish and Suela 2 the First Nations.
NOTE Confidence: 0.852982068888889
00:03:31.700 --> 00:03:33.982 I always start my talk by giving
NOTE Confidence: 0.852982068888889

00:03:33.982 --> 00:03:36.259 a definition of sex versus gender.
NOTE Confidence: 0.852982068888889

00:03:36.260 --> 00:03:38.234 So when I'm talking about sex differences,
NOTE Confidence: 0.852982068888889

00:03:38.240 --> 00:03:41.048 I'm referring to the biological and
NOTE Confidence: 0.852982068888889

00:03:41.048 --> 00:03:43.380 physiological mechanisms that define males,
NOTE Confidence: 0.852982068888889

00:03:43.380 --> 00:03:46.284 females, and intersex individuals.
NOTE Confidence: 0.852982068888889

00:03:46.284 --> 00:03:47.010 Gender.
NOTE Confidence: 0.852982068888889

00:03:47.010 --> 00:03:48.837 Some people think of as sexual orientation,
NOTE Confidence: 0.852982068888889

00:03:48.840 --> 00:03:49.953 as gender identity,
NOTE Confidence: 0.852982068888889

00:03:49.953 --> 00:03:52.179 and it's much more than that.
NOTE Confidence: 0.852982068888889

00:03:52.180 --> 00:03:55.612 It's how a society has expectations
NOTE Confidence: 0.852982068888889

00:03:55.612 --> 00:03:57.849 and attribute has attributes for
NOTE Confidence: 0.852982068888889

00:03:57.849 --> 00:04:00.027 you based on your gender identity
NOTE Confidence: 0.852982068888889

00:04:00.027 --> 00:04:02.277 and that society at every level.
NOTE Confidence: 0.852982068888889

00:04:02.280 --> 00:04:05.780 Home life, education, work life.
NOTE Confidence: 0.852982068888889

00:04:05.780 --> 00:04:07.999 And here is my spouse who identifies
NOTE Confidence: 0.852982068888889

00:04:07.999 --> 00:04:10.860 as a man showing what's appropriate in

NOTE Confidence: 0.852982068888889

00:04:10.860 --> 00:04:13.608 terms of the household and expected

NOTE Confidence: 0.852982068888889

00:04:13.688 --> 00:04:16.229 of him based on his gender identity.

NOTE Confidence: 0.852982068888889

00:04:16.230 --> 00:04:17.808 Neither of these terms are binary,

NOTE Confidence: 0.852982068888889

00:04:17.810 --> 00:04:19.610 as you can well imagine,

NOTE Confidence: 0.852982068888889

00:04:19.610 --> 00:04:22.290 and I'll be talking about more the sex

NOTE Confidence: 0.852982068888889

00:04:22.290 --> 00:04:23.914 differences and biomedical differences

NOTE Confidence: 0.852982068888889

00:04:23.914 --> 00:04:27.008 that we see in major depressive disorder.

NOTE Confidence: 0.852982068888889

00:04:27.010 --> 00:04:28.866 But I want to make it really clear

NOTE Confidence: 0.852982068888889

00:04:28.866 --> 00:04:30.768 that all the disparities that I'm

NOTE Confidence: 0.852982068888889

00:04:30.768 --> 00:04:32.493 talking about between females and

NOTE Confidence: 0.852982068888889

00:04:32.493 --> 00:04:34.750 males and women and men are many fold

NOTE Confidence: 0.852982068888889

00:04:34.750 --> 00:04:37.131 greater in people of color, indigenous,

NOTE Confidence: 0.852982068888889

00:04:37.131 --> 00:04:39.766 trans and non binary individuals.

NOTE Confidence: 0.852982068888889

00:04:39.770 --> 00:04:42.686 And all of that work deserves

NOTE Confidence: 0.852982068888889

00:04:42.686 --> 00:04:44.144 attention and acknowledgement.

NOTE Confidence: 0.852982068888889

00:04:44.150 --> 00:04:46.509 And I put some people mostly Canadian.
NOTE Confidence: 0.852982068888889

00:04:46.510 --> 00:04:48.075 Researchers there that I do
NOTE Confidence: 0.852982068888889

00:04:48.075 --> 00:04:50.239 quite a bit of that work so,
NOTE Confidence: 0.852982068888889

00:04:50.240 --> 00:04:52.262 but I'm happy to maybe answer
NOTE Confidence: 0.852982068888889

00:04:52.262 --> 00:04:54.379 questions about some of that later.
NOTE Confidence: 0.852982068888889

00:04:54.380 --> 00:04:57.420 So using my own family as an example,
NOTE Confidence: 0.852982068888889

00:04:57.420 --> 00:04:58.635 I think it's really obvious
NOTE Confidence: 0.852982068888889

00:04:58.635 --> 00:05:00.520 that there are a number of sex
NOTE Confidence: 0.852982068888889

00:05:00.520 --> 00:05:01.760 differences across the lifespan,
NOTE Confidence: 0.852982068888889

00:05:01.760 --> 00:05:03.671 and probably many of you are very
NOTE Confidence: 0.852982068888889

00:05:03.671 --> 00:05:05.456 well aware that females are more
NOTE Confidence: 0.852982068888889

00:05:05.456 --> 00:05:07.563 likely to live longer than males are.
NOTE Confidence: 0.852982068888889

00:05:07.570 --> 00:05:09.631 But what you might not be aware of is
NOTE Confidence: 0.852982068888889

00:05:09.631 --> 00:05:11.796 that females are also more likely to
NOTE Confidence: 0.852982068888889

00:05:11.796 --> 00:05:13.918 deal with chronic illness than males are.
NOTE Confidence: 0.852982068888889

00:05:13.920 --> 00:05:15.313 And this is my mom who suffered

NOTE Confidence: 0.852982068888889
00:05:15.313 --> 00:05:16.519 from a very severe form.
NOTE Confidence: 0.852982068888889
00:05:16.520 --> 00:05:19.327 Parkinson's disease towards the end of life,
NOTE Confidence: 0.852982068888889
00:05:19.330 --> 00:05:22.350 and this paper came out a few years ago now,
NOTE Confidence: 0.852982068888889
00:05:22.350 --> 00:05:24.390 showing that on average for
NOTE Confidence: 0.852982068888889
00:05:24.390 --> 00:05:26.022 a variety of diseases,
NOTE Confidence: 0.852982068888889
00:05:26.030 --> 00:05:28.214 females were diagnosed 2 years later
NOTE Confidence: 0.852982068888889
00:05:28.214 --> 00:05:30.839 than males were for the very for
NOTE Confidence: 0.852982068888889
00:05:30.839 --> 00:05:32.669 obviously the very same disease.
NOTE Confidence: 0.852982068888889
00:05:32.670 --> 00:05:35.406 And this is true for diseases even in
NOTE Confidence: 0.852982068888889
00:05:35.406 --> 00:05:37.907 which females show a greater prevalence.
NOTE Confidence: 0.852982068888889
00:05:37.910 --> 00:05:40.262 Now there are many reasons for
NOTE Confidence: 0.852982068888889
00:05:40.262 --> 00:05:41.046 this disparity,
NOTE Confidence: 0.852982068888889
00:05:41.050 --> 00:05:43.885 both on the sex and on the gender side,
NOTE Confidence: 0.852982068888889
00:05:43.890 --> 00:05:45.630 but I would argue her,
NOTE Confidence: 0.852982068888889
00:05:45.630 --> 00:05:46.908 I'd hesitate to say not hesitate.
NOTE Confidence: 0.835655182

00:05:46.910 --> 00:05:48.110 I'm not hesitating at all.
NOTE Confidence: 0.835655182

00:05:48.110 --> 00:05:50.062 I would imagine that a lot of this
NOTE Confidence: 0.835655182

00:05:50.062 --> 00:05:52.150 has to do with the fact that a
NOTE Confidence: 0.835655182

00:05:52.150 --> 00:05:54.108 much of our medical knowledge and
NOTE Confidence: 0.835655182

00:05:54.108 --> 00:05:56.283 scientific knowledge has come from
NOTE Confidence: 0.835655182

00:05:56.283 --> 00:05:58.310 male Physiology studying the male.
NOTE Confidence: 0.835655182

00:05:58.310 --> 00:06:01.190 And our playbook seems to be more in
NOTE Confidence: 0.835655182

00:06:01.276 --> 00:06:04.116 terms of the male Physiology, in fact,
NOTE Confidence: 0.835655182

00:06:04.116 --> 00:06:06.380 so much so that even in diseases where
NOTE Confidence: 0.835655182

00:06:06.441 --> 00:06:08.849 you see a greater prevalence in females.
NOTE Confidence: 0.835655182

00:06:08.850 --> 00:06:12.294 Females are said to have atypical symptoms.
NOTE Confidence: 0.835655182

00:06:12.300 --> 00:06:13.540 Like, let's just think about
NOTE Confidence: 0.835655182

00:06:13.540 --> 00:06:14.780 that just for a second.
NOTE Confidence: 0.835655182

00:06:14.780 --> 00:06:16.766 If there's more females that present
NOTE Confidence: 0.835655182

00:06:16.766 --> 00:06:18.980 with the disorder and yet they're
NOTE Confidence: 0.835655182

00:06:18.980 --> 00:06:21.060 classified as having atypical symptoms,

NOTE Confidence: 0.835655182

00:06:21.060 --> 00:06:23.370 that suggests we are using

NOTE Confidence: 0.835655182

00:06:23.370 --> 00:06:24.756 the wrong playbook.

NOTE Confidence: 0.835655182

00:06:24.760 --> 00:06:26.216 And so this might take a message.

NOTE Confidence: 0.835655182

00:06:26.220 --> 00:06:27.724 If none of you want to pay any

NOTE Confidence: 0.835655182

00:06:27.724 --> 00:06:28.808 more attention after the slide,

NOTE Confidence: 0.835655182

00:06:28.810 --> 00:06:31.318 this is totally fine because basically

NOTE Confidence: 0.835655182

00:06:31.318 --> 00:06:34.234 my message is that males cannot serve

NOTE Confidence: 0.835655182

00:06:34.234 --> 00:06:36.957 as a default for females that much

NOTE Confidence: 0.835655182

00:06:37.031 --> 00:06:39.600 of our knowledge has been based on.

NOTE Confidence: 0.835655182

00:06:39.600 --> 00:06:41.854 Out the male playbook, which is fine,

NOTE Confidence: 0.835655182

00:06:41.860 --> 00:06:44.074 but it's like if you're trying

NOTE Confidence: 0.835655182

00:06:44.074 --> 00:06:45.550 to fix a refrigerator.

NOTE Confidence: 0.835655182

00:06:45.550 --> 00:06:49.210 It's like using an oven manual.

NOTE Confidence: 0.835655182

00:06:49.210 --> 00:06:50.718 So as a neuroscientist,

NOTE Confidence: 0.835655182

00:06:50.718 --> 00:06:52.603 I'm interested in sex differences

NOTE Confidence: 0.835655182

00:06:52.603 --> 00:06:54.307 in the brain of course,
NOTE Confidence: 0.835655182

00:06:54.310 --> 00:06:55.969 and there are a number of them,
NOTE Confidence: 0.835655182

00:06:55.970 --> 00:06:57.434 and it's not one sex that's
NOTE Confidence: 0.835655182

00:06:57.434 --> 00:06:58.166 predominating the other.
NOTE Confidence: 0.835655182

00:06:58.170 --> 00:06:59.430 This is in terms of Gray matter.
NOTE Confidence: 0.835655182

00:06:59.430 --> 00:07:02.230 You can see a lot of different
NOTE Confidence: 0.835655182

00:07:02.230 --> 00:07:03.030 variation there,
NOTE Confidence: 0.835655182

00:07:03.030 --> 00:07:06.070 and also you see differences in white matter.
NOTE Confidence: 0.835655182

00:07:06.070 --> 00:07:08.302 So females are more likely to
NOTE Confidence: 0.835655182

00:07:08.302 --> 00:07:09.418 have interhemispheric connections
NOTE Confidence: 0.835655182

00:07:09.418 --> 00:07:12.073 and males are more likely to have
NOTE Confidence: 0.835655182

00:07:12.073 --> 00:07:13.183 intra hemispheric connections.
NOTE Confidence: 0.835655182

00:07:13.190 --> 00:07:15.710 And this may or may not lead to sex
NOTE Confidence: 0.835655182

00:07:15.710 --> 00:07:17.698 differences in the prevalence of brain
NOTE Confidence: 0.835655182

00:07:17.698 --> 00:07:20.238 disease that put some common ones up there.
NOTE Confidence: 0.835655182

00:07:20.240 --> 00:07:21.983 What I think is even more fascinating

NOTE Confidence: 0.835655182

00:07:21.983 --> 00:07:23.793 is that we see sex differences

NOTE Confidence: 0.835655182

00:07:23.793 --> 00:07:25.478 in the manifestation of disease.

NOTE Confidence: 0.835655182

00:07:25.480 --> 00:07:26.842 And that's true even in diseases

NOTE Confidence: 0.835655182

00:07:26.842 --> 00:07:28.535 where you don't see a sex difference

NOTE Confidence: 0.835655182

00:07:28.535 --> 00:07:30.017 in the prevalence of the disorder,

NOTE Confidence: 0.835655182

00:07:30.020 --> 00:07:30.668 like schizophrenia.

NOTE Confidence: 0.835655182

00:07:30.668 --> 00:07:33.260 And in my lab and in my work,

NOTE Confidence: 0.835655182

00:07:33.260 --> 00:07:36.319 I've been looking more at diseases that

NOTE Confidence: 0.835655182

00:07:36.319 --> 00:07:39.418 show a greater lifetime risk for it,

NOTE Confidence: 0.835655182

00:07:39.420 --> 00:07:40.156 for females,

NOTE Confidence: 0.835655182

00:07:40.156 --> 00:07:41.996 so Alzheimer's disease and depression.

NOTE Confidence: 0.835655182

00:07:42.000 --> 00:07:43.992 And today I'll be talking more

NOTE Confidence: 0.835655182

00:07:43.992 --> 00:07:45.320 about the depression work.

NOTE Confidence: 0.835655182

00:07:45.320 --> 00:07:47.190 So hopefully I've started to

NOTE Confidence: 0.835655182

00:07:47.190 --> 00:07:49.490 convince you that it's important to

NOTE Confidence: 0.835655182

00:07:49.490 --> 00:07:51.330 study sex differences in disease.
NOTE Confidence: 0.835655182

00:07:51.330 --> 00:07:53.058 Because it can give us clues
NOTE Confidence: 0.835655182

00:07:53.058 --> 00:07:54.850 on how a disease develops,
NOTE Confidence: 0.835655182

00:07:54.850 --> 00:07:57.142 the manifestation of that disease and
NOTE Confidence: 0.835655182

00:07:57.142 --> 00:07:59.448 also the treatment aspect and that
NOTE Confidence: 0.835655182

00:07:59.448 --> 00:08:01.584 treatment part is very rarely studied,
NOTE Confidence: 0.835655182

00:08:01.590 --> 00:08:03.515 but it also allows us to build
NOTE Confidence: 0.835655182

00:08:03.515 --> 00:08:05.330 better models of disease and that's
NOTE Confidence: 0.835655182

00:08:05.330 --> 00:08:06.880 true from both a preclinical
NOTE Confidence: 0.835655182

00:08:06.880 --> 00:08:08.789 and a clinical perspective.
NOTE Confidence: 0.835655182

00:08:08.790 --> 00:08:11.198 And of course better models with just
NOTE Confidence: 0.835655182

00:08:11.198 --> 00:08:13.243 give us better precision therapeutics
NOTE Confidence: 0.835655182

00:08:13.243 --> 00:08:15.593 and obviously if that doesn't
NOTE Confidence: 0.835655182

00:08:15.593 --> 00:08:18.247 convincing you are federal funding
NOTE Confidence: 0.835655182

00:08:18.247 --> 00:08:20.587 agencies are mandating incorporation.
NOTE Confidence: 0.835655182

00:08:20.590 --> 00:08:22.543 So anytime you see a sex difference

NOTE Confidence: 0.835655182

00:08:22.543 --> 00:08:24.509 in the work that you're doing,

NOTE Confidence: 0.835655182

00:08:24.510 --> 00:08:25.860 that should automatically queue you to

NOTE Confidence: 0.835655182

00:08:25.860 --> 00:08:27.768 think that one of two things are involved,

NOTE Confidence: 0.835655182

00:08:27.770 --> 00:08:29.730 or a combination of the two of them.

NOTE Confidence: 0.835655182

00:08:29.730 --> 00:08:31.221 One, sex chromosomes,

NOTE Confidence: 0.835655182

00:08:31.221 --> 00:08:33.209 the second sex hormones.

NOTE Confidence: 0.835655182

00:08:33.210 --> 00:08:35.235 And I'll be talking mostly

NOTE Confidence: 0.835655182

00:08:35.235 --> 00:08:36.450 about hormones today.

NOTE Confidence: 0.835655182

00:08:36.450 --> 00:08:37.635 And just because this gives

NOTE Confidence: 0.835655182

00:08:37.635 --> 00:08:38.820 me another excuse to put

NOTE Confidence: 0.867558796842105

00:08:38.871 --> 00:08:39.863 my adorable adult children

NOTE Confidence: 0.867558796842105

00:08:39.863 --> 00:08:41.103 back up on the screen.

NOTE Confidence: 0.867558796842105

00:08:41.110 --> 00:08:43.126 And so they were all on the same page.

NOTE Confidence: 0.867558796842105

00:08:43.130 --> 00:08:45.098 I'm talking about ovarian hormones like

NOTE Confidence: 0.867558796842105

00:08:45.098 --> 00:08:46.869 estrogens and females and testicular

NOTE Confidence: 0.867558796842105

00:08:46.869 --> 00:08:48.889 hormones like testosterone and males.
NOTE Confidence: 0.867558796842105

00:08:48.890 --> 00:08:50.290 And of course we.
NOTE Confidence: 0.867558796842105

00:08:50.290 --> 00:08:51.690 Have each other's hormones,
NOTE Confidence: 0.867558796842105

00:08:51.690 --> 00:08:53.640 or just at different concentrations,
NOTE Confidence: 0.867558796842105

00:08:53.640 --> 00:08:55.968 and these act on hormone receptors
NOTE Confidence: 0.867558796842105

00:08:55.968 --> 00:08:58.200 that are located across the body,
NOTE Confidence: 0.867558796842105

00:08:58.200 --> 00:08:59.680 not just in the reproductive
NOTE Confidence: 0.867558796842105

00:08:59.680 --> 00:09:00.864 tract across the brain,
NOTE Confidence: 0.867558796842105

00:09:00.870 --> 00:09:02.679 across the body.
NOTE Confidence: 0.867558796842105

00:09:02.680 --> 00:09:04.360 It gets more complicated than that,
NOTE Confidence: 0.867558796842105

00:09:04.360 --> 00:09:06.904 because testosterone itself can get converted
NOTE Confidence: 0.867558796842105

00:09:06.904 --> 00:09:10.399 to a very powerful estrogen called estradiol,
NOTE Confidence: 0.867558796842105

00:09:10.400 --> 00:09:13.940 or a very potent androgen called
NOTE Confidence: 0.867558796842105

00:09:13.940 --> 00:09:14.530 dihydrotestosterone.
NOTE Confidence: 0.867558796842105

00:09:14.530 --> 00:09:17.029 And sex hormones themselves can affect risk,
NOTE Confidence: 0.867558796842105

00:09:17.030 --> 00:09:18.092 symptomology and treatment.

NOTE Confidence: 0.867558796842105
00:09:18.092 --> 00:09:20.570 I'll give you an example from the
NOTE Confidence: 0.867558796842105
00:09:20.628 --> 00:09:22.119 schizophrenia literature showing
NOTE Confidence: 0.867558796842105
00:09:22.119 --> 00:09:24.107 across the menstrual cycle,
NOTE Confidence: 0.867558796842105
00:09:24.110 --> 00:09:27.098 as estradiol levels decline,
NOTE Confidence: 0.867558796842105
00:09:27.098 --> 00:09:29.339 psychotic symptoms increase.
NOTE Confidence: 0.867558796842105
00:09:29.340 --> 00:09:32.013 I thought I'd spent a couple of minutes just
NOTE Confidence: 0.867558796842105
00:09:32.013 --> 00:09:34.318 talking about what sex differences is not.
NOTE Confidence: 0.867558796842105
00:09:34.320 --> 00:09:36.648 It's not sexist, it's not more
NOTE Confidence: 0.867558796842105
00:09:36.648 --> 00:09:39.520 complicated in one sex versus the other.
NOTE Confidence: 0.867558796842105
00:09:39.520 --> 00:09:42.536 It's not believing that males and females are
NOTE Confidence: 0.867558796842105
00:09:42.536 --> 00:09:45.116 polar opposite and it's not the final step.
NOTE Confidence: 0.867558796842105
00:09:45.120 --> 00:09:47.289 So what do I mean by all of that?
NOTE Confidence: 0.867558796842105
00:09:47.290 --> 00:09:51.073 One is that I see this idea that when
NOTE Confidence: 0.867558796842105
00:09:51.073 --> 00:09:53.180 you see a Gray matter volume difference,
NOTE Confidence: 0.867558796842105
00:09:53.180 --> 00:09:55.106 that that somehow means that one
NOTE Confidence: 0.867558796842105

00:09:55.106 --> 00:09:57.089 sex is inferior to the other.
NOTE Confidence: 0.867558796842105

00:09:57.090 --> 00:09:58.850 I'm not sure really where that comes from.
NOTE Confidence: 0.867558796842105

00:09:58.850 --> 00:10:00.274 That's an empirical question,
NOTE Confidence: 0.867558796842105

00:10:00.274 --> 00:10:00.630 right?
NOTE Confidence: 0.867558796842105

00:10:00.630 --> 00:10:02.275 It just means that the two brains
NOTE Confidence: 0.867558796842105

00:10:02.275 --> 00:10:02.745 are different.
NOTE Confidence: 0.867558796842105

00:10:02.750 --> 00:10:04.846 It doesn't mean that one sex is inferior.
NOTE Confidence: 0.867558796842105

00:10:04.850 --> 00:10:06.994 And in fact I'll give you some examples.
NOTE Confidence: 0.867558796842105

00:10:07.000 --> 00:10:08.503 I might forget to give you one of them,
NOTE Confidence: 0.867558796842105

00:10:08.510 --> 00:10:09.620 but I'll give you some examples.
NOTE Confidence: 0.867558796842105

00:10:09.620 --> 00:10:11.627 You can ask me at the end of where
NOTE Confidence: 0.867558796842105

00:10:11.627 --> 00:10:14.205 you might see a Gray matter volume
NOTE Confidence: 0.867558796842105

00:10:14.205 --> 00:10:15.733 difference actually has beneficial
NOTE Confidence: 0.867558796842105

00:10:15.793 --> 00:10:17.907 effects to one sex versus the other.
NOTE Confidence: 0.867558796842105

00:10:17.910 --> 00:10:19.142 So that's a notion.
NOTE Confidence: 0.867558796842105

00:10:19.142 --> 00:10:20.682 So we should dispel ourselves

NOTE Confidence: 0.867558796842105
00:10:20.682 --> 00:10:21.890 of these notions.
NOTE Confidence: 0.867558796842105
00:10:21.890 --> 00:10:23.520 Another notions is is that
NOTE Confidence: 0.867558796842105
00:10:23.520 --> 00:10:25.150 females are more complicated to
NOTE Confidence: 0.867558796842105
00:10:25.210 --> 00:10:27.010 study because of their hormones.
NOTE Confidence: 0.867558796842105
00:10:27.010 --> 00:10:30.349 And Rebecca Shansky did a great editorial,
NOTE Confidence: 0.867558796842105
00:10:30.350 --> 00:10:31.650 not editorial, but a commentary,
NOTE Confidence: 0.867558796842105
00:10:31.650 --> 00:10:35.124 on this in science a couple of years ago.
NOTE Confidence: 0.867558796842105
00:10:35.130 --> 00:10:36.615 And these papers have come
NOTE Confidence: 0.867558796842105
00:10:36.615 --> 00:10:38.100 out and rats versus mice,
NOTE Confidence: 0.867558796842105
00:10:38.100 --> 00:10:39.905 and there's another one coming
NOTE Confidence: 0.867558796842105
00:10:39.905 --> 00:10:42.137 out in humans showing that the
NOTE Confidence: 0.867558796842105
00:10:42.137 --> 00:10:44.309 variability for a variety of traits,
NOTE Confidence: 0.867558796842105
00:10:44.310 --> 00:10:45.852 physiological and behavioral,
NOTE Confidence: 0.867558796842105
00:10:45.852 --> 00:10:47.908 there's no sex difference.
NOTE Confidence: 0.867558796842105
00:10:47.910 --> 00:10:50.773 So there's not one sex that's more
NOTE Confidence: 0.867558796842105

00:10:50.773 --> 00:10:53.050 inherently variable than the other sex.

NOTE Confidence: 0.867558796842105

00:10:53.050 --> 00:10:53.413 Now,

NOTE Confidence: 0.867558796842105

00:10:53.413 --> 00:10:55.954 what this doesn't mean is that the

NOTE Confidence: 0.867558796842105

00:10:55.954 --> 00:10:57.874 variability within each sex might not

NOTE Confidence: 0.867558796842105

00:10:57.874 --> 00:11:00.380 be driven at least in part by hormones.

NOTE Confidence: 0.867558796842105

00:11:00.380 --> 00:11:02.515 I thought I'd give you this example.

NOTE Confidence: 0.867558796842105

00:11:02.520 --> 00:11:04.475 These are testosterone levels and

NOTE Confidence: 0.867558796842105

00:11:04.475 --> 00:11:06.818 human males and this should indicate

NOTE Confidence: 0.867558796842105

00:11:06.818 --> 00:11:09.378 to you that you see a dramatic decline

NOTE Confidence: 0.867558796842105

00:11:09.378 --> 00:11:11.531 in testosterone levels on diurnal on

NOTE Confidence: 0.867558796842105

00:11:11.531 --> 00:11:14.509 a daily fashion by as much as 50%.

NOTE Confidence: 0.867558796842105

00:11:14.509 --> 00:11:17.330 So given that males have a diurnal

NOTE Confidence: 0.867558796842105

00:11:17.420 --> 00:11:20.205 fluctuation in hormones and females

NOTE Confidence: 0.867558796842105

00:11:20.205 --> 00:11:23.719 have a monthly fluctuation in their

NOTE Confidence: 0.867558796842105

00:11:23.719 --> 00:11:26.259 astral and progesterone levels,

NOTE Confidence: 0.867558796842105

00:11:26.260 --> 00:11:28.794 I have one question for you which

NOTE Confidence: 0.867558796842105

00:11:28.794 --> 00:11:31.360 is who's more hormonal? Now.

NOTE Confidence: 0.90279232625

00:11:33.590 --> 00:11:36.065 The other point I want to make is that

NOTE Confidence: 0.90279232625

00:11:36.065 --> 00:11:38.528 there are many types of sex differences,

NOTE Confidence: 0.90279232625

00:11:38.530 --> 00:11:39.928 and I see this a lot.

NOTE Confidence: 0.90279232625

00:11:39.930 --> 00:11:40.756 Sexual dimorphism.

NOTE Confidence: 0.90279232625

00:11:40.756 --> 00:11:43.647 Sexual dimorphism just refers to one thing,

NOTE Confidence: 0.90279232625

00:11:43.650 --> 00:11:45.054 which is very different,

NOTE Confidence: 0.90279232625

00:11:45.054 --> 00:11:47.182 polar opposites, if you will,

NOTE Confidence: 0.90279232625

00:11:47.182 --> 00:11:50.026 different morphs of the same trait.

NOTE Confidence: 0.90279232625

00:11:50.030 --> 00:11:51.966 But there are many kinds of sex differences,

NOTE Confidence: 0.90279232625

00:11:51.970 --> 00:11:54.050 and the 1:00 today that I'll talk about

NOTE Confidence: 0.90279232625

00:11:54.050 --> 00:11:55.877 first at least, is mechanistic differences.

NOTE Confidence: 0.90279232625

00:11:55.877 --> 00:11:58.363 And this is what I really want people

NOTE Confidence: 0.90279232625

00:11:58.363 --> 00:12:00.225 to think about in their own data.

NOTE Confidence: 0.90279232625

00:12:00.230 --> 00:12:01.525 And that might be where you don't

NOTE Confidence: 0.90279232625

00:12:01.525 --> 00:12:02.940 see a sex difference in the
NOTE Confidence: 0.90279232625

00:12:02.940 --> 00:12:04.290 trait that you're interested in.
NOTE Confidence: 0.90279232625

00:12:04.290 --> 00:12:06.019 As a matter what trade it is,
NOTE Confidence: 0.90279232625

00:12:06.020 --> 00:12:08.748 but that doesn't mean that the neural or
NOTE Confidence: 0.90279232625

00:12:08.748 --> 00:12:10.695 molecular mechanisms underlying that trait
NOTE Confidence: 0.90279232625

00:12:10.695 --> 00:12:13.113 are completely different between the sexes.
NOTE Confidence: 0.90279232625

00:12:13.120 --> 00:12:14.602 Another might be that you don't
NOTE Confidence: 0.90279232625

00:12:14.602 --> 00:12:16.393 see a sex difference in a trait
NOTE Confidence: 0.90279232625

00:12:16.393 --> 00:12:17.397 that you're interested in,
NOTE Confidence: 0.90279232625

00:12:17.400 --> 00:12:19.656 but that doesn't mean with stress,
NOTE Confidence: 0.90279232625

00:12:19.660 --> 00:12:20.416 disease, age,
NOTE Confidence: 0.90279232625

00:12:20.416 --> 00:12:21.172 hormones, genotype,
NOTE Confidence: 0.90279232625

00:12:21.172 --> 00:12:23.821 that that doesn't elicit a sex difference
NOTE Confidence: 0.90279232625

00:12:23.821 --> 00:12:26.373 either in the trait or in the molecular
NOTE Confidence: 0.90279232625

00:12:26.373 --> 00:12:28.938 and neural mechanisms guiding that trait.
NOTE Confidence: 0.90279232625

00:12:28.940 --> 00:12:31.860 So keep looking sounds weird,

NOTE Confidence: 0.90279232625

00:12:31.860 --> 00:12:34.119 but keep looking.

NOTE Confidence: 0.90279232625

00:12:34.120 --> 00:12:35.200 And I'll come back to that

NOTE Confidence: 0.90279232625

00:12:35.200 --> 00:12:36.130 point at the very end.

NOTE Confidence: 0.90279232625

00:12:36.130 --> 00:12:38.559 The last point I want to make

NOTE Confidence: 0.90279232625

00:12:38.559 --> 00:12:40.734 about this is that studying sex

NOTE Confidence: 0.90279232625

00:12:40.734 --> 00:12:42.544 differences isn't the final step.

NOTE Confidence: 0.90279232625

00:12:42.550 --> 00:12:45.119 There are a number of female unique

NOTE Confidence: 0.90279232625

00:12:45.119 --> 00:12:47.596 experiences that we already know drive

NOTE Confidence: 0.90279232625

00:12:47.596 --> 00:12:49.766 health outcomes and disease risk.

NOTE Confidence: 0.90279232625

00:12:49.770 --> 00:12:51.738 And I'll be talking about pregnancy

NOTE Confidence: 0.90279232625

00:12:51.738 --> 00:12:53.626 and the postpartum at the at

NOTE Confidence: 0.90279232625

00:12:53.626 --> 00:12:55.180 the latter half of this talk.

NOTE Confidence: 0.90279232625

00:12:55.180 --> 00:12:57.049 I really do think we can improve

NOTE Confidence: 0.90279232625

00:12:57.049 --> 00:12:58.826 our knowledge of pretty much any

NOTE Confidence: 0.90279232625

00:12:58.826 --> 00:13:00.656 disease if we give full consideration

NOTE Confidence: 0.90279232625

00:13:00.656 --> 00:13:02.497 to sex and gender differences.

NOTE Confidence: 0.90279232625

00:13:02.500 --> 00:13:04.780 And so I'd like to use the term like we

NOTE Confidence: 0.90279232625

00:13:04.841 --> 00:13:07.298 can harness that power of sex differences.

NOTE Confidence: 0.90279232625

00:13:07.300 --> 00:13:09.442 So today I'll talk to you a little bit

NOTE Confidence: 0.90279232625

00:13:09.442 --> 00:13:11.410 about some sex differences and major

NOTE Confidence: 0.90279232625

00:13:11.410 --> 00:13:13.740 depressive disorder that we see clinically.

NOTE Confidence: 0.90279232625

00:13:13.740 --> 00:13:15.434 I'll talk about a new preclinical model

NOTE Confidence: 0.90279232625

00:13:15.434 --> 00:13:17.327 that we have that's not fully formed,

NOTE Confidence: 0.90279232625

00:13:17.330 --> 00:13:19.026 but I'm going to tell you about it

NOTE Confidence: 0.90279232625

00:13:19.026 --> 00:13:20.858 anyway on the negative cognitive bias.

NOTE Confidence: 0.90279232625

00:13:20.860 --> 00:13:23.461 And then I'm going to pivot to talk about

NOTE Confidence: 0.90279232625

00:13:23.461 --> 00:13:26.267 the heterogeneity of perinatal depression.

NOTE Confidence: 0.90279232625

00:13:26.270 --> 00:13:28.090 So I think it's always useful to

NOTE Confidence: 0.90279232625

00:13:28.090 --> 00:13:29.962 look at whatever disease that you're

NOTE Confidence: 0.90279232625

00:13:29.962 --> 00:13:31.687 interested in across a lifespan.

NOTE Confidence: 0.90279232625

00:13:31.690 --> 00:13:34.105 And here's the female to male ratio

NOTE Confidence: 0.90279232625

00:13:34.110 --> 00:13:35.770 have a major depressive disorder.

NOTE Confidence: 0.90279232625

00:13:35.770 --> 00:13:38.248 And I think what pops out immediately

NOTE Confidence: 0.90279232625

00:13:38.248 --> 00:13:41.424 is that where you see that twice more

NOTE Confidence: 0.90279232625

00:13:41.424 --> 00:13:43.960 likely is during those reproductive years.

NOTE Confidence: 0.90279232625

00:13:43.960 --> 00:13:46.420 So suggesting that females have a

NOTE Confidence: 0.90279232625

00:13:46.420 --> 00:13:48.994 unique Physiology that results in these

NOTE Confidence: 0.90279232625

00:13:48.994 --> 00:13:50.734 specific periods of susceptibility

NOTE Confidence: 0.90279232625

00:13:50.734 --> 00:13:53.120 to depression across the lifespan.

NOTE Confidence: 0.90279232625

00:13:53.120 --> 00:13:55.682 It also lends itself to two

NOTE Confidence: 0.90279232625

00:13:55.682 --> 00:13:56.963 alternative biological explanations

NOTE Confidence: 0.90279232625

00:13:56.963 --> 00:13:59.437 for sex differences and depression.

NOTE Confidence: 0.90279232625

00:13:59.440 --> 00:14:01.276 One being that females are more

NOTE Confidence: 0.90279232625

00:14:01.276 --> 00:14:03.510 susceptible and I'm and are an ecologist,

NOTE Confidence: 0.90279232625

00:14:03.510 --> 00:14:04.896 so I'm always going to think it

NOTE Confidence: 0.90279232625

00:14:04.896 --> 00:14:06.239 has something to do with hormones.

NOTE Confidence: 0.90279232625

00:14:06.240 --> 00:14:08.208 But the other is that males are more
NOTE Confidence: 0.90279232625

00:14:08.208 --> 00:14:10.540 resistant, again due to their hormones.
NOTE Confidence: 0.90279232625

00:14:10.540 --> 00:14:12.340 And we've created a number of
NOTE Confidence: 0.90279232625

00:14:12.340 --> 00:14:14.080 animal models to look at this.
NOTE Confidence: 0.90279232625

00:14:14.080 --> 00:14:16.295 Another question that we've been
NOTE Confidence: 0.90279232625

00:14:16.295 --> 00:14:18.510 interested in is does antidepressant
NOTE Confidence: 0.783025733793103

00:14:18.510 --> 00:14:21.099 efficacy is it varied based on hormonal
NOTE Confidence: 0.783025733793103

00:14:21.099 --> 00:14:23.377 status in either males or females
NOTE Confidence: 0.783025733793103

00:14:23.377 --> 00:14:25.645 under an animal model of depression?
NOTE Confidence: 0.783025733793103

00:14:25.645 --> 00:14:27.008 Now, I always get asked this question,
NOTE Confidence: 0.783025733793103

00:14:27.010 --> 00:14:29.226 so it's better to put it up front
NOTE Confidence: 0.783025733793103

00:14:29.226 --> 00:14:31.398 and that is, do males and females
NOTE Confidence: 0.783025733793103

00:14:31.398 --> 00:14:32.746 just show depressant differently?
NOTE Confidence: 0.783025733793103

00:14:32.750 --> 00:14:34.575 So to be diagnosed with
NOTE Confidence: 0.783025733793103

00:14:34.575 --> 00:14:35.670 major depressive disorder,
NOTE Confidence: 0.783025733793103

00:14:35.670 --> 00:14:38.361 you have to one of the two blue symptoms

NOTE Confidence: 0.783025733793103

00:14:38.361 --> 00:14:41.245 and five out of the other seven symptoms.

NOTE Confidence: 0.783025733793103

00:14:41.250 --> 00:14:43.200 And I think somebody that's studying

NOTE Confidence: 0.783025733793103

00:14:43.200 --> 00:14:45.448 this with the best last name ever,

NOTE Confidence: 0.783025733793103

00:14:45.450 --> 00:14:46.786 I don't know if you can see that,

NOTE Confidence: 0.783025733793103

00:14:46.790 --> 00:14:49.718 but and you can't really argue with that.

NOTE Confidence: 0.783025733793103

00:14:49.720 --> 00:14:51.976 And it's a very large end and these

NOTE Confidence: 0.783025733793103

00:14:51.976 --> 00:14:54.788 are in person interviews and this is

NOTE Confidence: 0.783025733793103

00:14:54.788 --> 00:14:56.864 door to door 5 different countries

NOTE Confidence: 0.783025733793103

00:14:56.864 --> 00:14:59.051 in Europe and it wasn't until

NOTE Confidence: 0.783025733793103

00:14:59.051 --> 00:15:01.530 there were five or more symptoms.

NOTE Confidence: 0.783025733793103

00:15:01.530 --> 00:15:02.699 Maybe I have to use this, right.

NOTE Confidence: 0.783025733793103

00:15:02.699 --> 00:15:04.211 Yeah, it wasn't until there were five or

NOTE Confidence: 0.783025733793103

00:15:04.211 --> 00:15:05.645 more symptoms that you saw that shift.

NOTE Confidence: 0.783025733793103

00:15:05.650 --> 00:15:06.922 And the ratio,

NOTE Confidence: 0.783025733793103

00:15:06.922 --> 00:15:09.042 the DSM five also recognizes

NOTE Confidence: 0.783025733793103

00:15:09.042 --> 00:15:11.439 a number of other symptoms.
NOTE Confidence: 0.783025733793103

00:15:11.440 --> 00:15:13.596 You can have with major depressive disorder,
NOTE Confidence: 0.783025733793103

00:15:13.600 --> 00:15:15.992 but some of the common ones there and
NOTE Confidence: 0.783025733793103

00:15:15.992 --> 00:15:18.448 they recognize that there's actually 250
NOTE Confidence: 0.783025733793103

00:15:18.448 --> 00:15:20.800 unique symptom control combinations.
NOTE Confidence: 0.783025733793103

00:15:20.800 --> 00:15:23.218 So it's a very heterogeneous disorder.
NOTE Confidence: 0.783025733793103

00:15:23.220 --> 00:15:24.876 It makes it difficult to model.
NOTE Confidence: 0.783025733793103

00:15:24.880 --> 00:15:26.338 Like I know I'm going to try to sell
NOTE Confidence: 0.783025733793103

00:15:26.338 --> 00:15:27.628 you a story because I'm modeling
NOTE Confidence: 0.783025733793103

00:15:27.628 --> 00:15:28.492 this in in animals.
NOTE Confidence: 0.783025733793103

00:15:28.500 --> 00:15:29.886 I actually think it's really hard
NOTE Confidence: 0.783025733793103

00:15:29.886 --> 00:15:31.566 to model in humans as well, right,
NOTE Confidence: 0.783025733793103

00:15:31.566 --> 00:15:33.988 because you can have weight gain or
NOTE Confidence: 0.783025733793103

00:15:33.988 --> 00:15:36.244 weight loss, you can have insomnia,
NOTE Confidence: 0.783025733793103

00:15:36.244 --> 00:15:37.417 you can oversleep,
NOTE Confidence: 0.783025733793103

00:15:37.420 --> 00:15:39.442 and you can have second order

NOTE Confidence: 0.783025733793103
00:15:39.442 --> 00:15:40.453 agitation or retardation.
NOTE Confidence: 0.783025733793103
00:15:40.460 --> 00:15:41.510 So there's a lot of.
NOTE Confidence: 0.783025733793103
00:15:41.510 --> 00:15:44.970 Heterogeneity even within the
NOTE Confidence: 0.783025733793103
00:15:44.970 --> 00:15:46.700 clinical presentation.
NOTE Confidence: 0.783025733793103
00:15:46.700 --> 00:15:48.572 Not a ton of studies and I'm gonna
NOTE Confidence: 0.783025733793103
00:15:48.572 --> 00:15:50.499 end off with this particular now,
NOTE Confidence: 0.783025733793103
00:15:50.500 --> 00:15:51.490 but not a ton of studies.
NOTE Confidence: 0.783025733793103
00:15:51.490 --> 00:15:53.611 Look at sex differences even now even
NOTE Confidence: 0.783025733793103
00:15:53.611 --> 00:15:55.760 though it's been mandated for a while.
NOTE Confidence: 0.783025733793103
00:15:55.760 --> 00:15:57.874 But there are some studies that show
NOTE Confidence: 0.783025733793103
00:15:57.874 --> 00:15:59.515 some sex differences in symptoms
NOTE Confidence: 0.783025733793103
00:15:59.515 --> 00:16:01.215 for of major depressive disorder.
NOTE Confidence: 0.783025733793103
00:16:01.220 --> 00:16:04.279 So females are more likely to present
NOTE Confidence: 0.783025733793103
00:16:04.279 --> 00:16:05.976 with hypersomnia, hyperphagia,
NOTE Confidence: 0.783025733793103
00:16:05.976 --> 00:16:09.240 those atypical symptoms,
NOTE Confidence: 0.783025733793103

00:16:09.240 --> 00:16:13.112 which I really don't like that term and
NOTE Confidence: 0.783025733793103

00:16:13.112 --> 00:16:15.589 possibly cognitive symptoms as well.
NOTE Confidence: 0.783025733793103

00:16:15.590 --> 00:16:17.910 What about biomarkers of depression?
NOTE Confidence: 0.783025733793103

00:16:17.910 --> 00:16:18.275 Well,
NOTE Confidence: 0.783025733793103

00:16:18.275 --> 00:16:20.100 the Olympics systems very much
NOTE Confidence: 0.783025733793103

00:16:20.100 --> 00:16:22.270 involved in terms of integrity.
NOTE Confidence: 0.783025733793103

00:16:22.270 --> 00:16:24.664 I tend to fixate on the hippocampus,
NOTE Confidence: 0.783025733793103

00:16:24.670 --> 00:16:25.950 so I have to get this up there.
NOTE Confidence: 0.783025733793103

00:16:25.950 --> 00:16:28.350 But you can just use a limbic system.
NOTE Confidence: 0.783025733793103

00:16:28.350 --> 00:16:30.750 There are a number of meta analysis show
NOTE Confidence: 0.783025733793103

00:16:30.750 --> 00:16:33.276 that it's related to duration of illness.
NOTE Confidence: 0.783025733793103

00:16:33.280 --> 00:16:34.704 In terms of volume?
NOTE Confidence: 0.783025733793103

00:16:34.704 --> 00:16:36.840 The stress system is obviously perturbed
NOTE Confidence: 0.783025733793103

00:16:36.908 --> 00:16:38.928 also in major depressive disorder.
NOTE Confidence: 0.783025733793103

00:16:38.930 --> 00:16:41.730 Meta analysis show increased levels
NOTE Confidence: 0.783025733793103

00:16:41.730 --> 00:16:44.530 of cortisol impairments in negative

NOTE Confidence: 0.783025733793103
00:16:44.618 --> 00:16:47.600 feedback of the HP or hypothalamic
NOTE Confidence: 0.783025733793103
00:16:47.600 --> 00:16:51.035 pituitary adrenal system and we see Pro
NOTE Confidence: 0.783025733793103
00:16:51.035 --> 00:16:54.330 inflammatory immune system is also perturbed.
NOTE Confidence: 0.783025733793103
00:16:54.330 --> 00:16:56.555 You see more pro inflammatory
NOTE Confidence: 0.783025733793103
00:16:56.555 --> 00:16:57.890 markers and metabolomics,
NOTE Confidence: 0.783025733793103
00:16:57.890 --> 00:17:00.315 so we see higher levels
NOTE Confidence: 0.783025733793103
00:17:00.315 --> 00:17:01.770 of tryptophan metabolism.
NOTE Confidence: 0.783025733793103
00:17:01.770 --> 00:17:03.798 And again few studies out there,
NOTE Confidence: 0.783025733793103
00:17:03.800 --> 00:17:05.108 but there are some,
NOTE Confidence: 0.783025733793103
00:17:05.108 --> 00:17:07.070 there's some evidence of sex differences
NOTE Confidence: 0.783025733793103
00:17:07.124 --> 00:17:08.649 in some of these biomarkers.
NOTE Confidence: 0.783025733793103
00:17:08.650 --> 00:17:10.698 But because they're so few and far between,
NOTE Confidence: 0.783025733793103
00:17:10.700 --> 00:17:11.650 it's hard to make a,
NOTE Confidence: 0.783025733793103
00:17:11.650 --> 00:17:12.396 you know,
NOTE Confidence: 0.783025733793103
00:17:12.396 --> 00:17:13.515 definitive knowledge about
NOTE Confidence: 0.783025733793103

00:17:13.515 --> 00:17:15.380 all of this or definitive
NOTE Confidence: 0.848241996666667

00:17:15.444 --> 00:17:16.949 statement of all of this.
NOTE Confidence: 0.848241996666667

00:17:16.950 --> 00:17:19.190 So I want to say we really need to start
NOTE Confidence: 0.848241996666667

00:17:19.248 --> 00:17:21.768 using sex as a variable because if we're not,
NOTE Confidence: 0.848241996666667

00:17:21.770 --> 00:17:23.910 it's hampering our understanding, right.
NOTE Confidence: 0.848241996666667

00:17:23.910 --> 00:17:25.226 So a lot of these, sometimes you'll
NOTE Confidence: 0.848241996666667

00:17:25.226 --> 00:17:26.822 see one study will show one thing,
NOTE Confidence: 0.848241996666667

00:17:26.830 --> 00:17:28.240 sometimes we'll say another thing
NOTE Confidence: 0.848241996666667

00:17:28.240 --> 00:17:29.930 in terms of sex differences that
NOTE Confidence: 0.848241996666667

00:17:29.930 --> 00:17:31.547 few studies that are out there but.
NOTE Confidence: 0.848241996666667

00:17:31.550 --> 00:17:32.965 They don't always pay attention
NOTE Confidence: 0.848241996666667

00:17:32.965 --> 00:17:34.380 to age or treatment remission,
NOTE Confidence: 0.848241996666667

00:17:34.380 --> 00:17:35.530 or whether they're treatment naive.
NOTE Confidence: 0.848241996666667

00:17:35.530 --> 00:17:37.760 And all of these things
NOTE Confidence: 0.848241996666667

00:17:37.760 --> 00:17:39.098 obviously will matter.
NOTE Confidence: 0.848241996666667

00:17:39.100 --> 00:17:40.584 I would be remiss if I didn't

NOTE Confidence: 0.848241996666667

00:17:40.584 --> 00:17:41.660 show these two studies,

NOTE Confidence: 0.848241996666667

00:17:41.660 --> 00:17:44.522 both fantastic studies looking at the

NOTE Confidence: 0.848241996666667

00:17:44.522 --> 00:17:46.430 transcriptomic signatures of major

NOTE Confidence: 0.848241996666667

00:17:46.502 --> 00:17:49.418 depressive disorder in males versus females.

NOTE Confidence: 0.848241996666667

00:17:49.420 --> 00:17:50.056 Obviously humans,

NOTE Confidence: 0.848241996666667

00:17:50.056 --> 00:17:52.600 and you can see in their Venn diagrams

NOTE Confidence: 0.848241996666667

00:17:52.665 --> 00:17:54.597 across a variety of brain regions,

NOTE Confidence: 0.848241996666667

00:17:54.600 --> 00:17:56.260 not a lot of overlap.

NOTE Confidence: 0.848241996666667

00:17:56.260 --> 00:17:58.930 So the genes that are differentially

NOTE Confidence: 0.848241996666667

00:17:58.930 --> 00:18:00.300 upregulated, downregulated,

NOTE Confidence: 0.848241996666667

00:18:00.300 --> 00:18:03.060 do not overlap.

NOTE Confidence: 0.848241996666667

00:18:03.060 --> 00:18:03.980 However,

NOTE Confidence: 0.848241996666667

00:18:03.980 --> 00:18:05.460 in the small little sliver,

NOTE Confidence: 0.848241996666667

00:18:05.460 --> 00:18:06.730 this comes from Marianne Stanley's

NOTE Confidence: 0.848241996666667

00:18:06.730 --> 00:18:08.301 work and the small little sliver

NOTE Confidence: 0.848241996666667

00:18:08.301 --> 00:18:09.317 here that does overlap.
NOTE Confidence: 0.848241996666667

00:18:09.320 --> 00:18:11.270 You can see that the gene
NOTE Confidence: 0.848241996666667

00:18:11.270 --> 00:18:12.570 expression patterns are opposite,
NOTE Confidence: 0.848241996666667

00:18:12.570 --> 00:18:14.950 so genes that are down regulated and
NOTE Confidence: 0.848241996666667

00:18:14.950 --> 00:18:17.487 females are updated in males and vice versa.
NOTE Confidence: 0.848241996666667

00:18:17.490 --> 00:18:19.824 So this suggests that the representation
NOTE Confidence: 0.848241996666667

00:18:19.824 --> 00:18:22.312 of this disorder is quite different
NOTE Confidence: 0.848241996666667

00:18:22.312 --> 00:18:24.916 in males versus females and likely
NOTE Confidence: 0.848241996666667

00:18:24.916 --> 00:18:26.760 has implications for treatment.
NOTE Confidence: 0.848241996666667

00:18:26.760 --> 00:18:28.734 So what are the common risk factors
NOTE Confidence: 0.848241996666667

00:18:28.734 --> 00:18:30.090 for major depressive disorder?
NOTE Confidence: 0.848241996666667

00:18:30.090 --> 00:18:31.502 Female sex being one.
NOTE Confidence: 0.848241996666667

00:18:31.502 --> 00:18:32.914 I've talked about that.
NOTE Confidence: 0.848241996666667

00:18:32.920 --> 00:18:35.104 Another is chronic illness.
NOTE Confidence: 0.848241996666667

00:18:35.104 --> 00:18:37.834 Family history and chronic stress,
NOTE Confidence: 0.848241996666667

00:18:37.840 --> 00:18:40.276 and I would argue as mostly an

NOTE Confidence: 0.848241996666667
00:18:40.276 --> 00:18:42.159 animal research that we can lump
NOTE Confidence: 0.848241996666667
00:18:42.159 --> 00:18:44.026 a lot of this into chronic stress
NOTE Confidence: 0.848241996666667
00:18:44.026 --> 00:18:45.198 or chronic stress category.
NOTE Confidence: 0.848241996666667
00:18:45.200 --> 00:18:47.300 So we've been looking at that
NOTE Confidence: 0.848241996666667
00:18:47.300 --> 00:18:49.024 intersection between female sex and
NOTE Confidence: 0.848241996666667
00:18:49.024 --> 00:18:51.088 chronic stress and our work and we do
NOTE Confidence: 0.848241996666667
00:18:51.088 --> 00:18:53.540 use a lot of animal models of depression.
NOTE Confidence: 0.848241996666667
00:18:53.540 --> 00:18:55.703 And I know that's a tall order
NOTE Confidence: 0.848241996666667
00:18:55.703 --> 00:18:57.829 because you can't ask them about
NOTE Confidence: 0.848241996666667
00:18:57.829 --> 00:18:59.337 their thoughts of suicide,
NOTE Confidence: 0.848241996666667
00:18:59.340 --> 00:19:00.324 what you can,
NOTE Confidence: 0.848241996666667
00:19:00.324 --> 00:19:02.922 but they don't tell you anything but most
NOTE Confidence: 0.848241996666667
00:19:02.922 --> 00:19:05.410 of the animal models that are out there.
NOTE Confidence: 0.848241996666667
00:19:05.410 --> 00:19:07.430 Will perturbed either stress
NOTE Confidence: 0.848241996666667
00:19:07.430 --> 00:19:09.450 hormones or sex hormones.
NOTE Confidence: 0.848241996666667

00:19:09.450 --> 00:19:11.144 Now you can't ask them about their
NOTE Confidence: 0.848241996666667

00:19:11.144 --> 00:19:13.147 symptoms that you can look at some
NOTE Confidence: 0.848241996666667

00:19:13.147 --> 00:19:14.065 endophenotypes of depression,
NOTE Confidence: 0.848241996666667

00:19:14.070 --> 00:19:16.910 including those biomarkers, very easily,
NOTE Confidence: 0.848241996666667

00:19:16.910 --> 00:19:18.962 obviously in animal models.
NOTE Confidence: 0.848241996666667

00:19:18.962 --> 00:19:21.014 And in our studies,
NOTE Confidence: 0.848241996666667

00:19:21.020 --> 00:19:22.376 I know there's a busy slide,
NOTE Confidence: 0.848241996666667

00:19:22.380 --> 00:19:23.700 but I put this up there to say,
NOTE Confidence: 0.848241996666667

00:19:23.700 --> 00:19:25.380 look, it's a heterogeneous disorder.
NOTE Confidence: 0.848241996666667

00:19:25.380 --> 00:19:26.976 It's difficult to model in humans.
NOTE Confidence: 0.848241996666667

00:19:26.980 --> 00:19:29.300 It's difficult to model in animals as well.
NOTE Confidence: 0.848241996666667

00:19:29.300 --> 00:19:31.316 But I do think it's really important
NOTE Confidence: 0.848241996666667

00:19:31.316 --> 00:19:33.619 to look at a variety of endophenotypes
NOTE Confidence: 0.848241996666667

00:19:33.619 --> 00:19:36.115 of depression in any kind of study
NOTE Confidence: 0.848241996666667

00:19:36.115 --> 00:19:37.219 that you're doing.
NOTE Confidence: 0.848241996666667

00:19:37.220 --> 00:19:38.716 So we try to look at a number

NOTE Confidence: 0.848241996666667

00:19:38.716 --> 00:19:39.938 of different kinds of behavior,

NOTE Confidence: 0.848241996666667

00:19:39.940 --> 00:19:41.480 maternal behavior for looking

NOTE Confidence: 0.848241996666667

00:19:41.480 --> 00:19:42.635 at postpartum depression,

NOTE Confidence: 0.848241996666667

00:19:42.640 --> 00:19:45.058 look at endocrine factors as well

NOTE Confidence: 0.848241996666667

00:19:45.058 --> 00:19:47.320 as some neural factors as well.

NOTE Confidence: 0.848241996666667

00:19:47.320 --> 00:19:50.256 I am a bit fixated on the hippocampus.

NOTE Confidence: 0.848241996666667

00:19:50.260 --> 00:19:52.199 Why am I so interested in it?

NOTE Confidence: 0.848241996666667

00:19:52.200 --> 00:19:54.102 We know it's important for memory

NOTE Confidence: 0.848241996666667

00:19:54.102 --> 00:19:54.736 and emotion.

NOTE Confidence: 0.848241996666667

00:19:54.740 --> 00:19:56.550 We see integrity loss with

NOTE Confidence: 0.848241996666667

00:19:56.550 --> 00:19:57.636 major depressive disorder.

NOTE Confidence: 0.848241996666667

00:19:57.640 --> 00:19:59.516 This the early work came from Shailene

NOTE Confidence: 0.848241996666667

00:19:59.516 --> 00:20:01.420 who showed with untreated depression,

NOTE Confidence: 0.848241996666667

00:20:01.420 --> 00:20:05.040 small hippocampus that negative correlation.

NOTE Confidence: 0.773109768

00:20:05.040 --> 00:20:06.740 I'm interested in sex differences,

NOTE Confidence: 0.773109768

00:20:06.740 --> 00:20:08.450 so of course they have to have it has
NOTE Confidence: 0.773109768

00:20:08.450 --> 00:20:10.595 a lot of these estrogen receptors and
NOTE Confidence: 0.773109768

00:20:10.595 --> 00:20:12.600 androgen receptors within the campus itself.
NOTE Confidence: 0.773109768

00:20:12.600 --> 00:20:14.640 And the late great Bruce McEwen
NOTE Confidence: 0.773109768

00:20:14.640 --> 00:20:16.860 showed that that the hippocampus.
NOTE Confidence: 0.773109768

00:20:16.860 --> 00:20:19.164 Had very high levels of these
NOTE Confidence: 0.773109768

00:20:19.164 --> 00:20:20.700 glucocorticoids in the hippocampus.
NOTE Confidence: 0.773109768

00:20:20.700 --> 00:20:22.044 So if stress is playing a role,
NOTE Confidence: 0.773109768

00:20:22.050 --> 00:20:23.800 it's kind of an important to show
NOTE Confidence: 0.773109768

00:20:23.800 --> 00:20:25.069 that those receptors are there.
NOTE Confidence: 0.773109768

00:20:25.070 --> 00:20:27.614 And it's attractive to study to me because
NOTE Confidence: 0.773109768

00:20:27.614 --> 00:20:29.761 it's very plastic in adulthood and
NOTE Confidence: 0.773109768

00:20:29.761 --> 00:20:32.337 there are many forms of plasticity that
NOTE Confidence: 0.773109768

00:20:32.337 --> 00:20:34.745 show both the sex and stress difference.
NOTE Confidence: 0.773109768

00:20:34.750 --> 00:20:37.430 And here's the late great Bruce McEwen there.
NOTE Confidence: 0.773109768

00:20:37.430 --> 00:20:40.054 This is a coronal section of a rodent

NOTE Confidence: 0.773109768

00:20:40.054 --> 00:20:41.919 hippocampus in every single area.

NOTE Confidence: 0.773109768

00:20:41.920 --> 00:20:43.030 I can give you examples.

NOTE Confidence: 0.773109768

00:20:43.030 --> 00:20:46.310 I'm going to give you one because in his lab,

NOTE Confidence: 0.773109768

00:20:46.310 --> 00:20:46.714 his.

NOTE Confidence: 0.773109768

00:20:46.714 --> 00:20:48.734 They showed that chronic restraint

NOTE Confidence: 0.773109768

00:20:48.734 --> 00:20:51.424 stress caused atrophy in the April good

NOTE Confidence: 0.773109768

00:20:51.424 --> 00:20:53.769 dendrites in the CA 3 pyramidal cells.

NOTE Confidence: 0.773109768

00:20:53.770 --> 00:20:55.546 And when I did a postdoc with him,

NOTE Confidence: 0.773109768

00:20:55.550 --> 00:20:56.950 he said what about females?

NOTE Confidence: 0.773109768

00:20:56.950 --> 00:20:58.550 And he allowed me to do that study.

NOTE Confidence: 0.773109768

00:20:58.550 --> 00:21:00.515 Is a great postdoc supervisor

NOTE Confidence: 0.773109768

00:21:00.515 --> 00:21:02.087 allows you to do.

NOTE Confidence: 0.773109768

00:21:02.090 --> 00:21:03.861 And I did it and we saw

NOTE Confidence: 0.773109768

00:21:03.861 --> 00:21:05.260 that the atrophy happened,

NOTE Confidence: 0.773109768

00:21:05.260 --> 00:21:07.206 but it happened in the basal dendrites.

NOTE Confidence: 0.773109768

00:21:07.210 --> 00:21:09.051 And I'm sure many of you are
NOTE Confidence: 0.773109768

00:21:09.051 --> 00:21:10.856 thinking this is the most boring
NOTE Confidence: 0.773109768

00:21:10.856 --> 00:21:12.764 study you could possibly show us,
NOTE Confidence: 0.773109768

00:21:12.770 --> 00:21:15.038 but I'm putting it up there because
NOTE Confidence: 0.773109768

00:21:15.038 --> 00:21:17.318 this is one of those examples.
NOTE Confidence: 0.773109768

00:21:17.320 --> 00:21:20.470 Where you can see at a different
NOTE Confidence: 0.773109768

00:21:20.470 --> 00:21:21.820 out functional outcome.
NOTE Confidence: 0.773109768

00:21:21.820 --> 00:21:23.344 So even though you have atrophy
NOTE Confidence: 0.773109768

00:21:23.344 --> 00:21:24.759 and that should say to you,
NOTE Confidence: 0.773109768

00:21:24.760 --> 00:21:24.994 oh,
NOTE Confidence: 0.773109768

00:21:24.994 --> 00:21:26.398 they're going to be worse at
NOTE Confidence: 0.773109768

00:21:26.398 --> 00:21:28.018 something and this is absolutely true.
NOTE Confidence: 0.773109768

00:21:28.020 --> 00:21:30.120 Vicki Lowe's group has shown that in
NOTE Confidence: 0.773109768

00:21:30.120 --> 00:21:32.249 males this causes a functional impairment
NOTE Confidence: 0.773109768

00:21:32.249 --> 00:21:34.194 for spatial learning and memory.
NOTE Confidence: 0.773109768

00:21:34.200 --> 00:21:36.990 In females it does the opposite.

NOTE Confidence: 0.773109768

00:21:36.990 --> 00:21:39.360 So it actually improves learning and

NOTE Confidence: 0.773109768

00:21:39.360 --> 00:21:41.600 memory and females this paradigm.

NOTE Confidence: 0.773109768

00:21:41.600 --> 00:21:44.828 So watch those notions.

NOTE Confidence: 0.773109768

00:21:44.830 --> 00:21:46.750 The dental gyrus is my very favorite area,

NOTE Confidence: 0.773109768

00:21:46.750 --> 00:21:47.414 the hippocampus,

NOTE Confidence: 0.773109768

00:21:47.414 --> 00:21:49.406 because it retains the ability to

NOTE Confidence: 0.773109768

00:21:49.406 --> 00:21:51.690 produce new neurons throughout adulthood,

NOTE Confidence: 0.773109768

00:21:51.690 --> 00:21:53.986 and that's shown in all mammalian species,

NOTE Confidence: 0.773109768

00:21:53.990 --> 00:21:57.000 which I'm happy to talk about afterwards.

NOTE Confidence: 0.773109768

00:21:57.000 --> 00:21:58.675 There are many different ways

NOTE Confidence: 0.773109768

00:21:58.675 --> 00:22:00.015 you can measure neurogenesis.

NOTE Confidence: 0.773109768

00:22:00.020 --> 00:22:02.396 I'm not going to go through all of them,

NOTE Confidence: 0.773109768

00:22:02.400 --> 00:22:04.815 but you can look at self proliferation,

NOTE Confidence: 0.773109768

00:22:04.820 --> 00:22:07.214 which is the production of new neurons,

NOTE Confidence: 0.773109768

00:22:07.220 --> 00:22:09.248 and you can use an endogenous

NOTE Confidence: 0.773109768

00:22:09.248 --> 00:22:10.600 marker like case 57.
NOTE Confidence: 0.773109768

00:22:10.600 --> 00:22:13.008 You'll also see some data looking another
NOTE Confidence: 0.773109768

00:22:13.008 --> 00:22:14.780 endogenous marker called DOUBLECORTIN,
NOTE Confidence: 0.773109768

00:22:14.780 --> 00:22:16.740 which is expressed in
NOTE Confidence: 0.773109768

00:22:16.740 --> 00:22:18.700 all amateur new neurons.
NOTE Confidence: 0.773109768

00:22:18.700 --> 00:22:21.139 Or if you're looking at a longer time point,
NOTE Confidence: 0.773109768

00:22:21.140 --> 00:22:23.324 you'd use a DNA synthesis marker
NOTE Confidence: 0.773109768

00:22:23.324 --> 00:22:24.780 like from a deoxyuridine,
NOTE Confidence: 0.773109768

00:22:24.780 --> 00:22:26.874 and then determine whether that new
NOTE Confidence: 0.773109768

00:22:26.874 --> 00:22:29.401 cell is Co labeled with a mature
NOTE Confidence: 0.773109768

00:22:29.401 --> 00:22:31.176 neuronal protein like new one.
NOTE Confidence: 0.773109768

00:22:31.180 --> 00:22:32.956 And it might not even be the number
NOTE Confidence: 0.773109768

00:22:32.956 --> 00:22:34.805 of these new cells or new neurons
NOTE Confidence: 0.773109768

00:22:34.805 --> 00:22:35.618 that are produced,
NOTE Confidence: 0.773109768

00:22:35.620 --> 00:22:37.713 but how are they active and are
NOTE Confidence: 0.773109768

00:22:37.713 --> 00:22:39.918 they active in an appropriate way?

NOTE Confidence: 0.773109768

00:22:39.920 --> 00:22:41.776 And one of the ways that people do

NOTE Confidence: 0.773109768

00:22:41.776 --> 00:22:43.607 this is by using immediate early

NOTE Confidence: 0.773109768

00:22:43.607 --> 00:22:45.237 genes which are expressed after

NOTE Confidence: 0.773109768

00:22:45.237 --> 00:22:46.570 an action potential,

NOTE Confidence: 0.773109768

00:22:46.570 --> 00:22:48.926 and some common ones are ZIF 268.

NOTE Confidence: 0.773109768

00:22:48.926 --> 00:22:49.232 Cfas.

NOTE Confidence: 0.773109768

00:22:49.232 --> 00:22:49.538 Now,

NOTE Confidence: 0.773109768

00:22:49.538 --> 00:22:51.680 the I don't neurogenesis in the campus

NOTE Confidence: 0.7814706789

00:22:51.739 --> 00:22:53.401 was sort of rediscovered in the

NOTE Confidence: 0.7814706789

00:22:53.401 --> 00:22:55.424 early 90s and and since then there

NOTE Confidence: 0.7814706789

00:22:55.424 --> 00:22:57.772 have been a lot of studies trying to

NOTE Confidence: 0.7814706789

00:22:57.772 --> 00:23:00.306 figure out what these new neurons do.

NOTE Confidence: 0.7814706789

00:23:00.310 --> 00:23:02.298 And I would say there's no real

NOTE Confidence: 0.7814706789

00:23:02.298 --> 00:23:03.690 argument that they're involved.

NOTE Confidence: 0.7814706789

00:23:03.690 --> 00:23:05.646 A little bit of stress resilience,

NOTE Confidence: 0.7814706789

00:23:05.650 --> 00:23:06.496 antidepressant efficacy,
NOTE Confidence: 0.7814706789

00:23:06.496 --> 00:23:09.457 efficacy for some behaviors as well as
NOTE Confidence: 0.7814706789

00:23:09.457 --> 00:23:11.448 something called pattern separation,
NOTE Confidence: 0.7814706789

00:23:11.450 --> 00:23:13.205 which I'm going to talk about in a bit.
NOTE Confidence: 0.7814706789

00:23:13.210 --> 00:23:17.445 And of course we see sex differences.
NOTE Confidence: 0.7814706789

00:23:17.450 --> 00:23:19.704 The other thing that people found is,
NOTE Confidence: 0.7814706789

00:23:19.710 --> 00:23:21.750 and this is from Boldrini's work,
NOTE Confidence: 0.7814706789

00:23:21.750 --> 00:23:23.670 that major depressive disorder
NOTE Confidence: 0.7814706789

00:23:23.670 --> 00:23:26.070 is associated with reduction in,
NOTE Confidence: 0.7814706789

00:23:26.070 --> 00:23:27.810 in this case self proliferation.
NOTE Confidence: 0.7814706789

00:23:27.810 --> 00:23:30.950 So that's that endogenous marker
NOTE Confidence: 0.7814706789

00:23:30.950 --> 00:23:33.012 of K67 of self liberation.
NOTE Confidence: 0.7814706789

00:23:33.012 --> 00:23:35.160 And with major depressive disorder you
NOTE Confidence: 0.7814706789

00:23:35.220 --> 00:23:38.006 see reduction in supply operation with a
NOTE Confidence: 0.7814706789

00:23:38.006 --> 00:23:39.900 selective serotonin reuptake inhibitors,
NOTE Confidence: 0.7814706789

00:23:39.900 --> 00:23:42.204 you see a normalization and in this data

NOTE Confidence: 0.7814706789

00:23:42.204 --> 00:23:44.230 a tricyclic antidepressants overshoot.

NOTE Confidence: 0.7814706789

00:23:44.230 --> 00:23:45.334 But she didn't see that every

NOTE Confidence: 0.7814706789

00:23:45.334 --> 00:23:46.330 time she's done this study.

NOTE Confidence: 0.7814706789

00:23:46.330 --> 00:23:48.166 So this just happened to be one of those.

NOTE Confidence: 0.7814706789

00:23:48.170 --> 00:23:48.942 Prosperous things.

NOTE Confidence: 0.7814706789

00:23:48.942 --> 00:23:51.258 We were really interested when this

NOTE Confidence: 0.7814706789

00:23:51.258 --> 00:23:53.700 first came out because loan of course,

NOTE Confidence: 0.7814706789

00:23:53.700 --> 00:23:54.388 postmortem tissue.

NOTE Confidence: 0.7814706789

00:23:54.388 --> 00:23:55.420 That's what happens.

NOTE Confidence: 0.7814706789

00:23:55.420 --> 00:23:56.716 What we were what about sex?

NOTE Confidence: 0.7814706789

00:23:56.720 --> 00:23:58.588 Are there sex differences?

NOTE Confidence: 0.7814706789

00:23:58.588 --> 00:23:59.989 So John EPP,

NOTE Confidence: 0.7814706789

00:23:59.990 --> 00:24:01.325 who's now an assistant professor

NOTE Confidence: 0.7814706789

00:24:01.325 --> 00:24:02.393 at University of Calgary,

NOTE Confidence: 0.7814706789

00:24:02.400 --> 00:24:04.308 he was doing PhD with me at the time

NOTE Confidence: 0.7814706789

00:24:04.308 --> 00:24:06.607 and I got her hands and some tissue from
NOTE Confidence: 0.7814706789

00:24:06.607 --> 00:24:08.660 the Stanley Medical Research Foundation.
NOTE Confidence: 0.7814706789

00:24:08.660 --> 00:24:10.040 So there are three groups,
NOTE Confidence: 0.7814706789

00:24:10.040 --> 00:24:11.522 non depressed individuals,
NOTE Confidence: 0.7814706789

00:24:11.522 --> 00:24:13.498 depressed individuals that were
NOTE Confidence: 0.7814706789

00:24:13.498 --> 00:24:14.980 prescribed antidepressants and
NOTE Confidence: 0.7814706789

00:24:14.980 --> 00:24:16.770 depressed individuals that had psychotic
NOTE Confidence: 0.7814706789

00:24:16.770 --> 00:24:19.174 symptoms as well and were prescribed
NOTE Confidence: 0.7814706789

00:24:19.174 --> 00:24:21.390 both antidepressants and antipsychotics.
NOTE Confidence: 0.7814706789

00:24:21.390 --> 00:24:23.806 And he looked at these immature new neurons,
NOTE Confidence: 0.7814706789

00:24:23.810 --> 00:24:25.150 these double court and expressing
NOTE Confidence: 0.7814706789

00:24:25.150 --> 00:24:26.810 cells that are right down there,
NOTE Confidence: 0.7814706789

00:24:26.810 --> 00:24:29.090 and we didn't see any large
NOTE Confidence: 0.7814706789

00:24:29.090 --> 00:24:30.230 differences in males.
NOTE Confidence: 0.7814706789

00:24:30.230 --> 00:24:32.334 Actually a little decrease
NOTE Confidence: 0.7814706789

00:24:32.334 --> 00:24:33.386 with antipsychotics,

NOTE Confidence: 0.7814706789

00:24:33.390 --> 00:24:35.581 but we did see that up regulation

NOTE Confidence: 0.7814706789

00:24:35.581 --> 00:24:37.510 in females that were prescribed

NOTE Confidence: 0.7814706789

00:24:37.510 --> 00:24:40.288 antidepressants and this actually kind of,

NOTE Confidence: 0.7814706789

00:24:40.290 --> 00:24:41.320 even though they're not that

NOTE Confidence: 0.7814706789

00:24:41.320 --> 00:24:42.144 many studies out there,

NOTE Confidence: 0.7814706789

00:24:42.150 --> 00:24:44.660 but matches what people found

NOTE Confidence: 0.7814706789

00:24:44.660 --> 00:24:47.170 in terms of hippocampal volume.

NOTE Confidence: 0.7814706789

00:24:47.170 --> 00:24:49.246 There's an increase in female responders,

NOTE Confidence: 0.7814706789

00:24:49.250 --> 00:24:52.075 not so much male responders

NOTE Confidence: 0.7814706789

00:24:52.075 --> 00:24:53.205 to antidepressants.

NOTE Confidence: 0.7814706789

00:24:53.210 --> 00:24:55.212 And the neurogenesis effect that we saw

NOTE Confidence: 0.7814706789

00:24:55.212 --> 00:24:57.590 here was only in the younger populations.

NOTE Confidence: 0.7814706789

00:24:57.590 --> 00:24:59.132 We didn't have enough power to

NOTE Confidence: 0.7814706789

00:24:59.132 --> 00:25:01.200 look at age by sex interactions.

NOTE Confidence: 0.7814706789

00:25:01.200 --> 00:25:03.036 But we saw that this aggregation

NOTE Confidence: 0.7814706789

00:25:03.036 --> 00:25:04.960 was only in people that were
NOTE Confidence: 0.7814706789

00:25:04.960 --> 00:25:06.545 younger than 50 or younger,
NOTE Confidence: 0.7814706789

00:25:06.550 --> 00:25:08.080 not in the older population,
NOTE Confidence: 0.7814706789

00:25:08.080 --> 00:25:09.970 which is the same thing that
NOTE Confidence: 0.7814706789

00:25:09.970 --> 00:25:11.710 Paul Lucas and had found.
NOTE Confidence: 0.7814706789

00:25:11.710 --> 00:25:13.420 So hopefully what I've told you
NOTE Confidence: 0.7814706789

00:25:13.420 --> 00:25:16.070 for this part of the talk is that
NOTE Confidence: 0.7814706789

00:25:16.070 --> 00:25:17.880 sex differences in major depressive
NOTE Confidence: 0.7814706789

00:25:17.880 --> 00:25:20.298 disorder go beyond prevalence of the
NOTE Confidence: 0.7814706789

00:25:20.298 --> 00:25:22.288 disease to symptomology and biomarkers,
NOTE Confidence: 0.7814706789

00:25:22.290 --> 00:25:24.824 and that it really needs to be
NOTE Confidence: 0.7814706789

00:25:24.824 --> 00:25:27.362 considered and along with age,
NOTE Confidence: 0.7814706789

00:25:27.362 --> 00:25:29.719 treatment response, but also whether
NOTE Confidence: 0.7814706789

00:25:29.719 --> 00:25:32.257 or not there are treatment naive.
NOTE Confidence: 0.7814706789

00:25:32.260 --> 00:25:34.690 I want to pivot to talk about a new
NOTE Confidence: 0.7814706789

00:25:34.690 --> 00:25:36.739 model that we're thinking about.

NOTE Confidence: 0.7814706789

00:25:36.740 --> 00:25:38.917 And this is negative kind of bias.

NOTE Confidence: 0.7814706789

00:25:38.920 --> 00:25:41.951 It's a kind of symptom of major

NOTE Confidence: 0.7814706789

00:25:41.951 --> 00:25:42.817 depressive disorder.

NOTE Confidence: 0.7814706789

00:25:42.820 --> 00:25:44.228 And what is it?

NOTE Confidence: 0.7814706789

00:25:44.228 --> 00:25:45.988 It's an interpretation of ambiguous

NOTE Confidence: 0.7814706789

00:25:45.988 --> 00:25:47.479 stimuli as being negative.

NOTE Confidence: 0.7814706789

00:25:47.480 --> 00:25:48.756 So Doctor Travis Hodges,

NOTE Confidence: 0.7814706789

00:25:48.756 --> 00:25:50.670 who did a postdoc in my

NOTE Confidence: 0.856535137142857

00:25:50.744 --> 00:25:53.257 lab and is now an assistant professor

NOTE Confidence: 0.856535137142857

00:25:53.257 --> 00:25:55.140 at Mount Holyoke University,

NOTE Confidence: 0.856535137142857

00:25:55.140 --> 00:25:56.560 he always uses this example.

NOTE Confidence: 0.856535137142857

00:25:56.560 --> 00:25:59.536 So somebody could say to him that's an

NOTE Confidence: 0.856535137142857

00:25:59.536 --> 00:26:01.880 interesting shirt you have on and if you.

NOTE Confidence: 0.856535137142857

00:26:01.880 --> 00:26:03.696 That you can interpret that in a negative

NOTE Confidence: 0.856535137142857

00:26:03.696 --> 00:26:05.765 way or if you're very a positive person,

NOTE Confidence: 0.856535137142857

00:26:05.770 --> 00:26:07.786 like you can see Travis's, you'd be like,
NOTE Confidence: 0.856535137142857

00:26:07.786 --> 00:26:08.746 well, thank you very much.
NOTE Confidence: 0.856535137142857

00:26:08.750 --> 00:26:10.772 It is a very interesting shirt, isn't it?
NOTE Confidence: 0.856535137142857

00:26:10.772 --> 00:26:12.677 So people with major depressive
NOTE Confidence: 0.856535137142857

00:26:12.677 --> 00:26:14.675 disorder will have a negative
NOTE Confidence: 0.856535137142857

00:26:14.675 --> 00:26:16.630 bias to these ambiguous stimuli.
NOTE Confidence: 0.856535137142857

00:26:16.630 --> 00:26:18.522 It's resistant to treatment,
NOTE Confidence: 0.856535137142857

00:26:18.522 --> 00:26:20.887 it predicts future depressive episodes,
NOTE Confidence: 0.856535137142857

00:26:20.890 --> 00:26:23.590 and it requires pattern separation,
NOTE Confidence: 0.856535137142857

00:26:23.590 --> 00:26:25.024 which I'm going to tell you
NOTE Confidence: 0.856535137142857

00:26:25.024 --> 00:26:26.230 about what that means now.
NOTE Confidence: 0.856535137142857

00:26:26.230 --> 00:26:28.102 So pattern separation or
NOTE Confidence: 0.856535137142857

00:26:28.102 --> 00:26:29.974 pattern discrimination is the
NOTE Confidence: 0.856535137142857

00:26:29.974 --> 00:26:31.990 ability to form distinct.
NOTE Confidence: 0.856535137142857

00:26:31.990 --> 00:26:34.562 Representations of similar inputs
NOTE Confidence: 0.856535137142857

00:26:34.562 --> 00:26:37.777 during memory encoding and storage.

NOTE Confidence: 0.856535137142857

00:26:37.780 --> 00:26:41.660 So it's like trying to find the jar of peanut

NOTE Confidence: 0.856535137142857

00:26:41.749 --> 00:26:45.197 butter in a sea of similar looking jars.

NOTE Confidence: 0.856535137142857

00:26:45.200 --> 00:26:47.237 And this is a scene that plays

NOTE Confidence: 0.856535137142857

00:26:47.237 --> 00:26:49.857 out in my household all the time,

NOTE Confidence: 0.856535137142857

00:26:49.860 --> 00:26:51.975 which is why we now have two peanut butters,

NOTE Confidence: 0.856535137142857

00:26:51.980 --> 00:26:53.037 I think, he said the other day.

NOTE Confidence: 0.856535137142857

00:26:53.040 --> 00:26:54.900 We don't have any prunes.

NOTE Confidence: 0.856535137142857

00:26:54.900 --> 00:26:55.636 And we had to.

NOTE Confidence: 0.856535137142857

00:26:55.636 --> 00:26:57.063 We actually had two and I bought

NOTE Confidence: 0.856535137142857

00:26:57.063 --> 00:26:58.719 another one because I believed him.

NOTE Confidence: 0.856535137142857

00:26:58.720 --> 00:27:01.220 I should know better.

NOTE Confidence: 0.856535137142857

00:27:01.220 --> 00:27:02.564 It turns out that females and males

NOTE Confidence: 0.856535137142857

00:27:02.564 --> 00:27:03.740 pay attention to different cues.

NOTE Confidence: 0.856535137142857

00:27:03.740 --> 00:27:05.100 And so sometimes you'll see

NOTE Confidence: 0.856535137142857

00:27:05.100 --> 00:27:05.916 females perform better,

NOTE Confidence: 0.856535137142857

00:27:05.920 --> 00:27:07.467 sometimes you'll see males or perform better.
NOTE Confidence: 0.856535137142857

00:27:07.470 --> 00:27:09.780 And I'm happy to talk about that,
NOTE Confidence: 0.856535137142857

00:27:09.780 --> 00:27:10.575 that particular work.
NOTE Confidence: 0.856535137142857

00:27:10.575 --> 00:27:11.370 But right now,
NOTE Confidence: 0.856535137142857

00:27:11.370 --> 00:27:12.914 I'm going to talk to you about the
NOTE Confidence: 0.856535137142857

00:27:12.914 --> 00:27:14.508 kind of biased task we developed.
NOTE Confidence: 0.856535137142857

00:27:14.510 --> 00:27:17.390 So with similar ish inputs,
NOTE Confidence: 0.856535137142857

00:27:17.390 --> 00:27:17.658 one,
NOTE Confidence: 0.856535137142857

00:27:17.658 --> 00:27:20.070 they had a context where they got shocked in,
NOTE Confidence: 0.856535137142857

00:27:20.070 --> 00:27:21.450 another they didn't have a shock,
NOTE Confidence: 0.856535137142857

00:27:21.450 --> 00:27:24.708 got shocked in and this was across 16 days.
NOTE Confidence: 0.856535137142857

00:27:24.710 --> 00:27:27.212 And then on the 18th day Travis gave them
NOTE Confidence: 0.856535137142857

00:27:27.212 --> 00:27:29.668 what we're calling an ambiguous context.
NOTE Confidence: 0.856535137142857

00:27:29.670 --> 00:27:31.693 So it had half the features of
NOTE Confidence: 0.856535137142857

00:27:31.693 --> 00:27:33.563 the shot context and half the
NOTE Confidence: 0.856535137142857

00:27:33.563 --> 00:27:35.447 features of the non shot context.

NOTE Confidence: 0.856535137142857
00:27:35.450 --> 00:27:37.606 And rats and mice will tell you
NOTE Confidence: 0.856535137142857
00:27:37.606 --> 00:27:39.683 if they remember fear the fearful
NOTE Confidence: 0.856535137142857
00:27:39.683 --> 00:27:41.483 context by freezing or that's
NOTE Confidence: 0.856535137142857
00:27:41.483 --> 00:27:43.428 one thing they can show you.
NOTE Confidence: 0.856535137142857
00:27:43.430 --> 00:27:44.970 And so we are interpreting.
NOTE Confidence: 0.856535137142857
00:27:44.970 --> 00:27:47.265 High freezing as a negative
NOTE Confidence: 0.856535137142857
00:27:47.265 --> 00:27:49.560 bias to this ambiguous context.
NOTE Confidence: 0.856535137142857
00:27:49.560 --> 00:27:50.580 If they didn't have this,
NOTE Confidence: 0.856535137142857
00:27:50.580 --> 00:27:52.176 higher freezing levels would say they
NOTE Confidence: 0.856535137142857
00:27:52.176 --> 00:27:54.597 have a neutral or maybe even a positive bias.
NOTE Confidence: 0.856535137142857
00:27:54.600 --> 00:27:56.133 And then Travis went on to look
NOTE Confidence: 0.856535137142857
00:27:56.133 --> 00:27:57.540 at a variety of biomarkers,
NOTE Confidence: 0.856535137142857
00:27:57.540 --> 00:27:59.604 including activity using the
NOTE Confidence: 0.856535137142857
00:27:59.604 --> 00:28:02.184 immediate early Gene C Fox.
NOTE Confidence: 0.856535137142857
00:28:02.190 --> 00:28:06.006 And so first he looked across the lifespan,
NOTE Confidence: 0.856535137142857

00:28:06.010 --> 00:28:08.175 adolescence and adulthood at middle
NOTE Confidence: 0.856535137142857

00:28:08.175 --> 00:28:10.732 age and we actually, to our surprise,
NOTE Confidence: 0.856535137142857

00:28:10.732 --> 00:28:12.650 didn't see any sex or age difference
NOTE Confidence: 0.856535137142857

00:28:12.703 --> 00:28:13.528 in that pattern.
NOTE Confidence: 0.856535137142857

00:28:13.530 --> 00:28:16.188 Discrimination in terms of their ability
NOTE Confidence: 0.856535137142857

00:28:16.188 --> 00:28:18.849 to discriminate between those two contexts.
NOTE Confidence: 0.856535137142857

00:28:18.850 --> 00:28:21.238 Where we started to see some
NOTE Confidence: 0.856535137142857

00:28:21.238 --> 00:28:23.250 differences was with negative bias.
NOTE Confidence: 0.856535137142857

00:28:23.250 --> 00:28:25.818 So this is the freezing basically
NOTE Confidence: 0.856535137142857

00:28:25.818 --> 00:28:27.530 to the ambiguous context.
NOTE Confidence: 0.856535137142857

00:28:27.530 --> 00:28:31.044 And in males we saw as lifetime
NOTE Confidence: 0.856535137142857

00:28:31.044 --> 00:28:32.550 as life progressed.
NOTE Confidence: 0.856535137142857

00:28:32.550 --> 00:28:32.954 Age.
NOTE Confidence: 0.856535137142857

00:28:32.954 --> 00:28:34.166 As they aged,
NOTE Confidence: 0.856535137142857

00:28:34.166 --> 00:28:36.186 I showed more negative bias,
NOTE Confidence: 0.856535137142857

00:28:36.190 --> 00:28:38.020 and I really wanted to subtitle

NOTE Confidence: 0.856535137142857
00:28:38.020 --> 00:28:39.550 this as grumpy old men,
NOTE Confidence: 0.856535137142857
00:28:39.550 --> 00:28:41.560 but the reviewers and Travis
NOTE Confidence: 0.856535137142857
00:28:41.560 --> 00:28:43.570 wouldn't let me do it.
NOTE Confidence: 0.754828374166667
00:28:43.570 --> 00:28:45.200 Females you see this upregulation
NOTE Confidence: 0.754828374166667
00:28:45.200 --> 00:28:47.529 when it starts to come down again,
NOTE Confidence: 0.754828374166667
00:28:47.530 --> 00:28:50.008 and the only time you see significant
NOTE Confidence: 0.754828374166667
00:28:50.008 --> 00:28:51.830 sex differences in middle age.
NOTE Confidence: 0.754828374166667
00:28:51.830 --> 00:28:54.889 But that's in under normal basal situations.
NOTE Confidence: 0.754828374166667
00:28:54.890 --> 00:28:59.058 What happens in an animal model of stress?
NOTE Confidence: 0.754828374166667
00:28:59.060 --> 00:29:00.840 So using chronic unpredictable stress
NOTE Confidence: 0.754828374166667
00:29:00.840 --> 00:29:03.130 paradigm in both males and females,
NOTE Confidence: 0.754828374166667
00:29:03.130 --> 00:29:05.188 we found an increase in negative bias
NOTE Confidence: 0.754828374166667
00:29:05.188 --> 00:29:06.880 which maybe you'd expect to see.
NOTE Confidence: 0.754828374166667
00:29:06.880 --> 00:29:08.752 Now a lot of labs I know would stop.
NOTE Confidence: 0.754828374166667
00:29:08.760 --> 00:29:09.790 It's there's no sex difference.
NOTE Confidence: 0.754828374166667

00:29:09.790 --> 00:29:11.473 I'm just going to use males from now on,
NOTE Confidence: 0.754828374166667

00:29:11.480 --> 00:29:14.060 but we're not that lap.
NOTE Confidence: 0.754828374166667

00:29:14.060 --> 00:29:16.859 And and look at what you can see when
NOTE Confidence: 0.754828374166667

00:29:16.859 --> 00:29:19.680 you don't assume that it's the same.
NOTE Confidence: 0.754828374166667

00:29:19.680 --> 00:29:21.600 So this is what we're calling
NOTE Confidence: 0.754828374166667

00:29:21.600 --> 00:29:22.240 functional connectivity.
NOTE Confidence: 0.754828374166667

00:29:22.240 --> 00:29:23.026 There's like CFOs.
NOTE Confidence: 0.754828374166667

00:29:23.026 --> 00:29:25.186 I know this is really confusing, but I
NOTE Confidence: 0.754828374166667

00:29:25.186 --> 00:29:27.237 think you'll see some patterns right away.
NOTE Confidence: 0.754828374166667

00:29:27.240 --> 00:29:28.956 There are 15 different brain regions.
NOTE Confidence: 0.754828374166667

00:29:28.960 --> 00:29:30.658 This activity in each brain region
NOTE Confidence: 0.754828374166667

00:29:30.658 --> 00:29:32.370 and then correlated with each other.
NOTE Confidence: 0.754828374166667

00:29:32.370 --> 00:29:35.789 These are only correlations of .5 or above.
NOTE Confidence: 0.754828374166667

00:29:35.789 --> 00:29:38.387 Absolute value of .5 or five.
NOTE Confidence: 0.754828374166667

00:29:38.390 --> 00:29:39.400 Red lines,
NOTE Confidence: 0.754828374166667

00:29:39.400 --> 00:29:40.410 positive correlations,

NOTE Confidence: 0.754828374166667
00:29:40.410 --> 00:29:42.430 blue lines negative correlations.
NOTE Confidence: 0.754828374166667
00:29:42.430 --> 00:29:44.008 And hopefully what you can see
NOTE Confidence: 0.754828374166667
00:29:44.008 --> 00:29:45.443 right away is sometimes you'll
NOTE Confidence: 0.754828374166667
00:29:45.443 --> 00:29:46.767 see a negative correlation.
NOTE Confidence: 0.754828374166667
00:29:46.770 --> 00:29:48.942 Females very strong as so the
NOTE Confidence: 0.754828374166667
00:29:48.942 --> 00:29:51.357 thickness will say how large they are
NOTE Confidence: 0.754828374166667
00:29:51.357 --> 00:29:54.009 and a positive in males or a very -,
NOTE Confidence: 0.754828374166667
00:29:54.010 --> 00:29:57.070 1 in males and non existent one in females.
NOTE Confidence: 0.754828374166667
00:29:57.070 --> 00:29:59.240 So what this suggests to us is.
NOTE Confidence: 0.754828374166667
00:29:59.240 --> 00:30:00.760 The neural representation of
NOTE Confidence: 0.754828374166667
00:30:00.760 --> 00:30:02.660 negative cognitive biases is very
NOTE Confidence: 0.754828374166667
00:30:02.660 --> 00:30:04.357 different in males versus females,
NOTE Confidence: 0.754828374166667
00:30:04.360 --> 00:30:06.376 so if you're trying to treat this,
NOTE Confidence: 0.754828374166667
00:30:06.380 --> 00:30:08.744 you can imagine you're going to
NOTE Confidence: 0.754828374166667
00:30:08.744 --> 00:30:10.320 get some different responses.
NOTE Confidence: 0.754828374166667

00:30:10.320 --> 00:30:13.140 He also looked at inflammatory signaling,
NOTE Confidence: 0.754828374166667

00:30:13.140 --> 00:30:14.940 and in the basolateral amygdala,
NOTE Confidence: 0.754828374166667

00:30:14.940 --> 00:30:17.334 he found that for a variety of
NOTE Confidence: 0.754828374166667

00:30:17.334 --> 00:30:18.360 prone inflammatory cytokines,
NOTE Confidence: 0.754828374166667

00:30:18.360 --> 00:30:22.206 females had an upregulation, males didn't.
NOTE Confidence: 0.754828374166667

00:30:22.210 --> 00:30:23.466 At all.
NOTE Confidence: 0.754828374166667

00:30:23.466 --> 00:30:24.722 So again,
NOTE Confidence: 0.754828374166667

00:30:24.722 --> 00:30:26.606 completely different representation.
NOTE Confidence: 0.754828374166667

00:30:26.610 --> 00:30:28.368 Of course, we looked at neurogenesis,
NOTE Confidence: 0.754828374166667

00:30:28.370 --> 00:30:29.298 our bread and butter,
NOTE Confidence: 0.754828374166667

00:30:29.298 --> 00:30:31.017 and what we found for both males
NOTE Confidence: 0.754828374166667

00:30:31.017 --> 00:30:32.387 and females is with chronic,
NOTE Confidence: 0.754828374166667

00:30:32.390 --> 00:30:33.260 unpredictable stress,
NOTE Confidence: 0.754828374166667

00:30:33.260 --> 00:30:35.870 there was a decrease in neurogenesis.
NOTE Confidence: 0.754828374166667

00:30:35.870 --> 00:30:38.126 But when we did correlations with
NOTE Confidence: 0.754828374166667

00:30:38.126 --> 00:30:40.210 freezing to the ambiguous context,

NOTE Confidence: 0.754828374166667
00:30:40.210 --> 00:30:42.712 we actually only saw a correlation
NOTE Confidence: 0.754828374166667
00:30:42.712 --> 00:30:43.963 in the males,
NOTE Confidence: 0.754828374166667
00:30:43.970 --> 00:30:45.270 a significant correlation in males,
NOTE Confidence: 0.754828374166667
00:30:45.270 --> 00:30:46.722 but not in females.
NOTE Confidence: 0.754828374166667
00:30:46.722 --> 00:30:49.773 So what this suggests to us is that
NOTE Confidence: 0.754828374166667
00:30:49.773 --> 00:30:52.149 using this negative kind of bias.
NOTE Confidence: 0.754828374166667
00:30:52.150 --> 00:30:53.575 Has different representation
NOTE Confidence: 0.754828374166667
00:30:53.575 --> 00:30:55.475 and females versus males.
NOTE Confidence: 0.754828374166667
00:30:55.480 --> 00:30:57.524 We see more of a tie to
NOTE Confidence: 0.754828374166667
00:30:57.524 --> 00:30:58.400 neuroinflammation and females,
NOTE Confidence: 0.754828374166667
00:30:58.400 --> 00:31:00.208 perhaps neuroplasticity in males
NOTE Confidence: 0.754828374166667
00:31:00.208 --> 00:31:02.468 and for sure different neuronal
NOTE Confidence: 0.754828374166667
00:31:02.468 --> 00:31:04.159 networks that are activated.
NOTE Confidence: 0.754828374166667
00:31:04.160 --> 00:31:08.108 And actually in the human data,
NOTE Confidence: 0.754828374166667
00:31:08.108 --> 00:31:09.593 and this is Marianne Stanley's
NOTE Confidence: 0.754828374166667

00:31:09.593 --> 00:31:10.678 working at Chen Sibil,
NOTE Confidence: 0.754828374166667

00:31:10.680 --> 00:31:12.374 they've shown some of the same kinds
NOTE Confidence: 0.754828374166667

00:31:12.374 --> 00:31:13.942 of things in their transcriptomic
NOTE Confidence: 0.754828374166667

00:31:13.942 --> 00:31:15.127 signatures as well,
NOTE Confidence: 0.754828374166667

00:31:15.130 --> 00:31:19.150 that there seems to be maybe not like
NOTE Confidence: 0.754828374166667

00:31:19.150 --> 00:31:20.860 completely separate neuroinflammation,
NOTE Confidence: 0.754828374166667

00:31:20.860 --> 00:31:21.227 neuroplasticity,
NOTE Confidence: 0.754828374166667

00:31:21.227 --> 00:31:23.429 but that goes in opposite directions
NOTE Confidence: 0.754828374166667

00:31:23.429 --> 00:31:25.000 between males and females.
NOTE Confidence: 0.754828374166667

00:31:25.000 --> 00:31:27.534 So that's why I think it's so
NOTE Confidence: 0.754828374166667

00:31:27.534 --> 00:31:29.688 important to continue to study this.
NOTE Confidence: 0.754828374166667

00:31:29.690 --> 00:31:30.095 Now,
NOTE Confidence: 0.754828374166667

00:31:30.095 --> 00:31:32.930 I want to totally not totally switch
NOTE Confidence: 0.754828374166667

00:31:32.930 --> 00:31:35.926 gears like so we know that depression
NOTE Confidence: 0.754828374166667

00:31:35.926 --> 00:31:38.810 is seen in females compared to males,
NOTE Confidence: 0.754828374166667

00:31:38.810 --> 00:31:40.138 more females and males.

NOTE Confidence: 0.754828374166667
00:31:40.138 --> 00:31:42.890 That should really give us to think that,
NOTE Confidence: 0.754828374166667
00:31:42.890 --> 00:31:43.252 sorry,
NOTE Confidence: 0.754828374166667
00:31:43.252 --> 00:31:45.786 that we should look at some female
NOTE Confidence: 0.754828374166667
00:31:45.786 --> 00:31:46.510 specific factors.
NOTE Confidence: 0.8261995725
00:31:46.510 --> 00:31:49.456 And I put some common ones up there and
NOTE Confidence: 0.8261995725
00:31:49.456 --> 00:31:51.458 we know there's good evidence to show
NOTE Confidence: 0.8261995725
00:31:51.458 --> 00:31:53.815 that all of these factors can influence
NOTE Confidence: 0.8261995725
00:31:53.815 --> 00:31:56.110 the risk for major depressive disorder.
NOTE Confidence: 0.8261995725
00:31:56.110 --> 00:31:58.399 But I'm going to talk about pregnancy
NOTE Confidence: 0.8261995725
00:31:58.399 --> 00:32:00.149 and postpartum and before I do.
NOTE Confidence: 0.8261995725
00:32:00.150 --> 00:32:02.200 Let's talk about estrogens again,
NOTE Confidence: 0.8261995725
00:32:02.200 --> 00:32:05.050 one of my favorite hormones.
NOTE Confidence: 0.8261995725
00:32:05.050 --> 00:32:06.866 So I showed you the first graph already,
NOTE Confidence: 0.8261995725
00:32:06.870 --> 00:32:09.215 right this I said ohh reproductive hormones.
NOTE Confidence: 0.8261995725
00:32:09.220 --> 00:32:11.140 So that suggests the estrogens and
NOTE Confidence: 0.8261995725

00:32:11.140 --> 00:32:12.745 ovarian hormones are associated with
NOTE Confidence: 0.8261995725

00:32:12.745 --> 00:32:14.320 a risk to develop depression, right?
NOTE Confidence: 0.8261995725

00:32:14.320 --> 00:32:15.720 You look at that graph and that's
NOTE Confidence: 0.8261995725

00:32:15.720 --> 00:32:16.410 what you think.
NOTE Confidence: 0.8261995725

00:32:16.410 --> 00:32:19.354 But actually when you think about once a
NOTE Confidence: 0.8261995725

00:32:19.354 --> 00:32:22.205 greatest time of rest to develop denovo
NOTE Confidence: 0.8261995725

00:32:22.205 --> 00:32:24.250 depression and a female's lifetime
NOTE Confidence: 0.8261995725

00:32:24.319 --> 00:32:26.531 and that's during postmenopausal
NOTE Confidence: 0.8261995725

00:32:26.531 --> 00:32:28.743 period and during perimenopause.
NOTE Confidence: 0.8261995725

00:32:28.750 --> 00:32:30.952 And in fact these periods are
NOTE Confidence: 0.8261995725

00:32:30.952 --> 00:32:32.868 actually associated with a fluctuation
NOTE Confidence: 0.8261995725

00:32:32.868 --> 00:32:34.778 or a decrease in these.
NOTE Confidence: 0.8261995725

00:32:34.780 --> 00:32:35.530 Variant hormones,
NOTE Confidence: 0.8261995725

00:32:35.530 --> 00:32:37.780 so I'm going to use postpartum.
NOTE Confidence: 0.8261995725

00:32:37.780 --> 00:32:39.044 I'm going to talk about a style because,
NOTE Confidence: 0.8261995725

00:32:39.050 --> 00:32:39.738 again, it's my favorite.

NOTE Confidence: 0.8261995725

00:32:39.738 --> 00:32:41.310 I know I'm not supposed to have favorites,

NOTE Confidence: 0.8261995725

00:32:41.310 --> 00:32:44.249 but it's not my children, so it's fine.

NOTE Confidence: 0.8261995725

00:32:44.250 --> 00:32:45.864 At Week 20,

NOTE Confidence: 0.8261995725

00:32:45.864 --> 00:32:49.630 Australia levels are 200 times normal levels.

NOTE Confidence: 0.8261995725

00:32:49.630 --> 00:32:50.671 At week 30,

NOTE Confidence: 0.8261995725

00:32:50.671 --> 00:32:53.100 they're 300 times normal levels and they

NOTE Confidence: 0.8261995725

00:32:53.175 --> 00:32:55.845 climb even more dramatically after that.

NOTE Confidence: 0.8261995725

00:32:55.850 --> 00:32:57.420 And then what happens with

NOTE Confidence: 0.8261995725

00:32:57.420 --> 00:32:58.990 the expulsion of the placenta?

NOTE Confidence: 0.8261995725

00:32:58.990 --> 00:33:00.474 People are hypogonadal during

NOTE Confidence: 0.8261995725

00:33:00.474 --> 00:33:01.587 this time period,

NOTE Confidence: 0.8261995725

00:33:01.590 --> 00:33:04.985 so that's been thought of as a

NOTE Confidence: 0.8261995725

00:33:04.985 --> 00:33:07.970 possible risk factor for depression.

NOTE Confidence: 0.8261995725

00:33:07.970 --> 00:33:10.130 I'm sure many of you are thinking on

NOTE Confidence: 0.8261995725

00:33:10.130 --> 00:33:11.990 that's weird because I see all these

NOTE Confidence: 0.8261995725

00:33:11.990 --> 00:33:13.683 images in the media of pregnancy
NOTE Confidence: 0.8261995725

00:33:13.683 --> 00:33:15.518 and how glamorous and amazing.
NOTE Confidence: 0.8261995725

00:33:15.520 --> 00:33:17.840 It is, and it's just wonderful, amazing time.
NOTE Confidence: 0.8261995725

00:33:17.840 --> 00:33:20.760 And I'm going to blame Demi Moore because
NOTE Confidence: 0.8261995725

00:33:20.830 --> 00:33:22.979 most of you were not born in 1991.
NOTE Confidence: 0.8261995725

00:33:22.979 --> 00:33:25.002 But she posed on the cover of
NOTE Confidence: 0.8261995725

00:33:25.002 --> 00:33:26.200 Vanity Fair magazine.
NOTE Confidence: 0.8261995725

00:33:26.200 --> 00:33:27.285 And I don't know if the older
NOTE Confidence: 0.8261995725

00:33:27.285 --> 00:33:28.440 people in the audience remember,
NOTE Confidence: 0.8261995725

00:33:28.440 --> 00:33:29.950 but this was like a huge, big deal.
NOTE Confidence: 0.8261995725

00:33:29.950 --> 00:33:31.720 This was like, so like, Oh my God,
NOTE Confidence: 0.8261995725

00:33:31.720 --> 00:33:33.184 she said it's outrageous.
NOTE Confidence: 0.8261995725

00:33:33.184 --> 00:33:34.648 She's pregnant and naked.
NOTE Confidence: 0.8261995725

00:33:34.650 --> 00:33:36.708 But now look, like at the Grammys,
NOTE Confidence: 0.8261995725

00:33:36.710 --> 00:33:39.130 you see the amazing Beyoncé,
NOTE Confidence: 0.8261995725

00:33:39.130 --> 00:33:40.057 pregnant and naked.

NOTE Confidence: 0.8261995725

00:33:40.057 --> 00:33:42.563 But I thought I'd share with you the

NOTE Confidence: 0.8261995725

00:33:42.563 --> 00:33:45.029 worst picture of me ever taken in my life.

NOTE Confidence: 0.8261995725

00:33:45.030 --> 00:33:49.350 And this is to prove a point that it is,

NOTE Confidence: 0.8261995725

00:33:49.350 --> 00:33:49.793 yeah,

NOTE Confidence: 0.8261995725

00:33:49.793 --> 00:33:51.122 it's a point,

NOTE Confidence: 0.8261995725

00:33:51.122 --> 00:33:52.008 all right,

NOTE Confidence: 0.8261995725

00:33:52.010 --> 00:33:54.668 that it takes a tremendous toll

NOTE Confidence: 0.8261995725

00:33:54.668 --> 00:33:58.051 on a person's body to just state

NOTE Confidence: 0.8261995725

00:33:58.051 --> 00:34:00.075 that parasite penny fetus.

NOTE Confidence: 0.8261995725

00:34:00.080 --> 00:34:03.100 Pulmonary output decreases by 50%.

NOTE Confidence: 0.8261995725

00:34:03.100 --> 00:34:05.164 Cardiac output increases by

NOTE Confidence: 0.8261995725

00:34:05.164 --> 00:34:06.649 50% for extra fluid.

NOTE Confidence: 0.8261995725

00:34:06.649 --> 00:34:08.910 Liters of fluid are pumped through a

NOTE Confidence: 0.8261995725

00:34:08.980 --> 00:34:11.180 person's body when they're pregnant,

NOTE Confidence: 0.8261995725

00:34:11.180 --> 00:34:13.742 and so it's not super surprising

NOTE Confidence: 0.8261995725

00:34:13.742 --> 00:34:16.848 that there might be some health
NOTE Confidence: 0.8261995725

00:34:16.848 --> 00:34:18.819 repercussions for pregnancy.
NOTE Confidence: 0.8261995725

00:34:18.820 --> 00:34:21.058 And in fact we boycotters coined
NOTE Confidence: 0.8261995725

00:34:21.058 --> 00:34:23.600 this as a perfect storm for
NOTE Confidence: 0.8261995725

00:34:23.600 --> 00:34:26.510 depression because a number of the
NOTE Confidence: 0.8261995725

00:34:26.510 --> 00:34:28.576 so-called biological outcomes or
NOTE Confidence: 0.8261995725

00:34:28.576 --> 00:34:31.116 biomarkers with pregnancy and the
NOTE Confidence: 0.8261995725

00:34:31.116 --> 00:34:33.630 postpartum mirror that of what you
NOTE Confidence: 0.8261995725

00:34:33.630 --> 00:34:35.280 see in major depressive disorder.
NOTE Confidence: 0.8261995725

00:34:35.280 --> 00:34:38.206 So volume decreases in the hippocampus and
NOTE Confidence: 0.8261995725

00:34:38.206 --> 00:34:43.430 this is some work by the not by maxima.
NOTE Confidence: 0.8261995725

00:34:43.430 --> 00:34:46.010 The stress system is also perturbed,
NOTE Confidence: 0.8261995725

00:34:46.010 --> 00:34:47.950 increased levels of cortisol impairments
NOTE Confidence: 0.8261995725

00:34:47.950 --> 00:34:49.890 and negative feedback as pro
NOTE Confidence: 0.802580971666667

00:34:49.947 --> 00:34:51.522 inflammatory towards the end of
NOTE Confidence: 0.802580971666667

00:34:51.522 --> 00:34:53.687 pregnancy and you see up regulations

NOTE Confidence: 0.802580971666667
00:34:53.687 --> 00:34:55.289 and tryptophan metabolism,
NOTE Confidence: 0.802580971666667
00:34:55.290 --> 00:34:57.985 all of these same kind of biological
NOTE Confidence: 0.802580971666667
00:34:57.985 --> 00:35:01.940 outcomes you see with depression.
NOTE Confidence: 0.802580971666667
00:35:01.940 --> 00:35:05.398 The DSM 5 does not recognize perinatal
NOTE Confidence: 0.802580971666667
00:35:05.398 --> 00:35:07.760 depression as something different.
NOTE Confidence: 0.802580971666667
00:35:07.760 --> 00:35:08.876 It's a specifier,
NOTE Confidence: 0.802580971666667
00:35:08.876 --> 00:35:11.480 but it describes it as depression during
NOTE Confidence: 0.802580971666667
00:35:11.548 --> 00:35:14.180 gestation or up to four weeks postpartum.
NOTE Confidence: 0.802580971666667
00:35:14.180 --> 00:35:16.420 But if you look a little bit carefully
NOTE Confidence: 0.802580971666667
00:35:16.420 --> 00:35:18.865 at what who's getting depression during
NOTE Confidence: 0.802580971666667
00:35:18.865 --> 00:35:21.135 pregnancy versus in the postpartum,
NOTE Confidence: 0.802580971666667
00:35:21.140 --> 00:35:23.420 it's actually could be quite different.
NOTE Confidence: 0.802580971666667
00:35:23.420 --> 00:35:24.659 So Munk, Olsen.
NOTE Confidence: 0.802580971666667
00:35:24.659 --> 00:35:27.137 Showed that for first time admission
NOTE Confidence: 0.802580971666667
00:35:27.137 --> 00:35:30.176 to hospital with any mental disorder,
NOTE Confidence: 0.802580971666667

00:35:30.180 --> 00:35:32.160 not just major depressive disorder,
NOTE Confidence: 0.802580971666667

00:35:32.160 --> 00:35:35.044 it's actually a lower risk during pregnancy.
NOTE Confidence: 0.802580971666667

00:35:35.050 --> 00:35:36.514 First time admission, OK.
NOTE Confidence: 0.802580971666667

00:35:36.514 --> 00:35:39.164 But in the postpartum you see much
NOTE Confidence: 0.802580971666667

00:35:39.164 --> 00:35:41.450 higher levels or much greater risk.
NOTE Confidence: 0.802580971666667

00:35:41.450 --> 00:35:43.304 And it turns out that depression
NOTE Confidence: 0.802580971666667

00:35:43.304 --> 00:35:44.952 onset during pregnancy is associated
NOTE Confidence: 0.802580971666667

00:35:44.952 --> 00:35:46.727 with a history of depression.
NOTE Confidence: 0.802580971666667

00:35:46.730 --> 00:35:48.514 Depression onset postpartum is
NOTE Confidence: 0.802580971666667

00:35:48.514 --> 00:35:50.744 associated with the Novo Depression.
NOTE Confidence: 0.802580971666667

00:35:50.750 --> 00:35:53.048 So we were really interested in
NOTE Confidence: 0.802580971666667

00:35:53.048 --> 00:35:55.450 modeling that de Novo depression.
NOTE Confidence: 0.802580971666667

00:35:55.450 --> 00:35:56.896 And we have two different models,
NOTE Confidence: 0.802580971666667

00:35:56.900 --> 00:35:59.428 one of them that we work on more now.
NOTE Confidence: 0.802580971666667

00:35:59.428 --> 00:36:01.192 But I'll tell you a little
NOTE Confidence: 0.802580971666667

00:36:01.192 --> 00:36:02.679 bit about both of them.

NOTE Confidence: 0.802580971666667
00:36:02.680 --> 00:36:04.540 So hormonal withdrawal after pregnancy.
NOTE Confidence: 0.802580971666667
00:36:04.540 --> 00:36:06.478 So we just wanted to model
NOTE Confidence: 0.802580971666667
00:36:06.480 --> 00:36:07.496 pregnant a rodent pregnancy,
NOTE Confidence: 0.802580971666667
00:36:07.496 --> 00:36:08.258 in this case,
NOTE Confidence: 0.802580971666667
00:36:08.260 --> 00:36:09.885 very high levels of estrogens
NOTE Confidence: 0.802580971666667
00:36:09.885 --> 00:36:10.535 and progesterone.
NOTE Confidence: 0.802580971666667
00:36:10.540 --> 00:36:12.437 And then we withdrew them very quickly
NOTE Confidence: 0.802580971666667
00:36:12.437 --> 00:36:14.138 from these hormones and what happened?
NOTE Confidence: 0.802580971666667
00:36:14.140 --> 00:36:15.556 And we published this a long time ago,
NOTE Confidence: 0.802580971666667
00:36:15.560 --> 00:36:16.436 although Laura Bean,
NOTE Confidence: 0.802580971666667
00:36:16.436 --> 00:36:17.896 this group's been showing some,
NOTE Confidence: 0.802580971666667
00:36:17.900 --> 00:36:20.068 I think she's got actually two papers out
NOTE Confidence: 0.802580971666667
00:36:20.068 --> 00:36:22.047 now showing some very similar findings.
NOTE Confidence: 0.802580971666667
00:36:22.050 --> 00:36:25.362 What we found is that this this increased the
NOTE Confidence: 0.802580971666667
00:36:25.362 --> 00:36:28.028 expression of depressive like endophenotypes,
NOTE Confidence: 0.802580971666667

00:36:28.030 --> 00:36:29.985 so increased passive coping and
NOTE Confidence: 0.802580971666667

00:36:29.985 --> 00:36:31.940 the forced swim test decreases.
NOTE Confidence: 0.802580971666667

00:36:31.940 --> 00:36:35.738 Sucrose preference is akin to anodontia
NOTE Confidence: 0.802580971666667

00:36:35.738 --> 00:36:37.637 and decreased neuroplasticity.
NOTE Confidence: 0.802580971666667

00:36:37.640 --> 00:36:40.142 This is very similar to what's
NOTE Confidence: 0.802580971666667

00:36:40.142 --> 00:36:41.393 seen in humans.
NOTE Confidence: 0.802580971666667

00:36:41.400 --> 00:36:43.990 So Rubino's Group has looked at a
NOTE Confidence: 0.802580971666667

00:36:43.990 --> 00:36:45.515 hormone simulated pregnancy and
NOTE Confidence: 0.802580971666667

00:36:45.515 --> 00:36:47.591 people with a history of postpartum
NOTE Confidence: 0.802580971666667

00:36:47.591 --> 00:36:50.235 depression or not and seeing an up
NOTE Confidence: 0.802580971666667

00:36:50.235 --> 00:36:52.160 regulation in these depressive symptoms.
NOTE Confidence: 0.802580971666667

00:36:52.160 --> 00:36:54.134 And the individuals that had postpartum
NOTE Confidence: 0.802580971666667

00:36:54.134 --> 00:36:56.206 depression and VBA for Garger didn't
NOTE Confidence: 0.802580971666667

00:36:56.206 --> 00:36:58.306 give a hormone stimulated pregnancy or
NOTE Confidence: 0.802580971666667

00:36:58.306 --> 00:37:00.340 withdraw from home simulate pregnancy.
NOTE Confidence: 0.802580971666667

00:37:00.340 --> 00:37:02.416 She just withdrew them from ovarian

NOTE Confidence: 0.802580971666667

00:37:02.416 --> 00:37:05.457 hormones using a GNRH agonist and you can

NOTE Confidence: 0.802580971666667

00:37:05.457 --> 00:37:07.447 see a slight statistically significant.

NOTE Confidence: 0.802580971666667

00:37:07.450 --> 00:37:11.300 Increase in Hamilton depression scores.

NOTE Confidence: 0.802580971666667

00:37:11.300 --> 00:37:13.379 Viper's gone on to show that this

NOTE Confidence: 0.802580971666667

00:37:13.379 --> 00:37:14.969 increase in Hamilton Depression scores

NOTE Confidence: 0.802580971666667

00:37:14.969 --> 00:37:17.202 was related to the amount of decrease

NOTE Confidence: 0.802580971666667

00:37:17.202 --> 00:37:19.761 in estradiol and related to an increase

NOTE Confidence: 0.802580971666667

00:37:19.761 --> 00:37:21.673 in functional connectivity to the

NOTE Confidence: 0.802580971666667

00:37:21.673 --> 00:37:24.391 amygdala and a decrease in functional

NOTE Confidence: 0.802580971666667

00:37:24.391 --> 00:37:26.720 connectivity to the hippocampus.

NOTE Confidence: 0.802580971666667

00:37:26.720 --> 00:37:28.240 So hopefully what this clearly

NOTE Confidence: 0.802580971666667

00:37:28.240 --> 00:37:30.543 shows you from this work is that

NOTE Confidence: 0.802580971666667

00:37:30.543 --> 00:37:32.363 withdrawal from a variant hormones

NOTE Confidence: 0.802580971666667

00:37:32.363 --> 00:37:34.152 can increase depressive symptoms in

NOTE Confidence: 0.802580971666667

00:37:34.152 --> 00:37:36.054 both younger women and in rodents,

NOTE Confidence: 0.802580971666667

00:37:36.060 --> 00:37:37.360 which suggests that ovarian
NOTE Confidence: 0.802580971666667

00:37:37.360 --> 00:37:38.660 hormones are providing some.
NOTE Confidence: 0.802580971666667

00:37:38.660 --> 00:37:40.740 Resilience.
NOTE Confidence: 0.802580971666667

00:37:40.740 --> 00:37:41.538 Now Rand Eade,
NOTE Confidence: 0.802580971666667

00:37:41.538 --> 00:37:44.170 who did her PhD in my lab and is
NOTE Confidence: 0.802580971666667

00:37:44.170 --> 00:37:46.252 now doing a postdoc with Kieran
NOTE Confidence: 0.802580971666667

00:37:46.252 --> 00:37:47.879 O'Donnell and Rose Baggott,
NOTE Confidence: 0.802580971666667

00:37:47.880 --> 00:37:49.655 really was interested in this
NOTE Confidence: 0.802580971666667

00:37:49.655 --> 00:37:51.075 sort of perimenopausal period.
NOTE Confidence: 0.802580971666667

00:37:51.080 --> 00:37:54.000 And So what she did here was overact,
NOTE Confidence: 0.802580971666667

00:37:54.000 --> 00:37:56.785 demonized or did not recognize
NOTE Confidence: 0.802580971666667

00:37:56.785 --> 00:38:00.453 sham surgery to these sort of
NOTE Confidence: 0.802580971666667

00:38:00.453 --> 00:38:02.799 quasi perimenopausal females.
NOTE Confidence: 0.8741944125

00:38:02.800 --> 00:38:05.320 And then she gave six weeks of chronic,
NOTE Confidence: 0.8741944125

00:38:05.320 --> 00:38:06.018 unpredictable stress.
NOTE Confidence: 0.8741944125

00:38:06.018 --> 00:38:08.112 Now she did that because three

NOTE Confidence: 0.8741944125

00:38:08.112 --> 00:38:09.889 weeks will increase these

NOTE Confidence: 0.8741944125

00:38:09.889 --> 00:38:11.419 depressive like endophenotypes.

NOTE Confidence: 0.8741944125

00:38:11.420 --> 00:38:13.135 We wanted to mirror what

NOTE Confidence: 0.8741944125

00:38:13.135 --> 00:38:14.507 might happen in humans.

NOTE Confidence: 0.8741944125

00:38:14.510 --> 00:38:16.662 You present with depressive

NOTE Confidence: 0.8741944125

00:38:16.662 --> 00:38:17.738 like endophenotypes.

NOTE Confidence: 0.8741944125

00:38:17.740 --> 00:38:21.310 You're given an antidepressant like an SSRI.

NOTE Confidence: 0.8741944125

00:38:21.310 --> 00:38:23.648 Fluoxetine is the one that we chose,

NOTE Confidence: 0.8741944125

00:38:23.650 --> 00:38:24.866 better known as Prozac.

NOTE Confidence: 0.8741944125

00:38:24.866 --> 00:38:27.185 And then she looked at a variety

NOTE Confidence: 0.8741944125

00:38:27.185 --> 00:38:29.345 of behaviors and neural outcomes.

NOTE Confidence: 0.8741944125

00:38:29.350 --> 00:38:30.854 And I'm going to show you a graph

NOTE Confidence: 0.8741944125

00:38:30.854 --> 00:38:32.088 that's going to look really busy,

NOTE Confidence: 0.8741944125

00:38:32.090 --> 00:38:33.746 but it's like the clearest data,

NOTE Confidence: 0.8741944125

00:38:33.750 --> 00:38:35.868 I think, that we've ever had.

NOTE Confidence: 0.8741944125

00:38:35.870 --> 00:38:37.420 The pale green bars are
NOTE Confidence: 0.8741944125

00:38:37.420 --> 00:38:38.350 their overactive mized,
NOTE Confidence: 0.8741944125

00:38:38.350 --> 00:38:40.950 so removal of ovarian hormones
NOTE Confidence: 0.8741944125

00:38:40.950 --> 00:38:42.322 and it didn't matter.
NOTE Confidence: 0.8741944125

00:38:42.322 --> 00:38:44.380 That behavior we looked at passive
NOTE Confidence: 0.8741944125

00:38:44.448 --> 00:38:46.779 coping and the four swim test sucrose,
NOTE Confidence: 0.8741944125

00:38:46.780 --> 00:38:47.263 anhedonia,
NOTE Confidence: 0.8741944125

00:38:47.263 --> 00:38:49.195 sucrose preference over atomized
NOTE Confidence: 0.8741944125

00:38:49.195 --> 00:38:51.127 group showed this greater
NOTE Confidence: 0.8741944125

00:38:51.127 --> 00:38:52.820 depressive like endophenotype,
NOTE Confidence: 0.8741944125

00:38:52.820 --> 00:38:54.398 so more anxiety.
NOTE Confidence: 0.8741944125

00:38:54.398 --> 00:38:58.460 And we also looked at negative feedback HP,
NOTE Confidence: 0.8741944125

00:38:58.460 --> 00:38:59.228 a negative feedback.
NOTE Confidence: 0.8741944125

00:38:59.228 --> 00:39:01.759 And the way we did this is by using
NOTE Confidence: 0.8741944125

00:39:01.759 --> 00:39:03.449 a dexamethasone suppression test you
NOTE Confidence: 0.8741944125

00:39:03.449 --> 00:39:05.387 have a synthetic glucocorticoid that

NOTE Confidence: 0.8741944125
00:39:05.387 --> 00:39:07.967 should shut down release of corticosterone,
NOTE Confidence: 0.8741944125
00:39:07.970 --> 00:39:09.690 the main glucocorticoid and
NOTE Confidence: 0.8741944125
00:39:09.690 --> 00:39:11.840 rodents and it's sort of.
NOTE Confidence: 0.8741944125
00:39:11.840 --> 00:39:13.264 That was in the Shams you can see,
NOTE Confidence: 0.8741944125
00:39:13.270 --> 00:39:14.495 but in the over recognized
NOTE Confidence: 0.8741944125
00:39:14.495 --> 00:39:15.230 group that overshoots.
NOTE Confidence: 0.8741944125
00:39:15.230 --> 00:39:16.895 So we see an impairment
NOTE Confidence: 0.8741944125
00:39:16.895 --> 00:39:17.894 and negative feedback.
NOTE Confidence: 0.8741944125
00:39:17.900 --> 00:39:20.581 Now we have this idea that fluoxetine
NOTE Confidence: 0.8741944125
00:39:20.581 --> 00:39:23.259 would have different outcomes depending on.
NOTE Confidence: 0.8741944125
00:39:23.260 --> 00:39:24.298 I have a really nice coat,
NOTE Confidence: 0.8741944125
00:39:24.300 --> 00:39:25.820 but I took it out because it takes too long.
NOTE Confidence: 0.8741944125
00:39:25.820 --> 00:39:27.450 But anyway I didn't work.
NOTE Confidence: 0.8741944125
00:39:27.450 --> 00:39:30.636 So we didn't see any difference
NOTE Confidence: 0.8741944125
00:39:30.636 --> 00:39:33.485 in the efficacy of fluoxetine
NOTE Confidence: 0.8741944125

00:39:33.485 --> 00:39:36.880 based on the based on the hormonal
NOTE Confidence: 0.8741944125

00:39:36.880 --> 00:39:38.440 background of the females.
NOTE Confidence: 0.8741944125

00:39:38.440 --> 00:39:40.800 But we actually didn't see efficacy at all,
NOTE Confidence: 0.8741944125

00:39:40.800 --> 00:39:42.816 at least in terms of the behavior.
NOTE Confidence: 0.8741944125

00:39:42.820 --> 00:39:45.340 The only time we saw efficacy was in
NOTE Confidence: 0.8741944125

00:39:45.340 --> 00:39:47.209 this endocrine and neurochemistry,
NOTE Confidence: 0.8741944125

00:39:47.210 --> 00:39:47.890 not just show you that.
NOTE Confidence: 0.8741944125

00:39:47.890 --> 00:39:48.784 Looking out here,
NOTE Confidence: 0.8741944125

00:39:48.784 --> 00:39:50.572 you see that flat response here
NOTE Confidence: 0.8741944125

00:39:50.572 --> 00:39:52.140 in the sham individuals?
NOTE Confidence: 0.8741944125

00:39:52.140 --> 00:39:53.036 In the obex individuals,
NOTE Confidence: 0.8741944125

00:39:53.036 --> 00:39:54.380 it does come down a bit,
NOTE Confidence: 0.8741944125

00:39:54.380 --> 00:39:55.792 but it's still overshooting.
NOTE Confidence: 0.8741944125

00:39:55.792 --> 00:39:57.910 So even with the longer term
NOTE Confidence: 0.8741944125

00:39:57.977 --> 00:39:59.589 withdrawal from a variant,
NOTE Confidence: 0.8741944125

00:39:59.590 --> 00:40:01.615 home owners in combination with

NOTE Confidence: 0.8741944125

00:40:01.615 --> 00:40:03.235 stress increases the expression

NOTE Confidence: 0.8741944125

00:40:03.235 --> 00:40:05.610 of depressive like anathema types.

NOTE Confidence: 0.8741944125

00:40:05.610 --> 00:40:07.612 And we found that the efficacy of

NOTE Confidence: 0.8741944125

00:40:07.612 --> 00:40:09.451 fluoxetine was limited to neural and

NOTE Confidence: 0.8741944125

00:40:09.451 --> 00:40:10.679 endocrine outcomes very different

NOTE Confidence: 0.8741944125

00:40:10.679 --> 00:40:12.781 than what we see in terms of male

NOTE Confidence: 0.8741944125

00:40:12.781 --> 00:40:14.282 outcome even in our own lab.

NOTE Confidence: 0.8741944125

00:40:14.282 --> 00:40:16.886 But I would say that this also

NOTE Confidence: 0.8741944125

00:40:16.886 --> 00:40:19.018 suggested a variant hormones

NOTE Confidence: 0.8741944125

00:40:19.018 --> 00:40:20.968 provide some resilience.

NOTE Confidence: 0.8741944125

00:40:20.970 --> 00:40:23.283 So I want to talk in the last few

NOTE Confidence: 0.8741944125

00:40:23.283 --> 00:40:25.549 minutes about the second model we have.

NOTE Confidence: 0.8741944125

00:40:25.550 --> 00:40:27.130 So hormone withdrawal after birth

NOTE Confidence: 0.8741944125

00:40:27.130 --> 00:40:29.686 is to mimic that de Novo depression

NOTE Confidence: 0.8741944125

00:40:29.686 --> 00:40:31.395 right after pregnancy, right,

NOTE Confidence: 0.8741944125

00:40:31.395 --> 00:40:33.465 because we're withdrawing right away looking.

NOTE Confidence: 0.8741944125

00:40:33.470 --> 00:40:35.325 But we were also interested in later,

NOTE Confidence: 0.8741944125

00:40:35.330 --> 00:40:36.810 like maybe three months later,

NOTE Confidence: 0.8741944125

00:40:36.810 --> 00:40:38.990 that kind of time period.

NOTE Confidence: 0.8741944125

00:40:38.990 --> 00:40:41.354 And also this is really the

NOTE Confidence: 0.8741944125

00:40:41.354 --> 00:40:42.930 brainchild of Suzanne Vermette.

NOTE Confidence: 0.8741944125

00:40:42.930 --> 00:40:44.746 I would keep forgetting which mouse to use.

NOTE Confidence: 0.8741944125

00:40:44.750 --> 00:40:45.083 Remote,

NOTE Confidence: 0.8741944125

00:40:45.083 --> 00:40:46.415 who's an associate professor

NOTE Confidence: 0.8741944125

00:40:46.415 --> 00:40:47.747 at Wayne State University,

NOTE Confidence: 0.8741944125

00:40:47.750 --> 00:40:48.430 she came to the lab.

NOTE Confidence: 0.8741944125

00:40:48.430 --> 00:40:50.870 She's like, I don't like your model because.

NOTE Confidence: 0.8741944125

00:40:50.870 --> 00:40:52.120 They're not actually giving birth,

NOTE Confidence: 0.8741944125

00:40:52.120 --> 00:40:53.455 and that's Fairpoint.

NOTE Confidence: 0.8741944125

00:40:53.455 --> 00:40:56.570 So we came up with this model,

NOTE Confidence: 0.842546727142857

00:40:56.570 --> 00:40:58.110 which I'll tell you in a second

NOTE Confidence: 0.842546727142857
00:40:58.110 --> 00:40:59.697 because I forgot this was coming up.
NOTE Confidence: 0.842546727142857
00:40:59.700 --> 00:41:01.815 But I'm glad we came up with the model
NOTE Confidence: 0.842546727142857
00:41:01.815 --> 00:41:03.836 because 15 years later somebody showed us,
NOTE Confidence: 0.842546727142857
00:41:03.840 --> 00:41:05.700 hey, this is a good model.
NOTE Confidence: 0.842546727142857
00:41:05.700 --> 00:41:08.544 So this is looking at cortisol
NOTE Confidence: 0.842546727142857
00:41:08.544 --> 00:41:12.264 levels on postpartum week 6IN humans.
NOTE Confidence: 0.842546727142857
00:41:12.264 --> 00:41:16.314 And this is people that had
NOTE Confidence: 0.842546727142857
00:41:16.314 --> 00:41:17.628 depressive symptoms postpartum
NOTE Confidence: 0.842546727142857
00:41:17.628 --> 00:41:19.380 versus depressive symptoms that
NOTE Confidence: 0.842546727142857
00:41:19.438 --> 00:41:21.458 occurred before or during pregnancy.
NOTE Confidence: 0.842546727142857
00:41:21.460 --> 00:41:22.753 Versus healthy controls.
NOTE Confidence: 0.842546727142857
00:41:22.753 --> 00:41:25.339 And it's only those individuals that
NOTE Confidence: 0.842546727142857
00:41:25.339 --> 00:41:27.928 showed postpartum depression postpartum,
NOTE Confidence: 0.842546727142857
00:41:27.930 --> 00:41:29.530 sort of postpartum depression postpartum,
NOTE Confidence: 0.842546727142857
00:41:29.530 --> 00:41:29.960 yeah, you,
NOTE Confidence: 0.842546727142857

00:41:29.960 --> 00:41:31.465 I think you understand what I'm saying.
NOTE Confidence: 0.842546727142857

00:41:31.470 --> 00:41:33.810 Only those with postpartum symptoms
NOTE Confidence: 0.842546727142857

00:41:33.810 --> 00:41:36.150 that started onset postpartum that
NOTE Confidence: 0.842546727142857

00:41:36.216 --> 00:41:38.688 show these higher levels of cortisol.
NOTE Confidence: 0.842546727142857

00:41:38.690 --> 00:41:40.740 That's good because our model
NOTE Confidence: 0.842546727142857

00:41:40.740 --> 00:41:42.790 involves having a normal pregnancy,
NOTE Confidence: 0.842546727142857

00:41:42.790 --> 00:41:43.518 normal birth,
NOTE Confidence: 0.842546727142857

00:41:43.518 --> 00:41:44.974 and getting really high
NOTE Confidence: 0.842546727142857

00:41:44.974 --> 00:41:46.066 levels of corticosterone,
NOTE Confidence: 0.842546727142857

00:41:46.070 --> 00:41:49.180 which again is the main
NOTE Confidence: 0.842546727142857

00:41:49.180 --> 00:41:51.046 glucocorticoid for rodents.
NOTE Confidence: 0.842546727142857

00:41:51.050 --> 00:41:53.770 And we looked at maternal care and the
NOTE Confidence: 0.842546727142857

00:41:53.770 --> 00:41:56.813 force from test and N plasticity and we
NOTE Confidence: 0.842546727142857

00:41:56.813 --> 00:41:59.480 see these depressive like endophenotypes.
NOTE Confidence: 0.842546727142857

00:41:59.480 --> 00:42:01.344 So we see a reduction in maternal care.
NOTE Confidence: 0.842546727142857

00:42:01.350 --> 00:42:02.638 And I'm going to show you the

NOTE Confidence: 0.842546727142857
00:42:02.638 --> 00:42:03.470 rest of the data.
NOTE Confidence: 0.842546727142857
00:42:03.470 --> 00:42:05.761 So you'll see it in just a second and
NOTE Confidence: 0.842546727142857
00:42:05.761 --> 00:42:09.067 then we will give concurrent fluoxetine
NOTE Confidence: 0.842546727142857
00:42:09.070 --> 00:42:10.650 and it restores maternal care.
NOTE Confidence: 0.842546727142857
00:42:10.650 --> 00:42:12.694 But what does it do to the
NOTE Confidence: 0.842546727142857
00:42:12.694 --> 00:42:14.800 rest of the endophenotypes?
NOTE Confidence: 0.842546727142857
00:42:14.800 --> 00:42:17.900 So you can see the answer right there.
NOTE Confidence: 0.842546727142857
00:42:17.900 --> 00:42:19.140 It doesn't rescue it,
NOTE Confidence: 0.842546727142857
00:42:19.140 --> 00:42:20.690 so here's a postpartum court.
NOTE Confidence: 0.842546727142857
00:42:20.690 --> 00:42:23.462 These are really high levels of
NOTE Confidence: 0.842546727142857
00:42:23.462 --> 00:42:25.310 corticosterone and increases passive
NOTE Confidence: 0.842546727142857
00:42:25.386 --> 00:42:27.360 coping in the four swim test.
NOTE Confidence: 0.842546727142857
00:42:27.360 --> 00:42:30.356 The Hatch bars here are given fluoxetine.
NOTE Confidence: 0.842546727142857
00:42:30.360 --> 00:42:31.512 It doesn't help.
NOTE Confidence: 0.842546727142857
00:42:31.512 --> 00:42:33.708 In fact, it makes things worse.
NOTE Confidence: 0.842546727142857

00:42:33.708 --> 00:42:35.850 It was a significant effect to
NOTE Confidence: 0.842546727142857

00:42:35.924 --> 00:42:37.844 worsen symptoms with fluoxetine
NOTE Confidence: 0.842546727142857

00:42:37.844 --> 00:42:39.764 in the postpartum period.
NOTE Confidence: 0.842546727142857

00:42:39.770 --> 00:42:41.202 In terms of neurogenesis,
NOTE Confidence: 0.842546727142857

00:42:41.202 --> 00:42:43.350 again the dark Gray bars here
NOTE Confidence: 0.842546727142857

00:42:43.420 --> 00:42:45.308 are the corticosterone group,
NOTE Confidence: 0.842546727142857

00:42:45.310 --> 00:42:47.530 reduction in neurogenesis and both
NOTE Confidence: 0.842546727142857

00:42:47.530 --> 00:42:49.306 dorsal and ventral hippocampus,
NOTE Confidence: 0.842546727142857

00:42:49.310 --> 00:42:51.560 and these hash bars are the
NOTE Confidence: 0.842546727142857

00:42:51.560 --> 00:42:52.685 fluoxetine treated group.
NOTE Confidence: 0.842546727142857

00:42:52.690 --> 00:42:54.146 And you can see it's not restoring it.
NOTE Confidence: 0.842546727142857

00:42:54.150 --> 00:42:55.670 It should increase neuroplasticity.
NOTE Confidence: 0.842546727142857

00:42:55.670 --> 00:42:57.950 It does outside of the postpartum,
NOTE Confidence: 0.842546727142857

00:42:57.950 --> 00:42:58.628 does in males,
NOTE Confidence: 0.842546727142857

00:42:58.628 --> 00:43:00.610 it does outside of the postpartum in females,
NOTE Confidence: 0.842546727142857

00:43:00.610 --> 00:43:02.354 but during the postpartum

NOTE Confidence: 0.842546727142857
00:43:02.354 --> 00:43:04.970 period it doesn't do its job.
NOTE Confidence: 0.842546727142857
00:43:04.970 --> 00:43:07.628 So we've tried citrulline as well.
NOTE Confidence: 0.842546727142857
00:43:07.630 --> 00:43:08.992 Neither one of them are efficacious
NOTE Confidence: 0.842546727142857
00:43:08.992 --> 00:43:10.740 in the long term, so we wondered,
NOTE Confidence: 0.842546727142857
00:43:10.740 --> 00:43:11.860 why might this be?
NOTE Confidence: 0.842546727142857
00:43:11.860 --> 00:43:13.981 And I want to chew who's who
NOTE Confidence: 0.842546727142857
00:43:13.981 --> 00:43:15.770 did a PhD in my lab,
NOTE Confidence: 0.842546727142857
00:43:15.770 --> 00:43:16.940 looked at a variety of things,
NOTE Confidence: 0.842546727142857
00:43:16.940 --> 00:43:18.476 and I just want you to pay attention
NOTE Confidence: 0.842546727142857
00:43:18.476 --> 00:43:19.741 to the information because that's
NOTE Confidence: 0.842546727142857
00:43:19.741 --> 00:43:21.409 what I'm going to talk about.
NOTE Confidence: 0.842546727142857
00:43:21.410 --> 00:43:22.706 But we can talk about the other part.
NOTE Confidence: 0.842546727142857
00:43:22.710 --> 00:43:24.636 Just looked at some serotonin markers.
NOTE Confidence: 0.842546727142857
00:43:24.640 --> 00:43:26.075 Those seem to be perturbed as well.
NOTE Confidence: 0.842546727142857
00:43:26.080 --> 00:43:28.950 That might be another Ave to go.
NOTE Confidence: 0.842546727142857

00:43:28.950 --> 00:43:31.660 In terms of hippocampal inflammation,
NOTE Confidence: 0.842546727142857

00:43:31.660 --> 00:43:34.236 the pink bars or the court treated animals,
NOTE Confidence: 0.842546727142857

00:43:34.240 --> 00:43:36.075 hatched bars are also those
NOTE Confidence: 0.842546727142857

00:43:36.075 --> 00:43:37.176 fluoxetine treated animals.
NOTE Confidence: 0.842546727142857

00:43:37.180 --> 00:43:39.340 It didn't matter when we gave
NOTE Confidence: 0.842546727142857

00:43:39.340 --> 00:43:40.780 them fluoxetine that upregulated
NOTE Confidence: 0.842546727142857

00:43:40.845 --> 00:43:42.585 IL 1 beta and the hippocampus.
NOTE Confidence: 0.842546727142857

00:43:42.590 --> 00:43:46.319 So that that.
NOTE Confidence: 0.842546727142857

00:43:46.320 --> 00:43:47.400 To this route,
NOTE Confidence: 0.842546727142857

00:43:47.400 --> 00:43:49.680 because Siad at all in 2018
NOTE Confidence: 0.842546727142857

00:43:49.680 --> 00:43:52.560 had shown that for a variety
NOTE Confidence: 0.842546727142857

00:43:52.560 --> 00:43:54.000 of inflammatory markers,
NOTE Confidence: 0.842546727142857

00:43:54.000 --> 00:43:56.604 there was an increase in non
NOTE Confidence: 0.842546727142857

00:43:56.604 --> 00:43:59.256 responders and so and also in IL 1 beta.
NOTE Confidence: 0.818266555384615

00:43:59.260 --> 00:44:01.192 So we thought if we could
NOTE Confidence: 0.818266555384615

00:44:01.192 --> 00:44:03.260 block the actions of IL 1 beta,

NOTE Confidence: 0.818266555384615
00:44:03.260 --> 00:44:05.060 could we improve antidepressant
NOTE Confidence: 0.818266555384615
00:44:05.060 --> 00:44:06.860 efficacy in the postpartum.
NOTE Confidence: 0.818266555384615
00:44:06.860 --> 00:44:10.596 And we did this using Anakinra and Romina.
NOTE Confidence: 0.818266555384615
00:44:10.600 --> 00:44:13.360 Garcia de Leon is doing a PhD in my lab
NOTE Confidence: 0.818266555384615
00:44:13.430 --> 00:44:16.190 and she's looking at perineuronal Nets.
NOTE Confidence: 0.818266555384615
00:44:16.190 --> 00:44:18.724 Now playing around on Nets are an
NOTE Confidence: 0.818266555384615
00:44:18.724 --> 00:44:20.393 extracellular structure that are
NOTE Confidence: 0.818266555384615
00:44:20.393 --> 00:44:21.968 associated with neuroplasticity.
NOTE Confidence: 0.818266555384615
00:44:21.970 --> 00:44:24.620 More of these perineuronal Nets
NOTE Confidence: 0.818266555384615
00:44:24.620 --> 00:44:26.210 reductions in neuroplasticity,
NOTE Confidence: 0.818266555384615
00:44:26.210 --> 00:44:28.600 and this is early days,
NOTE Confidence: 0.818266555384615
00:44:28.600 --> 00:44:29.678 you're going to see a low end.
NOTE Confidence: 0.818266555384615
00:44:29.680 --> 00:44:31.215 There's actually more than two
NOTE Confidence: 0.818266555384615
00:44:31.215 --> 00:44:32.443 in that pink group.
NOTE Confidence: 0.818266555384615
00:44:32.450 --> 00:44:33.548 It just looks like there's two.
NOTE Confidence: 0.818266555384615

00:44:33.550 --> 00:44:34.534 But the Anna,
NOTE Confidence: 0.818266555384615

00:44:34.534 --> 00:44:37.250 we're going to have more data very soon.
NOTE Confidence: 0.818266555384615

00:44:37.250 --> 00:44:38.348 So I'm not going to say
NOTE Confidence: 0.818266555384615

00:44:38.348 --> 00:44:38.897 anything about Corpus,
NOTE Confidence: 0.818266555384615

00:44:38.900 --> 00:44:40.588 who knows which way it's going to go.
NOTE Confidence: 0.818266555384615

00:44:40.590 --> 00:44:42.605 But with fluoxetine again and
NOTE Confidence: 0.818266555384615

00:44:42.605 --> 00:44:45.130 those hash bars only under court,
NOTE Confidence: 0.818266555384615

00:44:45.130 --> 00:44:46.114 you see an increase.
NOTE Confidence: 0.818266555384615

00:44:46.114 --> 00:44:47.915 Increase in prayer in our own on
NOTE Confidence: 0.818266555384615

00:44:47.915 --> 00:44:49.270 that's decrease the plasticity that's
NOTE Confidence: 0.818266555384615

00:44:49.270 --> 00:44:51.488 what we see in terms of neurogenesis.
NOTE Confidence: 0.818266555384615

00:44:51.490 --> 00:44:54.178 So it kind of makes sense and with
NOTE Confidence: 0.818266555384615

00:44:54.178 --> 00:44:56.688 anakinra we actually see a decrease.
NOTE Confidence: 0.818266555384615

00:44:56.690 --> 00:44:57.491 So we don't,
NOTE Confidence: 0.818266555384615

00:44:57.491 --> 00:44:59.360 I don't know about behavior yet those
NOTE Confidence: 0.818266555384615

00:44:59.419 --> 00:45:00.914 animal that's all getting crunched

NOTE Confidence: 0.818266555384615
00:45:00.914 --> 00:45:02.950 right now in terms of the data.
NOTE Confidence: 0.818266555384615
00:45:02.950 --> 00:45:05.800 But we're we're kind of excited
NOTE Confidence: 0.818266555384615
00:45:05.800 --> 00:45:08.625 that this might show what we
NOTE Confidence: 0.818266555384615
00:45:08.625 --> 00:45:11.537 thought I think it might show so.
NOTE Confidence: 0.818266555384615
00:45:11.540 --> 00:45:13.652 Just to to finish off the
NOTE Confidence: 0.818266555384615
00:45:13.652 --> 00:45:14.356 postpartum depression,
NOTE Confidence: 0.818266555384615
00:45:14.360 --> 00:45:17.740 I want to say that our data mirrors
NOTE Confidence: 0.818266555384615
00:45:17.740 --> 00:45:19.440 what's seen in the literature.
NOTE Confidence: 0.818266555384615
00:45:19.440 --> 00:45:22.150 There is limited evidence for
NOTE Confidence: 0.818266555384615
00:45:22.150 --> 00:45:24.318 efficacy in the postpartum.
NOTE Confidence: 0.818266555384615
00:45:24.320 --> 00:45:25.724 Specifically those dashed lines
NOTE Confidence: 0.818266555384615
00:45:25.724 --> 00:45:28.200 are to say there's not any data.
NOTE Confidence: 0.818266555384615
00:45:28.200 --> 00:45:30.018 This came out just last year.
NOTE Confidence: 0.818266555384615
00:45:30.020 --> 00:45:32.680 The eye is to show insufficient data.
NOTE Confidence: 0.818266555384615
00:45:32.680 --> 00:45:35.288 And so you can see low efficacy for
NOTE Confidence: 0.818266555384615

00:45:35.288 --> 00:45:37.180 citrulline and moderate efficacy,
NOTE Confidence: 0.818266555384615

00:45:37.180 --> 00:45:38.700 efficacy for because I'm alone.
NOTE Confidence: 0.818266555384615

00:45:38.700 --> 00:45:42.250 So I have to talk about brexanolone for two.
NOTE Confidence: 0.818266555384615

00:45:42.250 --> 00:45:44.470 Reasons one is fantastic
NOTE Confidence: 0.818266555384615

00:45:44.470 --> 00:45:47.340 translation from animal to human.
NOTE Confidence: 0.818266555384615

00:45:47.340 --> 00:45:48.672 I think partially because
NOTE Confidence: 0.818266555384615

00:45:48.672 --> 00:45:50.337 a Jimmy Grier is amazing,
NOTE Confidence: 0.818266555384615

00:45:50.340 --> 00:45:52.040 but be because she,
NOTE Confidence: 0.818266555384615

00:45:52.040 --> 00:45:52.890 you know,
NOTE Confidence: 0.818266555384615

00:45:52.890 --> 00:45:54.936 we're paying attention to sex and
NOTE Confidence: 0.818266555384615

00:45:54.936 --> 00:45:56.820 gender and female specific factors.
NOTE Confidence: 0.818266555384615

00:45:56.820 --> 00:45:58.420 So she has another model
NOTE Confidence: 0.818266555384615

00:45:58.420 --> 00:45:59.380 of postpartum depression,
NOTE Confidence: 0.818266555384615

00:45:59.380 --> 00:46:00.844 showing that allopregnanolone and
NOTE Confidence: 0.818266555384615

00:46:00.844 --> 00:46:03.040 that it's very high during pregnancy
NOTE Confidence: 0.818266555384615

00:46:03.095 --> 00:46:04.559 decreases in the postpartum.

NOTE Confidence: 0.818266555384615
00:46:04.560 --> 00:46:07.269 And when you give an analog allopregnanolone,
NOTE Confidence: 0.818266555384615
00:46:07.270 --> 00:46:09.190 this can reverse some of the
NOTE Confidence: 0.818266555384615
00:46:09.190 --> 00:46:10.470 depressive like behaviors that
NOTE Confidence: 0.818266555384615
00:46:10.524 --> 00:46:12.260 she saw in her animals and this.
NOTE Confidence: 0.818266555384615
00:46:12.260 --> 00:46:13.646 That led to some clinical trials.
NOTE Confidence: 0.818266555384615
00:46:13.650 --> 00:46:15.858 And for the first time ever,
NOTE Confidence: 0.818266555384615
00:46:15.860 --> 00:46:18.398 the FDA approved a drug specifically
NOTE Confidence: 0.818266555384615
00:46:18.398 --> 00:46:19.667 for postpartum depression.
NOTE Confidence: 0.818266555384615
00:46:19.670 --> 00:46:21.128 So it's a good news story.
NOTE Confidence: 0.818266555384615
00:46:21.130 --> 00:46:22.662 That's brexanolone,
NOTE Confidence: 0.818266555384615
00:46:22.662 --> 00:46:24.960 analog of allopregnanolone
NOTE Confidence: 0.818266555384615
00:46:24.960 --> 00:46:27.468 that shows some efficacy.
NOTE Confidence: 0.818266555384615
00:46:27.470 --> 00:46:28.286 So I do.
NOTE Confidence: 0.818266555384615
00:46:28.286 --> 00:46:28.830 I mean,
NOTE Confidence: 0.818266555384615
00:46:28.830 --> 00:46:31.110 I I started I think by saying that
NOTE Confidence: 0.818266555384615

00:46:31.110 --> 00:46:32.869 depression is very heterogeneous,
NOTE Confidence: 0.818266555384615

00:46:32.870 --> 00:46:33.755 so perinatal depression.
NOTE Confidence: 0.818266555384615

00:46:33.755 --> 00:46:35.820 So I think we do ourselves a
NOTE Confidence: 0.818266555384615

00:46:35.878 --> 00:46:38.328 disservice when we don't look at that
NOTE Confidence: 0.818266555384615

00:46:38.328 --> 00:46:39.920 heterogeneity and embrace it, right.
NOTE Confidence: 0.818266555384615

00:46:39.920 --> 00:46:42.090 It'll give us some maybe some clarity,
NOTE Confidence: 0.818266555384615

00:46:42.090 --> 00:46:42.786 maybe not,
NOTE Confidence: 0.818266555384615

00:46:42.786 --> 00:46:45.660 but maybe it'll give us some clarity and
NOTE Confidence: 0.818266555384615

00:46:45.660 --> 00:46:49.214 I won't belabor the point, but it isn't.
NOTE Confidence: 0.818266555384615

00:46:49.214 --> 00:46:50.150 It isn't.
NOTE Confidence: 0.818266555384615

00:46:50.150 --> 00:46:50.794 It doesn't.
NOTE Confidence: 0.818266555384615

00:46:50.794 --> 00:46:53.850 I know that this is the child center group,
NOTE Confidence: 0.818266555384615

00:46:53.850 --> 00:46:54.935 and I haven't shown you
NOTE Confidence: 0.818266555384615

00:46:54.935 --> 00:46:55.586 anything on offspring,
NOTE Confidence: 0.818266555384615

00:46:55.590 --> 00:46:56.187 so I just,
NOTE Confidence: 0.818266555384615

00:46:56.187 --> 00:46:57.580 I give you a couple of slides

NOTE Confidence: 0.834178215

00:46:57.634 --> 00:46:58.930 on offspring just because,

NOTE Confidence: 0.834178215

00:46:58.930 --> 00:47:00.450 of course, like Susie said,

NOTE Confidence: 0.834178215

00:47:00.450 --> 00:47:02.090 you know, there's no offspring.

NOTE Confidence: 0.834178215

00:47:02.090 --> 00:47:03.146 So now we have some offspring.

NOTE Confidence: 0.834178215

00:47:03.150 --> 00:47:05.208 I should show you what happens.

NOTE Confidence: 0.834178215

00:47:05.210 --> 00:47:06.158 I'm not going to show it.

NOTE Confidence: 0.834178215

00:47:06.160 --> 00:47:06.592 Don't worry.

NOTE Confidence: 0.834178215

00:47:06.592 --> 00:47:08.320 I'm going to show you too much data.

NOTE Confidence: 0.834178215

00:47:08.320 --> 00:47:09.305 This paper came out just

NOTE Confidence: 0.834178215

00:47:09.305 --> 00:47:10.290 a couple of weeks ago.

NOTE Confidence: 0.834178215

00:47:10.290 --> 00:47:11.568 I forgot to put the exact

NOTE Confidence: 0.834178215

00:47:11.568 --> 00:47:12.207 volume and everything,

NOTE Confidence: 0.834178215

00:47:12.210 --> 00:47:13.463 but it was just like a couple

NOTE Confidence: 0.834178215

00:47:13.463 --> 00:47:14.738 of weeks ago showing that

NOTE Confidence: 0.834178215

00:47:14.738 --> 00:47:16.130 antidepressant use during gestation.

NOTE Confidence: 0.834178215

00:47:16.130 --> 00:47:16.418 Remember,
NOTE Confidence: 0.834178215

00:47:16.418 --> 00:47:18.146 we're not giving it during gestation,
NOTE Confidence: 0.834178215

00:47:18.150 --> 00:47:19.836 we're giving it in the postpartum.
NOTE Confidence: 0.834178215

00:47:19.840 --> 00:47:22.255 It is quite different in our lab
NOTE Confidence: 0.834178215

00:47:22.260 --> 00:47:23.997 but we can talk about that but it it
NOTE Confidence: 0.834178215

00:47:23.997 --> 00:47:25.194 wasn't associated after adjustments
NOTE Confidence: 0.834178215

00:47:25.194 --> 00:47:27.108 wasn't associated with any higher risk
NOTE Confidence: 0.834178215

00:47:27.108 --> 00:47:28.819 for nerve developmental disorders.
NOTE Confidence: 0.834178215

00:47:28.820 --> 00:47:30.654 But what about in our own data.
NOTE Confidence: 0.834178215

00:47:30.660 --> 00:47:32.190 So we've seen this part of the graph already.
NOTE Confidence: 0.834178215

00:47:32.190 --> 00:47:34.059 This is a moms this is hippocampus,
NOTE Confidence: 0.834178215

00:47:34.060 --> 00:47:36.322 Iowa beta SSRI,
NOTE Confidence: 0.834178215

00:47:36.322 --> 00:47:39.338 fluoxetine increase inflammatory markers
NOTE Confidence: 0.834178215

00:47:39.340 --> 00:47:41.080 and the offspring male and female.
NOTE Confidence: 0.834178215

00:47:41.080 --> 00:47:43.096 No sex difference here but I don't
NOTE Confidence: 0.834178215

00:47:43.096 --> 00:47:45.060 want I'll tend I13 and interferon

NOTE Confidence: 0.834178215

00:47:45.060 --> 00:47:47.136 gamma and always all were reduced.

NOTE Confidence: 0.834178215

00:47:47.140 --> 00:47:48.640 This is an adult offspring

NOTE Confidence: 0.834178215

00:47:48.640 --> 00:47:49.840 the offspring don't get.

NOTE Confidence: 0.834178215

00:47:49.840 --> 00:47:51.790 Accessorize, it's all through the mom.

NOTE Confidence: 0.834178215

00:47:51.790 --> 00:47:52.990 It's not during gestation,

NOTE Confidence: 0.834178215

00:47:52.990 --> 00:47:55.129 it's all through either a change in

NOTE Confidence: 0.834178215

00:47:55.129 --> 00:47:56.943 behavior or through breast milk that

NOTE Confidence: 0.834178215

00:47:56.943 --> 00:47:59.554 we see these this outcome is there.

NOTE Confidence: 0.834178215

00:47:59.560 --> 00:48:00.439 That's our thought.

NOTE Confidence: 0.834178215

00:48:00.439 --> 00:48:02.490 I put this one up here because

NOTE Confidence: 0.834178215

00:48:02.553 --> 00:48:03.609 it's kind of cute.

NOTE Confidence: 0.834178215

00:48:03.610 --> 00:48:05.645 We've also given non pharmacological

NOTE Confidence: 0.834178215

00:48:05.645 --> 00:48:06.866 treatments like exercise,

NOTE Confidence: 0.834178215

00:48:06.870 --> 00:48:08.238 so course increase in their genesis,

NOTE Confidence: 0.834178215

00:48:08.240 --> 00:48:09.536 that's what it should do and it does.

NOTE Confidence: 0.834178215

00:48:09.540 --> 00:48:10.970 And females thank thank you,
NOTE Confidence: 0.834178215

00:48:10.970 --> 00:48:12.374 thank you, thank you.
NOTE Confidence: 0.834178215

00:48:12.374 --> 00:48:14.950 And in the adult offspring they don't,
NOTE Confidence: 0.834178215

00:48:14.950 --> 00:48:16.798 they weren't exposed to a running wheel,
NOTE Confidence: 0.834178215

00:48:16.800 --> 00:48:17.754 they didn't run.
NOTE Confidence: 0.834178215

00:48:17.754 --> 00:48:19.980 But in the adult offspring that increased.
NOTE Confidence: 0.834178215

00:48:19.980 --> 00:48:20.150 Regenesiis.
NOTE Confidence: 0.834178215

00:48:20.150 --> 00:48:21.860 So I think that's kind of cute if your mom,
NOTE Confidence: 0.834178215

00:48:21.860 --> 00:48:23.318 my mom was on an exerciser.
NOTE Confidence: 0.834178215

00:48:23.320 --> 00:48:24.916 So I know what that means.
NOTE Confidence: 0.834178215

00:48:24.920 --> 00:48:28.360 And I'm not a rat though, so I think I'm OK.
NOTE Confidence: 0.834178215

00:48:28.360 --> 00:48:31.699 And last little bit of the state
NOTE Confidence: 0.834178215

00:48:31.699 --> 00:48:34.200 is Tim Oberlander is a pediatrician
NOTE Confidence: 0.834178215

00:48:34.200 --> 00:48:36.615 at BC Children's Hospital and he
NOTE Confidence: 0.834178215

00:48:36.615 --> 00:48:38.571 has a group of individuals that
NOTE Confidence: 0.834178215

00:48:38.571 --> 00:48:40.894 were exposed to SSRI's in utero.

NOTE Confidence: 0.834178215

00:48:40.894 --> 00:48:43.582 And Susie looked at the neuroplastic

NOTE Confidence: 0.834178215

00:48:43.582 --> 00:48:45.942 protein reelin and found that

NOTE Confidence: 0.834178215

00:48:45.942 --> 00:48:47.778 an SSRI exposed individuals.

NOTE Confidence: 0.834178215

00:48:47.780 --> 00:48:49.550 It was a girls that showed

NOTE Confidence: 0.834178215

00:48:49.550 --> 00:48:50.730 a reduction in Wheeling.

NOTE Confidence: 0.834178215

00:48:50.730 --> 00:48:53.058 And in our rat and our rat model,

NOTE Confidence: 0.834178215

00:48:53.060 --> 00:48:55.195 we also see an early time point

NOTE Confidence: 0.834178215

00:48:55.195 --> 00:48:57.435 only that the walk maternal

NOTE Confidence: 0.834178215

00:48:57.435 --> 00:48:59.310 fluoxetine reduced neurogenesis.

NOTE Confidence: 0.834178215

00:48:59.310 --> 00:49:00.290 So if you're thinking

NOTE Confidence: 0.834178215

00:49:00.290 --> 00:49:01.025 about neoplastic proteins,

NOTE Confidence: 0.834178215

00:49:01.030 --> 00:49:04.214 it's kind of a mirroring of the two.

NOTE Confidence: 0.834178215

00:49:04.220 --> 00:49:05.688 So my last point,

NOTE Confidence: 0.834178215

00:49:05.688 --> 00:49:08.650 which you already know what the point is.

NOTE Confidence: 0.834178215

00:49:08.650 --> 00:49:10.106 So at the beginning of the pandemic,

NOTE Confidence: 0.834178215

00:49:10.110 --> 00:49:11.798 I had some undergrads and they're like, ohh,
NOTE Confidence: 0.834178215

00:49:11.798 --> 00:49:14.030 can't work in your lab because you can't go.
NOTE Confidence: 0.834178215

00:49:14.030 --> 00:49:14.870 And yeah, you know,
NOTE Confidence: 0.834178215

00:49:14.870 --> 00:49:15.710 play with the rats.
NOTE Confidence: 0.834178215

00:49:15.710 --> 00:49:16.566 And I said no,
NOTE Confidence: 0.834178215

00:49:16.566 --> 00:49:18.225 but you can do this study that
NOTE Confidence: 0.834178215

00:49:18.225 --> 00:49:19.509 I've been thinking about.
NOTE Confidence: 0.834178215

00:49:19.510 --> 00:49:23.320 And so I made them look at 3191
NOTE Confidence: 0.834178215

00:49:23.320 --> 00:49:26.794 articles published in 2009 and 2019.
NOTE Confidence: 0.834178215

00:49:26.794 --> 00:49:29.062 And they just look to see are
NOTE Confidence: 0.834178215

00:49:29.062 --> 00:49:30.900 they set in the article,
NOTE Confidence: 0.834178215

00:49:30.900 --> 00:49:32.988 do they say it's across 6
NOTE Confidence: 0.834178215

00:49:32.988 --> 00:49:34.032 journals in neuroscience,
NOTE Confidence: 0.800606148

00:49:34.040 --> 00:49:36.350 3IN neuroscience, 3IN psychiatry, do they
NOTE Confidence: 0.800606148

00:49:36.350 --> 00:49:39.619 say did they use males and females or not?
NOTE Confidence: 0.800606148

00:49:39.620 --> 00:49:41.756 So many more of these studies are using

NOTE Confidence: 0.800606148

00:49:41.756 --> 00:49:43.908 males and females and many fewer are

NOTE Confidence: 0.800606148

00:49:43.908 --> 00:49:46.069 omitting whether they what sex they used,

NOTE Confidence: 0.800606148

00:49:46.070 --> 00:49:48.954 which is that's the good news story.

NOTE Confidence: 0.800606148

00:49:48.960 --> 00:49:51.832 But then very few of these papers are

NOTE Confidence: 0.800606148

00:49:51.832 --> 00:49:54.577 using what we call an optimal design.

NOTE Confidence: 0.800606148

00:49:54.580 --> 00:49:56.632 And So what I mean by that is just

NOTE Confidence: 0.800606148

00:49:56.632 --> 00:49:58.480 did they disclose sample size?

NOTE Confidence: 0.800606148

00:49:58.480 --> 00:49:59.626 That was one of our criteria.

NOTE Confidence: 0.800606148

00:49:59.630 --> 00:50:02.836 Sample size. It's a pretty low bar.

NOTE Confidence: 0.800606148

00:50:02.840 --> 00:50:06.062 And then did they use it in the analysis?

NOTE Confidence: 0.800606148

00:50:06.070 --> 00:50:08.350 5% if you aren't looking,

NOTE Confidence: 0.800606148

00:50:08.350 --> 00:50:10.686 you're never going to see a sex difference,

NOTE Confidence: 0.800606148

00:50:10.690 --> 00:50:11.590 right, if you don't look.

NOTE Confidence: 0.800606148

00:50:11.590 --> 00:50:14.068 And then to my other horror,

NOTE Confidence: 0.800606148

00:50:14.070 --> 00:50:17.110 9 times more male only studies and female

NOTE Confidence: 0.800606148

00:50:17.110 --> 00:50:20.096 studies and we know those female specific.

NOTE Confidence: 0.800606148

00:50:20.100 --> 00:50:24.280 Experiences matter half the population.

NOTE Confidence: 0.800606148

00:50:24.280 --> 00:50:27.059 It would be great to increase that

NOTE Confidence: 0.800606148

00:50:27.059 --> 00:50:28.634 percentage and Neil Epperson's

NOTE Confidence: 0.800606148

00:50:28.634 --> 00:50:30.938 group has found his last slide,

NOTE Confidence: 0.800606148

00:50:30.940 --> 00:50:33.208 found as this was published just

NOTE Confidence: 0.800606148

00:50:33.208 --> 00:50:35.608 very recently that of the 20% of

NOTE Confidence: 0.800606148

00:50:35.608 --> 00:50:37.834 studies that they looked at that it

NOTE Confidence: 0.800606148

00:50:37.834 --> 00:50:40.114 properly about properly evaluating sex

NOTE Confidence: 0.800606148

00:50:40.114 --> 00:50:41.736 differences 72% found a difference.

NOTE Confidence: 0.800606148

00:50:41.736 --> 00:50:43.989 So that's why like if you look you

NOTE Confidence: 0.800606148

00:50:43.989 --> 00:50:45.627 will find you will likely find

NOTE Confidence: 0.788131351111111

00:50:47.650 --> 00:50:51.194 100%. So I tried to acknowledge all the

NOTE Confidence: 0.788131351111111

00:50:51.194 --> 00:50:53.984 people that have done the work in my lab,

NOTE Confidence: 0.788131351111111

00:50:53.990 --> 00:50:55.134 also the funding agencies

NOTE Confidence: 0.788131351111111

00:50:55.134 --> 00:50:56.278 I haven't talked about.

NOTE Confidence: 0.7881313511111111
00:50:56.280 --> 00:50:57.340 These are past and present.
NOTE Confidence: 0.7881313511111111
00:50:57.340 --> 00:50:59.594 I don't get money from all of
NOTE Confidence: 0.7881313511111111
00:50:59.594 --> 00:51:02.050 them right now and I just wanted
NOTE Confidence: 0.7881313511111111
00:51:02.050 --> 00:51:04.162 to end off on the organization
NOTE Confidence: 0.7881313511111111
00:51:04.238 --> 00:51:06.656 for the study of sex differences.
NOTE Confidence: 0.7881313511111111
00:51:06.660 --> 00:51:08.935 Please do I think about this group?
NOTE Confidence: 0.7881313511111111
00:51:08.940 --> 00:51:10.802 It's not just for neuroscience, it's it.
NOTE Confidence: 0.7881313511111111
00:51:10.802 --> 00:51:12.699 It is a focus more on sex.
NOTE Confidence: 0.7881313511111111
00:51:12.700 --> 00:51:13.892 But there is a little bit of gender
NOTE Confidence: 0.7881313511111111
00:51:13.892 --> 00:51:15.155 in the conference as well and it's
NOTE Confidence: 0.7881313511111111
00:51:15.155 --> 00:51:16.698 going to be in beautiful Calgary, AB.
NOTE Confidence: 0.7881313511111111
00:51:16.698 --> 00:51:19.082 So if you feel like learning about more.
NOTE Confidence: 0.7881313511111111
00:51:19.090 --> 00:51:22.537 These do join us, so thank you very much.
NOTE Confidence: 0.912127525
00:51:30.470 --> 00:51:30.930 All right.
NOTE Confidence: 0.699165225
00:51:32.390 --> 00:51:33.734 Some lovely comments coming through on
NOTE Confidence: 0.699165225

00:51:33.734 --> 00:51:35.259 the chapter saying and wonderful talks.

NOTE Confidence: 0.699165225

00:51:35.260 --> 00:51:36.680 Thank you so much for that

NOTE Confidence: 0.699165225

00:51:36.680 --> 00:51:37.868 questions for Doctor Glia.

NOTE Confidence: 0.92675772375

00:51:45.360 --> 00:51:47.440 Hi. Thank you so much for your talk.

NOTE Confidence: 0.92675772375

00:51:47.440 --> 00:51:49.609 I was wondering.

NOTE Confidence: 0.92675772375

00:51:49.610 --> 00:51:52.589 If you did any work and or have any

NOTE Confidence: 0.92675772375

00:51:52.589 --> 00:51:55.821 sort of inklings about what chemically

NOTE Confidence: 0.92675772375

00:51:55.821 --> 00:51:59.261 would make like brexanolone or I

NOTE Confidence: 0.92675772375

00:51:59.261 --> 00:52:02.015 think it was Anna Keenora effective

NOTE Confidence: 0.92675772375

00:52:02.015 --> 00:52:04.740 in these like postpartum symptoms

NOTE Confidence: 0.92675772375

00:52:04.740 --> 00:52:06.894 that fluoxetine you know doesn't have

NOTE Confidence: 0.92675772375

00:52:06.894 --> 00:52:07.814 that characteristic or something

NOTE Confidence: 0.92675772375

00:52:07.814 --> 00:52:09.158 like that like what is it chemically

NOTE Confidence: 0.92675772375

00:52:09.158 --> 00:52:11.210 that like might make those effective.

NOTE Confidence: 0.92675772375

00:52:11.210 --> 00:52:14.546 I think I think that's a great question

NOTE Confidence: 0.92675772375

00:52:14.550 --> 00:52:16.517 and I'd say that for brexanolone it's

NOTE Confidence: 0.92675772375

00:52:16.517 --> 00:52:18.353 easy because it's kind of replenishing

NOTE Confidence: 0.92675772375

00:52:18.353 --> 00:52:19.918 those hormones that we know.

NOTE Confidence: 0.92675772375

00:52:19.920 --> 00:52:20.606 Have diminished.

NOTE Confidence: 0.92675772375

00:52:20.606 --> 00:52:23.066 So I do think, remember I said oh you know,

NOTE Confidence: 0.92675772375

00:52:23.070 --> 00:52:24.630 part you may or may not remember I

NOTE Confidence: 0.92675772375

00:52:24.630 --> 00:52:26.717 said that part of our question has been

NOTE Confidence: 0.92675772375

00:52:26.717 --> 00:52:28.130 hey does antidepressant efficacy is it,

NOTE Confidence: 0.92675772375

00:52:28.130 --> 00:52:30.930 is it, does it change based on

NOTE Confidence: 0.92675772375

00:52:30.930 --> 00:52:33.020 hormonal status and something.

NOTE Confidence: 0.92675772375

00:52:33.020 --> 00:52:34.832 There's there's many things that are

NOTE Confidence: 0.92675772375

00:52:34.832 --> 00:52:37.111 going on in the postpartum that I

NOTE Confidence: 0.92675772375

00:52:37.111 --> 00:52:38.796 just don't think allows fluoxetine

NOTE Confidence: 0.92675772375

00:52:38.796 --> 00:52:41.237 to do its work long term like in in

NOTE Confidence: 0.92675772375

00:52:41.237 --> 00:52:43.416 our model it actually reverses the

NOTE Confidence: 0.92675772375

00:52:43.416 --> 00:52:46.308 maternal care deficits really early on

NOTE Confidence: 0.92675772375

00:52:46.308 --> 00:52:49.577 but for some reason it stops working so.
NOTE Confidence: 0.92675772375

00:52:49.580 --> 00:52:50.018 You know,
NOTE Confidence: 0.92675772375

00:52:50.018 --> 00:52:51.332 I think that that has something
NOTE Confidence: 0.92675772375

00:52:51.332 --> 00:52:52.798 to do with the information.
NOTE Confidence: 0.92675772375

00:52:52.800 --> 00:52:54.893 I probably don't know that's what Anakinra
NOTE Confidence: 0.92675772375

00:52:54.893 --> 00:52:56.905 is doing is you know blocking those
NOTE Confidence: 0.92675772375

00:52:56.905 --> 00:52:59.500 effects of IL 1 beta but allopregnanolone,
NOTE Confidence: 0.92675772375

00:52:59.500 --> 00:53:02.484 I think that part of that is by
NOTE Confidence: 0.92675772375

00:53:02.484 --> 00:53:04.985 that mechanism of action is by
NOTE Confidence: 0.92675772375

00:53:04.985 --> 00:53:07.206 replacing those that metabolite of
NOTE Confidence: 0.92675772375

00:53:07.206 --> 00:53:09.138 progesterone that's that's missing.
NOTE Confidence: 0.92675772375

00:53:09.140 --> 00:53:11.336 So just my system that you know the other
NOTE Confidence: 0.92675772375

00:53:11.336 --> 00:53:13.398 thing I think about a lot is plasticity.
NOTE Confidence: 0.92675772375

00:53:13.400 --> 00:53:15.857 So that of course I think about the campus
NOTE Confidence: 0.92675772375

00:53:15.857 --> 00:53:18.159 and we see those reductions in plasticity
NOTE Confidence: 0.92675772375

00:53:18.159 --> 00:53:20.778 and it's not just us in the postpartum,

NOTE Confidence: 0.92675772375

00:53:20.780 --> 00:53:22.958 it's pretty long term and things

NOTE Confidence: 0.92675772375

00:53:22.958 --> 00:53:24.410 that normally would upregulate

NOTE Confidence: 0.92675772375

00:53:24.469 --> 00:53:25.678 it don't necessarily.

NOTE Confidence: 0.92675772375

00:53:25.680 --> 00:53:27.090 So maybe it's that maybe it's

NOTE Confidence: 0.92675772375

00:53:27.090 --> 00:53:28.396 like a clamping of homeostasis

NOTE Confidence: 0.92675772375

00:53:28.396 --> 00:53:30.244 really like it's just we're not,

NOTE Confidence: 0.92675772375

00:53:30.250 --> 00:53:32.202 that system is not allowed to be as

NOTE Confidence: 0.92675772375

00:53:32.202 --> 00:53:34.374 liable as it should be and we need that.

NOTE Confidence: 0.92675772375

00:53:34.380 --> 00:53:37.922 There are many reasons to think that that's

NOTE Confidence: 0.92675772375

00:53:37.922 --> 00:53:40.328 important for the efficacy of fluoxetine.

NOTE Confidence: 0.92675772375

00:53:40.330 --> 00:53:42.620 Because that guy named uh.

NOTE Confidence: 0.92675772375

00:53:42.620 --> 00:53:43.478 That's wrong.

NOTE Confidence: 0.92675772375

00:53:43.478 --> 00:53:44.336 And Herbert,

NOTE Confidence: 0.92675772375

00:53:44.336 --> 00:53:46.481 Joe Herbert at Cambridge University

NOTE Confidence: 0.92675772375

00:53:46.481 --> 00:53:49.803 has also shown that you don't get that

NOTE Confidence: 0.92675772375

00:53:49.803 --> 00:53:51.864 obligation and neurogenesis unless you
NOTE Confidence: 0.92675772375

00:53:51.864 --> 00:53:54.594 give corticosterone in like a daily dosage.
NOTE Confidence: 0.92675772375

00:53:54.600 --> 00:53:56.175 If you give a pellets or you're
NOTE Confidence: 0.92675772375

00:53:56.175 --> 00:53:57.600 clamping at a certain level,
NOTE Confidence: 0.92675772375

00:53:57.600 --> 00:53:58.700 you don't get an increase.
NOTE Confidence: 0.92675772375

00:53:58.700 --> 00:54:00.434 That's in males.
NOTE Confidence: 0.92675772375

00:54:00.434 --> 00:54:03.902 So something about that ability to.
NOTE Confidence: 0.92675772375

00:54:03.910 --> 00:54:04.606 Move, be liable.
NOTE Confidence: 0.92675772375

00:54:04.606 --> 00:54:06.550 I don't know how else to say that,
NOTE Confidence: 0.92675772375

00:54:06.550 --> 00:54:07.618 but I think it has something
NOTE Confidence: 0.92675772375

00:54:07.618 --> 00:54:08.330 to do with homeostasis.
NOTE Confidence: 0.5942407933333333

00:54:11.300 --> 00:54:14.340 To change this. Something.
NOTE Confidence: 0.76798717

00:54:18.400 --> 00:54:19.936 The person who I always think is Allison,
NOTE Confidence: 0.76798717

00:54:19.940 --> 00:54:23.916 who's not Allison. April, I'm so sorry.
NOTE Confidence: 0.76798717

00:54:23.920 --> 00:54:25.156 That's from now on you're out.
NOTE Confidence: 0.76798717

00:54:25.160 --> 00:54:27.267 But could you please change your name

NOTE Confidence: 0.76798717

00:54:27.267 --> 00:54:29.378 because I clearly haven't encoded that.

NOTE Confidence: 0.76798717

00:54:29.380 --> 00:54:30.560 I need some better pattern

NOTE Confidence: 0.76798717

00:54:30.560 --> 00:54:31.268 separation or something.

NOTE Confidence: 0.76798717

00:54:31.270 --> 00:54:32.734 Yes, go ahead. Sorry.

NOTE Confidence: 0.76798717

00:54:32.734 --> 00:54:35.530 April, April, April.

NOTE Confidence: 0.76798717

00:54:35.530 --> 00:54:40.000 So you talked about like different?

NOTE Confidence: 0.76798717

00:54:40.000 --> 00:54:41.392 Aspects, so like hippocampus,

NOTE Confidence: 0.76798717

00:54:41.392 --> 00:54:43.480 the stresses in the immune system.

NOTE Confidence: 0.76798717

00:54:43.480 --> 00:54:48.359 I'm curious if you have looked at

NOTE Confidence: 0.76798717

00:54:48.360 --> 00:54:50.625 microglial phenotypes in the influence

NOTE Confidence: 0.76798717

00:54:50.625 --> 00:54:53.484 like in the inflammation and immune

NOTE Confidence: 0.76798717

00:54:53.484 --> 00:54:56.079 system route and postpartum depression,

NOTE Confidence: 0.76798717

00:54:56.080 --> 00:54:58.200 if you could speak on that at all.

NOTE Confidence: 0.76798717

00:54:58.200 --> 00:55:02.022 Yes, we have and we're and you're

NOTE Confidence: 0.76798717

00:55:02.022 --> 00:55:04.969 going to ask me what we found?

NOTE Confidence: 0.76798717

00:55:04.970 --> 00:55:07.308 Uh, So what happened was that particular

NOTE Confidence: 0.76798717

00:55:07.308 --> 00:55:09.769 study is the one that was anakinra.

NOTE Confidence: 0.76798717

00:55:09.770 --> 00:55:10.890 So we have some of the data.

NOTE Confidence: 0.76798717

00:55:10.890 --> 00:55:12.370 We don't have all of the data yet.

NOTE Confidence: 0.76798717

00:55:12.370 --> 00:55:14.246 And that was one of those pandemic,

NOTE Confidence: 0.76798717

00:55:14.250 --> 00:55:14.768 you know,

NOTE Confidence: 0.76798717

00:55:14.768 --> 00:55:16.581 a woman named Emily Clark started that

NOTE Confidence: 0.76798717

00:55:16.581 --> 00:55:18.639 and then the pandemic hit and she decided

NOTE Confidence: 0.76798717

00:55:18.639 --> 00:55:20.636 I'm going to go and do an MD instead,

NOTE Confidence: 0.76798717

00:55:20.640 --> 00:55:23.000 which I don't blame her.

NOTE Confidence: 0.76798717

00:55:23.000 --> 00:55:25.960 And uh, I don't remember,

NOTE Confidence: 0.76798717

00:55:25.960 --> 00:55:27.346 but it was a low end because

NOTE Confidence: 0.76798717

00:55:27.346 --> 00:55:28.780 we had to stop the study.

NOTE Confidence: 0.76798717

00:55:28.780 --> 00:55:29.392 So we'll,

NOTE Confidence: 0.76798717

00:55:29.392 --> 00:55:31.534 we'll have that information for you soon,

NOTE Confidence: 0.76798717

00:55:31.540 --> 00:55:32.580 I think.

NOTE Confidence: 0.76798717

00:55:32.580 --> 00:55:36.740 I mean microglia in general anyway are there.

NOTE Confidence: 0.76798717

00:55:36.740 --> 00:55:37.667 Then there's a,

NOTE Confidence: 0.76798717

00:55:37.667 --> 00:55:39.212 there's a change that happens

NOTE Confidence: 0.76798717

00:55:39.212 --> 00:55:40.833 at postpartum day early like by

NOTE Confidence: 0.76798717

00:55:40.833 --> 00:55:42.460 8:00 and then it comes back up.

NOTE Confidence: 0.76798717

00:55:42.460 --> 00:55:43.452 It's restored really quickly.

NOTE Confidence: 0.76798717

00:55:43.452 --> 00:55:44.692 They do seem more angry.

NOTE Confidence: 0.76798717

00:55:44.700 --> 00:55:47.500 So they have that and me void shape,

NOTE Confidence: 0.76798717

00:55:47.500 --> 00:55:49.190 not reactive, but ameboid shape.

NOTE Confidence: 0.76798717

00:55:49.190 --> 00:55:50.900 So there are some changes,

NOTE Confidence: 0.76798717

00:55:50.900 --> 00:55:51.844 but they're pretty early.

NOTE Confidence: 0.76798717

00:55:51.844 --> 00:55:53.260 They don't last a long time.

NOTE Confidence: 0.76798717

00:55:53.260 --> 00:55:54.790 But I don't know how to

NOTE Confidence: 0.76798717

00:55:54.790 --> 00:55:55.555 fluoxetine what's happening,

NOTE Confidence: 0.76798717

00:55:55.560 --> 00:55:59.326 and that is something we'll look at.

NOTE Confidence: 0.76798717

00:55:59.330 --> 00:55:59.595 Yeah,
NOTE Confidence: 0.76798717
00:55:59.595 --> 00:56:01.185 we also want to do some
NOTE Confidence: 0.76798717
00:56:01.185 --> 00:56:02.270 RAC and microglia too.
NOTE Confidence: 0.76798717
00:56:02.270 --> 00:56:03.518 So that's on the,
NOTE Confidence: 0.76798717
00:56:03.518 --> 00:56:06.454 that's in the on the books, super exciting.
NOTE Confidence: 0.76798717
00:56:06.454 --> 00:56:07.518 Thank you.
NOTE Confidence: 0.6595031875
00:56:08.050 --> 00:56:09.940 And of course thinking about the
NOTE Confidence: 0.6595031875
00:56:09.940 --> 00:56:10.995 intergenerational transmission of
NOTE Confidence: 0.6595031875
00:56:10.995 --> 00:56:12.920 mental health, Stacy Bilbo has some
NOTE Confidence: 0.6595031875
00:56:12.920 --> 00:56:16.990 wonderful micro gear data. Tracy Bale.
NOTE Confidence: 0.754163781111111
00:56:18.440 --> 00:56:19.875 At the intersection of prenatal
NOTE Confidence: 0.754163781111111
00:56:19.875 --> 00:56:21.023 stress and environmental pollution.
NOTE Confidence: 0.611038075714286
00:56:22.560 --> 00:56:23.564 Yeah, she's got some.
NOTE Confidence: 0.611038075714286
00:56:23.564 --> 00:56:25.286 I love state, Stacy Bubble and
NOTE Confidence: 0.611038075714286
00:56:25.286 --> 00:56:26.678 Tracy Bale. I love them both.
NOTE Confidence: 0.769211664
00:56:27.230 --> 00:56:29.050 Thank you for your talk.

NOTE Confidence: 0.769211664

00:56:29.050 --> 00:56:31.450 I have just a curiosity about

NOTE Confidence: 0.769211664

00:56:31.450 --> 00:56:32.796 other medications that we know

NOTE Confidence: 0.769211664

00:56:32.796 --> 00:56:34.126 have an effect on inflammation,

NOTE Confidence: 0.769211664

00:56:34.130 --> 00:56:36.811 like statins or metformin, for example.

NOTE Confidence: 0.769211664

00:56:36.811 --> 00:56:40.160 Like, is there any research to show you know,

NOTE Confidence: 0.769211664

00:56:40.160 --> 00:56:42.020 their benefit because it seems like

NOTE Confidence: 0.769211664

00:56:42.020 --> 00:56:43.968 it's the same kind of mechanism

NOTE Confidence: 0.769211664

00:56:43.970 --> 00:56:45.580 increasing inflammatory markers.

NOTE Confidence: 0.777320125833333

00:56:45.630 --> 00:56:49.172 Yeah. You know, that is really an

NOTE Confidence: 0.777320125833333

00:56:49.172 --> 00:56:51.389 interesting question and I know,

NOTE Confidence: 0.777320125833333

00:56:51.390 --> 00:56:52.820 I, I, I don't know.

NOTE Confidence: 0.777320125833333

00:56:52.820 --> 00:56:54.476 The answer like off the top of my head.

NOTE Confidence: 0.777320125833333

00:56:54.480 --> 00:56:57.056 But I know there's a researcher called

NOTE Confidence: 0.777320125833333

00:56:57.056 --> 00:56:59.012 Hillary Brown who's in University

NOTE Confidence: 0.777320125833333

00:56:59.012 --> 00:57:01.370 of Toronto who looks at autoimmune

NOTE Confidence: 0.777320125833333

00:57:01.370 --> 00:57:03.177 disorders and Perry Natal mental
NOTE Confidence: 0.777320125833333

00:57:03.177 --> 00:57:06.310 illness and it it's not a clear story.
NOTE Confidence: 0.777320125833333

00:57:06.310 --> 00:57:11.206 I think there I think it's something oh oh.
NOTE Confidence: 0.777320125833333

00:57:11.210 --> 00:57:15.158 So interferon therapy I do believe
NOTE Confidence: 0.777320125833333

00:57:15.160 --> 00:57:17.392 causes more depressive symptoms and in
NOTE Confidence: 0.777320125833333

00:57:17.392 --> 00:57:19.820 females than in males and in humans.
NOTE Confidence: 0.777320125833333

00:57:19.820 --> 00:57:21.353 So I think that there is more
NOTE Confidence: 0.777320125833333

00:57:21.353 --> 00:57:23.229 of a tie to inflammation and.
NOTE Confidence: 0.777320125833333

00:57:23.230 --> 00:57:24.676 And females, but it's, you know,
NOTE Confidence: 0.777320125833333

00:57:24.680 --> 00:57:27.040 that's not depression either.
NOTE Confidence: 0.777320125833333

00:57:27.040 --> 00:57:28.260 So I don't know.
NOTE Confidence: 0.777320125833333

00:57:28.260 --> 00:57:29.520 That's a really good question though.
NOTE Confidence: 0.777320125833333

00:57:29.710 --> 00:57:30.300 Thank you.
NOTE Confidence: 0.776884551176471

00:57:33.050 --> 00:57:34.305 Just quickly check the chat
NOTE Confidence: 0.776884551176471

00:57:34.305 --> 00:57:36.121 and just maybe in terms of the
NOTE Confidence: 0.776884551176471

00:57:36.121 --> 00:57:37.386 CFOs data that you presented,

NOTE Confidence: 0.776884551176471

00:57:37.390 --> 00:57:39.246 just looks really fascinating.

NOTE Confidence: 0.776884551176471

00:57:39.246 --> 00:57:43.338 So are you aware of any data on say

NOTE Confidence: 0.776884551176471

00:57:43.338 --> 00:57:45.518 transcranial stimulation studies or you

NOTE Confidence: 0.776884551176471

00:57:45.518 --> 00:57:47.849 know insects differences in terms of

NOTE Confidence: 0.776884551176471

00:57:47.849 --> 00:57:50.620 the regions that need to be targeted?

NOTE Confidence: 0.654342954

00:57:51.250 --> 00:57:52.650 Non of course not enough,

NOTE Confidence: 0.654342954

00:57:52.650 --> 00:57:54.882 but the studies that are out there show

NOTE Confidence: 0.654342954

00:57:54.882 --> 00:57:57.017 that it's actually better for females than

NOTE Confidence: 0.654342954

00:57:57.017 --> 00:57:59.617 it is for women than it is for for men,

NOTE Confidence: 0.654342954

00:57:59.620 --> 00:58:03.540 which is fascinating and I'll just give you.

NOTE Confidence: 0.654342954

00:58:03.540 --> 00:58:06.220 A so I I tried to look at that because

NOTE Confidence: 0.654342954

00:58:06.299 --> 00:58:08.579 we've actually done some dread work

NOTE Confidence: 0.654342954

00:58:08.579 --> 00:58:10.198 in that negative cognitive bias.

NOTE Confidence: 0.654342954

00:58:10.198 --> 00:58:12.440 And this is what I'm really pushing for.

NOTE Confidence: 0.654342954

00:58:12.440 --> 00:58:13.616 It was just some pilot work,

NOTE Confidence: 0.654342954

00:58:13.620 --> 00:58:15.181 but it I'm not going to tell
NOTE Confidence: 0.654342954

00:58:15.181 --> 00:58:16.400 you where or anything,
NOTE Confidence: 0.654342954

00:58:16.400 --> 00:58:17.835 but it went in the opposite direction.
NOTE Confidence: 0.654342954

00:58:17.840 --> 00:58:21.580 So when we shut down.
NOTE Confidence: 0.654342954

00:58:21.580 --> 00:58:23.918 Glutamate receptors and then a certain area,
NOTE Confidence: 0.654342954

00:58:23.920 --> 00:58:26.038 it actually increased negative bias in
NOTE Confidence: 0.654342954

00:58:26.038 --> 00:58:28.339 the females and decreased it in the male.
NOTE Confidence: 0.654342954

00:58:28.340 --> 00:58:29.360 So we're really excited about.
NOTE Confidence: 0.654342954

00:58:29.360 --> 00:58:30.482 So that's why exactly why I
NOTE Confidence: 0.654342954

00:58:30.482 --> 00:58:31.808 looked at that because I wanted to
NOTE Confidence: 0.654342954

00:58:31.808 --> 00:58:32.698 see is there any evidence,
NOTE Confidence: 0.654342954

00:58:32.700 --> 00:58:33.699 but you know,
NOTE Confidence: 0.654342954

00:58:33.699 --> 00:58:36.153 like that paper like 5% of people are
NOTE Confidence: 0.654342954

00:58:36.153 --> 00:58:38.580 looking at like using sex as a variable,
NOTE Confidence: 0.654342954

00:58:38.580 --> 00:58:40.029 like they use it as a covariate
NOTE Confidence: 0.654342954

00:58:40.029 --> 00:58:41.638 of let's say we accounted for it,

NOTE Confidence: 0.654342954

00:58:41.640 --> 00:58:44.376 accounted for it by having an equal number.

NOTE Confidence: 0.654342954

00:58:44.380 --> 00:58:45.826 But that's not showing me the.

NOTE Confidence: 0.654342954

00:58:45.830 --> 00:58:47.798 So if you're doing that work,

NOTE Confidence: 0.654342954

00:58:47.800 --> 00:58:49.851 even if you're not just give like

NOTE Confidence: 0.654342954

00:58:49.851 --> 00:58:51.180 make them different colors.

NOTE Confidence: 0.654342954

00:58:51.180 --> 00:58:54.090 On the graph so I can look at it and see.

NOTE Confidence: 0.654342954

00:58:54.090 --> 00:58:54.970 And the second thing is,

NOTE Confidence: 0.654342954

00:58:54.970 --> 00:58:56.951 don't tell me you don't have the

NOTE Confidence: 0.654342954

00:58:56.951 --> 00:58:58.349 power without doing it right?

NOTE Confidence: 0.654342954

00:58:58.350 --> 00:59:01.045 So actually it can increase your power.

NOTE Confidence: 0.654342954

00:59:01.050 --> 00:59:02.863 If you have a sex difference it

NOTE Confidence: 0.654342954

00:59:02.863 --> 00:59:04.010 will increase your power.

NOTE Confidence: 0.654342954

00:59:04.010 --> 00:59:06.082 And Murshed AL 2015 they did a

NOTE Confidence: 0.654342954

00:59:06.082 --> 00:59:08.268 really good job of explaining that.

NOTE Confidence: 0.633283416666667

00:59:09.600 --> 00:59:11.838 Kyle Pruitt does have a question.

NOTE Confidence: 0.633283416666667

00:59:11.840 --> 00:59:13.256 Kyle, would you like to unmute
NOTE Confidence: 0.633283416666667

00:59:13.256 --> 00:59:14.680 and ask doctor glia question?
NOTE Confidence: 0.84143864375

00:59:17.650 --> 00:59:18.954 I was told to look at the camera.
NOTE Confidence: 0.927008025

00:59:22.180 --> 00:59:24.730 Quick question, I'm sorry I missed the
NOTE Confidence: 0.927008025

00:59:24.730 --> 00:59:26.820 1st 3 minutes of your presentation,
NOTE Confidence: 0.927008025

00:59:26.820 --> 00:59:30.061 but I wondered if you if you included
NOTE Confidence: 0.927008025

00:59:30.061 --> 00:59:33.470 a trigger warning to the vast numbers
NOTE Confidence: 0.927008025

00:59:33.565 --> 00:59:36.635 of upper academics who are now pretty
NOTE Confidence: 0.927008025

00:59:36.635 --> 00:59:39.480 convinced that sex differences don't exist.
NOTE Confidence: 0.873922721428572

00:59:41.030 --> 00:59:43.059 I said I don't know if you. I did talk
NOTE Confidence: 0.873922721428572

00:59:43.059 --> 00:59:44.830 about how I don't think it's sexist.
NOTE Confidence: 0.651143117142857

00:59:45.000 --> 00:59:47.807 OK, good. That's good to be warned.
NOTE Confidence: 0.624510106

00:59:50.220 --> 00:59:52.930 I also yeah, I really,
NOTE Confidence: 0.81088518625

00:59:53.210 --> 00:59:54.332 I could give a whole talk
NOTE Confidence: 0.81088518625

00:59:54.332 --> 00:59:55.410 about that. But yeah,
NOTE Confidence: 0.754490446666667

00:59:56.120 --> 00:59:58.820 I also appreciated your mantra about

NOTE Confidence: 0.754490446666667

00:59:58.820 --> 01:00:02.404 if you don't look you'll see the same

NOTE Confidence: 0.754490446666667

01:00:02.404 --> 01:00:04.812 thing contaminates 87% of all the

NOTE Confidence: 0.754490446666667

01:00:04.812 --> 01:00:07.080 parent child research on on variables

NOTE Confidence: 0.754490446666667

01:00:07.153 --> 01:00:09.069 and resilience because variables

NOTE Confidence: 0.754490446666667

01:00:09.069 --> 01:00:11.943 don't exist in all those studies,

NOTE Confidence: 0.754490446666667

01:00:11.950 --> 01:00:13.700 no matter what they title the paper,

NOTE Confidence: 0.754490446666667

01:00:13.700 --> 01:00:16.864 it's extremely important that it

NOTE Confidence: 0.754490446666667

01:00:16.864 --> 01:00:19.804 ruins so much wonderful research.

NOTE Confidence: 0.754490446666667

01:00:19.810 --> 01:00:22.006 And I couldn't agree more with

NOTE Confidence: 0.754490446666667

01:00:22.006 --> 01:00:23.914 your your your incredible passion

NOTE Confidence: 0.754490446666667

01:00:23.914 --> 01:00:26.690 for including it now. Thank you.

NOTE Confidence: 0.68702568375

01:00:27.410 --> 01:00:28.706 About to say, but you have fetal sex.

NOTE Confidence: 0.68702568375

01:00:28.710 --> 01:00:30.019 A lot of people don't include it,

NOTE Confidence: 0.68702568375

01:00:30.020 --> 01:00:31.609 and I do think it's really important,

NOTE Confidence: 0.68702568375

01:00:31.610 --> 01:00:32.525 especially when they're

NOTE Confidence: 0.68702568375

01:00:32.525 --> 01:00:33.440 at inflammatory markers.

NOTE Confidence: 0.68702568375

01:00:33.440 --> 01:00:34.840 And then don't tell me

NOTE Confidence: 0.68702568375

01:00:34.840 --> 01:00:36.840 is it a male or female.

NOTE Confidence: 0.68702568375

01:00:36.840 --> 01:00:38.205 We know that's going to change things,

NOTE Confidence: 0.68702568375

01:00:38.210 --> 01:00:41.416 so I'm sure it muddies the waters.

NOTE Confidence: 0.68702568375

01:00:41.420 --> 01:00:42.910 Thank you.

NOTE Confidence: 0.796145329

01:00:42.910 --> 01:00:44.955 Please join me in thanking

NOTE Confidence: 0.796145329

01:00:44.955 --> 01:00:47.000 Dr Galea one more time.