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

 $00:00:01.232 \rightarrow 00:00:03.416$ it's a pleasure to welcome you here

NOTE Confidence: 0.894668615882353

 $00:00:03.416 \longrightarrow 00:00:05.054$ to Grand Rounds in the Cohen.

NOTE Confidence: 0.894668615882353

 $00:00:05.060 \longrightarrow 00:00:09.160$ No, oh, there we go.

NOTE Confidence: 0.894668615882353

 $00:00:09.160 \longrightarrow 00:00:10.390$ Is that a little bit better?

NOTE Confidence: 0.78138117625

 $00:00:12.780 \longrightarrow 00:00:14.620$ 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

 $00{:}00{:}17.960 \dashrightarrow 00{:}00{:}20.596$ I see some new faces in the audience

NOTE Confidence: 0.8925019965

 $00{:}00{:}20.596 \dashrightarrow 00{:}00{:}23.092$ and some new faces joining us on zoom.

NOTE Confidence: 0.8925019965

 $00{:}00{:}23.100 \dashrightarrow 00{:}00{:}24.396$ 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

 $00{:}00{:}26.386 \dashrightarrow 00{:}00{:}28.861$ pleasure to Co-chair the Grand Rounds

NOTE Confidence: 0.8925019965

 $00:00:28.861 \rightarrow 00:00:31.395$ committee here in the Child Study Center.

00:00:31.400 --> 00:00:33.560 And now just a little note about next NOTE Confidence: 0.8925019965 $00{:}00{:}33.560 \dashrightarrow 00{:}00{:}35.799$ week we'll be continuing our in person NOTE Confidence: 0.8925019965 $00{:}00{:}35.799 \dashrightarrow 00{:}00{:}37.830$ Grand Round series with Doctor Pasco NOTE Confidence: 0.8925019965 $00:00:37.830 \longrightarrow 00:00:40.272$ 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 $00:00:42.248 \rightarrow 00:00:43.960$ with sharing his perspective on NOTE Confidence: 0.8925019965 $00{:}00{:}43.960 \dashrightarrow 00{:}00{:}45.760$ attachment theory with the rest NOTE Confidence: 0.8925019965 $00:00:45.760 \longrightarrow 00:00:47.665$ Perspective analysis and then a NOTE Confidence: 0.8925019965 $00{:}00{:}47.665 \dashrightarrow 00{:}00{:}49.189$ 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 $00{:}00{:}51.596 \dashrightarrow 00{:}00{:}52.799$ international scholar that's NOTE Confidence: 0.8925019965 00:00:52.799 --> 00:00:53.769 joining us today, NOTE Confidence: 0.8925019965 $00:00:53.770 \rightarrow 00:00:55.265$ it's my pleasure to introduce NOTE Confidence: 0.8925019965 $00:00:55.265 \dashrightarrow 00:00:57.104$ and to welcome Doctor Liisa Galea NOTE Confidence: 0.8925019965 $00:00:57.104 \rightarrow 00:00:58.529$ to the Child Study Center. NOTE Confidence: 0.8925019965 $00:00:58.530 \rightarrow 00:01:00.378$ We have tried to make this talk happen

 $00:01:00.378 \rightarrow 00:01:02.341$ for over a year now through various

NOTE Confidence: 0.8925019965

 $00{:}01{:}02{.}341 \dashrightarrow 00{:}01{:}04{.}092$ different phases of the pandemic and

NOTE Confidence: 0.8925019965

 $00:01:04.092 \rightarrow 00:01:05.592$ it really is wonderful that you've

NOTE Confidence: 0.8925019965

 $00:01:05.592 \rightarrow 00:01:07.506$ been able to join us in person.

NOTE Confidence: 0.8925019965

 $00{:}01{:}07{.}506 \dashrightarrow 00{:}01{:}09{.}754$ And today now when I was tasked

NOTE Confidence: 0.8925019965

 $00:01:09.754 \rightarrow 00:01:11.530$ 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

 $00{:}01{:}13.480 \dashrightarrow 00{:}01{:}15.196$ but then I was worried about

NOTE Confidence: 0.8925019965

 $00:01:15.196 \longrightarrow 00:01:16.054$ the environmental impact.

NOTE Confidence: 0.8925019965

 $00:01:16.060 \dashrightarrow 00:01:17.940$ 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 $\operatorname{-->}$ 00:01:22.299 a few of the highlights and from

NOTE Confidence: 0.8925019965

 $00:01:22.299 \dashrightarrow 00:01:23.855$ Doctor Galea's illustrious career.

NOTE Confidence: 0.8925019965

 $00{:}01{:}23.860 \dashrightarrow 00{:}01{:}25.702$ She is a professor of psychology

NOTE Confidence: 0.8925019965

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

 $00:01:27.460 \longrightarrow 00:01:28.930$ where she also serves as a health

NOTE Confidence: 0.8925019965

 $00{:}01{:}28{.}930 \dashrightarrow 00{:}01{:}30{.}213$ adviser to the vice President

NOTE Confidence: 0.8925019965

 $00{:}01{:}30{.}213 \dashrightarrow 00{:}01{:}31{.}723$ for Research and Innovation and

NOTE Confidence: 0.8925019965

 $00{:}01{:}31.723 \dashrightarrow 00{:}01{:}33.292$ the scientific advisor for the

NOTE Confidence: 0.8925019965

 $00{:}01{:}33.292 \dashrightarrow 00{:}01{:}34.520$ Women's Health Research Institute.

NOTE Confidence: 0.8925019965

 $00:01:34.520 \longrightarrow 00:01:36.100$ 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

 $00{:}01{:}39{.}650 \dashrightarrow 00{:}01{:}41{.}498$ And I think may be you'll share some NOTE Confidence: 0.8925019965

 $00{:}01{:}41{.}498 \dashrightarrow 00{:}01{:}42{.}919$ information about how others perhaps

NOTE Confidence: 0.8925019965

 $00{:}01{:}42{.}919 \dashrightarrow 00{:}01{:}44{.}653$ join this initiative in the future.

NOTE Confidence: 0.8925019965

 $00:01:44.660 \rightarrow 00:01:46.444$ And she is a fellow with the Cavalli.

NOTE Confidence: 0.8925019965

 $00:01:46.450 \longrightarrow 00:01:49.140$ Foundation and with the International

NOTE Confidence: 0.8925019965

 $00{:}01{:}49{.}140 \dashrightarrow 00{:}01{:}51{.}292$ Behavioral Neuroscience Society and

NOTE Confidence: 0.8925019965

 $00{:}01{:}51{.}292 \dashrightarrow 00{:}01{:}54{.}406$ is the chief Editor of Frontiers in

NOTE Confidence: 0.8925019965

 $00:01:54.406 \rightarrow 00:01:56.720$ your endocrinology and the incoming

 $00:01:56.720 \rightarrow 00:01:58.244$ 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

 $00{:}02{:}00{.}530 \dashrightarrow 00{:}02{:}02{.}728$ which I think we'll hear a little

NOTE Confidence: 0.8925019965

 $00:02:02.728 \longrightarrow 00:02:04.719$ bit more about later on today.

NOTE Confidence: 0.8925019965

 $00{:}02{:}04.720 \dashrightarrow 00{:}02{:}07.660$ 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

 $00:02:11.260 \longrightarrow 00:02:14.144$ I believe will be the incoming inaugural

NOTE Confidence: 0.8925019965

 $00:02:14.144 \longrightarrow 00:02:16.469$ chair in women's mental health.

NOTE Confidence: 0.8925019965

 $00:02:16.470 \longrightarrow 00:02:18.130$ This interfere addiction and mental

NOTE Confidence: 0.8925019965

 $00{:}02{:}18.130 \dashrightarrow 00{:}02{:}20.788$ health and also known as Cam H in Toronto,

NOTE Confidence: 0.8925019965

 $00:02:20.790 \longrightarrow 00:02:22.834$ which is one of the world's leading

NOTE Confidence: 0.8925019965

 $00{:}02{:}22{.}834 \dashrightarrow 00{:}02{:}24{.}481$ 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

 $00{:}02{:}27.850 \dashrightarrow 00{:}02{:}29.776$ And I think these leadership positions,

 $00:02:29.780 \longrightarrow 00:02:32.054$ these honors are just a testament

NOTE Confidence: 0.8925019965

 $00{:}02{:}32.054 \dashrightarrow 00{:}02{:}33.908$ to the tremendous contribution that

NOTE Confidence: 0.8925019965

 $00{:}02{:}33{.}908 \dashrightarrow 00{:}02{:}35{.}854$ doctor Gillian her lab has made to

NOTE Confidence: 0.8925019965

 $00:02:35.854 \rightarrow 00:02:38.188$ sex and gender based health research,

NOTE Confidence: 0.8925019965

 $00:02:38.190 \longrightarrow 00:02:40.350$ which we're very excited to learn

NOTE Confidence: 0.8925019965

 $00:02:40.350 \longrightarrow 00:02:41.430$ more about today.

NOTE Confidence: 0.8925019965

 $00:02:41.430 \longrightarrow 00:02:43.614$ So please join me in thanking Dr Galea

NOTE Confidence: 0.8925019965

 $00:02:43.614 \rightarrow 00:02:45.669$ for joining us today for Grand Rounds.

NOTE Confidence: 0.852982068888889

 $00{:}02{:}52{.}690 \dashrightarrow 00{:}02{:}54{.}862$ Well, thank you so much for

NOTE Confidence: 0.852982068888889

 $00:02:54.862 \longrightarrow 00:02:55.948$ that kind introduction.

NOTE Confidence: 0.852982068888889

 $00:02:55.950 \longrightarrow 00:02:57.366$ My bio is not that big.

NOTE Confidence: 0.852982068888889

 $00:02:57.370 \longrightarrow 00:02:59.570$ 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

 $00:03:01.470 \rightarrow 00:03:03.118$ So I also thank you for the opportunity

NOTE Confidence: 0.852982068888889

 $00:03:03.118 \longrightarrow 00:03:04.550$ to talk about what I'm really,

NOTE Confidence: 0.852982068888889

 $00:03:04.550 \rightarrow 00:03:05.862$ really passionate about saying,

- NOTE Confidence: 0.852982068888889
- $00{:}03{:}05{.}862 \dashrightarrow 00{:}03{:}08{.}272$ to talk for the first half about
- NOTE Confidence: 0.852982068888889
- $00:03:08.272 \rightarrow 00:03:10.167$ 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
- $00:03:11.690 \rightarrow 00:03:14.034$ And then I'm going to pivot to talk
- NOTE Confidence: 0.852982068888889
- $00{:}03{:}14.034 \dashrightarrow 00{:}03{:}15.295$ about Women's Health and how that
- NOTE Confidence: 0.852982068888889
- $00:03:15.295 \dashrightarrow 00:03:16.620$ 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
- $00:03:23.340 \longrightarrow 00:03:25.713$ which is part of the unseated traditional
- NOTE Confidence: 0.852982068888889
- $00{:}03{:}25{.}713 \dashrightarrow 00{:}03{:}27{.}376$ and an cestral territories of the
- NOTE Confidence: 0.852982068888889
- 00:03:27.376 --> 00:03:28.856 Coast Salish peoples and Musqueam,
- NOTE Confidence: 0.852982068888889
- $00{:}03{:}28.860 \dashrightarrow 00{:}03{:}31.695$ Squamish and Suela 2 the First Nations.
- NOTE Confidence: 0.852982068888889
- $00{:}03{:}31{.}700 \dashrightarrow 00{:}03{:}33{.}982$ I always start my talk by giving
- NOTE Confidence: 0.852982068888889

 $00:03:33.982 \rightarrow 00:03:36.259$ a definition of sex versus gender.

NOTE Confidence: 0.852982068888889

 $00{:}03{:}36{.}260 \dashrightarrow 00{:}03{:}38{.}234$ So when I'm talking about sex differences,

NOTE Confidence: 0.852982068888889

 $00:03:38.240 \rightarrow 00:03:41.048$ I'm referring to the biological and

NOTE Confidence: 0.852982068888889

 $00:03:41.048 \rightarrow 00:03:43.380$ physiological mechanisms that define males,

NOTE Confidence: 0.852982068888889

 $00:03:43.380 \longrightarrow 00:03:46.284$ females, and intersex individuals.

NOTE Confidence: 0.852982068888889

 $00:03:46.284 \rightarrow 00:03:47.010$ Gender.

NOTE Confidence: 0.852982068888889

 $00:03:47.010 \rightarrow 00:03:48.837$ Some people think of as sexual orientation,

NOTE Confidence: 0.852982068888889

 $00:03:48.840 \longrightarrow 00:03:49.953$ as gender identity,

NOTE Confidence: 0.852982068888889

 $00{:}03{:}49{.}953 \dashrightarrow 00{:}03{:}52{.}179$ and it's much more than that.

NOTE Confidence: 0.852982068888889

 $00:03:52.180 \dashrightarrow 00:03:55.612$ It's how a society has expectations

NOTE Confidence: 0.852982068888889

 $00{:}03{:}55{.}612 \dashrightarrow 00{:}03{:}57{.}849$ and attribute has attributes for

NOTE Confidence: 0.852982068888889

 $00:03:57.849 \rightarrow 00:04:00.027$ you based on your gender identity

NOTE Confidence: 0.852982068888889

 $00:04:00.027 \rightarrow 00:04:02.277$ 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

 $00:04:05.780 \rightarrow 00:04:07.999$ And here is my spouse who identifies

NOTE Confidence: 0.852982068888889

 $00:04:07.999 \longrightarrow 00:04:10.860$ as a man showing what's appropriate in

- NOTE Confidence: 0.852982068888889
- $00:04:10.860 \dashrightarrow 00:04:13.608$ terms of the household and expected
- NOTE Confidence: 0.852982068888889
- $00:04:13.688 \rightarrow 00:04:16.229$ of him based on his gender identity.
- NOTE Confidence: 0.852982068888889
- $00:04:16.230 \rightarrow 00:04:17.808$ Neither of these terms are binary,
- NOTE Confidence: 0.852982068888889
- $00:04:17.810 \longrightarrow 00:04:19.610$ as you can well imagine,
- NOTE Confidence: 0.852982068888889
- $00:04:19.610 \longrightarrow 00:04:22.290$ and I'll be talking about more the sex
- NOTE Confidence: 0.852982068888889
- $00:04:22.290 \rightarrow 00:04:23.914$ differences and biomedical differences
- NOTE Confidence: 0.852982068888889
- $00:04:23.914 \rightarrow 00:04:27.008$ 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
- $00{:}04{:}28.866 \dashrightarrow 00{:}04{:}30.768$ that all the disparities that I'm
- NOTE Confidence: 0.852982068888889
- $00:04:30.768 \rightarrow 00:04:32.493$ talking about between females and
- NOTE Confidence: 0.852982068888889
- $00:04:32.493 \rightarrow 00:04:34.750$ 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
- $00{:}04{:}39{.}770 \dashrightarrow 00{:}04{:}42{.}686$ 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

 $00:04:44.150 \longrightarrow 00:04:46.509$ 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

 $00:04:50.240 \longrightarrow 00:04:52.262$ but I'm happy to maybe answer

NOTE Confidence: 0.852982068888889

 $00:04:52.262 \dashrightarrow 00:04:54.379$ questions about some of that later.

NOTE Confidence: 0.852982068888889

 $00:04:54.380 \rightarrow 00:04:57.420$ So using my own family as an example,

NOTE Confidence: 0.852982068888889

 $00{:}04{:}57{.}420 \dashrightarrow 00{:}04{:}58{.}635$ I think it's really obvious

NOTE Confidence: 0.852982068888889

 $00{:}04{:}58.635 \dashrightarrow 00{:}05{:}00.520$ that there are a number of sex

NOTE Confidence: 0.852982068888889

 $00:05:00.520 \longrightarrow 00:05:01.760$ differences across the lifespan,

NOTE Confidence: 0.852982068888889

 $00:05:01.760 \longrightarrow 00:05:03.671$ and probably many of you are very

NOTE Confidence: 0.852982068888889

 $00{:}05{:}03.671 \dashrightarrow 00{:}05{:}05.456$ well aware that females are more

NOTE Confidence: 0.852982068888889

 $00:05:05.456 \rightarrow 00:05:07.563$ likely to live longer than males are.

NOTE Confidence: 0.852982068888889

 $00:05:07.570 \longrightarrow 00:05:09.631$ But what you might not be aware of is

NOTE Confidence: 0.852982068888889

 $00:05:09.631 \dashrightarrow 00:05:11.796$ that females are also more likely to

NOTE Confidence: 0.852982068888889

 $00:05:11.796 \dashrightarrow 00:05:13.918$ deal with chronic illness than males are.

NOTE Confidence: 0.852982068888889

 $00:05:13.920 \longrightarrow 00:05:15.313$ And this is my mom who suffered

- NOTE Confidence: 0.852982068888889
- $00:05:15.313 \rightarrow 00:05:16.519$ from a very severe form.
- NOTE Confidence: 0.852982068888889
- $00:05:16.520 \rightarrow 00:05:19.327$ Parkinson's disease towards the end of life,
- NOTE Confidence: 0.852982068888889
- $00:05:19.330 \longrightarrow 00:05:22.350$ and this paper came out a few years ago now,
- NOTE Confidence: 0.852982068888889
- $00:05:22.350 \rightarrow 00:05:24.390$ showing that on average for
- NOTE Confidence: 0.852982068888889
- $00:05:24.390 \longrightarrow 00:05:26.022$ a variety of diseases,
- NOTE Confidence: 0.852982068888889
- $00:05:26.030 \rightarrow 00:05:28.214$ females were diagnosed 2 years later
- NOTE Confidence: 0.852982068888889
- $00:05:28.214 \rightarrow 00:05:30.839$ than males were for the very for
- NOTE Confidence: 0.852982068888889
- $00:05:30.839 \rightarrow 00:05:32.669$ obviously the very same disease.
- NOTE Confidence: 0.852982068888889
- $00{:}05{:}32{.}670 \dashrightarrow 00{:}05{:}35{.}406$ And this is true for diseases even in
- NOTE Confidence: 0.852982068888889
- $00:05:35.406 \rightarrow 00:05:37.907$ which females show a greater prevalence.
- NOTE Confidence: 0.852982068888889
- $00:05:37.910 \longrightarrow 00:05:40.262$ Now there are many reasons for
- NOTE Confidence: 0.852982068888889
- $00:05:40.262 \longrightarrow 00:05:41.046$ this disparity,
- NOTE Confidence: 0.852982068888889
- $00:05:41.050 \dashrightarrow 00:05:43.885$ both on the sex and on the gender side,
- NOTE Confidence: 0.852982068888889
- $00{:}05{:}43.890 \dashrightarrow 00{:}05{:}45.630$ but I would argue her,
- NOTE Confidence: 0.852982068888889
- $00{:}05{:}45{.}630 \dashrightarrow 00{:}05{:}46{.}908$ I'd he
sitate to say not he
sitate.
- NOTE Confidence: 0.835655182

 $00:05:46.910 \rightarrow 00:05:48.110$ 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

 $00{:}05{:}50{.}062 \dashrightarrow 00{:}05{:}52{.}150$ has to do with the fact that a

NOTE Confidence: 0.835655182

 $00{:}05{:}52{.}150 \dashrightarrow 00{:}05{:}54{.}108$ 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

 $00:05:56.283 \rightarrow 00:05:58.310$ male Physiology studying the male.

NOTE Confidence: 0.835655182

 $00{:}05{:}58{.}310 \dashrightarrow 00{:}06{:}01{.}190$ And our playbook seems to be more in

NOTE Confidence: 0.835655182

 $00:06:01.276 \rightarrow 00:06:04.116$ terms of the male Physiology, in fact,

NOTE Confidence: 0.835655182

 $00{:}06{:}04.116 \dashrightarrow 00{:}06{:}06.380$ so much so that even in diseases where

NOTE Confidence: 0.835655182

 $00:06:06.441 \rightarrow 00:06:08.849$ you see a greater prevalence in females.

NOTE Confidence: 0.835655182

 $00:06:08.850 \rightarrow 00:06:12.294$ Females are said to have atypical symptoms.

NOTE Confidence: 0.835655182

 $00:06:12.300 \longrightarrow 00:06:13.540$ Like, let's just think about

NOTE Confidence: 0.835655182

 $00:06:13.540 \longrightarrow 00:06:14.780$ that just for a second.

NOTE Confidence: 0.835655182

 $00:06:14.780 \longrightarrow 00:06:16.766$ If there's more females that present

NOTE Confidence: 0.835655182

 $00{:}06{:}16.766 \dashrightarrow 00{:}06{:}18.980$ with the disorder and yet they're

NOTE Confidence: 0.835655182

 $00:06:18.980 \rightarrow 00:06:21.060$ classified as having atypical symptoms,

- NOTE Confidence: 0.835655182
- $00:06:21.060 \longrightarrow 00:06:23.370$ that suggests we are using

 $00:06:23.370 \longrightarrow 00:06:24.756$ the wrong playbook.

NOTE Confidence: 0.835655182

 $00:06:24.760 \dashrightarrow 00:06:26.216$ And so this might take a message.

NOTE Confidence: 0.835655182

 $00:06:26.220 \longrightarrow 00:06:27.724$ If none of you want to pay any

NOTE Confidence: 0.835655182

 $00:06:27.724 \rightarrow 00:06:28.808$ more attention after the slide,

NOTE Confidence: 0.835655182

 $00:06:28.810 \rightarrow 00:06:31.318$ this is totally fine because basically

NOTE Confidence: 0.835655182

 $00:06:31.318 \dashrightarrow 00:06:34.234$ my message is that males cannot serve

NOTE Confidence: 0.835655182

 $00{:}06{:}34{.}234 \dashrightarrow 00{:}06{:}36{.}957$ as a default for females that much

NOTE Confidence: 0.835655182

 $00:06:37.031 \dashrightarrow 00:06:39.600$ 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

 $00{:}06{:}44.074 \dashrightarrow 00{:}06{:}45.550$ to fix a refrigerator.

NOTE Confidence: 0.835655182

 $00{:}06{:}45{.}550 \dashrightarrow 00{:}06{:}49{.}210$ 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

- $00:06:52.603 \rightarrow 00:06:54.307$ in the brain of course,
- NOTE Confidence: 0.835655182
- $00:06:54.310 \longrightarrow 00:06:55.969$ and there are a number of them,
- NOTE Confidence: 0.835655182
- $00:06:55.970 \longrightarrow 00:06:57.434$ and it's not one sex that's
- NOTE Confidence: 0.835655182
- $00:06:57.434 \rightarrow 00:06:58.166$ predominating the other.
- NOTE Confidence: 0.835655182
- $00{:}06{:}58{.}170 \dashrightarrow 00{:}06{:}59{.}430$ 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
- $00:07:02.230 \longrightarrow 00:07:03.030$ variation there,
- NOTE Confidence: 0.835655182
- $00:07:03.030 \rightarrow 00:07:06.070$ and also you see differences in white matter.
- NOTE Confidence: 0.835655182
- $00{:}07{:}06.070 \dashrightarrow 00{:}07{:}08.302$ So females are more likely to
- NOTE Confidence: 0.835655182
- $00:07:08.302 \rightarrow 00:07:09.418$ have interhemispheric connections
- NOTE Confidence: 0.835655182
- $00:07:09.418 \longrightarrow 00:07:12.073$ and males are more likely to have
- NOTE Confidence: 0.835655182
- $00{:}07{:}12.073 \dashrightarrow 00{:}07{:}13.183$ 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
- $00:07:15.710 \dashrightarrow 00:07:17.698$ differences in the prevalence of brain
- NOTE Confidence: 0.835655182
- $00:07:17.698 \rightarrow 00:07:20.238$ disease that put some common ones up there.
- NOTE Confidence: 0.835655182
- $00:07:20.240 \longrightarrow 00:07:21.983$ What I think is even more fascinating

- NOTE Confidence: 0.835655182
- $00{:}07{:}21.983 \dashrightarrow 00{:}07{:}23.793$ is that we see sex differences

 $00:07:23.793 \dashrightarrow 00:07:25.478$ in the manifestation of disease.

NOTE Confidence: 0.835655182

 $00{:}07{:}25{.}480 \dashrightarrow 00{:}07{:}26{.}842$ And that's true even in diseases

NOTE Confidence: 0.835655182

 $00:07:26.842 \rightarrow 00:07:28.535$ where you don't see a sex difference

NOTE Confidence: 0.835655182

 $00:07:28.535 \rightarrow 00:07:30.017$ 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

 $00{:}07{:}33.260 \dashrightarrow 00{:}07{:}36.319$ I've been looking more at diseases that

NOTE Confidence: 0.835655182

 $00{:}07{:}36.319 \dashrightarrow 00{:}07{:}39.418$ show a greater lifetime risk for it,

NOTE Confidence: 0.835655182

 $00:07:39.420 \longrightarrow 00:07:40.156$ for females,

NOTE Confidence: 0.835655182

 $00:07:40.156 \longrightarrow 00:07:41.996$ so Alzheimer's disease and depression.

NOTE Confidence: 0.835655182

 $00{:}07{:}42.000 \dashrightarrow 00{:}07{:}43.992$ And today I'll be talking more

NOTE Confidence: 0.835655182

 $00{:}07{:}43.992 \dashrightarrow 00{:}07{:}45.320$ about the depression work.

NOTE Confidence: 0.835655182

 $00{:}07{:}45{.}320 \dashrightarrow 00{:}07{:}47{.}190$ So hopefully I've started to

NOTE Confidence: 0.835655182

 $00{:}07{:}47.190 \dashrightarrow 00{:}07{:}49.490$ convince you that it's important to

 $00:07:49.490 \rightarrow 00:07:51.330$ 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

 $00:07:53.058 \rightarrow 00:07:54.850$ on how a disease develops,

NOTE Confidence: 0.835655182

 $00{:}07{:}54.850 \dashrightarrow 00{:}07{:}57.142$ the manifestation of that disease and

NOTE Confidence: 0.835655182

 $00{:}07{:}57{.}142 \dashrightarrow 00{:}07{:}59{.}448$ also the treatment aspect and that

NOTE Confidence: 0.835655182

 $00:07:59.448 \dashrightarrow 00:08:01.584$ treatment part is very rarely studied,

NOTE Confidence: 0.835655182

 $00{:}08{:}01.590 \dashrightarrow 00{:}08{:}03.515$ but it also allows us to build

NOTE Confidence: 0.835655182

 $00{:}08{:}03{.}515 \dashrightarrow 00{:}08{:}05{.}330$ better models of disease and that's

NOTE Confidence: 0.835655182

 $00{:}08{:}05{.}330 \dashrightarrow 00{:}08{:}06{.}880$ true from both a preclinical

NOTE Confidence: 0.835655182

 $00:08:06.880 \rightarrow 00:08:08.789$ and a clinical perspective.

NOTE Confidence: 0.835655182

 $00{:}08{:}08{.}790 \dashrightarrow 00{:}08{:}11{.}198$ And of course better models with just

NOTE Confidence: 0.835655182

 $00:08:11.198 \longrightarrow 00:08:13.243$ give us better precision therapeutics

NOTE Confidence: 0.835655182

 $00:08:13.243 \longrightarrow 00:08:15.593$ 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

 $00:08:18.247 \rightarrow 00:08:20.587$ agencies are mandating incorporation.

NOTE Confidence: 0.835655182

 $00:08:20.590 \rightarrow 00:08:22.543$ So anytime you see a sex difference

- NOTE Confidence: 0.835655182
- $00:08:22.543 \longrightarrow 00:08:24.509$ in the work that you're doing,
- NOTE Confidence: 0.835655182
- $00{:}08{:}24.510 \dashrightarrow 00{:}08{:}25.860$ that should automatically queue you to
- NOTE Confidence: 0.835655182
- $00:08:25.860 \rightarrow 00:08:27.768$ think that one of two things are involved,
- NOTE Confidence: 0.835655182
- $00:08:27.770 \longrightarrow 00:08:29.730$ or a combination of the two of them.
- NOTE Confidence: 0.835655182
- $00:08:29.730 \longrightarrow 00:08:31.221$ One, sex chromosomes,
- NOTE Confidence: 0.835655182
- $00{:}08{:}31{.}221 \dashrightarrow 00{:}08{:}33{.}209$ the second sex hormones.
- NOTE Confidence: 0.835655182
- $00:08:33.210 \longrightarrow 00:08:35.235$ And I'll be talking mostly
- NOTE Confidence: 0.835655182
- $00:08:35.235 \longrightarrow 00:08:36.450$ about hormones today.
- NOTE Confidence: 0.835655182
- $00{:}08{:}36{.}450 \dashrightarrow 00{:}08{:}37{.}635$ And just because this gives
- NOTE Confidence: 0.835655182
- $00:08:37.635 \rightarrow 00:08:38.820$ me another excuse to put
- NOTE Confidence: 0.867558796842105
- $00:08:38.871 \longrightarrow 00:08:39.863$ my adorable adult children
- NOTE Confidence: 0.867558796842105
- $00{:}08{:}39{.}863 \dashrightarrow 00{:}08{:}41{.}103$ back up on the screen.
- NOTE Confidence: 0.867558796842105
- $00{:}08{:}41{.}110 \dashrightarrow 00{:}08{:}43{.}126$ And so they were all on the same page.
- NOTE Confidence: 0.867558796842105
- $00{:}08{:}43.130 \dashrightarrow 00{:}08{:}45.098$ I'm talking about ovarian hormones like
- NOTE Confidence: 0.867558796842105
- $00{:}08{:}45{.}098 \dashrightarrow 00{:}08{:}46{.}869$ estrogens and females and testicular
- NOTE Confidence: 0.867558796842105

 $00:08:46.869 \dashrightarrow 00:08:48.889$ hormones like test osterone and males.

NOTE Confidence: 0.867558796842105

 $00{:}08{:}48{.}890 \dashrightarrow 00{:}08{:}50{.}290$ And of course we.

NOTE Confidence: 0.867558796842105

 $00:08:50.290 \longrightarrow 00:08:51.690$ Have each other's hormones,

NOTE Confidence: 0.867558796842105

 $00:08:51.690 \rightarrow 00:08:53.640$ or just at different concentrations,

NOTE Confidence: 0.867558796842105

 $00{:}08{:}53.640 \dashrightarrow 00{:}08{:}55.968$ and these act on hormone receptors

NOTE Confidence: 0.867558796842105

 $00:08:55.968 \rightarrow 00:08:58.200$ that are located across the body,

NOTE Confidence: 0.867558796842105

 $00:08:58.200 \longrightarrow 00:08:59.680$ not just in the reproductive

NOTE Confidence: 0.867558796842105

 $00:08:59.680 \rightarrow 00:09:00.864$ tract across the brain,

NOTE Confidence: 0.867558796842105

 $00:09:00.870 \longrightarrow 00:09:02.679$ across the body.

NOTE Confidence: 0.867558796842105

 $00:09:02.680 \rightarrow 00:09:04.360$ It gets more complicated than that,

NOTE Confidence: 0.867558796842105

 $00:09:04.360 \longrightarrow 00:09:06.904$ 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

 $00:09:10.400 \rightarrow 00:09:13.940$ or a very potent and rogen called

NOTE Confidence: 0.867558796842105

00:09:13.940 --> 00:09:14.530 dihydrotestosterone.

NOTE Confidence: 0.867558796842105

 $00:09:14.530 \longrightarrow 00:09:17.029$ And sex hormones themselves can affect risk,

NOTE Confidence: 0.867558796842105

 $00:09:17.030 \longrightarrow 00:09:18.092$ 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
- $00:09:22.119 \rightarrow 00:09:24.107$ across the menstrual cycle,
- NOTE Confidence: 0.867558796842105
- $00:09:24.110 \longrightarrow 00:09:27.098$ 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
- $00:09:32.013 \rightarrow 00:09:34.318$ 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
- $00:09:36.648 \rightarrow 00:09:39.520$ complicated in one sex versus the other.
- NOTE Confidence: 0.867558796842105
- $00{:}09{:}39{.}520 \dashrightarrow 00{:}09{:}42{.}536$ It's not believing that males and females are
- NOTE Confidence: 0.867558796842105
- $00:09:42.536 \rightarrow 00:09:45.116$ polar opposite and it's not the final step.
- NOTE Confidence: 0.867558796842105
- $00:09:45.120 \longrightarrow 00:09:47.289$ So what do I mean by all of that?
- NOTE Confidence: 0.867558796842105
- $00:09:47.290 \dashrightarrow 00:09:51.073$ One is that I see this idea that when
- NOTE Confidence: 0.867558796842105
- $00{:}09{:}51{.}073 \dashrightarrow 00{:}09{:}53{.}180$ you see a Gray matter volume difference,
- NOTE Confidence: 0.867558796842105
- $00{:}09{:}53.180 \dashrightarrow 00{:}09{:}55.106$ that that somehow means that one
- NOTE Confidence: 0.867558796842105

 $00:09:55.106 \longrightarrow 00:09:57.089$ sex is inferior to the other.

NOTE Confidence: 0.867558796842105

 $00{:}09{:}57{.}090 \dashrightarrow 00{:}09{:}58{.}850$ 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

 $00{:}10{:}00{.}630 \dashrightarrow 00{:}10{:}02{.}275$ It just means that the two brains

NOTE Confidence: 0.867558796842105

 $00{:}10{:}02.275 \dashrightarrow 00{:}10{:}02.745$ are different.

NOTE Confidence: 0.867558796842105

 $00{:}10{:}02.750 \dashrightarrow 00{:}10{:}04.846$ It doesn't mean that one sex is inferior.

NOTE Confidence: 0.867558796842105

 $00:10:04.850 \rightarrow 00:10:06.994$ And in fact I'll give you some examples.

NOTE Confidence: 0.867558796842105

 $00{:}10{:}07{.}000 \dashrightarrow 00{:}10{:}08{.}503$ I might forget to give you one of them,

NOTE Confidence: 0.867558796842105

 $00:10:08.510 \longrightarrow 00:10:09.620$ but I'll give you some examples.

NOTE Confidence: 0.867558796842105

 $00{:}10{:}09{.}620 \dashrightarrow 00{:}10{:}11{.}627$ You can ask me at the end of where

NOTE Confidence: 0.867558796842105

 $00:10:11.627 \rightarrow 00:10:14.205$ 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

 $00{:}10{:}15{.}793 \dashrightarrow 00{:}10{:}17{.}907$ effects to one sex versus the other.

NOTE Confidence: 0.867558796842105

 $00{:}10{:}17{.}910 \dashrightarrow 00{:}10{:}19{.}142$ So that's a notion.

NOTE Confidence: 0.867558796842105

 $00:10:19.142 \longrightarrow 00:10:20.682$ So we should dispel ourselves

- NOTE Confidence: 0.867558796842105
- $00:10:20.682 \rightarrow 00:10:21.890$ of these notions.
- NOTE Confidence: 0.867558796842105
- $00:10:21.890 \longrightarrow 00:10:23.520$ Another notions is is that
- NOTE Confidence: 0.867558796842105
- $00:10:23.520 \longrightarrow 00:10:25.150$ females are more complicated to
- NOTE Confidence: 0.867558796842105
- $00:10:25.210 \longrightarrow 00:10:27.010$ 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
- $00:10:30.350 \rightarrow 00:10:31.650$ not editorial, but a commentary,
- NOTE Confidence: 0.867558796842105
- $00:10:31.650 \rightarrow 00:10:35.124$ on this in science a couple of years ago.
- NOTE Confidence: 0.867558796842105
- $00:10:35.130 \longrightarrow 00:10:36.615$ 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
- $00:10:38.100 \rightarrow 00:10:39.905$ and there's another one coming
- NOTE Confidence: 0.867558796842105
- $00:10:39.905 \longrightarrow 00:10:42.137$ 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
- $00:10:44.310 \longrightarrow 00:10:45.852$ physiological and behavioral,
- NOTE Confidence: 0.867558796842105
- $00{:}10{:}45.852 \dashrightarrow 00{:}10{:}47.908$ there's no sex difference.
- NOTE Confidence: 0.867558796842105
- $00{:}10{:}47{.}910 \dashrightarrow 00{:}10{:}50{.}773$ So there's not one sex that's more
- NOTE Confidence: 0.867558796842105

 $00:10:50.773 \rightarrow 00:10:53.050$ inherently variable than the other sex.

NOTE Confidence: 0.867558796842105

 $00:10:53.050 \longrightarrow 00:10:53.413$ Now,

NOTE Confidence: 0.867558796842105

 $00{:}10{:}53{.}413 \dashrightarrow 00{:}10{:}55{.}954$ what this doesn't mean is that the

NOTE Confidence: 0.867558796842105

 $00:10:55.954 \rightarrow 00:10:57.874$ variability within each sex might not

NOTE Confidence: 0.867558796842105

 $00{:}10{:}57{.}874 \dashrightarrow 00{:}11{:}00{.}380$ be driven at least in part by hormones.

NOTE Confidence: 0.867558796842105

 $00:11:00.380 \dashrightarrow 00:11:02.515$ I thought I'd give you this example.

NOTE Confidence: 0.867558796842105

 $00{:}11{:}02.520 \dashrightarrow 00{:}11{:}04.475$ These are test osterone levels and

NOTE Confidence: 0.867558796842105

 $00{:}11{:}04.475 \dashrightarrow 00{:}11{:}06.818$ human males and this should indicate

NOTE Confidence: 0.867558796842105

 $00{:}11{:}06{.}818 \dashrightarrow 00{:}11{:}09{.}378$ to you that you see a dramatic decline

NOTE Confidence: 0.867558796842105

00:11:09.378 --> 00:11:11.531 in test
osterone 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

 $00:11:14.509 \dashrightarrow 00:11:17.330$ So given that males have a diurnal

NOTE Confidence: 0.867558796842105

 $00{:}11{:}17{.}420 \dashrightarrow 00{:}11{:}20{.}205$ fluctuation in hormones and females

NOTE Confidence: 0.867558796842105

 $00{:}11{:}20{.}205 \dashrightarrow 00{:}11{:}23{.}719$ have a monthly fluctuation in their

NOTE Confidence: 0.867558796842105

 $00:11:23.719 \rightarrow 00:11:26.259$ 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
- $00:11:28.794 \longrightarrow 00:11:31.360$ is who's more hormonal? Now.
- NOTE Confidence: 0.90279232625
- $00{:}11{:}33{.}590 \dashrightarrow 00{:}11{:}36{.}065$ The other point I want to make is that
- NOTE Confidence: 0.90279232625
- $00:11:36.065 \rightarrow 00:11:38.528$ there are many types of sex differences,
- NOTE Confidence: 0.90279232625
- $00{:}11{:}38{.}530 \dashrightarrow 00{:}11{:}39{.}928$ 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
- $00:11:43.650 \rightarrow 00:11:45.054$ 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
- $00{:}11{:}47{.}182 \dashrightarrow 00{:}11{:}50{.}026$ different morphs of the same trait.
- NOTE Confidence: 0.90279232625
- $00:11:50.030 \rightarrow 00:11:51.966$ But there are many kinds of sex differences,
- NOTE Confidence: 0.90279232625
- $00:11:51.970 \longrightarrow 00:11:54.050$ and the 1:00 today that I'll talk about
- NOTE Confidence: 0.90279232625
- $00{:}11{:}54.050 \dashrightarrow 00{:}11{:}55.877$ first at least, is mechanistic differences.
- NOTE Confidence: 0.90279232625
- $00{:}11{:}55{.}877 \dashrightarrow 00{:}11{:}58{.}363$ And this is what I really want people
- NOTE Confidence: 0.90279232625
- $00{:}11{:}58{.}363 \dashrightarrow 00{:}12{:}00{.}225$ to think about in their own data.
- NOTE Confidence: 0.90279232625
- $00{:}12{:}00{.}230 \dashrightarrow 00{:}12{:}01{.}525$ And that might be where you don't
- NOTE Confidence: 0.90279232625

 $00{:}12{:}01{.}525 \dashrightarrow 00{:}12{:}02{.}940$ see a sex difference in the

NOTE Confidence: 0.90279232625

 $00:12:02.940 \longrightarrow 00:12:04.290$ trait that you're interested in.

NOTE Confidence: 0.90279232625

 $00:12:04.290 \longrightarrow 00:12:06.019$ As a matter what trade it is,

NOTE Confidence: 0.90279232625

 $00{:}12{:}06.020 \dashrightarrow 00{:}12{:}08.748$ 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

 $00:12:10.695 \rightarrow 00:12:13.113$ are completely different between the sexes.

NOTE Confidence: 0.90279232625

 $00:12:13.120 \longrightarrow 00:12:14.602$ Another might be that you don't

NOTE Confidence: 0.90279232625

 $00:12:14.602 \longrightarrow 00:12:16.393$ see a sex difference in a trait

NOTE Confidence: 0.90279232625

 $00{:}12{:}16{.}393 \dashrightarrow 00{:}12{:}17{.}397$ that you're interested in,

NOTE Confidence: 0.90279232625

 $00:12:17.400 \rightarrow 00:12:19.656$ but that doesn't mean with stress,

NOTE Confidence: 0.90279232625

 $00:12:19.660 \longrightarrow 00:12:20.416$ disease, age,

NOTE Confidence: 0.90279232625

00:12:20.416 --> 00:12:21.172 hormones, genotype,

NOTE Confidence: 0.90279232625

 $00{:}12{:}21.172 \dashrightarrow 00{:}12{:}23.821$ that that doesn't elicit a sex difference

NOTE Confidence: 0.90279232625

 $00{:}12{:}23.821 \dashrightarrow 00{:}12{:}26.373$ either in the trait or in the molecular

NOTE Confidence: 0.90279232625

 $00{:}12{:}26{.}373 \dashrightarrow 00{:}12{:}28{.}938$ 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
- $00:12:31.860 \rightarrow 00:12:34.119$ but keep looking.
- NOTE Confidence: 0.90279232625
- $00:12:34.120 \longrightarrow 00:12:35.200$ And I'll come back to that
- NOTE Confidence: 0.90279232625
- $00:12:35.200 \rightarrow 00:12:36.130$ point at the very end.
- NOTE Confidence: 0.90279232625
- $00:12:36.130 \longrightarrow 00:12:38.559$ The last point I want to make
- NOTE Confidence: 0.90279232625
- $00{:}12{:}38{.}559 \dashrightarrow 00{:}12{:}40{.}734$ about this is that studying sex
- NOTE Confidence: 0.90279232625
- $00:12:40.734 \longrightarrow 00:12:42.544$ differences isn't the final step.
- NOTE Confidence: 0.90279232625
- $00{:}12{:}42.550 \dashrightarrow 00{:}12{:}45.119$ There are a number of female unique
- NOTE Confidence: 0.90279232625
- $00:12:45.119 \rightarrow 00:12:47.596$ experiences that we already know drive
- NOTE Confidence: 0.90279232625
- $00{:}12{:}47.596 \dashrightarrow 00{:}12{:}49.766$ 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
- $00:12:51.738 \longrightarrow 00:12:53.626$ and the postpartum at the at
- NOTE Confidence: 0.90279232625
- $00{:}12{:}53.626 \dashrightarrow 00{:}12{:}55.180$ the latter half of this talk.
- NOTE Confidence: 0.90279232625
- $00:12:55.180 \longrightarrow 00:12:57.049$ 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
- $00{:}12{:}58.826 \dashrightarrow 00{:}13{:}00.656$ disease if we give full consideration
- NOTE Confidence: 0.90279232625

 $00{:}13{:}00{.}656 \dashrightarrow 00{:}13{:}02{.}497$ to sex and gender differences.

NOTE Confidence: 0.90279232625

 $00{:}13{:}02{.}500 \dashrightarrow 00{:}13{:}04{.}780$ 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

 $00:13:09.442 \longrightarrow 00:13:11.410$ 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

 $00{:}13{:}13{.}740 \dashrightarrow 00{:}13{:}15{.}434$ I'll talk about a new preclinical model

NOTE Confidence: 0.90279232625

 $00:13:15.434 \rightarrow 00:13:17.327$ that we have that's not fully formed,

NOTE Confidence: 0.90279232625

 $00{:}13{:}17{.}330 \dashrightarrow 00{:}13{:}19{.}026$ but I'm going to tell you about it

NOTE Confidence: 0.90279232625

 $00:13:19.026 \rightarrow 00:13:20.858$ 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

 $00:13:23.461 \rightarrow 00:13:26.267$ the heterogeneity of perinatal depression.

NOTE Confidence: 0.90279232625

 $00:13:26.270 \longrightarrow 00:13:28.090$ So I think it's always useful to

NOTE Confidence: 0.90279232625

 $00{:}13{:}28{.}090 \dashrightarrow 00{:}13{:}29{.}962$ look at whatever disease that you're

NOTE Confidence: 0.90279232625

 $00{:}13{:}29{.}962 \dashrightarrow 00{:}13{:}31{.}687$ interested in across a lifespan.

NOTE Confidence: 0.90279232625

 $00{:}13{:}31{.}690 \dashrightarrow 00{:}13{:}34{.}105$ And here's the female to male ratio

- NOTE Confidence: 0.90279232625
- $00:13:34.110 \rightarrow 00:13:35.770$ have a major depressive disorder.
- NOTE Confidence: 0.90279232625
- $00:13:35.770 \longrightarrow 00:13:38.248$ And I think what pops out immediately
- NOTE Confidence: 0.90279232625
- $00:13:38.248 \rightarrow 00:13:41.424$ is that where you see that twice more
- NOTE Confidence: 0.90279232625
- $00:13:41.424 \rightarrow 00:13:43.960$ likely is during those reproductive years.
- NOTE Confidence: 0.90279232625
- $00{:}13{:}43.960 \dashrightarrow 00{:}13{:}46.420$ So suggesting that females have a
- NOTE Confidence: 0.90279232625
- $00{:}13{:}46{.}420 \dashrightarrow 00{:}13{:}48{.}994$ unique Physiology that results in these
- NOTE Confidence: 0.90279232625
- $00:13:48.994 \rightarrow 00:13:50.734$ specific periods of susceptibility
- NOTE Confidence: 0.90279232625
- $00{:}13{:}50{.}734 \dashrightarrow 00{:}13{:}53{.}120$ to depression across the lifespan.
- NOTE Confidence: 0.90279232625
- $00{:}13{:}53{.}120 \dashrightarrow 00{:}13{:}55{.}682$ It also lends itself to two
- NOTE Confidence: 0.90279232625
- $00:13:55.682 \rightarrow 00:13:56.963$ alternative biological explanations
- NOTE Confidence: 0.90279232625
- $00:13:56.963 \rightarrow 00:13:59.437$ for sex differences and depression.
- NOTE Confidence: 0.90279232625
- $00{:}13{:}59{.}440 \dashrightarrow 00{:}14{:}01{.}276$ One being that females are more
- NOTE Confidence: 0.90279232625
- $00:14:01.276 \rightarrow 00:14:03.510$ susceptible and I'm and are an ecologist,
- NOTE Confidence: 0.90279232625
- $00{:}14{:}03{.}510 \dashrightarrow 00{:}14{:}04{.}896$ so I'm always going to think it
- NOTE Confidence: 0.90279232625
- $00{:}14{:}04.896 \dashrightarrow 00{:}14{:}06.239$ has something to do with hormones.
- NOTE Confidence: 0.90279232625

 $00:14:06.240 \rightarrow 00:14:08.208$ But the other is that males are more

NOTE Confidence: 0.90279232625

 $00:14:08.208 \longrightarrow 00:14:10.540$ resistant, again due to their hormones.

NOTE Confidence: 0.90279232625

 $00{:}14{:}10{.}540 \dashrightarrow 00{:}14{:}12{.}340$ And we've created a number of

NOTE Confidence: 0.90279232625

 $00:14:12.340 \longrightarrow 00:14:14.080$ 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

00:14:18.579 --> 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

 $00{:}14{:}23.377 \dashrightarrow 00{:}14{:}25.645$ under an animal model of depression?

NOTE Confidence: 0.783025733793103

00:14:25.650 --> 00:14:27.008 Now, I always get asked this question,

NOTE Confidence: 0.783025733793103

 $00:14:27.010 \longrightarrow 00:14:29.226$ so it's better to put it up front

NOTE Confidence: 0.783025733793103

 $00{:}14{:}29{.}226 \dashrightarrow 00{:}14{:}31{.}398$ and that is, do males and females

NOTE Confidence: 0.783025733793103

 $00:14:31.398 \rightarrow 00:14:32.746$ just show depressant differently?

NOTE Confidence: 0.783025733793103

 $00:14:32.750 \longrightarrow 00:14:34.575$ So to be diagnosed with

NOTE Confidence: 0.783025733793103

00:14:34.575 --> 00:14:35.670 major depressive disorder,

NOTE Confidence: 0.783025733793103

 $00{:}14{:}35.670 \dashrightarrow 00{:}14{:}38.361$ you have to one of the two blue symptoms

 $00:14:38.361 \rightarrow 00:14:41.245$ and five out of the other seven symptoms.

NOTE Confidence: 0.783025733793103

 $00:14:41.250 \rightarrow 00:14:43.200$ And I think somebody that's studying

NOTE Confidence: 0.783025733793103

 $00:14:43.200 \longrightarrow 00:14:45.448$ this with the best last name ever,

NOTE Confidence: 0.783025733793103

 $00:14:45.450 \rightarrow 00:14:46.786$ I don't know if you can see that,

NOTE Confidence: 0.783025733793103

 $00:14:46.790 \rightarrow 00:14:49.718$ but and you can't really argue with that.

NOTE Confidence: 0.783025733793103

 $00{:}14{:}49{.}720 \dashrightarrow 00{:}14{:}51{.}976$ And it's a very large end and these

NOTE Confidence: 0.783025733793103

 $00{:}14{:}51{.}976 \dashrightarrow 00{:}14{:}54{.}788$ are in person interviews and this is

NOTE Confidence: 0.783025733793103

 $00{:}14{:}54.788 \dashrightarrow 00{:}14{:}56.864$ door to door 5 different countries

NOTE Confidence: 0.783025733793103

 $00:14:56.864 \longrightarrow 00:14:59.051$ 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

 $00{:}15{:}02.699 \dashrightarrow 00{:}15{:}04.211$ Yeah, it wasn't until there were five or

NOTE Confidence: 0.783025733793103

 $00{:}15{:}04{.}211 \dashrightarrow 00{:}15{:}05{.}645$ more symptoms that you saw that shift.

NOTE Confidence: 0.783025733793103

 $00{:}15{:}05{.}650 \dashrightarrow 00{:}15{:}06{.}922$ And the ratio,

NOTE Confidence: 0.783025733793103

 $00{:}15{:}06{.}922 \dashrightarrow 00{:}15{:}09{.}042$ the DSM five also recognizes

 $00:15:09.042 \longrightarrow 00:15:11.439$ a number of other symptoms.

NOTE Confidence: 0.783025733793103

 $00:15:11.440 \rightarrow 00:15:13.596$ You can have with major depressive disorder,

NOTE Confidence: 0.783025733793103

 $00:15:13.600 \longrightarrow 00:15:15.992$ but some of the common ones there and

NOTE Confidence: 0.783025733793103

 $00:15:15.992 \rightarrow 00:15:18.448$ they recognize that there's actually 250

NOTE Confidence: 0.783025733793103

 $00:15:18.448 \rightarrow 00:15:20.800$ unique symptom control combinations.

NOTE Confidence: 0.783025733793103

 $00:15:20.800 \rightarrow 00:15:23.218$ So it's a very heterogeneous disorder.

NOTE Confidence: 0.783025733793103

 $00:15:23.220 \longrightarrow 00:15:24.876$ 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

 $00:15:27.628 \longrightarrow 00:15:28.492$ 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

 $00:15:29.886 \longrightarrow 00:15:31.566$ to model in humans as well, right,

NOTE Confidence: 0.783025733793103

 $00:15:31.566 \rightarrow 00:15:33.988$ because you can have weight gain or

NOTE Confidence: 0.783025733793103

 $00:15:33.988 \rightarrow 00:15:36.244$ weight loss, you can have insomnia,

NOTE Confidence: 0.783025733793103

 $00{:}15{:}36{.}244 \dashrightarrow 00{:}15{:}37{.}417$ you can oversleep,

NOTE Confidence: 0.783025733793103

 $00:15:37.420 \longrightarrow 00:15:39.442$ and you can have second order

- NOTE Confidence: 0.783025733793103
- $00:15:39.442 \longrightarrow 00:15:40.453$ agitation or retardation.
- NOTE Confidence: 0.783025733793103
- $00{:}15{:}40{.}460 \dashrightarrow 00{:}15{:}41{.}510$ 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
- $00:15:44.970 \longrightarrow 00:15:46.700$ clinical presentation.
- NOTE Confidence: 0.783025733793103
- $00{:}15{:}46.700 \dashrightarrow 00{:}15{:}48.572$ Not a ton of studies and I'm gonna
- NOTE Confidence: 0.783025733793103
- $00:15:48.572 \rightarrow 00:15:50.499$ end off with this particular now,
- NOTE Confidence: 0.783025733793103
- $00:15:50.500 \longrightarrow 00:15:51.490$ but not a ton of studies.
- NOTE Confidence: 0.783025733793103
- $00{:}15{:}51{.}490 \dashrightarrow 00{:}15{:}53{.}611$ Look at sex differences even now even
- NOTE Confidence: 0.783025733793103
- $00{:}15{:}53.611 \dashrightarrow 00{:}15{:}55.760$ though it's been mandated for a while.
- NOTE Confidence: 0.783025733793103
- $00{:}15{:}55{.}760 \dashrightarrow 00{:}15{:}57{.}874$ But there are some studies that show
- NOTE Confidence: 0.783025733793103
- $00:15:57.874 \rightarrow 00:15:59.515$ some sex differences in symptoms
- NOTE Confidence: 0.783025733793103
- $00{:}15{:}59{.}515 \dashrightarrow 00{:}16{:}01{.}215$ 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
- $00:16:05.976 \longrightarrow 00:16:09.240$ those a atypical symptoms,
- NOTE Confidence: 0.783025733793103

 $00:16:09.240 \longrightarrow 00:16:13.112$ which I really don't like that term and

NOTE Confidence: 0.783025733793103

 $00{:}16{:}13.112 \dashrightarrow 00{:}16{:}15.589$ possibly cognitive symptoms as well.

NOTE Confidence: 0.783025733793103

 $00:16:15.590 \rightarrow 00:16:17.910$ What about biomarkers of depression?

NOTE Confidence: 0.783025733793103

00:16:17.910 --> 00:16:18.275 Well,

NOTE Confidence: 0.783025733793103

 $00:16:18.275 \rightarrow 00:16:20.100$ the Olympics systems very much

NOTE Confidence: 0.783025733793103

 $00:16:20.100 \rightarrow 00:16:22.270$ 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

 $00:16:24.670 \longrightarrow 00:16:25.950$ so I have to get this up there.

NOTE Confidence: 0.783025733793103

 $00{:}16{:}25.950 \dashrightarrow 00{:}16{:}28.350$ But you can just use a limbic system.

NOTE Confidence: 0.783025733793103

 $00{:}16{:}28.350 \dashrightarrow 00{:}16{:}30.750$ There are a number of meta analysis show

NOTE Confidence: 0.783025733793103

 $00{:}16{:}30.750 \dashrightarrow 00{:}16{:}33.276$ that it's related to duration of illness.

NOTE Confidence: 0.783025733793103

 $00:16:33.280 \longrightarrow 00:16:34.704$ In terms of volume?

NOTE Confidence: 0.783025733793103

 $00:16:34.704 \rightarrow 00:16:36.840$ The stress system is obviously perturbed

NOTE Confidence: 0.783025733793103

 $00{:}16{:}36{.}908 \dashrightarrow 00{:}16{:}38{.}928$ also in major depressive disorder.

NOTE Confidence: 0.783025733793103

 $00:16:38.930 \rightarrow 00:16:41.730$ Meta analysis show increased levels

NOTE Confidence: 0.783025733793103

 $00:16:41.730 \rightarrow 00:16:44.530$ of cortisol impairments in negative

- NOTE Confidence: 0.783025733793103
- $00:16:44.618 \longrightarrow 00:16:47.600$ feedback of the HP or hypothalamic
- NOTE Confidence: 0.783025733793103
- $00{:}16{:}47.600 \dashrightarrow 00{:}16{:}51.035$ 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
- $00:16:57.890 \longrightarrow 00:17:00.315$ 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
- $00:17:03.800 \longrightarrow 00:17:05.108$ but there are some,
- NOTE Confidence: 0.783025733793103
- $00:17:05.108 \longrightarrow 00:17:07.070$ there's some evidence of sex differences
- NOTE Confidence: 0.783025733793103
- $00:17:07.124 \longrightarrow 00:17:08.649$ in some of these biomarkers.
- NOTE Confidence: 0.783025733793103
- $00{:}17{:}08.650 \dashrightarrow 00{:}17{:}10.698$ But because they're so few and far between,
- NOTE Confidence: 0.783025733793103
- $00{:}17{:}10.700 \dashrightarrow 00{:}17{:}11.650$ it's hard to make a,
- NOTE Confidence: 0.783025733793103
- 00:17:11.650 --> 00:17:12.396 you know,
- NOTE Confidence: 0.783025733793103
- $00:17:12.396 \longrightarrow 00:17:13.515$ definitive knowledge about
- NOTE Confidence: 0.783025733793103

 $00:17:13.515 \longrightarrow 00:17:15.380$ all of this or definitive

NOTE Confidence: 0.8482419966666667

 $00{:}17{:}15{.}444 \dashrightarrow 00{:}17{:}16{.}949$ statement of all of this.

NOTE Confidence: 0.8482419966666667

 $00:17:16.950 \rightarrow 00:17:19.190$ So I want to say we really need to start

NOTE Confidence: 0.8482419966666667

 $00:17:19.248 \rightarrow 00:17:21.768$ using sex as a variable because if we're not,

NOTE Confidence: 0.8482419966666667

 $00:17:21.770 \longrightarrow 00:17:23.910$ it's hampering our understanding, right.

NOTE Confidence: 0.8482419966666667

 $00{:}17{:}23{.}910 \dashrightarrow 00{:}17{:}25{.}226$ So a lot of these, sometimes you'll

NOTE Confidence: 0.8482419966666667

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

NOTE Confidence: 0.8482419966666667

 $00:17:26.830 \rightarrow 00:17:28.240$ sometimes we'll say another thing

NOTE Confidence: 0.8482419966666667

 $00{:}17{:}28{.}240 \dashrightarrow 00{:}17{:}29{.}930$ in terms of sex differences that

NOTE Confidence: 0.8482419966666667

 $00{:}17{:}29{.}930 \dashrightarrow 00{:}17{:}31{.}547$ few studies that are out there but.

NOTE Confidence: 0.8482419966666667

 $00:17:31.550 \rightarrow 00:17:32.965$ They don't always pay attention

NOTE Confidence: 0.8482419966666667

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

NOTE Confidence: 0.8482419966666667

 $00:17:34.380 \rightarrow 00:17:35.530$ or whether they're treatment naive.

NOTE Confidence: 0.8482419966666667

 $00:17:35.530 \rightarrow 00:17:37.760$ And all of these things

NOTE Confidence: 0.8482419966666667

 $00:17:37.760 \longrightarrow 00:17:39.098$ obviously will matter.

NOTE Confidence: 0.8482419966666667

 $00:17:39.100 \longrightarrow 00:17:40.584$ I would be remiss if I didn't

- NOTE Confidence: 0.8482419966666667
- $00:17:40.584 \longrightarrow 00:17:41.660$ show these two studies,
- NOTE Confidence: 0.8482419966666667
- $00{:}17{:}41.660 \dashrightarrow 00{:}17{:}44.522$ both fantastic studies looking at the
- NOTE Confidence: 0.8482419966666667
- $00{:}17{:}44.522 \dashrightarrow 00{:}17{:}46.430$ transcriptomic signatures of major
- NOTE Confidence: 0.8482419966666667
- $00{:}17{:}46.502 \dashrightarrow 00{:}17{:}49.418$ depressive disorder in males versus females.
- NOTE Confidence: 0.8482419966666667
- $00:17:49.420 \longrightarrow 00:17:50.056$ Obviously humans,
- NOTE Confidence: 0.8482419966666667
- $00{:}17{:}50.056 \dashrightarrow 00{:}17{:}52.600$ and you can see in their Venn diagrams
- NOTE Confidence: 0.8482419966666667
- 00:17:52.665 --> 00:17:54.597 across a variety of brain regions,
- NOTE Confidence: 0.8482419966666667
- $00{:}17{:}54.600 \dashrightarrow 00{:}17{:}56.260$ not a lot of overlap.
- NOTE Confidence: 0.8482419966666667
- $00:17:56.260 \longrightarrow 00:17:58.930$ So the genes that are differentially
- NOTE Confidence: 0.8482419966666667
- 00:17:58.930 --> 00:18:00.300 upregulated, downregulated,
- NOTE Confidence: 0.8482419966666667
- $00:18:00.300 \longrightarrow 00:18:03.060$ do not overlap.
- NOTE Confidence: 0.8482419966666667
- $00{:}18{:}03.060 \dashrightarrow 00{:}18{:}03.980$ However,
- NOTE Confidence: 0.8482419966666667
- $00{:}18{:}03{.}980 \dashrightarrow 00{:}18{:}05{.}460$ in the small little sliver,
- NOTE Confidence: 0.8482419966666667
- $00{:}18{:}05{.}460 \dashrightarrow 00{:}18{:}06{.}730$ this comes from Marianne Stanley's
- NOTE Confidence: 0.8482419966666667
- $00{:}18{:}06{.}730 \dashrightarrow 00{:}18{:}08{.}301$ work and the small little sliver
- NOTE Confidence: 0.8482419966666667

 $00:18:08.301 \longrightarrow 00:18:09.317$ here that does overlap.

NOTE Confidence: 0.8482419966666667

 $00{:}18{:}09{.}320 \dashrightarrow 00{:}18{:}11{.}270$ You can see that the gene

NOTE Confidence: 0.8482419966666667

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

NOTE Confidence: 0.8482419966666667

 $00:18:12.570 \rightarrow 00:18:14.950$ so genes that are down regulated and

NOTE Confidence: 0.8482419966666667

 $00{:}18{:}14.950 \dashrightarrow 00{:}18{:}17.487$ females are updated in males and vice versa.

NOTE Confidence: 0.8482419966666667

 $00{:}18{:}17{.}490 \dashrightarrow 00{:}18{:}19{.}824$ So this suggests that the representation

NOTE Confidence: 0.8482419966666667

 $00:18:19.824 \longrightarrow 00:18:22.312$ of this disorder is quite different

NOTE Confidence: 0.8482419966666667

 $00{:}18{:}22{.}312 \dashrightarrow 00{:}18{:}24{.}916$ in males versus females and likely

NOTE Confidence: 0.8482419966666667

 $00{:}18{:}24{.}916 \dashrightarrow 00{:}18{:}26{.}760$ has implications for treatment.

NOTE Confidence: 0.8482419966666667

 $00{:}18{:}26.760 \dashrightarrow 00{:}18{:}28.734$ So what are the common risk factors

NOTE Confidence: 0.8482419966666667

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

NOTE Confidence: 0.8482419966666667

 $00:18:30.090 \longrightarrow 00:18:31.502$ Female sex being one.

NOTE Confidence: 0.8482419966666667

 $00{:}18{:}31{.}502 \dashrightarrow 00{:}18{:}32{.}914$ I've talked about that.

NOTE Confidence: 0.8482419966666667

 $00:18:32.920 \longrightarrow 00:18:35.104$ Another is chronic illness.

NOTE Confidence: 0.8482419966666667

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

NOTE Confidence: 0.8482419966666667

 $00:18:37.840 \longrightarrow 00:18:40.276$ and I would argue as mostly an
- NOTE Confidence: 0.8482419966666667
- $00:18:40.276 \rightarrow 00:18:42.159$ animal research that we can lump
- NOTE Confidence: 0.8482419966666667
- $00{:}18{:}42.159 \dashrightarrow 00{:}18{:}44.026$ a lot of this into chronic stress
- NOTE Confidence: 0.8482419966666667
- $00:18:44.026 \longrightarrow 00:18:45.198$ or chronic stress category.
- NOTE Confidence: 0.8482419966666667
- $00:18:45.200 \longrightarrow 00:18:47.300$ So we've been looking at that
- NOTE Confidence: 0.8482419966666667
- $00{:}18{:}47{.}300 \dashrightarrow 00{:}18{:}49{.}024$ intersection between female sex and
- NOTE Confidence: 0.8482419966666667
- $00{:}18{:}49{.}024 \dashrightarrow 00{:}18{:}51{.}088$ chronic stress and our work and we do
- NOTE Confidence: 0.8482419966666667
- $00{:}18{:}51{.}088 \dashrightarrow 00{:}18{:}53{.}540$ use a lot of animal models of depression.
- NOTE Confidence: 0.8482419966666667
- $00{:}18{:}53{.}540 \dashrightarrow 00{:}18{:}55{.}703$ And I know that's a tall order
- NOTE Confidence: 0.8482419966666667
- 00:18:55.703 --> 00:18:57.829 because you can't ask them about
- NOTE Confidence: 0.8482419966666667
- $00:18:57.829 \rightarrow 00:18:59.337$ their thoughts of suicide,
- NOTE Confidence: 0.8482419966666667
- $00:18:59.340 \longrightarrow 00:19:00.324$ what you can,
- NOTE Confidence: 0.8482419966666667
- $00:19:00.324 \rightarrow 00:19:02.922$ but they don't tell you anything but most
- NOTE Confidence: 0.8482419966666667
- $00{:}19{:}02{.}922 \dashrightarrow 00{:}19{:}05{.}410$ of the animal models that are out there.
- NOTE Confidence: 0.8482419966666667
- 00:19:05.410 --> 00:19:07.430 Will perturbed either stress
- NOTE Confidence: 0.8482419966666667
- $00:19:07.430 \longrightarrow 00:19:09.450$ hormones or sex hormones.
- NOTE Confidence: 0.8482419966666667

 $00:19:09.450 \longrightarrow 00:19:11.144$ Now you can't ask them about their

NOTE Confidence: 0.8482419966666667

 $00:19:11.144 \rightarrow 00:19:13.147$ symptoms that you can look at some

NOTE Confidence: 0.8482419966666667

 $00:19:13.147 \rightarrow 00:19:14.065$ endophenotypes of depression,

NOTE Confidence: 0.8482419966666667

 $00:19:14.070 \rightarrow 00:19:16.910$ including those biomarkers, very easily,

NOTE Confidence: 0.8482419966666667

 $00:19:16.910 \longrightarrow 00:19:18.962$ obviously in animal models.

NOTE Confidence: 0.8482419966666667

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

NOTE Confidence: 0.8482419966666667

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

NOTE Confidence: 0.8482419966666667

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

NOTE Confidence: 0.8482419966666667

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

NOTE Confidence: 0.8482419966666667

 $00:19:25.380 \longrightarrow 00:19:26.976$ It's difficult to model in humans.

NOTE Confidence: 0.8482419966666667

 $00{:}19{:}26{.}980 \dashrightarrow 00{:}19{:}29{.}300$ It's difficult to model in animals as well.

NOTE Confidence: 0.8482419966666667

 $00{:}19{:}29{.}300 \dashrightarrow 00{:}19{:}31{.}316$ But I do think it's really important

NOTE Confidence: 0.8482419966666667

 $00{:}19{:}31{.}316 \dashrightarrow 00{:}19{:}33{.}619$ to look at a variety of endophenotypes

NOTE Confidence: 0.8482419966666667

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

NOTE Confidence: 0.8482419966666667

 $00:19:36.115 \rightarrow 00:19:37.219$ that you're doing.

NOTE Confidence: 0.8482419966666667

 $00:19:37.220 \longrightarrow 00:19:38.716$ So we try to look at a number

- NOTE Confidence: 0.8482419966666667
- 00:19:38.716 --> 00:19:39.938 of different kinds of behavior,
- NOTE Confidence: 0.8482419966666667
- 00:19:39.940 --> 00:19:41.480 maternal behavior for looking
- NOTE Confidence: 0.8482419966666667
- $00:19:41.480 \longrightarrow 00:19:42.635$ at postpartum depression,
- NOTE Confidence: 0.8482419966666667
- $00:19:42.640 \longrightarrow 00:19:45.058$ look at endocrine factors as well
- NOTE Confidence: 0.8482419966666667
- $00{:}19{:}45.058 \dashrightarrow 00{:}19{:}47.320$ as some neural factors as well.
- NOTE Confidence: 0.8482419966666667
- $00{:}19{:}47{.}320 \dashrightarrow 00{:}19{:}50{.}256$ I am a bit fix ated on the hippocampus.
- NOTE Confidence: 0.8482419966666667
- 00:19:50.260 --> 00:19:52.199 Why am I so interested in it?
- NOTE Confidence: 0.8482419966666667
- 00:19:52.200 --> 00:19:54.102 We know it's important for memory
- NOTE Confidence: 0.8482419966666667
- $00:19:54.102 \longrightarrow 00:19:54.736$ and emotion.
- NOTE Confidence: 0.8482419966666667
- $00:19:54.740 \longrightarrow 00:19:56.550$ We see integrity loss with
- NOTE Confidence: 0.8482419966666667
- $00:19:56.550 \longrightarrow 00:19:57.636$ major depressive disorder.
- NOTE Confidence: 0.8482419966666667
- $00:19:57.640 \rightarrow 00:19:59.516$ This the early work came from Shailene
- NOTE Confidence: 0.8482419966666667
- $00{:}19{:}59{.}516 \dashrightarrow 00{:}20{:}01{.}420$ who showed with untreated depression,
- NOTE Confidence: 0.8482419966666667
- $00:20:01.420 \longrightarrow 00:20:05.040$ small hippocampus that negative correlation.
- NOTE Confidence: 0.773109768
- $00{:}20{:}05{.}040 \dashrightarrow 00{:}20{:}06{.}740$ I'm interested in sex differences,
- NOTE Confidence: 0.773109768

 $00:20:06.740 \longrightarrow 00:20:08.450$ so of course they have to have it has

NOTE Confidence: 0.773109768

 $00{:}20{:}08.450 \dashrightarrow 00{:}20{:}10.595$ a lot of these estrogen receptors and

NOTE Confidence: 0.773109768

 $00:20:10.595 \rightarrow 00:20:12.600$ and rogen receptors within the campus itself.

NOTE Confidence: 0.773109768

 $00{:}20{:}12.600 \dashrightarrow 00{:}20{:}14.640$ And the late great Bruce McEwen

NOTE Confidence: 0.773109768

 $00{:}20{:}14.640 \dashrightarrow 00{:}20{:}16.860$ showed 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

 $00:20:19.164 \rightarrow 00:20:20.700$ glucocorticoids in the hippocampus.

NOTE Confidence: 0.773109768

 $00:20:20.700 \longrightarrow 00:20:22.044$ So if stress is playing a role,

NOTE Confidence: 0.773109768

 $00{:}20{:}22{.}050 \dashrightarrow 00{:}20{:}23{.}800$ it's kind of an important to show

NOTE Confidence: 0.773109768

 $00{:}20{:}23.800 \dashrightarrow 00{:}20{:}25.069$ that those receptors are there.

NOTE Confidence: 0.773109768

 $00:20:25.070 \longrightarrow 00:20:27.614$ And it's attractive to study to me because

NOTE Confidence: 0.773109768

 $00:20:27.614 \rightarrow 00:20:29.761$ it's very plastic in adulthood and

NOTE Confidence: 0.773109768

 $00{:}20{:}29{.}761 \dashrightarrow 00{:}20{:}32{.}337$ there are many forms of plasticity that

NOTE Confidence: 0.773109768

 $00:20:32.337 \rightarrow 00:20:34.745$ show both the sex and stress difference.

NOTE Confidence: 0.773109768

 $00:20:34.750 \rightarrow 00:20:37.430$ And here's the late great Bruce McEwen there.

NOTE Confidence: 0.773109768

 $00:20:37.430 \longrightarrow 00:20:40.054$ 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.

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

NOTE Confidence: 0.773109768

 $00:20:43.030 \rightarrow 00:20:46.310$ I'm going to give you one because in his lab,

NOTE Confidence: 0.773109768

 $00{:}20{:}46{.}310 \dashrightarrow 00{:}20{:}46{.}714$ his.

NOTE Confidence: 0.773109768

 $00{:}20{:}46.714 \dashrightarrow 00{:}20{:}48.734$ They showed that chronic restraint

NOTE Confidence: 0.773109768

 $00{:}20{:}48.734 \dashrightarrow 00{:}20{:}51.424$ stress caused a trophy in the April good

NOTE Confidence: 0.773109768

 $00:20:51.424 \rightarrow 00:20:53.769$ dendrites in the CA 3 pyramidal cells.

NOTE Confidence: 0.773109768

 $00{:}20{:}53.770 \dashrightarrow 00{:}20{:}55.546$ And when I did a postdoc with him,

NOTE Confidence: 0.773109768

 $00:20:55.550 \longrightarrow 00:20:56.950$ he said what about females?

NOTE Confidence: 0.773109768

 $00:20:56.950 \longrightarrow 00:20:58.550$ And he allowed me to do that study.

NOTE Confidence: 0.773109768

 $00:20:58.550 \longrightarrow 00:21:00.515$ Is a great postdoc supervisor

NOTE Confidence: 0.773109768

 $00{:}21{:}00{.}515 \dashrightarrow 00{:}21{:}02{.}087$ 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

 $00{:}21{:}03.861 \dashrightarrow 00{:}21{:}05.260$ that the atrophy happened,

NOTE Confidence: 0.773109768

 $00{:}21{:}05{.}260 \dashrightarrow 00{:}21{:}07{.}206$ but it happened in the basal dendrites.

00:21:07.210 - 00:21:09.051 And I'm sure many of you are

NOTE Confidence: 0.773109768

 $00:21:09.051 \rightarrow 00:21:10.856$ 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

 $00:21:12.770 \longrightarrow 00:21:15.038$ but I'm putting it up there because

NOTE Confidence: 0.773109768

 $00{:}21{:}15{.}038 \dashrightarrow 00{:}21{:}17{.}318$ 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

 $00:21:20.470 \longrightarrow 00:21:21.820$ 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

 $00{:}21{:}23{.}344 \dashrightarrow 00{:}21{:}24{.}759$ and that should say to you,

NOTE Confidence: 0.773109768

00:21:24.760 --> 00:21:24.994 oh,

NOTE Confidence: 0.773109768

 $00:21:24.994 \longrightarrow 00:21:26.398$ they're going to be worse at

NOTE Confidence: 0.773109768

 $00:21:26.398 \rightarrow 00:21:28.018$ something and this is absolutely true.

NOTE Confidence: 0.773109768

 $00{:}21{:}28{.}020 \dashrightarrow 00{:}21{:}30{.}120$ Vicki Lowe's group has shown that in

NOTE Confidence: 0.773109768

 $00:21:30.120 \longrightarrow 00:21:32.249$ males this causes a functional impairment

NOTE Confidence: 0.773109768

 $00{:}21{:}32{.}249 \dashrightarrow 00{:}21{:}34{.}194$ 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

 $00{:}21{:}39{.}360 \dashrightarrow 00{:}21{:}41{.}600$ memory and females this paradigm.

NOTE Confidence: 0.773109768

 $00:21:41.600 \longrightarrow 00:21:44.828$ So watch those notions.

NOTE Confidence: 0.773109768

 $00:21:44.830 \rightarrow 00:21:46.750$ The dental gyrus is my very favorite area,

NOTE Confidence: 0.773109768

 $00:21:46.750 \longrightarrow 00:21:47.414$ the hippocampus,

NOTE Confidence: 0.773109768

 $00:21:47.414 \longrightarrow 00:21:49.406$ 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

 $00:21:51.690 \rightarrow 00:21:53.986$ and that's shown in all mammalian species,

NOTE Confidence: 0.773109768

 $00:21:53.990 \rightarrow 00:21:57.000$ 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

 $00{:}21{:}58.675 \dashrightarrow 00{:}22{:}00.015$ you can measure neurogenesis.

NOTE Confidence: 0.773109768

 $00{:}22{:}00{.}020 \dashrightarrow 00{:}22{:}02{.}396$ I'm not going to go through all of them,

NOTE Confidence: 0.773109768

 $00:22:02.400 \longrightarrow 00:22:04.815$ but you can look at self proliferation,

NOTE Confidence: 0.773109768

 $00:22:04.820 \rightarrow 00:22:07.214$ which is the production of new neurons,

NOTE Confidence: 0.773109768

 $00:22:07.220 \longrightarrow 00:22:09.248$ and you can use an endogenous

 $00:22:09.248 \longrightarrow 00:22:10.600$ marker like case 57.

NOTE Confidence: 0.773109768

 $00{:}22{:}10.600 \dashrightarrow 00{:}22{:}13.008$ 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

 $00{:}22{:}14.780 \dashrightarrow 00{:}22{:}16.740$ which is expressed in

NOTE Confidence: 0.773109768

 $00{:}22{:}16.740 \dashrightarrow 00{:}22{:}18.700$ all a mateur new neurons.

NOTE Confidence: 0.773109768

 $00:22:18.700 \longrightarrow 00:22:21.139$ Or if you're looking at a longer time point,

NOTE Confidence: 0.773109768

 $00{:}22{:}21{.}140 \dashrightarrow 00{:}22{:}23{.}324$ 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

 $00{:}22{:}24.780 \dashrightarrow 00{:}22{:}26.874$ and then determine whether that new

NOTE Confidence: 0.773109768

 $00{:}22{:}26.874 \dashrightarrow 00{:}22{:}29.401$ cell is Co labeled with a mature

NOTE Confidence: 0.773109768

 $00:22:29.401 \longrightarrow 00:22:31.176$ neuronal protein like new one.

NOTE Confidence: 0.773109768

 $00:22:31.180 \longrightarrow 00:22:32.956$ And it might not even be the number

NOTE Confidence: 0.773109768

 $00:22:32.956 \longrightarrow 00:22:34.805$ of these new cells or new neurons

NOTE Confidence: 0.773109768

 $00:22:34.805 \longrightarrow 00:22:35.618$ that are produced,

NOTE Confidence: 0.773109768

 $00:22:35.620 \longrightarrow 00:22:37.713$ but how are they active and are

NOTE Confidence: 0.773109768

 $00:22:37.713 \rightarrow 00:22:39.918$ they active in an appropriate way?

- NOTE Confidence: 0.773109768
- $00:22:39.920 \longrightarrow 00:22:41.776$ And one of the ways that people do
- NOTE Confidence: 0.773109768
- $00:22:41.776 \longrightarrow 00:22:43.607$ this is by using immediate early
- NOTE Confidence: 0.773109768
- $00:22:43.607 \rightarrow 00:22:45.237$ genes which are expressed after
- NOTE Confidence: 0.773109768
- $00:22:45.237 \longrightarrow 00:22:46.570$ 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
- $00{:}22{:}48.926 \dashrightarrow 00{:}22{:}49.232$ Cfas.
- NOTE Confidence: 0.773109768
- 00:22:49.232 --> 00:22:49.538 Now,
- NOTE Confidence: 0.773109768
- $00:22:49.538 \rightarrow 00:22:51.680$ the I don't neurogenesis in the campus
- NOTE Confidence: 0.7814706789
- $00{:}22{:}51.739 \dashrightarrow 00{:}22{:}53.401$ was sort of rediscovered in the
- NOTE Confidence: 0.7814706789
- $00:22:53.401 \longrightarrow 00:22:55.424$ early 90s and and since then there
- NOTE Confidence: 0.7814706789
- $00{:}22{:}55{.}424 \dashrightarrow 00{:}22{:}57{.}772$ have been a lot of studies trying to
- NOTE Confidence: 0.7814706789
- $00{:}22{:}57{.}772 \dashrightarrow 00{:}23{:}00{.}306$ figure out what these new neurons do.
- NOTE Confidence: 0.7814706789
- $00:23:00.310 \longrightarrow 00:23:02.298$ And I would say there's no real
- NOTE Confidence: 0.7814706789
- $00{:}23{:}02{.}298 \dashrightarrow 00{:}23{:}03{.}690$ 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

 $00:23:09.457 \rightarrow 00:23:11.448$ 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

 $00{:}23{:}13{.}210 \dashrightarrow 00{:}23{:}17{.}445$ And of course we see sex differences.

NOTE Confidence: 0.7814706789

 $00{:}23{:}17{.}450 \dashrightarrow 00{:}23{:}19{.}704$ 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

 $00:23:21.750 \longrightarrow 00:23:23.670$ that major depressive disorder

NOTE Confidence: 0.7814706789

 $00{:}23{:}23{.}670 \dashrightarrow 00{:}23{:}26{.}070$ is associated with reduction in,

NOTE Confidence: 0.7814706789

 $00{:}23{:}26.070 \dashrightarrow 00{:}23{:}27.810$ in this case self proliferation.

NOTE Confidence: 0.7814706789

 $00{:}23{:}27{.}810 \dashrightarrow 00{:}23{:}30{.}950$ So that's that endogenous marker

NOTE Confidence: 0.7814706789

 $00{:}23{:}30{.}950 \dashrightarrow 00{:}23{:}33{.}012$ 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

 $00{:}23{:}35{.}220 \dashrightarrow 00{:}23{:}38{.}006$ 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

 $00:23:39.900 \longrightarrow 00:23:42.204$ you see a normalization and in this data

- NOTE Confidence: 0.7814706789
- $00:23:42.204 \rightarrow 00:23:44.230$ a tricyclic antidepressants overshot.

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

NOTE Confidence: 0.7814706789

 $00:23:45.334 \longrightarrow 00:23:46.330$ time she's done this study.

NOTE Confidence: 0.7814706789

 $00:23:46.330 \rightarrow 00:23:48.166$ So this just happened to be one of those.

NOTE Confidence: 0.7814706789

 $00:23:48.170 \longrightarrow 00:23:48.942$ Prosperous things.

NOTE Confidence: 0.7814706789

 $00:23:48.942 \rightarrow 00:23:51.258$ 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

 $00:23:53.700 \rightarrow 00:23:54.388$ postmortem tissue.

NOTE Confidence: 0.7814706789

 $00:23:54.388 \longrightarrow 00:23:55.420$ That's what happens.

NOTE Confidence: 0.7814706789

 $00:23:55.420 \longrightarrow 00:23:56.716$ What we were what about sex?

NOTE Confidence: 0.7814706789

 $00:23:56.720 \longrightarrow 00:23:58.588$ 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

 $00{:}24{:}01{.}325 \dashrightarrow 00{:}24{:}02{.}393$ at University of Calgary,

NOTE Confidence: 0.7814706789

 $00{:}24{:}02{.}400 \dashrightarrow 00{:}24{:}04{.}308$ he was doing PhD with me at the time

 $00{:}24{:}04{.}308 \dashrightarrow 00{:}24{:}06{.}607$ and I got her hands and some tissue from

NOTE Confidence: 0.7814706789

 $00{:}24{:}06.607 \dashrightarrow 00{:}24{:}08.660$ the Stanley Medical Research Foundation.

NOTE Confidence: 0.7814706789

 $00:24:08.660 \longrightarrow 00:24:10.040$ So there are three groups,

NOTE Confidence: 0.7814706789

 $00:24:10.040 \rightarrow 00:24:11.522$ non depressed individuals,

NOTE Confidence: 0.7814706789

 $00{:}24{:}11{.}522 \dashrightarrow 00{:}24{:}13{.}498$ depressed individuals that were

NOTE Confidence: 0.7814706789

 $00{:}24{:}13.498 \dashrightarrow 00{:}24{:}14.980$ prescribed antidepressants and

NOTE Confidence: 0.7814706789

 $00{:}24{:}14.980 \dashrightarrow 00{:}24{:}16.770$ depressed individuals that had psychotic

NOTE Confidence: 0.7814706789

 $00:24:16.770 \longrightarrow 00:24:19.174$ symptoms as well and were prescribed

NOTE Confidence: 0.7814706789

 $00{:}24{:}19{.}174 \dashrightarrow 00{:}24{:}21{.}390$ both antidepressants and antipsychotics.

NOTE Confidence: 0.7814706789

 $00{:}24{:}21{.}390 \dashrightarrow 00{:}24{:}23{.}806$ And he looked at these immature new neurons,

NOTE Confidence: 0.7814706789

 $00{:}24{:}23.810 \dashrightarrow 00{:}24{:}25.150$ these double court and expressing

NOTE Confidence: 0.7814706789

 $00:24:25.150 \longrightarrow 00:24:26.810$ cells that are right down there,

NOTE Confidence: 0.7814706789

 $00:24:26.810 \longrightarrow 00:24:29.090$ and we didn't see any large

NOTE Confidence: 0.7814706789

 $00:24:29.090 \longrightarrow 00:24:30.230$ differences in males.

NOTE Confidence: 0.7814706789

00:24:30.230 --> 00:24:32.334 Actually a little decrease

NOTE Confidence: 0.7814706789

 $00:24:32.334 \rightarrow 00:24:33.386$ with antipsychotics,

- NOTE Confidence: 0.7814706789
- $00:24:33.390 \longrightarrow 00:24:35.581$ but we did see that up regulation

 $00{:}24{:}35{.}581 \dashrightarrow 00{:}24{:}37{.}510$ in females that were prescribed

NOTE Confidence: 0.7814706789

 $00:24:37.510 \rightarrow 00:24:40.288$ antidepressants and this actually kind of,

NOTE Confidence: 0.7814706789

 $00:24:40.290 \longrightarrow 00:24:41.320$ even though they're not that

NOTE Confidence: 0.7814706789

 $00:24:41.320 \longrightarrow 00:24:42.144$ many studies out there,

NOTE Confidence: 0.7814706789

 $00:24:42.150 \longrightarrow 00:24:44.660$ 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

 $00:24:47.170 \longrightarrow 00:24:49.246$ There's an increase in female responders,

NOTE Confidence: 0.7814706789

 $00:24:49.250 \longrightarrow 00:24:52.075$ not so much male responders

NOTE Confidence: 0.7814706789

 $00:24:52.075 \longrightarrow 00:24:53.205$ to antidepressants.

NOTE Confidence: 0.7814706789

 $00{:}24{:}53{.}210 \dashrightarrow 00{:}24{:}55{.}212$ And the neurogenesis effect that we saw

NOTE Confidence: 0.7814706789

 $00:24:55.212 \rightarrow 00:24:57.590$ here was only in the younger populations.

NOTE Confidence: 0.7814706789

 $00:24:57.590 \longrightarrow 00:24:59.132$ We didn't have enough power to

NOTE Confidence: 0.7814706789

 $00{:}24{:}59{.}132 \dashrightarrow 00{:}25{:}01{.}200$ look at age by sex interactions.

NOTE Confidence: 0.7814706789

 $00{:}25{:}01{.}200 \dashrightarrow 00{:}25{:}03{.}036$ But we saw that this aggregation

 $00:25:03.036 \rightarrow 00:25:04.960$ 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

 $00:25:06.550 \longrightarrow 00:25:08.080$ not in the older population,

NOTE Confidence: 0.7814706789

 $00:25:08.080 \longrightarrow 00:25:09.970$ which is the same thing that

NOTE Confidence: 0.7814706789

 $00:25:09.970 \longrightarrow 00:25:11.710$ Paul Lucas and had found.

NOTE Confidence: 0.7814706789

 $00{:}25{:}11.710 \dashrightarrow 00{:}25{:}13.420$ So hopefully what I've told you

NOTE Confidence: 0.7814706789

 $00:25:13.420 \longrightarrow 00:25:16.070$ for this part of the talk is that

NOTE Confidence: 0.7814706789

 $00:25:16.070 \rightarrow 00:25:17.880$ sex differences in major depressive

NOTE Confidence: 0.7814706789

 $00{:}25{:}17.880 \dashrightarrow 00{:}25{:}20.298$ disorder go beyond prevalence of the

NOTE Confidence: 0.7814706789

 $00:25:20.298 \rightarrow 00:25:22.288$ disease to symptomology and biomarkers,

NOTE Confidence: 0.7814706789

 $00:25:22.290 \longrightarrow 00:25:24.824$ and that it really needs to be

NOTE Confidence: 0.7814706789

 $00:25:24.824 \rightarrow 00:25:27.362$ considered and along with age,

NOTE Confidence: 0.7814706789

 $00{:}25{:}27{.}362 \dashrightarrow 00{:}25{:}29{.}719$ treatment response, but also whether

NOTE Confidence: 0.7814706789

 $00{:}25{:}29.719 \dashrightarrow 00{:}25{:}32.257$ or not there are treatment naive.

NOTE Confidence: 0.7814706789

 $00:25:32.260 \longrightarrow 00:25:34.690$ I want to pivot to talk about a new

NOTE Confidence: 0.7814706789

 $00:25:34.690 \rightarrow 00:25:36.739$ model that we're thinking about.

- NOTE Confidence: 0.7814706789
- $00:25:36.740 \dashrightarrow 00:25:38.917$ And this is negative kind of bias.
- NOTE Confidence: 0.7814706789
- $00:25:38.920 \longrightarrow 00:25:41.951$ 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
- $00:25:42.820 \longrightarrow 00:25:44.228$ And what is it?
- NOTE Confidence: 0.7814706789
- $00{:}25{:}44{.}228 \dashrightarrow 00{:}25{:}45{.}988$ It's an interpretation of ambiguous
- NOTE Confidence: 0.7814706789
- $00:25:45.988 \longrightarrow 00:25:47.479$ stimuli as being negative.
- NOTE Confidence: 0.7814706789
- 00:25:47.480 --> 00:25:48.756 So Doctor Travis Hodges,
- NOTE Confidence: 0.7814706789
- $00:25:48.756 \longrightarrow 00:25:50.670$ who did a postdoc in my
- NOTE Confidence: 0.856535137142857
- $00:25:50.744 \rightarrow 00:25:53.257$ 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
- $00:25:55.140 \longrightarrow 00:25:56.560$ he always uses this example.
- NOTE Confidence: 0.856535137142857
- $00{:}25{:}56{.}560 \dashrightarrow 00{:}25{:}59{.}536$ So some body could say to him that's an
- NOTE Confidence: 0.856535137142857
- $00:25:59.536 \rightarrow 00:26:01.880$ interesting shirt you have on and if you.
- NOTE Confidence: 0.856535137142857
- $00{:}26{:}01{.}880 \dashrightarrow 00{:}26{:}03{.}696$ That you can interpret that in a negative
- NOTE Confidence: 0.856535137142857
- $00{:}26{:}03.696 \dashrightarrow 00{:}26{:}05.765$ 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

 $00{:}26{:}07.786 \dashrightarrow 00{:}26{:}08.746$ 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

 $00:26:10.772 \rightarrow 00:26:12.677$ So people with major depressive

NOTE Confidence: 0.856535137142857

 $00{:}26{:}12.677 \dashrightarrow 00{:}26{:}14.675$ disorder will have a negative

NOTE Confidence: 0.856535137142857

 $00{:}26{:}14.675 \dashrightarrow 00{:}26{:}16.630$ bias to these ambiguous stimuli.

NOTE Confidence: 0.856535137142857

 $00:26:16.630 \longrightarrow 00:26:18.522$ It's resistant to treatment,

NOTE Confidence: 0.856535137142857

 $00:26:18.522 \rightarrow 00:26:20.887$ it predicts future depressive episodes,

NOTE Confidence: 0.856535137142857

 $00:26:20.890 \rightarrow 00:26:23.590$ and it requires pattern separation,

NOTE Confidence: 0.856535137142857

 $00:26:23.590 \rightarrow 00:26:25.024$ which I'm going to tell you

NOTE Confidence: 0.856535137142857

 $00:26:25.024 \longrightarrow 00:26:26.230$ about what that means now.

NOTE Confidence: 0.856535137142857

 $00:26:26.230 \longrightarrow 00:26:28.102$ So pattern separation or

NOTE Confidence: 0.856535137142857

 $00:26:28.102 \longrightarrow 00:26:29.974$ pattern discrimination is the

NOTE Confidence: 0.856535137142857

 $00:26:29.974 \longrightarrow 00:26:31.990$ ability to form distinct.

NOTE Confidence: 0.856535137142857

 $00{:}26{:}31{.}990 \dashrightarrow 00{:}26{:}34{.}562$ Representations of similar inputs

NOTE Confidence: 0.856535137142857

 $00:26:34.562 \rightarrow 00:26:37.777$ 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
- $00{:}26{:}41.749 \dashrightarrow 00{:}26{:}45.197$ butter in a sea of similar looking jars.
- NOTE Confidence: 0.856535137142857
- $00:26:45.200 \longrightarrow 00:26:47.237$ And this is a scene that plays
- NOTE Confidence: 0.856535137142857
- $00:26:47.237 \rightarrow 00:26:49.857$ out in my household all the time,
- NOTE Confidence: 0.856535137142857
- $00:26:49.860 \rightarrow 00:26:51.975$ which is why we now have two peanut butters,
- NOTE Confidence: 0.856535137142857
- $00:26:51.980 \longrightarrow 00:26:53.037$ I think, he said the other day.
- NOTE Confidence: 0.856535137142857
- $00:26:53.040 \rightarrow 00:26:54.900$ We don't have any prunes.
- NOTE Confidence: 0.856535137142857
- $00:26:54.900 \longrightarrow 00:26:55.636$ And we had to.
- NOTE Confidence: 0.856535137142857
- $00{:}26{:}55{.}636 \dashrightarrow 00{:}26{:}57{.}063$ We actually had two and I bought
- NOTE Confidence: 0.856535137142857
- $00{:}26{:}57.063 \dashrightarrow 00{:}26{:}58.719$ another one because I believed him.
- NOTE Confidence: 0.856535137142857
- $00{:}26{:}58{.}720 \dashrightarrow 00{:}27{:}01{.}220$ I should know better.
- NOTE Confidence: 0.856535137142857
- $00{:}27{:}01{.}220 \dashrightarrow 00{:}27{:}02{.}564$ It turns out that females and males
- NOTE Confidence: 0.856535137142857
- $00{:}27{:}02{.}564 \dashrightarrow 00{:}27{:}03{.}740$ pay attention to different cues.
- NOTE Confidence: 0.856535137142857
- $00{:}27{:}03.740 \dashrightarrow 00{:}27{:}05.100$ 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

 $00:27:05.920 \rightarrow 00:27:07.467$ sometimes you'll see males or perform better.

NOTE Confidence: 0.856535137142857

 $00{:}27{:}07{.}470 \dashrightarrow 00{:}27{:}09{.}780$ And I'm happy to talk about that,

NOTE Confidence: 0.856535137142857

 $00{:}27{:}09{.}780 \dashrightarrow 00{:}27{:}10{.}575$ that particular work.

NOTE Confidence: 0.856535137142857

00:27:10.575 --> 00:27:11.370 But right now,

NOTE Confidence: 0.856535137142857

 $00{:}27{:}11{.}370 \dashrightarrow 00{:}27{:}12{.}914$ I'm going to talk to you about the

NOTE Confidence: 0.856535137142857

 $00{:}27{:}12{.}914 \dashrightarrow 00{:}27{:}14{.}508$ kind of biased task we developed.

NOTE Confidence: 0.856535137142857

 $00:27:14.510 \longrightarrow 00:27:17.390$ So with similar ish inputs,

NOTE Confidence: 0.856535137142857

00:27:17.390 --> 00:27:17.658 one,

NOTE Confidence: 0.856535137142857

 $00{:}27{:}17.658 \dashrightarrow 00{:}27{:}20.070$ they had a context where they got shocked in,

NOTE Confidence: 0.856535137142857

 $00:27:20.070 \longrightarrow 00:27:21.450$ another they didn't have a shock,

NOTE Confidence: 0.856535137142857

 $00{:}27{:}21.450 \dashrightarrow 00{:}27{:}24.708$ got shocked in and this was across 16 days.

NOTE Confidence: 0.856535137142857

 $00{:}27{:}24.710 \dashrightarrow 00{:}27{:}27.212$ And then on the 18th day Travis gave them

NOTE Confidence: 0.856535137142857

 $00:27:27.212 \rightarrow 00:27:29.668$ what we're calling an ambiguous context.

NOTE Confidence: 0.856535137142857

 $00{:}27{:}29.670 \dashrightarrow 00{:}27{:}31.693$ So it had half the features of

NOTE Confidence: 0.856535137142857

 $00{:}27{:}31.693 \dashrightarrow 00{:}27{:}33.563$ the shot context and half the

NOTE Confidence: 0.856535137142857

 $00{:}27{:}33{.}563 \dashrightarrow 00{:}27{:}35{.}447$ features of the non shot context.

- NOTE Confidence: 0.856535137142857
- $00{:}27{:}35{.}450 \dashrightarrow 00{:}27{:}37{.}606$ 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
- $00:27:39.683 \longrightarrow 00:27:41.483$ context by freezing or that's
- NOTE Confidence: 0.856535137142857
- $00:27:41.483 \longrightarrow 00:27:43.428$ one thing they can show you.
- NOTE Confidence: 0.856535137142857
- $00:27:43.430 \longrightarrow 00:27:44.970$ And so we are interpreting.
- NOTE Confidence: 0.856535137142857
- $00{:}27{:}44.970 \dashrightarrow 00{:}27{:}47.265$ High freezing as a negative
- NOTE Confidence: 0.856535137142857
- $00{:}27{:}47.265 \dashrightarrow 00{:}27{:}49.560$ bias to this ambiguous context.
- NOTE Confidence: 0.856535137142857
- $00:27:49.560 \longrightarrow 00:27:50.580$ If they didn't have this,
- NOTE Confidence: 0.856535137142857
- $00:27:50.580 \rightarrow 00:27:52.176$ higher freezing levels would say they
- NOTE Confidence: 0.856535137142857
- $00:27:52.176 \rightarrow 00:27:54.597$ 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
- $00{:}27{:}57{.}540 \dashrightarrow 00{:}27{:}59{.}604$ 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
- $00{:}28{:}02{.}190 \dashrightarrow 00{:}28{:}06{.}006$ And so first he looked across the lifespan,
- NOTE Confidence: 0.856535137142857

 $00{:}28{:}06{.}010 \dashrightarrow 00{:}28{:}08{.}175$ adolescence and a dulthood at middle

NOTE Confidence: 0.856535137142857

 $00{:}28{:}08.175 \dashrightarrow 00{:}28{:}10.732$ age and we actually, to our surprise,

NOTE Confidence: 0.856535137142857

 $00{:}28{:}10.732 \dashrightarrow 00{:}28{:}12.650$ didn't see any sex or age difference

NOTE Confidence: 0.856535137142857

 $00{:}28{:}12.703 \dashrightarrow 00{:}28{:}13.528$ in that pattern.

NOTE Confidence: 0.856535137142857

 $00:28:13.530 \rightarrow 00:28:16.188$ Discrimination in terms of their ability

NOTE Confidence: 0.856535137142857

 $00{:}28{:}16.188 \dashrightarrow 00{:}28{:}18.849$ to discriminate between those two contexts.

NOTE Confidence: 0.856535137142857

 $00{:}28{:}18.850 \dashrightarrow 00{:}28{:}21.238$ Where we started to see some

NOTE Confidence: 0.856535137142857

 $00:28:21.238 \rightarrow 00:28:23.250$ differences was with negative bias.

NOTE Confidence: 0.856535137142857

 $00{:}28{:}23{.}250 \dashrightarrow 00{:}28{:}25{.}818$ So this is the freezing basically

NOTE Confidence: 0.856535137142857

 $00:28:25.818 \longrightarrow 00:28:27.530$ to the ambiguous context.

NOTE Confidence: 0.856535137142857

 $00{:}28{:}27{.}530 \dashrightarrow 00{:}28{:}31{.}044$ And in males we saw as lifetime

NOTE Confidence: 0.856535137142857

 $00:28:31.044 \rightarrow 00:28:32.550$ as life progressed.

NOTE Confidence: 0.856535137142857

00:28:32.550 --> 00:28:32.954 Age.

NOTE Confidence: 0.856535137142857

 $00:28:32.954 \longrightarrow 00:28:34.166$ As they aged,

NOTE Confidence: 0.856535137142857

 $00:28:34.166 \longrightarrow 00:28:36.186$ 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
- $00:28:38.020 \rightarrow 00:28:39.550$ this as grumpy old men,
- NOTE Confidence: 0.856535137142857
- $00:28:39.550 \longrightarrow 00:28:41.560$ 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
- $00:28:43.570 \rightarrow 00:28:45.200$ Females you see this upregulation
- NOTE Confidence: 0.754828374166667
- $00:28:45.200 \rightarrow 00:28:47.529$ when it starts to come down again,
- NOTE Confidence: 0.754828374166667
- $00:28:47.530 \longrightarrow 00:28:50.008$ and the only time you see significant
- NOTE Confidence: 0.754828374166667
- $00{:}28{:}50{.}008 \dashrightarrow 00{:}28{:}51{.}830$ sex differences in middle age.
- NOTE Confidence: 0.754828374166667
- $00{:}28{:}51{.}830 \dashrightarrow 00{:}28{:}54{.}889$ But that's in under normal basal situations.
- NOTE Confidence: 0.754828374166667
- $00{:}28{:}54{.}890 \dashrightarrow 00{:}28{:}59{.}058$ What happens in an animal model of stress?
- NOTE Confidence: 0.754828374166667
- $00:28:59.060 \longrightarrow 00:29:00.840$ So using chronic unpredictable stress
- NOTE Confidence: 0.754828374166667
- $00{:}29{:}00{.}840 \dashrightarrow 00{:}29{:}03{.}130$ paradigm in both males and females,
- NOTE Confidence: 0.754828374166667
- $00{:}29{:}03.130 \dashrightarrow 00{:}29{:}05.188$ 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
- $00{:}29{:}06{.}880 \dashrightarrow 00{:}29{:}08{.}752$ Now a lot of labs I know would stop.
- NOTE Confidence: 0.754828374166667
- $00:29:08.760 \longrightarrow 00:29:09.790$ 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

 $00{:}29{:}11{.}480 \dashrightarrow 00{:}29{:}14{.}060$ but we're not that lap.

NOTE Confidence: 0.754828374166667

 $00{:}29{:}14.060 \dashrightarrow 00{:}29{:}16.859$ And and look at what you can see when

NOTE Confidence: 0.754828374166667

 $00:29:16.859 \rightarrow 00:29:19.680$ you don't assume that it's the same.

NOTE Confidence: 0.754828374166667

 $00{:}29{:}19.680 \dashrightarrow 00{:}29{:}21.600$ So this is what we're calling

NOTE Confidence: 0.754828374166667

 $00:29:21.600 \longrightarrow 00:29:22.240$ functional connectivity.

NOTE Confidence: 0.754828374166667

 $00:29:22.240 \longrightarrow 00:29:23.026$ There's like CFOs.

NOTE Confidence: 0.754828374166667

 $00:29:23.026 \rightarrow 00:29:25.186$ I know this is really confusing, but I

NOTE Confidence: 0.754828374166667

 $00{:}29{:}25.186 \dashrightarrow 00{:}29{:}27.237$ think you'll see some patterns right away.

NOTE Confidence: 0.754828374166667

 $00:29:27.240 \rightarrow 00:29:28.956$ There are 15 different brain regions.

NOTE Confidence: 0.754828374166667

 $00:29:28.960 \rightarrow 00:29:30.658$ This activity in each brain region

NOTE Confidence: 0.754828374166667

 $00{:}29{:}30.658 \dashrightarrow 00{:}29{:}32.370$ and then correlated with each other.

NOTE Confidence: 0.754828374166667

 $00:29:32.370 \rightarrow 00:29:35.789$ These are only correlations of .5 or above.

NOTE Confidence: 0.754828374166667

 $00:29:35.789 \longrightarrow 00:29:38.387$ Absolute value of .5 or five.

NOTE Confidence: 0.754828374166667

 $00{:}29{:}38{.}390 \dashrightarrow 00{:}29{:}39{.}400$ Red lines,

NOTE Confidence: 0.754828374166667

 $00:29:39.400 \longrightarrow 00:29:40.410$ positive correlations,

- NOTE Confidence: 0.754828374166667
- $00:29:40.410 \longrightarrow 00:29:42.430$ blue lines negative correlations.
- NOTE Confidence: 0.754828374166667
- $00:29:42.430 \longrightarrow 00:29:44.008$ 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
- $00:29:45.443 \rightarrow 00:29:46.767$ see a negative correlation.
- NOTE Confidence: 0.754828374166667
- $00:29:46.770 \longrightarrow 00:29:48.942$ Females very strong as so the
- NOTE Confidence: 0.754828374166667
- $00:29:48.942 \rightarrow 00:29:51.357$ 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
- $00:29:54.010 \rightarrow 00:29:57.070$ 1 in males and non existent one in females.
- NOTE Confidence: 0.754828374166667
- $00:29:57.070 \longrightarrow 00:29:59.240$ So what this suggests to us is.
- NOTE Confidence: 0.754828374166667
- $00:29:59.240 \longrightarrow 00:30:00.760$ The neural representation of
- NOTE Confidence: 0.754828374166667
- $00:30:00.760 \rightarrow 00:30:02.660$ 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
- $00:30:04.360 \longrightarrow 00:30:06.376$ so if you're trying to treat this,
- NOTE Confidence: 0.754828374166667
- $00{:}30{:}06{.}380 \dashrightarrow 00{:}30{:}08{.}744$ you can imagine you're going to
- NOTE Confidence: 0.754828374166667
- $00{:}30{:}08{.}744 \dashrightarrow 00{:}30{:}10{.}320$ get some different responses.
- NOTE Confidence: 0.754828374166667

 $00:30:10.320 \rightarrow 00:30:13.140$ He also looked at inflammatory signaling,

NOTE Confidence: 0.754828374166667

 $00:30:13.140 \longrightarrow 00:30:14.940$ and in the basolateral amygdala,

NOTE Confidence: 0.754828374166667

 $00:30:14.940 \longrightarrow 00:30:17.334$ he found that for a variety of

NOTE Confidence: 0.754828374166667

00:30:17.334 --> 00:30:18.360 prone flammatory cytokines,

NOTE Confidence: 0.754828374166667

 $00:30:18.360 \longrightarrow 00:30:22.206$ females had an upregulation, males didn't.

NOTE Confidence: 0.754828374166667

 $00{:}30{:}22{.}210 \dashrightarrow 00{:}30{:}23{.}466$ At all.

NOTE Confidence: 0.754828374166667

00:30:23.466 --> 00:30:24.722 So again,

NOTE Confidence: 0.754828374166667

 $00:30:24.722 \rightarrow 00:30:26.606$ completely different representation.

NOTE Confidence: 0.754828374166667

 $00:30:26.610 \rightarrow 00:30:28.368$ Of course, we looked at neurogenesis,

NOTE Confidence: 0.754828374166667

 $00{:}30{:}28{.}370 \dashrightarrow 00{:}30{:}29{.}298$ our bread and butter,

NOTE Confidence: 0.754828374166667

 $00{:}30{:}29{.}298 \dashrightarrow 00{:}30{:}31{.}017$ and what we found for both males

NOTE Confidence: 0.754828374166667

 $00:30:31.017 \longrightarrow 00:30:32.387$ and females is with chronic,

NOTE Confidence: 0.754828374166667

00:30:32.390 --> 00:30:33.260 unpredictable stress,

NOTE Confidence: 0.754828374166667

 $00:30:33.260 \longrightarrow 00:30:35.870$ there was a decrease in neurogenesis.

NOTE Confidence: 0.754828374166667

 $00{:}30{:}35{.}870 \dashrightarrow 00{:}30{:}38{.}126$ But when we did correlations with

NOTE Confidence: 0.754828374166667

 $00:30:38.126 \rightarrow 00:30:40.210$ freezing to the ambiguous context,

 $00:30:40.210 \longrightarrow 00:30:42.712$ we actually only saw a correlation

NOTE Confidence: 0.754828374166667

 $00:30:42.712 \longrightarrow 00:30:43.963$ in the males,

NOTE Confidence: 0.754828374166667

00:30:43.970 --> 00:30:45.270 a significant correlation in males,

NOTE Confidence: 0.754828374166667

 $00:30:45.270 \longrightarrow 00:30:46.722$ but not in females.

NOTE Confidence: 0.754828374166667

 $00:30:46.722 \longrightarrow 00:30:49.773$ So what this suggests to us is that

NOTE Confidence: 0.754828374166667

 $00:30:49.773 \longrightarrow 00:30:52.149$ using this negative kind of bias.

NOTE Confidence: 0.754828374166667

 $00{:}30{:}52.150 \dashrightarrow 00{:}30{:}53.575$ Has different representation

NOTE Confidence: 0.754828374166667

 $00:30:53.575 \longrightarrow 00:30:55.475$ and females versus males.

NOTE Confidence: 0.754828374166667

 $00{:}30{:}55{.}480 \dashrightarrow 00{:}30{:}57{.}524$ 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

 $00:30:58.400 \rightarrow 00:31:00.208$ perhaps neuroplasticity in males

NOTE Confidence: 0.754828374166667

 $00{:}31{:}00{.}208 \dashrightarrow 00{:}31{:}02{.}468$ and for sure different neuronal

NOTE Confidence: 0.754828374166667

 $00{:}31{:}02{.}468 \dashrightarrow 00{:}31{:}04{.}159$ networks that are activated.

NOTE Confidence: 0.754828374166667

 $00{:}31{:}04{.}160 \dashrightarrow 00{:}31{:}08{.}108$ And actually in the human data,

NOTE Confidence: 0.754828374166667

 $00:31:08.108 \dashrightarrow 00:31:09.593$ and this is Marianne Stanley's

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

NOTE Confidence: 0.754828374166667

 $00{:}31{:}10.680 \dashrightarrow 00{:}31{:}12.374$ they've shown some of the same kinds

NOTE Confidence: 0.754828374166667

 $00{:}31{:}12{.}374 \dashrightarrow 00{:}31{:}13{.}942$ of things in their transcriptomic

NOTE Confidence: 0.754828374166667

 $00:31:13.942 \longrightarrow 00:31:15.127$ signatures as well,

NOTE Confidence: 0.754828374166667

 $00{:}31{:}15{.}130 \dashrightarrow 00{:}31{:}19{.}150$ 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

 $00:31:21.227 \rightarrow 00:31:23.429$ but that goes in opposite directions

NOTE Confidence: 0.754828374166667

 $00{:}31{:}23{.}429 \dashrightarrow 00{:}31{:}25{.}000$ between males and females.

NOTE Confidence: 0.754828374166667

 $00:31:25.000 \rightarrow 00:31:27.534$ So that's why I think it's so

NOTE Confidence: 0.754828374166667

 $00{:}31{:}27{.}534 \dashrightarrow 00{:}31{:}29{.}688$ important to continue to study this.

NOTE Confidence: 0.754828374166667

 $00:31:29.690 \longrightarrow 00:31:30.095$ Now,

NOTE Confidence: 0.754828374166667

00:31:30.095 --> 00:31:32.930 I want to totally not totally switch

NOTE Confidence: 0.754828374166667

 $00:31:32.930 \rightarrow 00:31:35.926$ gears like so we know that depression

NOTE Confidence: 0.754828374166667

 $00:31:35.926 \rightarrow 00:31:38.810$ is seen in females compared to males,

NOTE Confidence: 0.754828374166667

 $00:31:38.810 \longrightarrow 00:31:40.138$ more females and males.

 $00:31:40.138 \rightarrow 00:31:42.890$ That should really give us to think that,

NOTE Confidence: 0.754828374166667

 $00:31:42.890 \rightarrow 00:31:43.252$ sorry,

NOTE Confidence: 0.754828374166667

 $00:31:43.252 \dashrightarrow 00:31:45.786$ that we should look at some female

NOTE Confidence: 0.754828374166667

 $00{:}31{:}45.786 \dashrightarrow 00{:}31{:}46.510$ specific factors.

NOTE Confidence: 0.8261995725

 $00{:}31{:}46{.}510 \dashrightarrow 00{:}31{:}49{.}456$ And I put some common ones up there and

NOTE Confidence: 0.8261995725

 $00:31:49.456 \rightarrow 00:31:51.458$ we know there's good evidence to show

NOTE Confidence: 0.8261995725

 $00{:}31{:}51{.}458 \dashrightarrow 00{:}31{:}53{.}815$ that all of these factors can influence

NOTE Confidence: 0.8261995725

 $00:31:53.815 \rightarrow 00:31:56.110$ the risk for major depressive disorder.

NOTE Confidence: 0.8261995725

 $00{:}31{:}56{.}110 \dashrightarrow 00{:}31{:}58{.}399$ But I'm going to talk about pregnancy

NOTE Confidence: 0.8261995725

 $00{:}31{:}58{.}399 \dashrightarrow 00{:}32{:}00{.}149$ 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

 $00{:}32{:}02{.}200 \dashrightarrow 00{:}32{:}05{.}050$ one of my favorite hormones.

NOTE Confidence: 0.8261995725

 $00:32:05.050 \dashrightarrow 00:32:06.866$ So I showed you the first graph already,

NOTE Confidence: 0.8261995725

 $00{:}32{:}06.870 \dashrightarrow 00{:}32{:}09.215$ right this I said ohh reproductive hormones.

NOTE Confidence: 0.8261995725

 $00{:}32{:}09{.}220 \dashrightarrow 00{:}32{:}11{.}140$ So that suggests the estrogens and

 $00:32:11.140 \longrightarrow 00:32:12.745$ 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

 $00:32:14.320 \longrightarrow 00:32:15.720$ You look at that graph and that's

NOTE Confidence: 0.8261995725

 $00:32:15.720 \longrightarrow 00:32:16.410$ what you think.

NOTE Confidence: 0.8261995725

 $00{:}32{:}16{.}410 \dashrightarrow 00{:}32{:}19{.}354$ 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

 $00{:}32{:}22{.}205 \dashrightarrow 00{:}32{:}24{.}250$ depression and a female's lifetime

NOTE Confidence: 0.8261995725

 $00:32:24.319 \rightarrow 00:32:26.531$ and that's during postmenopausal

NOTE Confidence: 0.8261995725

 $00{:}32{:}26{.}531 \dashrightarrow 00{:}32{:}28{.}743$ period and during perimenopause.

NOTE Confidence: 0.8261995725

 $00:32:28.750 \longrightarrow 00:32:30.952$ And in fact these periods are

NOTE Confidence: 0.8261995725

 $00{:}32{:}30{.}952 \dashrightarrow 00{:}32{:}32{.}868$ actually associated with a fluctuation

NOTE Confidence: 0.8261995725

 $00{:}32{:}32{.}868 \dashrightarrow 00{:}32{:}34{.}778$ or a decrease in these.

NOTE Confidence: 0.8261995725

00:32:34.780 --> 00:32:35.530 Variant hormones,

NOTE Confidence: 0.8261995725

 $00{:}32{:}35{.}530 \dashrightarrow 00{:}32{:}37{.}780$ 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
- $00:32:41.310 \longrightarrow 00:32:44.249$ but it's not my children, so it's fine.
- NOTE Confidence: 0.8261995725
- $00:32:44.250 \longrightarrow 00:32:45.864$ At Week 20,
- NOTE Confidence: 0.8261995725
- $00{:}32{:}45{.}864 \dashrightarrow 00{:}32{:}49{.}630$ 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
- $00:32:50.671 \dashrightarrow 00:32:53.100$ they're 300 times normal levels and they
- NOTE Confidence: 0.8261995725
- $00:32:53.175 \rightarrow 00:32:55.845$ climb even more dramatically after that.
- NOTE Confidence: 0.8261995725
- $00:32:55.850 \longrightarrow 00:32:57.420$ And then what happens with
- NOTE Confidence: 0.8261995725
- $00:32:57.420 \longrightarrow 00:32:58.990$ the expulsion of the placenta?
- NOTE Confidence: 0.8261995725
- $00:32:58.990 \rightarrow 00:33:00.474$ People are hypogonadal during
- NOTE Confidence: 0.8261995725
- $00:33:00.474 \longrightarrow 00:33:01.587$ this time period,
- NOTE Confidence: 0.8261995725
- $00{:}33{:}01{.}590 \dashrightarrow 00{:}33{:}04{.}985$ so that's been thought of as a
- NOTE Confidence: 0.8261995725
- $00{:}33{:}04{.}985 \dashrightarrow 00{:}33{:}07{.}970$ possible risk factor for depression.
- NOTE Confidence: 0.8261995725
- $00{:}33{:}07{.}970 \dashrightarrow 00{:}33{:}10{.}130$ I'm sure many of you are thinking on
- NOTE Confidence: 0.8261995725
- $00:33:10.130 \rightarrow 00:33:11.990$ 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

 $00{:}33{:}13.683 \dashrightarrow 00{:}33{:}15.518$ and how glamorous and a mazing.

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

 $00:33:17.840 \dashrightarrow 00:33:20.760$ And I'm going to blame Demi Moore because

NOTE Confidence: 0.8261995725

 $00:33:20.830 \longrightarrow 00:33:22.979 \text{ most of you were not born in 1991.}$

NOTE Confidence: 0.8261995725

 $00{:}33{:}22{.}979 \dashrightarrow 00{:}33{:}25{.}002$ 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

 $00{:}33{:}26{.}200 \dashrightarrow 00{:}33{:}27{.}285$ And I don't know if the older

NOTE Confidence: 0.8261995725

 $00:33:27.285 \dashrightarrow 00:33:28.440$ people in the audience remember,

NOTE Confidence: 0.8261995725

 $00:33:28.440 \longrightarrow 00:33:29.950$ 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

 $00:33:31.720 \longrightarrow 00:33:33.184$ she said it's outrageous.

NOTE Confidence: 0.8261995725

 $00:33:33.184 \rightarrow 00:33:34.648$ 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

 $00:33:39.130 \longrightarrow 00:33:40.057$ pregnant and naked.

- NOTE Confidence: 0.8261995725
- $00{:}33{:}40.057 \dashrightarrow 00{:}33{:}42.563$ But I thought I'd share with you the
- NOTE Confidence: 0.8261995725
- $00:33:42.563 \rightarrow 00:33:45.029$ 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
- $00:33:49.350 \longrightarrow 00:33:49.793$ yeah,
- NOTE Confidence: 0.8261995725
- $00:33:49.793 \longrightarrow 00:33:51.122$ 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
- $00:33:54.668 \longrightarrow 00:33:58.051$ on a person's body to just state
- NOTE Confidence: 0.8261995725
- $00{:}33{:}58.051 \dashrightarrow 00{:}34{:}00.075$ that parasite penny fetus.
- NOTE Confidence: 0.8261995725
- $00:34:00.080 \longrightarrow 00:34:03.100$ 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
- $00{:}34{:}06{.}649 \dashrightarrow 00{:}34{:}08{.}910$ Liters of fluid are pumped through a
- NOTE Confidence: 0.8261995725
- $00:34:08.980 \rightarrow 00:34:11.180$ person's body when they're pregnant,
- NOTE Confidence: 0.8261995725
- $00{:}34{:}11{.}180 \dashrightarrow 00{:}34{:}13{.}742$ and so it's not super surprising
- NOTE Confidence: 0.8261995725

 $00:34:13.742 \longrightarrow 00:34:16.848$ that there might be some health

NOTE Confidence: 0.8261995725

 $00{:}34{:}16.848 \dashrightarrow 00{:}34{:}18.819$ repercussions for pregnancy.

NOTE Confidence: 0.8261995725

 $00{:}34{:}18{.}820 \dashrightarrow 00{:}34{:}21{.}058$ And in fact we boy cotters coined

NOTE Confidence: 0.8261995725

 $00:34:21.058 \longrightarrow 00:34:23.600$ this as a perfect storm for

NOTE Confidence: 0.8261995725

 $00{:}34{:}23.600 \dashrightarrow 00{:}34{:}26.510$ 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

 $00{:}34{:}28{.}576 \dashrightarrow 00{:}34{:}31{.}116$ biomarkers with pregnancy and the

NOTE Confidence: 0.8261995725

 $00{:}34{:}31{.}116 \dashrightarrow 00{:}34{:}33{.}630$ postpartum mirror that of what you

NOTE Confidence: 0.8261995725

 $00{:}34{:}33{.}630 \dashrightarrow 00{:}34{:}35{.}280$ see in major depressive disorder.

NOTE Confidence: 0.8261995725

 $00{:}34{:}35{.}280 \dashrightarrow 00{:}34{:}38{.}206$ So volume decreases in the hippocampus and

NOTE Confidence: 0.8261995725

 $00{:}34{:}38{.}206 \dashrightarrow 00{:}34{:}43{.}430$ this is some work by the not by maxima.

NOTE Confidence: 0.8261995725

 $00:34:43.430 \rightarrow 00:34:46.010$ The stress system is also perturbed,

NOTE Confidence: 0.8261995725

 $00:34:46.010 \longrightarrow 00:34:47.950$ increased levels of cortisol impairments

NOTE Confidence: 0.8261995725

 $00:34:47.950 \longrightarrow 00:34:49.890$ and negative feedback as pro

NOTE Confidence: 0.8025809716666667

 $00:34:49.947 \longrightarrow 00:34:51.522$ inflammatory towards the end of

NOTE Confidence: 0.802580971666667

 $00{:}34{:}51{.}522 \dashrightarrow 00{:}34{:}53{.}687$ 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
- $00{:}34{:}55{.}290 \dashrightarrow 00{:}34{:}57{.}985$ all of these same kind of biological
- NOTE Confidence: 0.802580971666667
- $00:34:57.985 \rightarrow 00:35:01.940$ outcomes you see with depression.
- NOTE Confidence: 0.8025809716666667
- $00{:}35{:}01{.}940 \dashrightarrow 00{:}35{:}05{.}398$ The DSM 5 does not recognize perinatal
- NOTE Confidence: 0.8025809716666667
- $00:35:05.398 \dashrightarrow 00:35:07.760$ depression as something different.
- NOTE Confidence: 0.802580971666667
- 00:35:07.760 --> 00:35:08.876 It's a specifier,
- NOTE Confidence: 0.8025809716666667
- $00:35:08.876 \rightarrow 00:35:11.480$ but it describes it as depression during
- NOTE Confidence: 0.802580971666667
- $00:35:11.548 \rightarrow 00:35:14.180$ gestation or up to four weeks postpartum.
- NOTE Confidence: 0.8025809716666667
- $00{:}35{:}14.180 \dashrightarrow 00{:}35{:}16.420$ But if you look a little bit carefully
- NOTE Confidence: 0.802580971666667
- $00:35:16.420 \rightarrow 00:35:18.865$ at what who's getting depression during
- NOTE Confidence: 0.8025809716666667
- $00:35:18.865 \rightarrow 00:35:21.135$ pregnancy versus in the postpartum,
- NOTE Confidence: 0.802580971666667
- $00:35:21.140 \longrightarrow 00:35:23.420$ it's actually could be quite different.
- NOTE Confidence: 0.802580971666667
- $00{:}35{:}23.420 \dashrightarrow 00{:}35{:}24.659$ So Munk, Olsen.
- NOTE Confidence: 0.802580971666667
- $00{:}35{:}24.659 \dashrightarrow 00{:}35{:}27.137$ Showed that for first time admission
- NOTE Confidence: 0.802580971666667
- $00{:}35{:}27.137 \dashrightarrow 00{:}35{:}30.176$ 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

 $00{:}35{:}32{.}160 \dashrightarrow 00{:}35{:}35{.}044$ 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: 0.8025809716666667

 $00:35:36.514 \rightarrow 00:35:39.164$ But in the postpartum you see much

NOTE Confidence: 0.802580971666667

 $00:35:39.164 \rightarrow 00:35:41.450$ higher levels or much greater risk.

NOTE Confidence: 0.802580971666667

 $00:35:41.450 \dashrightarrow 00:35:43.304$ And it turns out that depression

NOTE Confidence: 0.8025809716666667

 $00:35:43.304 \rightarrow 00:35:44.952$ onset during pregnancy is associated

NOTE Confidence: 0.802580971666667

 $00:35:44.952 \longrightarrow 00:35:46.727$ with a history of depression.

NOTE Confidence: 0.802580971666667

 $00{:}35{:}46{.}730 \dashrightarrow 00{:}35{:}48{.}514$ Depression onset postpartum is

NOTE Confidence: 0.802580971666667

 $00:35:48.514 \rightarrow 00:35:50.744$ associated with the Novo Depression.

NOTE Confidence: 0.802580971666667

 $00:35:50.750 \dashrightarrow 00:35:53.048$ So we were really interested in

NOTE Confidence: 0.8025809716666667

 $00:35:53.048 \dashrightarrow 00:35:55.450$ modeling that de Novo depression.

NOTE Confidence: 0.802580971666667

 $00:35:55.450 \rightarrow 00:35:56.896$ And we have two different models,

NOTE Confidence: 0.802580971666667

 $00:35:56.900 \dashrightarrow 00:35:59.428$ one of them that we work on more now.

NOTE Confidence: 0.802580971666667

 $00{:}35{:}59{.}428 \dashrightarrow 00{:}36{:}01{.}192$ But I'll tell you a little

NOTE Confidence: 0.802580971666667

 $00:36:01.192 \longrightarrow 00:36:02.679$ bit about both of them.

 $00:36:02.680 \rightarrow 00:36:04.540$ So hormonal withdrawal after pregnancy.

NOTE Confidence: 0.802580971666667

 $00:36:04.540 \longrightarrow 00:36:06.478$ So we just wanted to model

NOTE Confidence: 0.802580971666667

00:36:06.480 --> 00:36:07.496 pregnant a rodent pregnancy,

NOTE Confidence: 0.8025809716666667

 $00:36:07.496 \longrightarrow 00:36:08.258$ in this case,

NOTE Confidence: 0.802580971666667

00:36:08.260 --> 00:36:09.885 very high levels of estrogens

NOTE Confidence: 0.802580971666667

 $00:36:09.885 \rightarrow 00:36:10.535$ and progesterone.

NOTE Confidence: 0.8025809716666667

 $00:36:10.540 \dashrightarrow 00:36:12.437$ And then we with drew them very quickly

NOTE Confidence: 0.802580971666667

 $00:36:12.437 \rightarrow 00:36:14.138$ from these hormones and what happened?

NOTE Confidence: 0.802580971666667

 $00{:}36{:}14.140 \dashrightarrow 00{:}36{:}15.556$ 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

 $00:36:16.436 \rightarrow 00:36:17.896$ this group's been showing some,

NOTE Confidence: 0.802580971666667

 $00{:}36{:}17{.}900 \dashrightarrow 00{:}36{:}20{.}068$ I think she's got actually two papers out

NOTE Confidence: 0.802580971666667

 $00:36:20.068 \rightarrow 00:36:22.047$ 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: 0.8025809716666667

00:36:25.362 --> 00:36:28.028 expression of depressive like endophenotypes,

 $00:36:28.030 \rightarrow 00:36:29.985$ 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

 $00{:}36{:}31{.}940 \dashrightarrow 00{:}36{:}35{.}738$ Sucrose preference is akin to anodontia

NOTE Confidence: 0.802580971666667

 $00:36:35.738 \rightarrow 00:36:37.637$ and decreased neuroplasticity.

NOTE Confidence: 0.802580971666667

 $00:36:37.640 \longrightarrow 00:36:40.142$ This is very similar to what's

NOTE Confidence: 0.802580971666667

 $00{:}36{:}40{.}142 \dashrightarrow 00{:}36{:}41{.}393$ seen in humans.

NOTE Confidence: 0.8025809716666667

 $00{:}36{:}41{.}400 \dashrightarrow 00{:}36{:}43{.}990$ So Rubino's Group has looked at a

NOTE Confidence: 0.802580971666667

 $00:36:43.990 \longrightarrow 00:36:45.515$ hormone simulated pregnancy and

NOTE Confidence: 0.802580971666667

 $00:36:45.515 \rightarrow 00:36:47.591$ people with a history of postpartum

NOTE Confidence: 0.802580971666667

 $00{:}36{:}47.591 \dashrightarrow 00{:}36{:}50.235$ depression or not and seeing an up

NOTE Confidence: 0.802580971666667

 $00:36:50.235 \dashrightarrow 00:36:52.160$ regulation in these depressive symptoms.

NOTE Confidence: 0.8025809716666667

 $00{:}36{:}52{.}160 \dashrightarrow 00{:}36{:}54{.}134$ And the individuals that had postpartum

NOTE Confidence: 0.8025809716666667

 $00{:}36{:}54{.}134 \dashrightarrow 00{:}36{:}56{.}206$ depression and VBA for Garger didn't

NOTE Confidence: 0.8025809716666667

 $00{:}36{:}56{.}206$ --> $00{:}36{:}58{.}306$ give a hormone stimulated pregnancy or

NOTE Confidence: 0.8025809716666667

 $00:36:58.306 \dashrightarrow 00:37:00.340$ with draw from home simulate pregnancy.

NOTE Confidence: 0.8025809716666667

 $00:37:00.340 \rightarrow 00:37:02.416$ She just withdrew them from ovarian
$00:37:02.416 \rightarrow 00:37:05.457$ hormones using a GNRH agonist and you can

NOTE Confidence: 0.802580971666667

 $00{:}37{:}05{.}457 \dashrightarrow 00{:}37{:}07{.}447$ see a slight statistically significant.

NOTE Confidence: 0.802580971666667

 $00{:}37{:}07{.}450 \dashrightarrow 00{:}37{:}11{.}300$ Increase in Hamilton depression scores.

NOTE Confidence: 0.802580971666667

 $00:37:11.300 \longrightarrow 00:37:13.379$ Viper's gone on to show that this

NOTE Confidence: 0.8025809716666667

00:37:13.379 --> 00:37:14.969 increase in Hamilton Depression scores

NOTE Confidence: 0.802580971666667

 $00{:}37{:}14.969 \dashrightarrow 00{:}37{:}17.202$ was related to the amount of decrease

NOTE Confidence: 0.8025809716666667

 $00{:}37{:}17{.}202 \dashrightarrow 00{:}37{:}19{.}761$ in estradiol and related to an increase

NOTE Confidence: 0.802580971666667

 $00:37:19.761 \longrightarrow 00:37:21.673$ in functional connectivity to the

NOTE Confidence: 0.8025809716666667

 $00:37:21.673 \rightarrow 00:37:24.391$ amygdala and a decrease in functional

NOTE Confidence: 0.802580971666667

 $00:37:24.391 \rightarrow 00:37:26.720$ connectivity to the hippocampus.

NOTE Confidence: 0.8025809716666667

 $00:37:26.720 \longrightarrow 00:37:28.240$ So hopefully what this clearly

NOTE Confidence: 0.802580971666667

 $00:37:28.240 \longrightarrow 00:37:30.543$ shows you from this work is that

NOTE Confidence: 0.802580971666667

00:37:30.543 --> 00:37:32.363 with drawal from a variant hormones

NOTE Confidence: 0.8025809716666667

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,

 $00:37:36.060 \longrightarrow 00:37:37.360$ which suggests that ovarian

NOTE Confidence: 0.802580971666667

 $00{:}37{:}37{.}360 \dashrightarrow 00{:}37{:}38{.}660$ hormones are providing some.

NOTE Confidence: 0.802580971666667

00:37:38.660 --> 00:37:40.740 Resilience.

NOTE Confidence: 0.8025809716666667

00:37:40.740 --> 00:37:41.538 Now Rand Eade,

NOTE Confidence: 0.802580971666667

 $00:37:41.538 \longrightarrow 00:37:44.170$ who did her PhD in my lab and is

NOTE Confidence: 0.802580971666667

 $00{:}37{:}44.170 \dashrightarrow 00{:}37{:}46.252$ now doing a postdoc with Kieran

NOTE Confidence: 0.8025809716666667

00:37:46.252 --> 00:37:47.879 O'Donnell and Rose Baggott,

NOTE Confidence: 0.802580971666667

 $00:37:47.880 \longrightarrow 00:37:49.655$ really was interested in this

NOTE Confidence: 0.802580971666667

 $00{:}37{:}49.655 \dashrightarrow 00{:}37{:}51.075$ sort of perimenopausal period.

NOTE Confidence: 0.802580971666667

 $00{:}37{:}51.080 \dashrightarrow 00{:}37{:}54.000$ And So what she did here was overact,

NOTE Confidence: 0.802580971666667

 $00{:}37{:}54.000 \dashrightarrow 00{:}37{:}56.785$ demonized or did not recognize

NOTE Confidence: 0.8025809716666667

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

 $00{:}38{:}02{.}800 \dashrightarrow 00{:}38{:}05{.}320$ And then she gave six weeks of chronic,

NOTE Confidence: 0.8741944125

 $00:38:05.320 \longrightarrow 00:38:06.018$ unpredictable stress.

NOTE Confidence: 0.8741944125

 $00:38:06.018 \dashrightarrow 00:38:08.112$ Now she did that because three

- NOTE Confidence: 0.8741944125
- $00{:}38{:}08{.}112 \dashrightarrow 00{:}38{:}09{.}889$ weeks will increase these

 $00:38:09.889 \rightarrow 00:38:11.419$ depressive like endophenotypes.

NOTE Confidence: 0.8741944125

 $00:38:11.420 \longrightarrow 00:38:13.135$ 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

 $00{:}38{:}14{.}510 \dashrightarrow 00{:}38{:}16{.}662$ 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

 $00:38:21.310 \rightarrow 00:38:23.648$ Fluoxetine is the one that we chose,

NOTE Confidence: 0.8741944125

 $00:38:23.650 \longrightarrow 00:38:24.866$ better known as Prozac.

NOTE Confidence: 0.8741944125

 $00:38:24.866 \rightarrow 00:38:27.185$ And then she looked at a variety

NOTE Confidence: 0.8741944125

 $00{:}38{:}27.185 \dashrightarrow 00{:}38{:}29.345$ of behaviors and neural outcomes.

NOTE Confidence: 0.8741944125

 $00{:}38{:}29{.}350 \dashrightarrow 00{:}38{:}30{.}854$ And I'm going to show you a graph

NOTE Confidence: 0.8741944125

 $00:38:30.854 \rightarrow 00:38:32.088$ 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

 $00{:}38{:}33{.}750 \dashrightarrow 00{:}38{:}35{.}868$ I think, that we've ever had.

 $00:38:35.870 \longrightarrow 00:38:37.420$ The pale green bars are

NOTE Confidence: 0.8741944125

 $00{:}38{:}37{.}420 \dashrightarrow 00{:}38{:}38{.}350$ their overactive mized,

NOTE Confidence: 0.8741944125

 $00{:}38{:}38{.}350 \dashrightarrow 00{:}38{:}40{.}950$ so removal of ovarian hormones

NOTE Confidence: 0.8741944125

 $00:38:40.950 \longrightarrow 00:38:42.322$ and it didn't matter.

NOTE Confidence: 0.8741944125

 $00{:}38{:}42{.}322 \dashrightarrow 00{:}38{:}44{.}380$ That behavior we looked at passive

NOTE Confidence: 0.8741944125

 $00{:}38{:}44{.}448 \dashrightarrow 00{:}38{:}46{.}779$ coping and the four swim test sucrose,

NOTE Confidence: 0.8741944125

00:38:46.780 --> 00:38:47.263 anhedonia,

NOTE Confidence: 0.8741944125

 $00{:}38{:}47{.}263 \dashrightarrow 00{:}38{:}49{.}195$ sucrose preference over atomized

NOTE Confidence: 0.8741944125

 $00{:}38{:}49{.}195 \dashrightarrow 00{:}38{:}51{.}127$ group showed this greater

NOTE Confidence: 0.8741944125

00:38:51.127 --> 00:38:52.820 depressive like endophenotype,

NOTE Confidence: 0.8741944125

 $00:38:52.820 \longrightarrow 00:38:54.398$ so more anxiety.

NOTE Confidence: 0.8741944125

 $00:38:54.398 \rightarrow 00:38:58.460$ And we also looked at negative feedback HP,

NOTE Confidence: 0.8741944125

 $00{:}38{:}58{.}460 \dashrightarrow 00{:}38{:}59{.}228$ a negative feedback.

NOTE Confidence: 0.8741944125

 $00:38:59.228 \dashrightarrow 00:39:01.759$ And the way we did this is by using

NOTE Confidence: 0.8741944125

 $00{:}39{:}01.759 \dashrightarrow 00{:}39{:}03.449$ a dexame thasone suppression test you

NOTE Confidence: 0.8741944125

 $00:39:03.449 \rightarrow 00:39:05.387$ have a synthetic glucocorticoid that

- NOTE Confidence: 0.8741944125
- $00:39:05.387 \rightarrow 00:39:07.967$ should shut down release of corticosterone,
- NOTE Confidence: 0.8741944125
- $00{:}39{:}07{.}970 \dashrightarrow 00{:}39{:}09{.}690$ the main glucocorticoid and
- NOTE Confidence: 0.8741944125
- $00:39:09.690 \longrightarrow 00:39:11.840$ rodents and it's sort of.
- NOTE Confidence: 0.8741944125
- $00:39:11.840 \rightarrow 00:39:13.264$ That was in the Shams you can see,
- NOTE Confidence: 0.8741944125
- $00:39:13.270 \longrightarrow 00:39:14.495$ but in the over recognized
- NOTE Confidence: 0.8741944125
- $00:39:14.495 \longrightarrow 00:39:15.230$ group that overshoots.
- NOTE Confidence: 0.8741944125
- $00:39:15.230 \longrightarrow 00:39:16.895$ So we see an impairment
- NOTE Confidence: 0.8741944125
- $00{:}39{:}16.895 \dashrightarrow 00{:}39{:}17.894$ and negative feedback.
- NOTE Confidence: 0.8741944125
- $00:39:17.900 \longrightarrow 00:39:20.581$ Now we have this idea that fluoxetine
- NOTE Confidence: 0.8741944125
- $00:39:20.581 \rightarrow 00:39:23.259$ 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
- $00:39:30.636 \longrightarrow 00:39:33.485$ in the efficacy of fluoxetine
- NOTE Confidence: 0.8741944125

 $00{:}39{:}33{.}485 \dashrightarrow 00{:}39{:}36{.}880$ based on the based on the hormonal

NOTE Confidence: 0.8741944125

 $00:39:36.880 \longrightarrow 00:39:38.440$ background of the females.

NOTE Confidence: 0.8741944125

 $00:39:38.440 \rightarrow 00:39:40.800$ But we actually didn't see efficacy at all,

NOTE Confidence: 0.8741944125

 $00:39{:}40.800 \dashrightarrow 00{:}39{:}42.816$ at least in terms of the behavior.

NOTE Confidence: 0.8741944125

 $00{:}39{:}42.820 \dashrightarrow 00{:}39{:}45.340$ The only time we saw efficacy was in

NOTE Confidence: 0.8741944125

 $00:39:45.340 \longrightarrow 00:39:47.209$ this endocrine and neurochemistry,

NOTE Confidence: 0.8741944125

 $00:39:47.210 \longrightarrow 00:39:47.890$ not just show you that.

NOTE Confidence: 0.8741944125

00:39:47.890 --> 00:39:48.784 Looking out here,

NOTE Confidence: 0.8741944125

 $00{:}39{:}48.784 \dashrightarrow 00{:}39{:}50.572$ you see that flat response here

NOTE Confidence: 0.8741944125

 $00:39:50.572 \longrightarrow 00:39:52.140$ in the sham individuals?

NOTE Confidence: 0.8741944125

 $00:39:52.140 \longrightarrow 00:39:53.036$ In the obex individuals,

NOTE Confidence: 0.8741944125

 $00:39:53.036 \rightarrow 00:39:54.380$ it does come down a bit,

NOTE Confidence: 0.8741944125

 $00:39:54.380 \longrightarrow 00:39:55.792$ but it's still overshooting.

NOTE Confidence: 0.8741944125

 $00:39:55.792 \longrightarrow 00:39:57.910$ So even with the longer term

NOTE Confidence: 0.8741944125

 $00{:}39{:}57{.}977 \dashrightarrow 00{:}39{:}59{.}589$ with drawal from a variant,

NOTE Confidence: 0.8741944125

 $00{:}39{:}59{.}590 \dashrightarrow 00{:}40{:}01{.}615$ home owners in combination with

 $00:40:01.615 \longrightarrow 00:40:03.235$ stress increases the expression

NOTE Confidence: 0.8741944125

 $00:40:03.235 \rightarrow 00:40:05.610$ of depressive like anathema types.

NOTE Confidence: 0.8741944125

 $00:40:05.610 \longrightarrow 00:40:07.612$ And we found that the efficacy of

NOTE Confidence: 0.8741944125

 $00{:}40{:}07{.}612 \dashrightarrow 00{:}40{:}09{.}451$ fluoxetine was limited to neural and

NOTE Confidence: 0.8741944125

 $00{:}40{:}09{.}451 \dashrightarrow 00{:}40{:}10.679$ endocrine outcomes very different

NOTE Confidence: 0.8741944125

 $00{:}40{:}10.679 \dashrightarrow 00{:}40{:}12.781$ than what we see in terms of male

NOTE Confidence: 0.8741944125

 $00:40:12.781 \longrightarrow 00:40:14.282$ outcome even in our own lab.

NOTE Confidence: 0.8741944125

 $00:40:14.282 \longrightarrow 00:40:16.886$ But I would say that this also

NOTE Confidence: 0.8741944125

 $00{:}40{:}16.886 \dashrightarrow 00{:}40{:}19.018$ suggested a variant hormones

NOTE Confidence: 0.8741944125

 $00:40:19.018 \rightarrow 00:40:20.968$ provide some resilience.

NOTE Confidence: 0.8741944125

 $00:40:20.970 \longrightarrow 00:40:23.283$ So I want to talk in the last few

NOTE Confidence: 0.8741944125

 $00{:}40{:}23.283 \dashrightarrow 00{:}40{:}25.549$ minutes about the second model we have.

NOTE Confidence: 0.8741944125

 $00{:}40{:}25{.}550 \dashrightarrow 00{:}40{:}27{.}130$ So hormone with drawal 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,

00:40:31.395 --> 00:40:33.465 because we're withdrawing right away looking.

NOTE Confidence: 0.8741944125

 $00{:}40{:}33{.}470 \dashrightarrow 00{:}40{:}35{.}325$ But we were also interested in later,

NOTE Confidence: 0.8741944125

 $00:40:35.330 \longrightarrow 00:40:36.810$ like maybe three months later,

NOTE Confidence: 0.8741944125

 $00:40:36.810 \longrightarrow 00:40:38.990$ that kind of time period.

NOTE Confidence: 0.8741944125

 $00{:}40{:}38{.}990 \dashrightarrow 00{:}40{:}41{.}354$ And also this is really the

NOTE Confidence: 0.8741944125

 $00{:}40{:}41{.}354 \dashrightarrow 00{:}40{:}42{.}930$ brainchild of Suzanne Vermette.

NOTE Confidence: 0.8741944125

 $00:40:42.930 \rightarrow 00:40:44.746$ 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

 $00{:}40{:}45.083 \dashrightarrow 00{:}40{:}46.415$ 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

 $00{:}40{:}47.750 \dashrightarrow 00{:}40{:}48.430$ she came to the lab.

NOTE Confidence: 0.8741944125

 $00{:}40{:}48{.}430 \dashrightarrow 00{:}40{:}50{.}870$ She's like, I don't like your model because.

NOTE Confidence: 0.8741944125

 $00:40:50.870 \rightarrow 00:40:52.120$ They're not actually giving birth,

NOTE Confidence: 0.8741944125

 $00{:}40{:}52{.}120 \dashrightarrow 00{:}40{:}53{.}455$ and that's Fairpoint.

NOTE Confidence: 0.8741944125

 $00:40:53.455 \longrightarrow 00:40:56.570$ So we came up with this model,

NOTE Confidence: 0.842546727142857

 $00:40:56.570 \longrightarrow 00:40:58.110$ which I'll tell you in a second

 $00:40:58.110 \longrightarrow 00:40:59.697$ because I forgot this was coming up.

NOTE Confidence: 0.842546727142857

 $00{:}40{:}59{.}700 \dashrightarrow 00{:}41{:}01{.}815$ But I'm glad we came up with the model

NOTE Confidence: 0.842546727142857

 $00:41:01.815 \rightarrow 00:41:03.836$ because 15 years later somebody showed us,

NOTE Confidence: 0.842546727142857

 $00:41:03.840 \longrightarrow 00:41:05.700$ hey, this is a good model.

NOTE Confidence: 0.842546727142857

 $00:41:05.700 \longrightarrow 00:41:08.544$ So this is looking at cortisol

NOTE Confidence: 0.842546727142857

 $00{:}41{:}08{.}544 \dashrightarrow 00{:}41{:}12{.}264$ levels on postpartum week 6IN humans.

NOTE Confidence: 0.842546727142857

 $00:41:12.264 \longrightarrow 00:41:16.314$ And this is people that had

NOTE Confidence: 0.842546727142857

 $00:41:16.314 \rightarrow 00:41:17.628$ depressive symptoms postpartum

NOTE Confidence: 0.842546727142857

 $00{:}41{:}17.628 \dashrightarrow 00{:}41{:}19.380$ 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

 $00:41:21.460 \longrightarrow 00:41:22.753$ Versus healthy controls.

NOTE Confidence: 0.842546727142857

 $00{:}41{:}22.753 \dashrightarrow 00{:}41{:}25.339$ 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

 $00:41:27.930 \longrightarrow 00:41:29.530$ sort of postpartum depression postpartum,

NOTE Confidence: 0.842546727142857

00:41:29.530 --> 00:41:29.960 yeah, you,

 $00:41:29.960 \rightarrow 00:41:31.465$ I think you understand what I'm saying.

NOTE Confidence: 0.842546727142857

 $00:41:31.470 \longrightarrow 00:41:33.810$ Only those with postpartum symptoms

NOTE Confidence: 0.842546727142857

 $00:41:33.810 \longrightarrow 00:41:36.150$ that started onset postpartum that

NOTE Confidence: 0.842546727142857

 $00:41:36.216 \rightarrow 00:41:38.688$ show these higher levels of cortisol.

NOTE Confidence: 0.842546727142857

 $00:41:38.690 \longrightarrow 00:41:40.740$ 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

 $00:41:43.518 \longrightarrow 00:41:44.974$ and getting really high

NOTE Confidence: 0.842546727142857

00:41:44.974 --> 00:41:46.066 levels of corticosterone,

NOTE Confidence: 0.842546727142857

 $00:41:46.070 \longrightarrow 00:41:49.180$ which again is the main

NOTE Confidence: 0.842546727142857

 $00:41:49.180 \longrightarrow 00:41:51.046$ glucocorticoid for rodents.

NOTE Confidence: 0.842546727142857

 $00{:}41{:}51{.}050 \dashrightarrow 00{:}41{:}53{.}770$ And we looked at eternal care and the

NOTE Confidence: 0.842546727142857

 $00{:}41{:}53.770 \dashrightarrow 00{:}41{:}56.813$ force from test and N plasticity and we

NOTE Confidence: 0.842546727142857

 $00{:}41{:}56.813 \dashrightarrow 00{:}41{:}59.480$ see these depressive like endophenotypes.

NOTE Confidence: 0.842546727142857

 $00{:}41{:}59{.}480 \dashrightarrow 00{:}42{:}01{.}344$ 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

 $00{:}42{:}02{.}638 \dashrightarrow 00{:}42{:}03{.}470$ rest of the data.

NOTE Confidence: 0.842546727142857

 $00{:}42{:}03{.}470 \dashrightarrow 00{:}42{:}05{.}761$ So you'll see it in just a second and

NOTE Confidence: 0.842546727142857

 $00:42:05.761 \longrightarrow 00:42:09.067$ then we will give concurrent fluoxetine

NOTE Confidence: 0.842546727142857

 $00{:}42{:}09{.}070 \dashrightarrow 00{:}42{:}10.650$ and it restores maternal care.

NOTE Confidence: 0.842546727142857

 $00{:}42{:}10.650 \dashrightarrow 00{:}42{:}12.694$ But what does it do to the

NOTE Confidence: 0.842546727142857

 $00:42:12.694 \rightarrow 00:42:14.800$ rest of the endophenotypes?

NOTE Confidence: 0.842546727142857

 $00:42:14.800 \longrightarrow 00:42:17.900$ 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

 $00{:}42{:}19{.}140 \dashrightarrow 00{:}42{:}20{.}690$ 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

 $00:42:23.462 \rightarrow 00:42:25.310$ corticosterone and increases passive

NOTE Confidence: 0.842546727142857

 $00{:}42{:}25{.}386 \dashrightarrow 00{:}42{:}27{.}360$ coping in the four swim test.

NOTE Confidence: 0.842546727142857

 $00{:}42{:}27{.}360 \dashrightarrow 00{:}42{:}30{.}356$ The Hatch bars here are given fluoxetine.

NOTE Confidence: 0.842546727142857

 $00{:}42{:}30{.}360 \dashrightarrow 00{:}42{:}31{.}512$ It doesn't help.

NOTE Confidence: 0.842546727142857

 $00{:}42{:}31{.}512 \dashrightarrow 00{:}42{:}33{.}708$ In fact, it makes things worse.

00:42:33.708 - 00:42:35.850 It was a significant effect to

NOTE Confidence: 0.842546727142857

 $00:42:35.924 \rightarrow 00:42:37.844$ worsen symptoms with fluoxetine

NOTE Confidence: 0.842546727142857

 $00:42:37.844 \longrightarrow 00:42:39.764$ in the postpartum period.

NOTE Confidence: 0.842546727142857

 $00:42:39.770 \longrightarrow 00:42:41.202$ In terms of neurogenesis,

NOTE Confidence: 0.842546727142857

 $00:42:41.202 \longrightarrow 00:42:43.350$ again the dark Gray bars here

NOTE Confidence: 0.842546727142857

 $00{:}42{:}43{.}420 \dashrightarrow 00{:}42{:}45{.}308$ are the corticosterone group,

NOTE Confidence: 0.842546727142857

 $00:42:45.310 \longrightarrow 00:42:47.530$ 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

 $00{:}42{:}49{.}310 \dashrightarrow 00{:}42{:}51{.}560$ and these hash bars are the

NOTE Confidence: 0.842546727142857

 $00:42:51.560 \rightarrow 00:42:52.685$ fluoxetine treated group.

NOTE Confidence: 0.842546727142857

 $00{:}42{:}52.690 \dashrightarrow 00{:}42{:}54.146$ And you can see it's not restoring it.

NOTE Confidence: 0.842546727142857

 $00{:}42{:}54{.}150 \dashrightarrow 00{:}42{:}55{.}670$ It should increase neuroplasticity.

NOTE Confidence: 0.842546727142857

 $00{:}42{:}55.670 \dashrightarrow 00{:}42{:}57.950$ It does outside of the postpartum,

NOTE Confidence: 0.842546727142857

 $00:42:57.950 \longrightarrow 00:42:58.628$ does in males,

NOTE Confidence: 0.842546727142857

 $00:42:58.628 \rightarrow 00:43:00.610$ it does outside of the postpartum in females,

NOTE Confidence: 0.842546727142857

 $00:43:00.610 \longrightarrow 00:43:02.354$ but during the postpartum

- NOTE Confidence: 0.842546727142857
- $00:43:02.354 \longrightarrow 00:43:04.970$ period it doesn't do its job.
- NOTE Confidence: 0.842546727142857
- $00{:}43{:}04{.}970 \dashrightarrow 00{:}43{:}07{.}628$ So we've tried citrulline as well.
- NOTE Confidence: 0.842546727142857
- $00{:}43{:}07{.}630 \dashrightarrow 00{:}43{:}08{.}992$ Neither one of them are efficacious
- NOTE Confidence: 0.842546727142857
- $00:43:08.992 \rightarrow 00:43:10.740$ in the long term, so we wondered,
- NOTE Confidence: 0.842546727142857
- $00:43:10.740 \longrightarrow 00:43:11.860$ why might this be?
- NOTE Confidence: 0.842546727142857
- $00:43:11.860 \longrightarrow 00:43:13.981$ 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
- $00:43:15.770 \longrightarrow 00:43:16.940$ looked at a variety of things,
- NOTE Confidence: 0.842546727142857
- $00{:}43{:}16{.}940 \dashrightarrow 00{:}43{:}18{.}476$ and I just want you to pay attention
- NOTE Confidence: 0.842546727142857
- $00:43:18.476 \longrightarrow 00:43:19.741$ 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
- $00{:}43{:}21.410 \dashrightarrow 00{:}43{:}22.706$ But we can talk about the other part.
- NOTE Confidence: 0.842546727142857
- $00{:}43{:}22.710 \dashrightarrow 00{:}43{:}24.636$ Just looked at some seroton in markers.
- NOTE Confidence: 0.842546727142857
- $00{:}43{:}24.640 \dashrightarrow 00{:}43{:}26.075$ Those seem to be perturbed as well.
- NOTE Confidence: 0.842546727142857
- $00:43:26.080 \longrightarrow 00:43:28.950$ 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

 $00{:}43{:}31{.}660 \dashrightarrow 00{:}43{:}34{.}236$ the pink bars or the court treated animals,

NOTE Confidence: 0.842546727142857

 $00:43:34.240 \longrightarrow 00:43:36.075$ 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

 $00:43:39.340 \longrightarrow 00:43:40.780$ them fluoxetine that upregulated

NOTE Confidence: 0.842546727142857

 $00:43:40.845 \rightarrow 00:43:42.585$ IL 1 beta and the hippocampus.

NOTE Confidence: 0.842546727142857

 $00:43:42.590 \longrightarrow 00:43:46.319$ So that that.

NOTE Confidence: 0.842546727142857

 $00:43:46.320 \longrightarrow 00:43:47.400$ To this route,

NOTE Confidence: 0.842546727142857

 $00:43:47.400 \longrightarrow 00:43:49.680$ because Siad at all in 2018

NOTE Confidence: 0.842546727142857

 $00:43:49.680 \longrightarrow 00:43:52.560$ 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

 $00{:}43{:}54.000 \dashrightarrow 00{:}43{:}56.604$ there was an increase in non

NOTE Confidence: 0.842546727142857

 $00{:}43{:}56.604 \dashrightarrow 00{:}43{:}59.256$ responders and so and also in IL 1 beta.

NOTE Confidence: 0.818266555384615

 $00:43:59.260 \longrightarrow 00:44:01.192$ So we thought if we could

NOTE Confidence: 0.818266555384615

 $00:44:01.192 \rightarrow 00:44:03.260$ block the actions of IL 1 beta,

- NOTE Confidence: 0.818266555384615
- $00:44:03.260 \longrightarrow 00:44:05.060$ could we improve antidepressant
- NOTE Confidence: 0.818266555384615
- $00:44:05.060 \rightarrow 00:44:06.860$ efficacy in the postpartum.
- NOTE Confidence: 0.818266555384615
- $00{:}44{:}06{.}860 \dashrightarrow 00{:}44{:}10{.}596$ 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
- $00:44:13.430 \rightarrow 00:44:16.190$ and she's looking at perineuronal Nets.
- NOTE Confidence: 0.818266555384615
- $00{:}44{:}16.190 \dashrightarrow 00{:}44{:}18.724$ Now playing around on Nets are an
- NOTE Confidence: 0.818266555384615
- $00:44:18.724 \longrightarrow 00:44:20.393$ extracellular structure that are
- NOTE Confidence: 0.818266555384615
- $00:44:20.393 \rightarrow 00:44:21.968$ associated with neuroplasticity.
- NOTE Confidence: 0.818266555384615
- $00{:}44{:}21.970 \dashrightarrow 00{:}44{:}24.620$ More of these perineuronal Nets
- NOTE Confidence: 0.818266555384615
- $00:44:24.620 \rightarrow 00:44:26.210$ reductions in neuroplasticity,
- NOTE Confidence: 0.818266555384615
- $00:44:26.210 \longrightarrow 00:44:28.600$ and this is early days,
- NOTE Confidence: 0.818266555384615
- $00:44:28.600 \rightarrow 00:44:29.678$ you're going to see a low end.
- NOTE Confidence: 0.818266555384615
- $00:44:29.680 \longrightarrow 00:44:31.215$ There's actually more than two
- NOTE Confidence: 0.818266555384615
- $00{:}44{:}31{.}215 \dashrightarrow 00{:}44{:}32{.}443$ in that pink group.
- NOTE Confidence: 0.818266555384615
- $00:44:32.450 \longrightarrow 00:44:33.548$ It just looks like there's two.
- NOTE Confidence: 0.818266555384615

- $00:44:33.550 \longrightarrow 00:44:34.534$ But the Anna,
- NOTE Confidence: 0.818266555384615
- $00:44:34.534 \rightarrow 00:44:37.250$ we're going to have more data very soon.
- NOTE Confidence: 0.818266555384615
- $00{:}44{:}37{.}250 \dashrightarrow 00{:}44{:}38{.}348$ 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
- $00:44:38.900 \rightarrow 00:44:40.588$ who knows which way it's going to go.
- NOTE Confidence: 0.818266555384615
- $00{:}44{:}40.590 \dashrightarrow 00{:}44{:}42.605$ But with fluoxetine again and
- NOTE Confidence: 0.818266555384615
- $00:44:42.605 \rightarrow 00:44:45.130$ those hash bars only under court,
- NOTE Confidence: 0.818266555384615
- $00:44:45.130 \longrightarrow 00:44:46.114$ 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
- $00:44:47.915 \rightarrow 00:44:49.270$ that's decrease the plasticity that's
- NOTE Confidence: 0.818266555384615
- $00:44:49.270 \longrightarrow 00:44:51.488$ what we see in terms of neurogenesis.
- NOTE Confidence: 0.818266555384615
- $00{:}44{:}51{.}490 \dashrightarrow 00{:}44{:}54{.}178$ So it kind of makes sense and with
- NOTE Confidence: 0.818266555384615
- $00{:}44{:}54{.}178 \dashrightarrow 00{:}44{:}56{.}688$ anakinra we actually see a decrease.
- NOTE Confidence: 0.818266555384615
- $00:44:56.690 \longrightarrow 00:44:57.491$ So we don't,
- NOTE Confidence: 0.818266555384615
- $00:44:57.491 \longrightarrow 00:44:59.360$ I don't know about behavior yet those
- NOTE Confidence: 0.818266555384615
- $00:44:59.419 \rightarrow 00:45:00.914$ animal that's all getting crunched

- NOTE Confidence: 0.818266555384615
- $00:45:00.914 \longrightarrow 00:45:02.950$ 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
- $00:45:05.800 \longrightarrow 00:45:08.625$ 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
- $00{:}45{:}11.540 \dashrightarrow 00{:}45{:}13.652$ Just to to finish off the
- NOTE Confidence: 0.818266555384615
- $00:45:13.652 \rightarrow 00:45:14.356$ postpartum depression,
- NOTE Confidence: 0.818266555384615
- $00:45:14.360 \longrightarrow 00:45:17.740$ I want to say that our data mirrors
- NOTE Confidence: 0.818266555384615
- $00:45:17.740 \longrightarrow 00:45:19.440$ what's seen in the literature.
- NOTE Confidence: 0.818266555384615
- $00:45:19.440 \longrightarrow 00:45:22.150$ There is limited evidence for
- NOTE Confidence: 0.818266555384615
- $00:45:22.150 \rightarrow 00:45:24.318$ efficacy in the postpartum.
- NOTE Confidence: 0.818266555384615
- $00:45:24.320 \longrightarrow 00:45:25.724$ Specifically those dashed lines
- NOTE Confidence: 0.818266555384615
- $00:45:25.724 \rightarrow 00:45:28.200$ are to say there's not any data.
- NOTE Confidence: 0.818266555384615
- $00:45:28.200 \longrightarrow 00:45:30.018$ This came out just last year.
- NOTE Confidence: 0.818266555384615
- $00{:}45{:}30{.}020 \dashrightarrow 00{:}45{:}32{.}680$ The eye is to show insufficient data.
- NOTE Confidence: 0.818266555384615
- $00{:}45{:}32.680 \dashrightarrow 00{:}45{:}35.288$ And so you can see low efficacy for
- NOTE Confidence: 0.818266555384615

 $00:45:35.288 \rightarrow 00:45:37.180$ 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

 $00{:}45{:}38{.}700 \dashrightarrow 00{:}45{:}42{.}250$ So I have to talk about brex anolone for two.

NOTE Confidence: 0.818266555384615

 $00:45:42.250 \longrightarrow 00:45:44.470$ Reasons one is fantastic

NOTE Confidence: 0.818266555384615

 $00{:}45{:}44{.}470 \dashrightarrow 00{:}45{:}47{.}340$ translation from animal to human.

NOTE Confidence: 0.818266555384615

 $00{:}45{:}47{.}340 \dashrightarrow 00{:}45{:}48{.}672$ 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

 $00:45:50.340 \longrightarrow 00:45:52.040$ but be because she,

NOTE Confidence: 0.818266555384615

00:45:52.040 --> 00:45:52.890 you know,

NOTE Confidence: 0.818266555384615

 $00{:}45{:}52{.}890 \dashrightarrow 00{:}45{:}54{.}936$ we're paying attention to sex and

NOTE Confidence: 0.818266555384615

 $00{:}45{:}54{.}936 \dashrightarrow 00{:}45{:}56{.}820$ gender and female specific factors.

NOTE Confidence: 0.818266555384615

 $00{:}45{:}56.820 \dashrightarrow 00{:}45{:}58.420$ So she has another model

NOTE Confidence: 0.818266555384615

 $00:45:58.420 \longrightarrow 00:45:59.380$ of postpartum depression,

NOTE Confidence: 0.818266555384615

 $00:45:59.380 \longrightarrow 00:46:00.844$ showing that allopregnanolone and

NOTE Confidence: 0.818266555384615

 $00:46:00.844 \rightarrow 00:46:03.040$ that it's very high during pregnancy

NOTE Confidence: 0.818266555384615

 $00:46:03.095 \rightarrow 00:46:04.559$ 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
- $00{:}46{:}07{.}270 \dashrightarrow 00{:}46{:}09{.}190$ this can reverse some of the
- NOTE Confidence: 0.818266555384615
- $00:46:09.190 \longrightarrow 00:46:10.470$ depressive like behaviors that
- NOTE Confidence: 0.818266555384615
- $00:46:10.524 \rightarrow 00:46:12.260$ she saw in her animals and this.
- NOTE Confidence: 0.818266555384615
- $00:46:12.260 \longrightarrow 00:46:13.646$ That led to some clinical trials.
- NOTE Confidence: 0.818266555384615
- $00:46:13.650 \rightarrow 00:46:15.858$ 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
- $00:46:18.398 \longrightarrow 00:46:19.667$ 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
- $00:46:21.130 \longrightarrow 00:46:22.662$ That's brexanolone,
- NOTE Confidence: 0.818266555384615
- 00:46:22.662 --> 00:46:24.960 analog of allopregnanolone
- NOTE Confidence: 0.818266555384615
- $00:46:24.960 \longrightarrow 00:46:27.468$ 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
- $00{:}46{:}28.830 \dashrightarrow 00{:}46{:}31.110$ I I started I think by saying that
- NOTE Confidence: 0.818266555384615

 $00:46:31.110 \rightarrow 00:46:32.869$ depression is very heterogeneous,

NOTE Confidence: 0.818266555384615

 $00{:}46{:}32{.}870 \dashrightarrow 00{:}46{:}33{.}755$ 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

 $00:46:35.878 \longrightarrow 00:46:38.328$ disservice when we don't look at that

NOTE Confidence: 0.818266555384615

 $00{:}46{:}38{.}328 \dashrightarrow 00{:}46{:}39{.}920$ heterogeneity and embrace it, right.

NOTE Confidence: 0.818266555384615

 $00:46:39.920 \longrightarrow 00:46:42.090$ It'll give us some maybe some clarity,

NOTE Confidence: 0.818266555384615

 $00:46:42.090 \longrightarrow 00:46:42.786$ maybe not,

NOTE Confidence: 0.818266555384615

 $00:46:42.786 \rightarrow 00:46:45.660$ but maybe it'll give us some clarity and

NOTE Confidence: 0.818266555384615

 $00:46:45.660 \rightarrow 00:46:49.214$ I won't belabor the point, but it isn't.

NOTE Confidence: 0.818266555384615

 $00:46:49.214 \longrightarrow 00:46:50.150$ It isn't.

NOTE Confidence: 0.818266555384615

00:46:50.150 --> 00:46:50.794 It doesn't.

NOTE Confidence: 0.818266555384615

 $00{:}46{:}50{.}794 \dashrightarrow 00{:}46{:}53{.}850$ I know that this is the child center group,

NOTE Confidence: 0.818266555384615

 $00{:}46{:}53.850 \dashrightarrow 00{:}46{:}54.935$ and I haven't shown you

NOTE Confidence: 0.818266555384615

 $00:46:54.935 \rightarrow 00:46:55.586$ anything on offspring,

NOTE Confidence: 0.818266555384615

 $00:46:55.590 \rightarrow 00:46:56.187$ 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
- $00{:}47{:}02.090 \dashrightarrow 00{:}47{:}03.146$ So now we have some offspring.
- NOTE Confidence: 0.834178215
- $00{:}47{:}03.150 \dashrightarrow 00{:}47{:}05.208$ I should show you what happens.
- NOTE Confidence: 0.834178215
- $00:47:05.210 \longrightarrow 00:47:06.158$ 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
- $00{:}47{:}06{.}592 \dashrightarrow 00{:}47{:}08{.}320$ I'm going to show you too much data.
- NOTE Confidence: 0.834178215
- $00{:}47{:}08{.}320 \dashrightarrow 00{:}47{:}09{.}305$ This paper came out just
- NOTE Confidence: 0.834178215
- $00:47:09.305 \longrightarrow 00:47:10.290$ a couple of weeks ago.
- NOTE Confidence: 0.834178215
- $00:47:10.290 \longrightarrow 00:47:11.568$ I forgot to put the exact
- NOTE Confidence: 0.834178215
- $00{:}47{:}11.568 \dashrightarrow 00{:}47{:}12.207$ volume and everything,
- NOTE Confidence: 0.834178215
- $00:47:12.210 \longrightarrow 00:47:13.463$ but it was just like a couple
- NOTE Confidence: 0.834178215
- $00{:}47{:}13.463 \dashrightarrow 00{:}47{:}14.738$ of weeks ago showing that
- NOTE Confidence: 0.834178215
- $00:47:14.738 \longrightarrow 00:47:16.130$ antidepressant use during gestation.
- NOTE Confidence: 0.834178215

- $00:47:16.130 \longrightarrow 00:47:16.418$ Remember,
- NOTE Confidence: 0.834178215
- $00:47:16.418 \rightarrow 00:47:18.146$ we're not giving it during gestation,
- NOTE Confidence: 0.834178215
- $00:47:18.150 \rightarrow 00:47:19.836$ we're giving it in the postpartum.
- NOTE Confidence: 0.834178215
- $00:47:19.840 \longrightarrow 00:47:22.255$ It is quite different in our lab
- NOTE Confidence: 0.834178215
- $00{:}47{:}22.260 \dashrightarrow 00{:}47{:}23.997$ 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
- $00:47:25.194 \rightarrow 00:47:27.108$ wasn't associated with any higher risk
- NOTE Confidence: 0.834178215
- $00:47:27.108 \rightarrow 00:47:28.819$ for nerve developmental disorders.
- NOTE Confidence: 0.834178215
- $00{:}47{:}28.820 \dashrightarrow 00{:}47{:}30.654$ But what about in our own data.
- NOTE Confidence: 0.834178215
- $00:47:30.660 \rightarrow 00:47:32.190$ So we've seen this part of the graph already.
- NOTE Confidence: 0.834178215
- $00{:}47{:}32.190 \dashrightarrow 00{:}47{:}34.059$ This is a moms this is hippocampus,
- NOTE Confidence: 0.834178215
- $00:47:34.060 \rightarrow 00:47:36.322$ Iowa beta SSRI,
- NOTE Confidence: 0.834178215
- 00:47:36.322 --> 00:47:39.338 fluoxetine increase inflammatory markers
- NOTE Confidence: 0.834178215
- $00:47:39.340 \rightarrow 00:47:41.080$ 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
- $00{:}47{:}47{.}140 \dashrightarrow 00{:}47{:}48{.}640$ This is an adult offspring
- NOTE Confidence: 0.834178215
- $00:47:48.640 \longrightarrow 00:47:49.840$ 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
- $00:47:51.790 \longrightarrow 00:47:52.990$ It's not during gestation,
- NOTE Confidence: 0.834178215
- $00:47:52.990 \longrightarrow 00:47:55.129$ it's all through either a change in
- NOTE Confidence: 0.834178215
- $00{:}47{:}55{.}129 \dashrightarrow 00{:}47{:}56{.}943$ behavior or through breast milk that
- NOTE Confidence: 0.834178215
- $00{:}47{:}56{.}943 \dashrightarrow 00{:}47{:}59{.}554$ we see these this outcome is there.
- NOTE Confidence: 0.834178215
- $00:47:59.560 \longrightarrow 00:48:00.439$ That's our thought.
- NOTE Confidence: 0.834178215
- $00:48:00.439 \longrightarrow 00:48:02.490$ 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
- $00{:}48{:}03.610 \dashrightarrow 00{:}48{:}05.645$ 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
- $00{:}48{:}06{.}870 \dashrightarrow 00{:}48{:}08{.}238$ so course increase in their genesis,
- NOTE Confidence: 0.834178215
- $00{:}48{:}08{.}240 \dashrightarrow 00{:}48{:}09{.}536$ that's what it should do and it does.
- NOTE Confidence: 0.834178215

 $00:48:09.540 \longrightarrow 00:48:10.970$ And females thank thank you,

NOTE Confidence: 0.834178215

 $00{:}48{:}10.970 \dashrightarrow 00{:}48{:}12.374$ thank you, thank you.

NOTE Confidence: 0.834178215

 $00:48:12.374 \dashrightarrow 00:48:14.950$ And in the adult offspring they don't,

NOTE Confidence: 0.834178215

 $00:48:14.950 \rightarrow 00:48:16.798$ 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

 $00{:}48{:}17.754 \dashrightarrow 00{:}48{:}19.980$ But in the adult offspring that increased.

NOTE Confidence: 0.834178215

 $00{:}48{:}19{.}980 \dashrightarrow 00{:}48{:}20{.}150$ Regenesis.

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

 $00{:}48{:}21{.}860 \dashrightarrow 00{:}48{:}23{.}318$ my mom was on an exerciser.

NOTE Confidence: 0.834178215

 $00{:}48{:}23{.}320 \dashrightarrow 00{:}48{:}24{.}916$ So I know what that means.

NOTE Confidence: 0.834178215

 $00{:}48{:}24{.}920 \dashrightarrow 00{:}48{:}28{.}360$ And I'm not a rat though, so I think I'm OK.

NOTE Confidence: 0.834178215

 $00:48:28.360 \longrightarrow 00:48:31.699$ And last little bit of the state

NOTE Confidence: 0.834178215

 $00{:}48{:}31.699 \dashrightarrow 00{:}48{:}34.200$ is Tim Oberlander is a pediatrician

NOTE Confidence: 0.834178215

 $00:48:34.200 \longrightarrow 00:48:36.615$ at BC Children's Hospital and he

NOTE Confidence: 0.834178215

 $00:48:36.615 \longrightarrow 00:48:38.571$ 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
- $00:48:40.894 \rightarrow 00:48:43.582$ And Susie looked at the neuroplastic

 $00:48:43.582 \longrightarrow 00:48:45.942$ 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

 $00:48:47.780 \longrightarrow 00:48:49.550$ It was a girls that showed

NOTE Confidence: 0.834178215

 $00:48:49.550 \longrightarrow 00:48:50.730$ 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

 $00:48:55.195 \longrightarrow 00:48:57.435$ only that the walk maternal

NOTE Confidence: 0.834178215

 $00:48:57.435 \rightarrow 00:48:59.310$ 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

 $00{:}49{:}01{.}030 \dashrightarrow 00{:}49{:}04{.}214$ 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

 $00{:}49{:}05{.}688 \dashrightarrow 00{:}49{:}08{.}650$ which you already know what the point is.

NOTE Confidence: 0.834178215

 $00{:}49{:}08.650 \dashrightarrow 00{:}49{:}10.106$ So at the beginning of the pandemic,

 $00:49:10.110 \rightarrow 00:49:11.798$ I had some undergrads and they're like, ohh,

NOTE Confidence: 0.834178215

 $00:49:11.798 \longrightarrow 00:49:14.030$ 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

 $00:49:14.870 \longrightarrow 00:49:15.710$ play with the rats.

NOTE Confidence: 0.834178215

00:49:15.710 --> 00:49:16.566 And I said no,

NOTE Confidence: 0.834178215

 $00:49:16.566 \longrightarrow 00:49:18.225$ but you can do this study that

NOTE Confidence: 0.834178215

 $00:49:18.225 \longrightarrow 00:49:19.509$ I've been thinking about.

NOTE Confidence: 0.834178215

 $00:49:19.510 \longrightarrow 00:49:23.320$ And so I made them look at 3191

NOTE Confidence: 0.834178215

 $00:49:23.320 \longrightarrow 00:49:26.794$ articles published in 2009 and 2019.

NOTE Confidence: 0.834178215

 $00:49:26.794 \longrightarrow 00:49:29.062$ And they just look to see are

NOTE Confidence: 0.834178215

 $00:49:29.062 \longrightarrow 00:49:30.900$ they set in the article,

NOTE Confidence: 0.834178215

 $00:49:30.900 \longrightarrow 00:49:32.988$ 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

 $00:49:36.350 \rightarrow 00:49:39.619$ say did they use males and females or not?

NOTE Confidence: 0.800606148

 $00:49:39.620 \rightarrow 00:49:41.756$ 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
- $00{:}49{:}43.908 \dashrightarrow 00{:}49{:}46.069$ omitting whether they what sex they used,
- NOTE Confidence: 0.800606148
- $00{:}49{:}46.070 \dashrightarrow 00{:}49{:}48.954$ which is that's the good news story.
- NOTE Confidence: 0.800606148
- $00{:}49{:}48{.}960 \dashrightarrow 00{:}49{:}51{.}832$ But then very few of these papers are
- NOTE Confidence: 0.800606148
- $00:49:51.832 \rightarrow 00:49:54.577$ using what we call an optimal design.
- NOTE Confidence: 0.800606148
- $00{:}49{:}54{.}580 \dashrightarrow 00{:}49{:}56{.}632$ And So what I mean by that is just
- NOTE Confidence: 0.800606148
- $00:49:56.632 \rightarrow 00:49:58.480$ did they disclose sample size?
- NOTE Confidence: 0.800606148
- $00:49:58.480 \longrightarrow 00:49:59.626$ That was one of our criteria.
- NOTE Confidence: 0.800606148
- $00:49:59.630 \longrightarrow 00:50:02.836$ Sample size. It's a pretty low bar.
- NOTE Confidence: 0.800606148
- $00:50:02.840 \rightarrow 00:50:06.062$ 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
- $00:50:08.350 \rightarrow 00:50:10.686$ you're never going to see a sex difference,
- NOTE Confidence: 0.800606148
- $00:50:10.690 \longrightarrow 00:50:11.590$ right, if you don't look.
- NOTE Confidence: 0.800606148
- $00{:}50{:}11{.}590 \dashrightarrow 00{:}50{:}14{.}068$ And then to my other horror,
- NOTE Confidence: 0.800606148
- $00:50:14.070 \rightarrow 00:50:17.110$ 9 times more male only studies and female
- NOTE Confidence: 0.800606148

 $00:50:17.110 \longrightarrow 00:50:20.096$ studies and we know those female specific.

NOTE Confidence: 0.800606148

 $00{:}50{:}20{.}100 \dashrightarrow 00{:}50{:}24{.}280$ Experiences matter half the population.

NOTE Confidence: 0.800606148

 $00{:}50{:}24.280 \dashrightarrow 00{:}50{:}27.059$ 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

 $00{:}50{:}30{.}940 \dashrightarrow 00{:}50{:}33{.}208$ found as this was published just

NOTE Confidence: 0.800606148

 $00:50:33.208 \rightarrow 00:50:35.608$ very recently that of the 20% of

NOTE Confidence: 0.800606148

 $00:50:35.608 \rightarrow 00:50:37.834$ studies that they looked at that it

NOTE Confidence: 0.800606148

 $00:50:37.834 \rightarrow 00:50:40.114$ properly about properly evaluating sex

NOTE Confidence: 0.800606148

 $00:50:40.114 \rightarrow 00:50:41.736$ 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: 0.78813135111111

 $00{:}50{:}47.650 \dashrightarrow 00{:}50{:}51.194$ 100%. So I tried to acknowledge all the

NOTE Confidence: 0.78813135111111

 $00:50:51.194 \rightarrow 00:50:53.984$ people that have done the work in my lab,

NOTE Confidence: 0.78813135111111

 $00:50:53.990 \longrightarrow 00:50:55.134$ also the funding agencies

NOTE Confidence: 0.78813135111111

 $00{:}50{:}55{.}134 \dashrightarrow 00{:}50{:}56{.}278$ I haven't talked about.

 $00:50:56.280 \longrightarrow 00:50:57.340$ These are past and present.

NOTE Confidence: 0.78813135111111

00:50:57.340 --> 00:50:59.594 I don't get money from all of

NOTE Confidence: 0.78813135111111

 $00:50:59.594 \rightarrow 00:51:02.050$ them right now and I just wanted

NOTE Confidence: 0.78813135111111

 $00:51:02.050 \longrightarrow 00:51:04.162$ to end off on the organization

NOTE Confidence: 0.78813135111111

 $00{:}51{:}04{.}238 \dashrightarrow 00{:}51{:}06{.}656$ for the study of sex differences.

NOTE Confidence: 0.78813135111111

00:51:06.660 --> 00:51:08.935 Please do I think about this group?

NOTE Confidence: 0.78813135111111

00:51:08.940 --> 00:51:10.802 It's not just for neuroscience, it's it.

NOTE Confidence: 0.78813135111111

 $00:51:10.802 \longrightarrow 00:51:12.699$ It is a focus more on sex.

NOTE Confidence: 0.78813135111111

 $00{:}51{:}12.700 \dashrightarrow 00{:}51{:}13.892$ But there is a little bit of gender

NOTE Confidence: 0.78813135111111

 $00{:}51{:}13.892 \dashrightarrow 00{:}51{:}15.155$ in the conference as well and it's

NOTE Confidence: 0.78813135111111

00:51:15.155 --> 00:51:16.698 going to be in beautiful Calgary, AB.

NOTE Confidence: 0.78813135111111

 $00{:}51{:}16.698 \dashrightarrow 00{:}51{:}19.082$ So if you feel like learning about more.

NOTE Confidence: 0.78813135111111

 $00{:}51{:}19{.}090 \dashrightarrow 00{:}51{:}22{.}537$ These do join us, so thank you very much.

NOTE Confidence: 0.912127525

 $00{:}51{:}30{.}470 \dashrightarrow 00{:}51{:}30{.}930$ All right.

NOTE Confidence: 0.699165225

 $00{:}51{:}32{.}390 \dashrightarrow 00{:}51{:}33{.}734$ Some lovely comments coming through on

 $00:51:33.734 \rightarrow 00:51:35.259$ the chapter saying and wonderful talks.

NOTE Confidence: 0.699165225

 $00:51:35.260 \longrightarrow 00:51:36.680$ Thank you so much for that

NOTE Confidence: 0.699165225

 $00{:}51{:}36{.}680 \dashrightarrow 00{:}51{:}37{.}868$ 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

 $00{:}51{:}47{.}440 \dashrightarrow 00{:}51{:}49{.}609$ I was wondering.

NOTE Confidence: 0.92675772375

 $00{:}51{:}49{.}610 \dashrightarrow 00{:}51{:}52{.}589$ If you did any work and or have any

NOTE Confidence: 0.92675772375

 $00:51:52.589 \rightarrow 00:51:55.821$ sort of inklings about what chemically

NOTE Confidence: 0.92675772375

00:51:55.821 --> 00:51:59.261 would make like brex
anolone 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

 $00{:}52{:}04{.}740 \dashrightarrow 00{:}52{:}06{.}894$ 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

 $00{:}52{:}07{.}814 \dashrightarrow 00{:}52{:}09{.}158$ like that like what is it chemically

NOTE Confidence: 0.92675772375

 $00{:}52{:}09{.}158 \dashrightarrow 00{:}52{:}11{.}210$ 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

 $00{:}52{:}14{.}550 \dashrightarrow 00{:}52{:}16{.}517$ and I'd say that for brexanolone it's

 $00:52:16.517 \rightarrow 00:52:18.353$ easy because it's kind of replenishing

NOTE Confidence: 0.92675772375

 $00{:}52{:}18{.}353 \dashrightarrow 00{:}52{:}19{.}918$ those hormones that we know.

NOTE Confidence: 0.92675772375

 $00{:}52{:}19{.}920 \dashrightarrow 00{:}52{:}20{.}606$ 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

 $00:52:24.630 \longrightarrow 00:52:26.717$ said that part of our question has been

NOTE Confidence: 0.92675772375

 $00:52:26.717 \rightarrow 00:52:28.130$ hey does antidepressant efficacy is it,

NOTE Confidence: 0.92675772375

 $00:52:28.130 \longrightarrow 00:52:30.930$ is it, does it change based on

NOTE Confidence: 0.92675772375

 $00:52:30.930 \dashrightarrow 00:52:33.020$ hormonal status and something.

NOTE Confidence: 0.92675772375

 $00:52:33.020 \dashrightarrow 00:52:34.832$ There's there's many things that are

NOTE Confidence: 0.92675772375

 $00{:}52{:}34{.}832 \dashrightarrow 00{:}52{:}37{.}111$ going on in the postpartum that I

NOTE Confidence: 0.92675772375

00:52:37.111 --> 00:52:38.796 just don't think allows flu
oxetine

NOTE Confidence: 0.92675772375

 $00{:}52{:}38.796 \dashrightarrow 00{:}52{:}41.237$ to do its work long term like in in

NOTE Confidence: 0.92675772375

 $00{:}52{:}41{.}237 \dashrightarrow 00{:}52{:}43{.}416$ our model it actually reverses the

NOTE Confidence: 0.92675772375

 $00:52:43.416 \rightarrow 00:52:46.308$ maternal care deficits really early on

 $00{:}52{:}46{.}308 \dashrightarrow 00{:}52{:}49{.}577$ 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

 $00:52:50.018 \rightarrow 00:52:51.332$ I think that has something

NOTE Confidence: 0.92675772375

 $00:52:51.332 \longrightarrow 00:52:52.798$ to do with the information.

NOTE Confidence: 0.92675772375

 $00{:}52{:}52{.}800 \dashrightarrow 00{:}52{:}54{.}893$ I probably don't know that's what Anakinra

NOTE Confidence: 0.92675772375

 $00{:}52{:}54{.}893 \dashrightarrow 00{:}52{:}56{.}905$ is doing is you know blocking those

NOTE Confidence: 0.92675772375

 $00:52:56.905 \rightarrow 00:52:59.500$ effects of IL 1 beta but allopregnanolone,

NOTE Confidence: 0.92675772375

 $00:52:59.500 \longrightarrow 00:53:02.484$ I think that part of that is by

NOTE Confidence: 0.92675772375

 $00{:}53{:}02{.}484 \dashrightarrow 00{:}53{:}04{.}985$ that mechanism of action is by

NOTE Confidence: 0.92675772375

 $00{:}53{:}04{.}985 \dashrightarrow 00{:}53{:}07{.}206$ replacing those that metabolite of

NOTE Confidence: 0.92675772375

 $00{:}53{:}07{.}206 \dashrightarrow 00{:}53{:}09{.}138$ 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

 $00{:}53{:}11{.}336 \dashrightarrow 00{:}53{:}13{.}398$ thing I think about a lot is plasticity.

NOTE Confidence: 0.92675772375

 $00{:}53{:}13{.}400 \dashrightarrow 00{:}53{:}15{.}857$ So that of course I think about the campus

NOTE Confidence: 0.92675772375

 $00{:}53{:}15{.}857 \dashrightarrow 00{:}53{:}18{.}159$ and we see those reductions in plasticity

NOTE Confidence: 0.92675772375

 $00:53:18.159 \rightarrow 00:53:20.778$ and it's not just us in the postpartum,

 $00:53:20.780 \longrightarrow 00:53:22.958$ it's pretty long term and things

NOTE Confidence: 0.92675772375

 $00:53:22.958 \longrightarrow 00:53:24.410$ that normally would upregulate

NOTE Confidence: 0.92675772375

 $00:53:24.469 \longrightarrow 00:53:25.678$ it don't necessarily.

NOTE Confidence: 0.92675772375

 $00{:}53{:}25{.}680 \dashrightarrow 00{:}53{:}27{.}090$ So may be it's that maybe it's

NOTE Confidence: 0.92675772375

 $00{:}53{:}27.090 \dashrightarrow 00{:}53{:}28.396$ 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

 $00:53:30.250 \rightarrow 00:53:32.202$ that system is not allowed to be as

NOTE Confidence: 0.92675772375

 $00:53:32.202 \dashrightarrow 00:53:34.374$ liable as it should be and we need that.

NOTE Confidence: 0.92675772375

 $00:53:34.380 \longrightarrow 00:53:37.922$ There are many reasons to think that that's

NOTE Confidence: 0.92675772375

 $00:53:37.922 \rightarrow 00:53:40.328$ important for the efficacy of fluoxetine.

NOTE Confidence: 0.92675772375

 $00:53:40.330 \longrightarrow 00:53:42.620$ Because that guy named uh.

NOTE Confidence: 0.92675772375

 $00{:}53{:}42.620 \dashrightarrow 00{:}53{:}43.478$ 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

 $00{:}53{:}46{.}481 \dashrightarrow 00{:}53{:}49{.}803$ has also shown that you don't get that

 $00:53:49.803 \rightarrow 00:53:51.864$ obligation and neurogenesis unless you

NOTE Confidence: 0.92675772375

 $00:53:51.864 \rightarrow 00:53:54.594$ 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

 $00:53:56.175 \rightarrow 00:53:57.600$ clamping at a certain level,

NOTE Confidence: 0.92675772375

 $00{:}53{:}57{.}600 \dashrightarrow 00{:}53{:}58{.}700$ you don't get an increase.

NOTE Confidence: 0.92675772375

 $00{:}53{:}58{.}700 \dashrightarrow 00{:}54{:}00{.}434$ That's in males.

NOTE Confidence: 0.92675772375

 $00:54:00.434 \longrightarrow 00:54:03.902$ So something about that ability to.

NOTE Confidence: 0.92675772375

 $00:54:03.910 \longrightarrow 00:54:04.606$ 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

 $00:54:06.550 \longrightarrow 00:54:07.618$ but I think it has something

NOTE Confidence: 0.92675772375

 $00{:}54{:}07{.}618 \dashrightarrow 00{:}54{:}08{.}330$ to do with homeostasis.

NOTE Confidence: 0.594240793333333

 $00:54:11.300 \longrightarrow 00:54:14.340$ 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

 $00:54:23.920 \longrightarrow 00:54:25.156$ That's from now on you're out.

NOTE Confidence: 0.76798717

 $00:54:25.160 \rightarrow 00:54:27.267$ But could you please change your name

- NOTE Confidence: 0.76798717
- $00:54:27.267 \rightarrow 00:54:29.378$ because I clearly haven't encoded that.

00:54:29.380 --> 00:54:30.560 I need some better pattern

NOTE Confidence: 0.76798717

 $00:54:30.560 \rightarrow 00:54:31.268$ 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

 $00:54:35.530 \rightarrow 00:54:40.000$ 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

 $00:54:41.392 \rightarrow 00:54:43.480$ the stresses in the immune system.

NOTE Confidence: 0.76798717

 $00:54:43.480 \longrightarrow 00:54:48.359$ I'm curious if you have looked at

NOTE Confidence: 0.76798717

 $00{:}54{:}48{.}360 \dashrightarrow 00{:}54{:}50{.}625$ microglial phenotypes in the influence

NOTE Confidence: 0.76798717

 $00{:}54{:}50{.}625 \dashrightarrow 00{:}54{:}53{.}484$ like in the inflammation and immune

NOTE Confidence: 0.76798717

 $00{:}54{:}53{.}484 \dashrightarrow 00{:}54{:}56{.}079$ system route and postpartum depression,

NOTE Confidence: 0.76798717

 $00:54:56.080 \rightarrow 00:54:58.200$ 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

 $00:55:02.022 \rightarrow 00:55:04.969$ going to ask me what we found?

 $00:55:04.970 \rightarrow 00:55:07.308$ Uh, So what happened was that particular

NOTE Confidence: 0.76798717

 $00{:}55{:}07{.}308 \dashrightarrow 00{:}55{:}09{.}769$ study is the one that was an akinra.

NOTE Confidence: 0.76798717

 $00{:}55{:}09{.}770 \dashrightarrow 00{:}55{:}10{.}890$ So we have some of the data.

NOTE Confidence: 0.76798717

 $00:55:10.890 \rightarrow 00:55:12.370$ We don't have all of the data yet.

NOTE Confidence: 0.76798717

 $00{:}55{:}12{.}370 \dashrightarrow 00{:}55{:}14{.}246$ And that was one of those pandemic,

NOTE Confidence: 0.76798717

 $00{:}55{:}14.250 \dashrightarrow 00{:}55{:}14.768$ you know,

NOTE Confidence: 0.76798717

 $00{:}55{:}14.768 \dashrightarrow 00{:}55{:}16.581$ a woman named Emily Clark started that

NOTE Confidence: 0.76798717

 $00:55:16.581 \rightarrow 00:55:18.639$ and then the pandemic hit and she decided

NOTE Confidence: 0.76798717

 $00{:}55{:}18.639 \dashrightarrow 00{:}55{:}20.636$ I'm going to go and do an MD instead,

NOTE Confidence: 0.76798717

 $00{:}55{:}20.640 \dashrightarrow 00{:}55{:}23.000$ 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

 $00{:}55{:}25{.}960 \dashrightarrow 00{:}55{:}27{.}346$ but it was a low end because

NOTE Confidence: 0.76798717

 $00:55:27.346 \longrightarrow 00:55:28.780$ we had to stop the study.

NOTE Confidence: 0.76798717

 $00:55:28.780 \longrightarrow 00:55:29.392$ So we'll,

NOTE Confidence: 0.76798717

 $00:55:29.392 \rightarrow 00:55:31.534$ we'll have that information for you soon,

NOTE Confidence: 0.76798717

 $00:55:31.540 \longrightarrow 00:55:32.580$ I think.
- NOTE Confidence: 0.76798717
- 00:55:32.580 --> 00:55:36.740 I mean microglia in general anyway are there.

 $00:55:36.740 \longrightarrow 00:55:37.667$ 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

 $00:55:39.212 \longrightarrow 00:55:40.833$ at postpartum day early like by

NOTE Confidence: 0.76798717

 $00:55:40.833 \longrightarrow 00:55:42.460$ 8:00 and then it comes back up.

NOTE Confidence: 0.76798717

 $00:55:42.460 \longrightarrow 00:55:43.452$ It's restored really quickly.

NOTE Confidence: 0.76798717

 $00:55:43.452 \rightarrow 00:55:44.692$ They do seem more angry.

NOTE Confidence: 0.76798717

 $00:55:44.700 \longrightarrow 00:55:47.500$ So they have that and me void shape,

NOTE Confidence: 0.76798717

 $00{:}55{:}47{.}500 \dashrightarrow 00{:}55{:}49{.}190$ not reactive, but a meboid shape.

NOTE Confidence: 0.76798717

 $00:55:49.190 \rightarrow 00:55:50.900$ So there are some changes,

NOTE Confidence: 0.76798717

 $00:55:50.900 \rightarrow 00:55:51.844$ but they're pretty early.

NOTE Confidence: 0.76798717

 $00{:}55{:}51{.}844 \dashrightarrow 00{:}55{:}53{.}260$ 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

 $00:55:54.790 \rightarrow 00:55:55.555$ fluoxetine what's happening,

NOTE Confidence: 0.76798717

 $00:55:55.560 \dashrightarrow 00:55:59.326$ 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
- $00{:}55{:}59{.}595 \dashrightarrow 00{:}56{:}01{.}185$ we also want to do some

 $00{:}56{:}01{.}185 \dashrightarrow 00{:}56{:}02{.}270$ RAC and microglia too.

NOTE Confidence: 0.76798717

 $00:56:02.270 \longrightarrow 00:56:03.518$ So that's on the,

NOTE Confidence: 0.76798717

 $00{:}56{:}03.518 \dashrightarrow 00{:}56{:}06.454$ that's in the on the books, super exciting.

NOTE Confidence: 0.76798717

 $00{:}56{:}06{.}454 \dashrightarrow 00{:}56{:}07{.}518$ Thank you.

NOTE Confidence: 0.6595031875

 $00{:}56{:}08.050 \dashrightarrow 00{:}56{:}09.940$ And of course thinking about the

NOTE Confidence: 0.6595031875

 $00{:}56{:}09{.}940 \dashrightarrow 00{:}56{:}10{.}995$ 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: 0.75416378111111

 $00{:}56{:}18{.}440 \dashrightarrow 00{:}56{:}19{.}875$ At the intersection of prenatal

NOTE Confidence: 0.75416378111111

 $00{:}56{:}19.875 \dashrightarrow 00{:}56{:}21.023$ stress and environmental pollution.

NOTE Confidence: 0.611038075714286

 $00{:}56{:}22{.}560 \dashrightarrow 00{:}56{:}23{.}564$ 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

 $00{:}56{:}25{.}286 \dashrightarrow 00{:}56{:}26{.}678$ Tracy Bale. I love them both.

NOTE Confidence: 0.769211664

 $00:56:27.230 \rightarrow 00:56:29.050$ Thank you for your talk.

- NOTE Confidence: 0.769211664
- $00:56:29.050 \longrightarrow 00:56:31.450$ I have just a curiosity about

 $00{:}56{:}31{.}450 \dashrightarrow 00{:}56{:}32{.}796$ 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

 $00:56:34.130 \rightarrow 00:56:36.811$ like statins or metformin, for example.

NOTE Confidence: 0.769211664

 $00:56:36.811 \rightarrow 00:56:40.160$ Like, is there any research to show you know,

NOTE Confidence: 0.769211664

 $00{:}56{:}40{.}160 \dashrightarrow 00{:}56{:}42{.}020$ their benefit because it seems like

NOTE Confidence: 0.769211664

 $00{:}56{:}42.020 \dashrightarrow 00{:}56{:}43.968$ 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

 $00{:}56{:}52{.}820 \dashrightarrow 00{:}56{:}54{.}476$ The answer like off the top of my head.

NOTE Confidence: 0.777320125833333

 $00{:}56{:}54{.}480 \dashrightarrow 00{:}56{:}57{.}056$ 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

 $00{:}56{:}59{.}012 \dashrightarrow 00{:}57{:}01{.}370$ of Toronto who looks at autoimmune

NOTE Confidence: 0.777320125833333

 $00:57:01.370 \rightarrow 00:57:03.177$ disorders and Perry Natal mental

NOTE Confidence: 0.777320125833333

 $00{:}57{:}03.177 \dashrightarrow 00{:}57{:}06.310$ illness and it it's not a clear story.

NOTE Confidence: 0.777320125833333

 $00{:}57{:}06{.}310 \dashrightarrow 00{:}57{:}11{.}206$ I think there I think it's something of oh.

NOTE Confidence: 0.777320125833333

 $00:57:11.210 \rightarrow 00:57:15.158$ So interferon therapy I do believe

NOTE Confidence: 0.777320125833333

 $00{:}57{:}15{.}160 \dashrightarrow 00{:}57{:}17{.}392$ causes more depressive symptoms and in

NOTE Confidence: 0.777320125833333

 $00{:}57{:}17{.}392 \dashrightarrow 00{:}57{:}19{.}820$ females than in males and in humans.

NOTE Confidence: 0.777320125833333

 $00{:}57{:}19{.}820 \dashrightarrow 00{:}57{:}21{.}353$ So I think that there is more

NOTE Confidence: 0.777320125833333

 $00:57:21.353 \longrightarrow 00:57:23.229$ of a tie to inflammation and.

NOTE Confidence: 0.777320125833333

 $00:57:23.230 \longrightarrow 00:57:24.676$ And females, but it's, you know,

NOTE Confidence: 0.777320125833333

 $00{:}57{:}24.680 \dashrightarrow 00{:}57{:}27.040$ that's not depression either.

NOTE Confidence: 0.777320125833333

 $00{:}57{:}27.040 \dashrightarrow 00{:}57{:}28.260$ So I don't know.

NOTE Confidence: 0.777320125833333

 $00{:}57{:}28.260 \dashrightarrow 00{:}57{:}29.520$ 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

 $00{:}57{:}33.050 \dashrightarrow 00{:}57{:}34.305$ Just quickly check the chat

NOTE Confidence: 0.776884551176471

 $00:57:34.305 \longrightarrow 00:57:36.121$ and just maybe in terms of the

NOTE Confidence: 0.776884551176471

00:57:36.121 --> 00:57:37.386 CFOs data that you presented,

 $00:57:37.390 \longrightarrow 00:57:39.246$ just looks really fascinating.

NOTE Confidence: 0.776884551176471

 $00:57:39.246 \longrightarrow 00:57:43.338$ So are you aware of any data on say

NOTE Confidence: 0.776884551176471

 $00{:}57{:}43.338 \dashrightarrow 00{:}57{:}45.518$ transcranial stimulation studies or you

NOTE Confidence: 0.776884551176471

 $00{:}57{:}45{.}518 \dashrightarrow 00{:}57{:}47{.}849$ know insects differences in terms of

NOTE Confidence: 0.776884551176471

 $00:57:47.849 \longrightarrow 00:57:50.620$ the regions that need to be targeted?

NOTE Confidence: 0.654342954

 $00:57:51.250 \rightarrow 00:57:52.650$ Non of course not enough,

NOTE Confidence: 0.654342954

 $00{:}57{:}52.650 \dashrightarrow 00{:}57{:}54.882$ but the studies that are out there show

NOTE Confidence: 0.654342954

 $00:57:54.882 \rightarrow 00:57:57.017$ 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

 $00{:}57{:}59{.}620 \dashrightarrow 00{:}58{:}03{.}540$ which is fascinating and I'll just give you.

NOTE Confidence: 0.654342954

 $00{:}58{:}03{.}540 \dashrightarrow 00{:}58{:}06{.}220$ 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

 $00{:}58{:}08{.}579 \dashrightarrow 00{:}58{:}10{.}198$ in that negative cognitive bias.

NOTE Confidence: 0.654342954

 $00{:}58{:}10.198 \dashrightarrow 00{:}58{:}12.440$ And this is what I'm really pushing for.

NOTE Confidence: 0.654342954

 $00:58:12.440 \longrightarrow 00:58:13.616$ It was just some pilot work,

NOTE Confidence: 0.654342954

 $00:58:13.620 \rightarrow 00:58:15.181$ but it I'm not going to tell

NOTE Confidence: 0.654342954

 $00{:}58{:}15{.}181 \dashrightarrow 00{:}58{:}16{.}400$ you where or anything,

NOTE Confidence: 0.654342954

 $00:58:16.400 \rightarrow 00:58:17.835$ but it went in the opposite direction.

NOTE Confidence: 0.654342954

 $00{:}58{:}17.840 \dashrightarrow 00{:}58{:}21.580$ 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

 $00:58:23.920 \longrightarrow 00:58:26.038$ it actually increased negative bias in

NOTE Confidence: 0.654342954

 $00{:}58{:}26{.}038 \dashrightarrow 00{:}58{:}28{.}339$ the females and decreased it in the male.

NOTE Confidence: 0.654342954

 $00{:}58{:}28{.}340 \dashrightarrow 00{:}58{:}29{.}360$ So we're really excited about.

NOTE Confidence: 0.654342954

 $00:58:29.360 \longrightarrow 00:58:30.482$ So that's why exactly why I

NOTE Confidence: 0.654342954

 $00{:}58{:}30{.}482 \dashrightarrow 00{:}58{:}31{.}808$ looked at that because I wanted to

NOTE Confidence: 0.654342954

 $00:58:31.808 \rightarrow 00:58:32.698$ 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

 $00:58:36.153 \rightarrow 00:58:38.580$ looking at like using sex as a variable,

NOTE Confidence: 0.654342954

 $00{:}58{:}38{.}580 \dashrightarrow 00{:}58{:}40{.}029$ like they use it as a covariate

NOTE Confidence: 0.654342954

 $00:58:40.029 \rightarrow 00:58:41.638$ of let's say we accounted for it,

- NOTE Confidence: 0.654342954
- $00:58:41.640 \rightarrow 00:58:44.376$ accounted for it by having an equal number.
- NOTE Confidence: 0.654342954
- $00{:}58{:}44{.}380 \dashrightarrow 00{:}58{:}45{.}826$ 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
- $00{:}58{:}49{.}851 \dashrightarrow 00{:}58{:}51{.}180$ make them different colors.
- NOTE Confidence: 0.654342954
- $00{:}58{:}51{.}180 \dashrightarrow 00{:}58{:}54{.}090$ On the graph so I can look at it and see.
- NOTE Confidence: 0.654342954
- $00:58:54.090 \rightarrow 00:58:54.970$ And the second thing is,
- NOTE Confidence: 0.654342954
- $00:58:54.970 \longrightarrow 00:58:56.951$ don't tell me you don't have the
- NOTE Confidence: 0.654342954
- $00:58:56.951 \rightarrow 00:58:58.349$ power without doing it right?
- NOTE Confidence: 0.654342954
- $00:58:58.350 \rightarrow 00:59:01.045$ So actually it can increase your power.
- NOTE Confidence: 0.654342954
- $00:59:01.050 \longrightarrow 00:59:02.863$ If you have a sex difference it
- NOTE Confidence: 0.654342954
- $00{:}59{:}02{.}863 \dashrightarrow 00{:}59{:}04{.}010$ will increase your power.
- NOTE Confidence: 0.654342954
- $00{:}59{:}04{.}010 \dashrightarrow 00{:}59{:}06{.}082$ And Murshed AL 2015 they did a
- NOTE Confidence: 0.654342954
- $00:59:06.082 \dashrightarrow 00:59:08.268$ really good job of explaining that.
- NOTE Confidence: 0.6332834166666667
- $00:59:09.600 \dashrightarrow 00:59:11.838$ Kyle Pruitt does have a question.
- NOTE Confidence: 0.6332834166666667

00:59:11.840 --> 00:59:13.256 Kyle, would you like to unmute

NOTE Confidence: 0.6332834166666667

 $00{:}59{:}13.256 \dashrightarrow 00{:}59{:}14.680$ and ask doctor glia question?

NOTE Confidence: 0.84143864375

 $00{:}59{:}17.650 \dashrightarrow 00{:}59{:}18.954$ I was told to look at the camera.

NOTE Confidence: 0.927008025

 $00:59:22.180 \longrightarrow 00:59:24.730$ 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

 $00{:}59{:}26.820 \dashrightarrow 00{:}59{:}30.061$ but I wondered if you if you included NOTE Confidence: 0.927008025

 $00:59:30.061 \rightarrow 00:59:33.470$ a trigger warning to the vast numbers

NOTE Confidence: 0.927008025

 $00:59:33.565 \rightarrow 00:59:36.635$ 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

 $00{:}59{:}43.059 \dashrightarrow 00{:}59{:}44.830$ 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

 $00:59:54.332 \longrightarrow 00:59:55.410$ about that. But yeah,

NOTE Confidence: 0.7544904466666667

 $00{:}59{:}56{.}120 \dashrightarrow 00{:}59{:}58{.}820$ I also appreciated your mantra about

- NOTE Confidence: 0.7544904466666667
- $00:59:58.820 \rightarrow 01:00:02.404$ if you don't look you'll see the same
- NOTE Confidence: 0.7544904466666667
- $01:00:02.404 \rightarrow 01:00:04.812$ thing contaminates 87% of all the
- NOTE Confidence: 0.7544904466666667
- $01:00:04.812 \longrightarrow 01:00:07.080$ parent child research on on variables
- NOTE Confidence: 0.7544904466666667
- $01:00:07.153 \dashrightarrow 01:00:09.069$ and resilience because variables
- NOTE Confidence: 0.7544904466666667
- $01:00:09.069 \rightarrow 01:00:11.943$ don't exist in all those studies,
- NOTE Confidence: 0.7544904466666667
- $01:00:11.950 \longrightarrow 01:00:13.700$ no matter what they title the paper,
- NOTE Confidence: 0.7544904466666667
- $01:00:13.700 \longrightarrow 01:00:16.864$ it's extremely important that it
- NOTE Confidence: 0.7544904466666667
- 01:00:16.864 --> 01:00:19.804 ruins so much wonderful research.
- NOTE Confidence: 0.7544904466666667
- 01:00:19.810 $\operatorname{-->}$ 01:00:22.006 And I couldn't agree more with
- NOTE Confidence: 0.7544904466666667
- $01:00:22.006 \rightarrow 01:00:23.914$ your your your incredible passion
- NOTE Confidence: 0.7544904466666667
- 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
- $01:00:28.710 \longrightarrow 01:00:30.019$ A lot of people don't include it,
- NOTE Confidence: 0.68702568375
- $01{:}00{:}30{.}020 \dashrightarrow 01{:}00{:}31{.}609$ and I do think it's really important,
- NOTE Confidence: 0.68702568375
- $01:00:31.610 \longrightarrow 01:00:32.525$ especially when they're
- NOTE Confidence: 0.68702568375

- 01:00:32.525 --> 01:00:33.440 at inflammatory markers.
- NOTE Confidence: 0.68702568375
- $01{:}00{:}33.440 \dashrightarrow 01{:}00{:}34.840$ And then don't tell me
- NOTE Confidence: 0.68702568375
- $01:00:34.840 \longrightarrow 01:00:36.840$ is it a male or female.
- NOTE Confidence: 0.68702568375
- $01:00:36.840 \rightarrow 01:00:38.205$ We know that's going to change things,
- NOTE Confidence: 0.68702568375
- $01{:}00{:}38{.}210 \dashrightarrow 01{:}00{:}41{.}416$ so I'm sure it muddles the waters.
- NOTE Confidence: 0.68702568375
- 01:00:41.420 --> 01:00:42.910 Thank you.
- NOTE Confidence: 0.796145329
- $01:00:42.910 \longrightarrow 01:00:44.955$ Please join me in thanking
- NOTE Confidence: 0.796145329
- 01:00:44.955 --> 01:00:47.000 Dr Galea one more time.