WEBVTT

NOTE duration: ”01:00:22.570”

NOTE Confidence: 0.75303626

00:00:07.440 --> 00:00:08.180 People are

NOTE Confidence: 0.93035024

00:00:08.960 --> 00:00:10.639 screaming, and so we'll give

NOTE Confidence: 0.93035024

00:00:10.639 --> 00:00:11.539 them a few,

NOTE Confidence: 0.9893832

00:00:11.840 --> 00:00:12.740 minutes. But

NOTE Confidence: 0.99947304

00:00:13.115 --> 00:00:13.934 in the meanwhile,

NOTE Confidence: 0.98405385

00:00:14.555 --> 00:00:15.514 I just wanna take the

NOTE Confidence: 0.98405385

00:00:15.514 --> 00:00:16.015 opportunity

NOTE Confidence: 0.9210639

00:00:16.315 --> 00:00:16.635 to,

NOTE Confidence: 0.99282765

00:00:17.675 --> 00:00:18.335 to welcome,

NOTE Confidence: 0.9942278

00:00:18.795 --> 00:00:20.175 doctor Emma Johnson.

NOTE Confidence: 0.9772885

00:00:20.635 --> 00:00:21.135 Emma,

NOTE Confidence: 0.8217613

00:00:22.715 --> 00:00:23.695 is a PhD,

NOTE Confidence: 0.99405193

00:00:24.875 --> 00:00:26.494 and she's an assistant professor

NOTE Confidence: 0.97261125

00:00:27.289 --> 00:00:28.490 at WashU and has a

NOTE Confidence: 0.97261125

00:00:28.490 --> 00:00:29.390 joint appointment,

NOTE Confidence: 0.9957078

00:00:30.250 --> 00:00:32.269 in psychological and brain sciences.

NOTE Confidence: 0.94027114

00:00:33.530 --> 00:00:34.510 Emma's research,

NOTE Confidence: 0.99304044

00:00:35.530 --> 00:00:36.030 centers

NOTE Confidence: 0.9832765

00:00:36.570 --> 00:00:37.390 on unraveling,

NOTE Confidence: 0.99959254

00:00:38.250 --> 00:00:38.909 the genetic

NOTE Confidence: 0.97275466

00:00:39.370 --> 00:00:39.870 architecture

NOTE Confidence: 0.99539053

00:00:40.570 --> 00:00:42.269 of substance use and addiction

NOTE Confidence: 0.98736274

00:00:43.425 --> 00:00:45.205 and how these intersect with,

NOTE Confidence: 0.98679936

00:00:46.065 --> 00:00:47.205 psychiatric conditions,

NOTE Confidence: 0.9992132

00:00:48.465 --> 00:00:49.605 including schizophrenia,

NOTE Confidence: 0.97388625

00:00:50.305 --> 00:00:51.445 suicidal behaviors,

NOTE Confidence: 0.9851207

00:00:52.705 --> 00:00:54.405 and also chronic pain.

NOTE Confidence: 0.95342946

00:00:54.865 --> 00:00:57.820 She applies statistical population and

NOTE Confidence: 0.95342946

00:00:58.120 --> 00:00:59.820 evolutionary genetic methods

NOTE Confidence: 0.91424245

00:01:00.280 --> 00:01:01.340 to large scale,

NOTE Confidence: 0.99760205

00:01:01.720 --> 00:01:03.579 genome wide association studies.

NOTE Confidence: 0.9777067

00:01:04.280 --> 00:01:06.140 Her work has included cross

NOTE Confidence: 0.9777067

00:01:06.280 --> 00:01:06.780 ancestry

NOTE Confidence: 0.9552164

00:01:07.160 --> 00:01:07.660 genetics,

NOTE Confidence: 0.89809066

00:01:08.204 --> 00:01:09.905 genetic analysis of schizophrenia,

NOTE Confidence: 0.9608606

00:01:10.685 --> 00:01:13.344 cannabis use disorder, and, tobacco,

NOTE Confidence: 0.9799818

00:01:15.405 --> 00:01:16.944 and smoking and addiction.

NOTE Confidence: 0.85582316

00:01:17.564 --> 00:01:19.244 She's done meta analysis of

NOTE Confidence: 0.85582316

00:01:19.244 --> 00:01:20.844 GWAS data on cannabis use

NOTE Confidence: 0.85582316

00:01:20.844 --> 00:01:22.545 disorder, which is published in

NOTE Confidence: 0.85582316

00:01:22.829 --> 00:01:23.810 Lancet Psychiatry.

NOTE Confidence: 0.97527736

00:01:24.750 --> 00:01:26.049 She's a key analyst,

NOTE Confidence: 0.94626904

00:01:27.069 --> 00:01:29.329 within the psychiatric genomics consortium

NOTE Confidence: 0.7347821

00:01:30.030 --> 00:01:30.929 substance use

NOTE Confidence: 0.93585396

00:01:31.390 --> 00:01:32.850 disorders working group,

NOTE Confidence: 0.9988405

00:01:33.709 --> 00:01:35.009 and she also collaborates

NOTE Confidence: 0.99186426

00:01:35.825 --> 00:01:36.805 in the collaborative

NOTE Confidence: 0.99865866

00:01:37.105 --> 00:01:38.565 study on the genetics of

NOTE Confidence: 0.9887654

00:01:39.025 --> 00:01:39.525 alcoholism.

NOTE Confidence: 0.9825332

00:01:40.545 --> 00:01:41.905 Emma has received a number

NOTE Confidence: 0.9825332

00:01:41.905 --> 00:01:42.944 of awards, which I'm not

NOTE Confidence: 0.9825332

00:01:42.944 --> 00:01:43.685 going to,

NOTE Confidence: 0.9440902

00:01:44.944 --> 00:01:46.385 to to talk about, but

NOTE Confidence: 0.9440902

00:01:46.385 --> 00:01:48.325 she's really well funded from,

NOTE Confidence: 0.97730565

00:01:48.950 --> 00:01:50.250 NIDA, from NIAAA,

NOTE Confidence: 0.9696402

00:01:50.630 --> 00:01:52.490 from the, Brain and Behavior

NOTE Confidence: 0.9696402

00:01:52.549 --> 00:01:53.049 Foundation,

NOTE Confidence: 0.97990066

00:01:53.990 --> 00:01:56.149 and also the American Foundation

NOTE Confidence: 0.97990066

00:01:56.149 --> 00:01:58.090 of Suicide Prevention. So,

NOTE Confidence: 0.99348855

00:01:59.270 --> 00:02:01.110 without further ado, I I'm

NOTE Confidence: 0.99348855

00:02:01.110 --> 00:02:02.250 gonna let Emma

NOTE Confidence: 0.8026996

00:02:03.555 --> 00:02:04.455 begin our presentation.

NOTE Confidence: 0.9994171

00:02:04.835 --> 00:02:06.995 Based on feedback from the

NOTE Confidence: 0.9994171

00:02:06.995 --> 00:02:08.935 previous webinars that we've had

NOTE Confidence: 0.9994171

00:02:08.995 --> 00:02:10.215 in the recent past,

NOTE Confidence: 0.96174294

00:02:11.315 --> 00:02:12.435 a number of folks have

NOTE Confidence: 0.96174294

00:02:12.435 --> 00:02:13.794 asked whether we could make

NOTE Confidence: 0.96174294

00:02:13.794 --> 00:02:16.195 it more interactive. And and

NOTE Confidence: 0.96174294

00:02:16.195 --> 00:02:17.635 so I asked Emma whether

NOTE Confidence: 0.96174294

00:02:17.635 --> 00:02:18.855 she'd be willing to

NOTE Confidence: 0.99718183

00:02:20.139 --> 00:02:21.260 kind of stop at the

NOTE Confidence: 0.99718183

00:02:21.260 --> 00:02:22.620 fifteen minute mark to take

NOTE Confidence: 0.99718183

00:02:22.620 --> 00:02:23.120 questions

NOTE Confidence: 0.9487646

00:02:23.580 --> 00:02:24.860 and to allow people to,

NOTE Confidence: 0.9487646

00:02:25.340 --> 00:02:26.860 you know, comment or ask

NOTE Confidence: 0.9487646

00:02:26.860 --> 00:02:28.880 questions. So Emma has graciously

NOTE Confidence: 0.9487646

00:02:29.020 --> 00:02:30.400 agreed to do that. So,

NOTE Confidence: 0.9487646

00:02:30.460 --> 00:02:31.360 Emma, thanks.

NOTE Confidence: 0.9552368

00:02:31.900 --> 00:02:33.440 And it's great having you.

NOTE Confidence: 0.9564963

00:02:34.195 --> 00:02:35.175 So take it away.

NOTE Confidence: 0.99984926

00:02:37.235 --> 00:02:38.375 Thank you so much.

NOTE Confidence: 0.9978146

00:02:40.355 --> 00:02:41.635 Let's see. It looks like

NOTE Confidence: 0.9978146

00:02:41.635 --> 00:02:43.235 I'm not able to share

NOTE Confidence: 0.9978146

00:02:43.235 --> 00:02:44.775 yet. Okay. There we go.

NOTE Confidence: 0.96443635

00:02:52.969 --> 00:02:55.049 K. Sorry. Suddenly, my mouse

NOTE Confidence: 0.96443635

00:02:55.049 --> 00:02:56.349 doesn't seem to be working.

NOTE Confidence: 0.95158404

00:02:58.889 --> 00:03:00.109 Alright. There we go.

NOTE Confidence: 0.9993359

00:03:01.985 --> 00:03:02.485 Okay.

NOTE Confidence: 0.99917996

00:03:12.065 --> 00:03:12.785 I think you all can

NOTE Confidence: 0.99917996

00:03:12.785 --> 00:03:13.985 see my slides. Does that

NOTE Confidence: 0.99917996

00:03:13.985 --> 00:03:16.005 look good? Yes. Okay.

NOTE Confidence: 0.99959445

00:03:17.060 --> 00:03:18.200 Awesome. Thank you.

NOTE Confidence: 0.99947196

00:03:18.659 --> 00:03:19.540 Thank you so much for

NOTE Confidence: 0.99947196

00:03:19.540 --> 00:03:20.760 that very kind introduction.

NOTE Confidence: 0.99978966

00:03:22.340 --> 00:03:22.840 I

NOTE Confidence: 0.9964615

00:03:23.299 --> 00:03:24.419 am going to try to

NOTE Confidence: 0.9964615

00:03:24.419 --> 00:03:25.459 keep an eye on time

NOTE Confidence: 0.9964615

00:03:25.459 --> 00:03:27.540 and stop every fifteen minutes

NOTE Confidence: 0.9964615

00:03:27.540 --> 00:03:28.200 or so,

NOTE Confidence: 0.9998658

00:03:28.580 --> 00:03:29.319 for questions.

NOTE Confidence: 0.8968179

00:03:30.260 --> 00:03:31.000 I will,

NOTE Confidence: 0.9997934

00:03:31.985 --> 00:03:32.885 be shrinking

NOTE Confidence: 0.95281607

00:03:33.905 --> 00:03:35.505 the videos, like, the the

NOTE Confidence: 0.95281607

00:03:35.505 --> 00:03:36.005 thumbnails,

NOTE Confidence: 0.9871252

00:03:36.385 --> 00:03:37.185 just so I can see

NOTE Confidence: 0.9871252

00:03:37.185 --> 00:03:38.785 my slides, but please feel

NOTE Confidence: 0.9871252

00:03:38.785 --> 00:03:39.745 free to speak up and

NOTE Confidence: 0.9871252

00:03:39.745 --> 00:03:41.265 interrupt me, if you do

NOTE Confidence: 0.9871252

00:03:41.265 --> 00:03:42.305 have a question at any

NOTE Confidence: 0.9871252

00:03:42.305 --> 00:03:43.665 point, but I will try

NOTE Confidence: 0.9871252

00:03:43.665 --> 00:03:44.165 to

NOTE Confidence: 0.99879575

00:03:44.465 --> 00:03:45.444 to pause.

NOTE Confidence: 0.9837008

00:03:47.100 --> 00:03:48.140 Thank you so much again

NOTE Confidence: 0.9837008

00:03:48.140 --> 00:03:49.260 for having me today. I'm

NOTE Confidence: 0.9837008

00:03:49.260 --> 00:03:50.620 really excited to talk about

NOTE Confidence: 0.9837008

00:03:50.620 --> 00:03:51.120 some,

NOTE Confidence: 0.99997497

00:03:51.500 --> 00:03:52.000 preliminary

NOTE Confidence: 0.9996132

00:03:52.459 --> 00:03:52.959 findings

NOTE Confidence: 0.99344796

00:03:53.340 --> 00:03:55.420 related to epigenetic differences in

NOTE Confidence: 0.99344796

00:03:55.420 --> 00:03:56.480 placental tissue

NOTE Confidence: 0.92689496

00:03:57.180 --> 00:03:58.860 associated with cannabis use during

NOTE Confidence: 0.92689496

00:03:58.860 --> 00:03:59.360 pregnancy.

NOTE Confidence: 0.98873615

00:04:00.995 --> 00:04:02.694 And I, don't have any,

NOTE Confidence: 0.99931407

00:04:03.395 --> 00:04:04.614 disclosures to report.

NOTE Confidence: 0.9899293

00:04:08.035 --> 00:04:09.575 So as that kind introduction

NOTE Confidence: 0.9899293

00:04:09.715 --> 00:04:11.235 mentioned, my work has primarily

NOTE Confidence: 0.9899293

00:04:11.235 --> 00:04:12.935 focused on trying to understand

NOTE Confidence: 0.9899293

00:04:12.995 --> 00:04:13.655 the genetics

NOTE Confidence: 0.97139215

00:04:14.320 --> 00:04:16.000 of substance use behaviors and

NOTE Confidence: 0.97139215

00:04:16.000 --> 00:04:17.920 substance use disorders. And that's

NOTE Confidence: 0.97139215

00:04:17.920 --> 00:04:18.640 not really,

NOTE Confidence: 0.9497144

00:04:19.920 --> 00:04:20.880 the work that I'm gonna

NOTE Confidence: 0.9497144

00:04:20.880 --> 00:04:21.920 be presenting today, but I

NOTE Confidence: 0.9497144

00:04:21.920 --> 00:04:23.440 think it's a a helpful

NOTE Confidence: 0.9497144

00:04:23.440 --> 00:04:24.500 place to start.

NOTE Confidence: 0.9995565

00:04:25.680 --> 00:04:26.720 So when I'm talking about

NOTE Confidence: 0.9995565

00:04:26.720 --> 00:04:28.560 substance use behaviors, I'm talking

NOTE Confidence: 0.9995565

00:04:28.560 --> 00:04:29.380 about studying

NOTE Confidence: 0.9928915

00:04:29.875 --> 00:04:31.635 behaviors that are complex and

NOTE Confidence: 0.9928915

00:04:31.635 --> 00:04:32.135 polygenic.

NOTE Confidence: 0.9993508

00:04:33.074 --> 00:04:34.035 And what I mean by

NOTE Confidence: 0.9993508

00:04:34.035 --> 00:04:35.335 complex is that,

NOTE Confidence: 0.9595433

00:04:35.635 --> 00:04:37.315 their behavior is influenced by

NOTE Confidence: 0.9595433

00:04:37.315 --> 00:04:39.074 both our genes and our

NOTE Confidence: 0.9595433

00:04:39.074 --> 00:04:39.574 environment.

NOTE Confidence: 0.99353296

00:04:41.635 --> 00:04:43.074 And by polygenic, I just

NOTE Confidence: 0.99353296

00:04:43.074 --> 00:04:44.275 mean that there's no one

NOTE Confidence: 0.99353296

00:04:44.275 --> 00:04:46.370 gene that causes the development

NOTE Confidence: 0.99353296

00:04:46.370 --> 00:04:47.889 of cannabis use disorder, but

NOTE Confidence: 0.99353296

00:04:47.889 --> 00:04:49.250 rather there are many genes

NOTE Confidence: 0.99353296

00:04:49.250 --> 00:04:50.930 and genetic variants all across

NOTE Confidence: 0.99353296

00:04:50.930 --> 00:04:51.669 our genome

NOTE Confidence: 0.989041

00:04:52.129 --> 00:04:53.029 that influence,

NOTE Confidence: 0.99469143

00:04:53.889 --> 00:04:56.210 someone's risk for developing cannabis

NOTE Confidence: 0.99469143

00:04:56.210 --> 00:04:57.589 use disorder, for example.

NOTE Confidence: 0.9914085

00:05:00.285 --> 00:05:01.565 One way that we can

NOTE Confidence: 0.9914085

00:05:01.565 --> 00:05:03.245 study the genetics of substance

NOTE Confidence: 0.9914085

00:05:03.245 --> 00:05:05.164 use behaviors and a, a

NOTE Confidence: 0.9914085

00:05:05.164 --> 00:05:06.764 method that I've used in

NOTE Confidence: 0.9914085

00:05:06.764 --> 00:05:08.285 my work, is something called

NOTE Confidence: 0.9914085

00:05:08.285 --> 00:05:10.305 a genome wide association study.

NOTE Confidence: 0.97701085

00:05:11.680 --> 00:05:13.200 At its most basic, in

NOTE Confidence: 0.97701085

00:05:13.200 --> 00:05:13.940 a GWAS,

NOTE Confidence: 0.9992694

00:05:14.240 --> 00:05:16.100 we are simply recruiting cases

NOTE Confidence: 0.9992694

00:05:16.400 --> 00:05:16.900 with,

NOTE Confidence: 0.98400545

00:05:17.440 --> 00:05:18.800 whichever, you know, trait or

NOTE Confidence: 0.98400545

00:05:18.800 --> 00:05:20.400 phenotype that we're interested in

NOTE Confidence: 0.98400545

00:05:20.400 --> 00:05:22.320 studying, for example, a substance

NOTE Confidence: 0.98400545

00:05:22.320 --> 00:05:23.060 use disorder,

NOTE Confidence: 0.98760194

00:05:23.440 --> 00:05:25.300 and then we're recruiting controls.

NOTE Confidence: 0.9978709

00:05:27.375 --> 00:05:28.514 And we're comparing,

NOTE Confidence: 0.99957794

00:05:29.134 --> 00:05:29.634 small

NOTE Confidence: 0.99129945

00:05:30.414 --> 00:05:31.775 differences in our in the

NOTE Confidence: 0.99129945

00:05:31.775 --> 00:05:33.134 DNA of these cases and

NOTE Confidence: 0.99129945

00:05:33.134 --> 00:05:34.335 controls, so at the level

NOTE Confidence: 0.99129945

00:05:34.335 --> 00:05:36.514 of single base pair changes

NOTE Confidence: 0.99129945

00:05:36.654 --> 00:05:37.794 or single nucleotide

NOTE Confidence: 0.9974559

00:05:38.095 --> 00:05:38.595 polymorphisms.

NOTE Confidence: 0.999534

00:05:42.339 --> 00:05:44.100 And if we compare these

NOTE Confidence: 0.999534

00:05:44.100 --> 00:05:46.100 small differences in DNA across

NOTE Confidence: 0.999534

00:05:46.100 --> 00:05:47.460 the genome, we can then

NOTE Confidence: 0.999534

00:05:47.460 --> 00:05:47.960 visualize

NOTE Confidence: 0.99959755

00:05:48.420 --> 00:05:49.960 the results of this comparison

NOTE Confidence: 0.9868413

00:05:50.500 --> 00:05:51.960 in something called a Manhattan

NOTE Confidence: 0.9868413

00:05:52.020 --> 00:05:53.860 plot, an example of which

NOTE Confidence: 0.9868413

00:05:53.860 --> 00:05:55.000 I'm showing here.

NOTE Confidence: 0.9995189

00:05:55.555 --> 00:05:56.375 This was

NOTE Confidence: 0.93588346

00:05:57.235 --> 00:05:58.275 one of the first really

NOTE Confidence: 0.93588346

00:05:58.275 --> 00:05:59.095 large scale

NOTE Confidence: 0.9152742

00:05:59.555 --> 00:06:01.335 GWAS of alcohol dependence.

NOTE Confidence: 0.8554493

00:06:01.714 --> 00:06:02.835 However you might notice,

NOTE Confidence: 0.98026055

00:06:03.315 --> 00:06:04.514 this didn't really look like

NOTE Confidence: 0.98026055

00:06:04.514 --> 00:06:05.794 the skyline of Manhattan at

NOTE Confidence: 0.98026055

00:06:05.794 --> 00:06:06.835 this point. It maybe looked

NOTE Confidence: 0.98026055

00:06:06.835 --> 00:06:07.634 a little bit more like

NOTE Confidence: 0.98026055

00:06:07.634 --> 00:06:09.095 the skyline of St. Louis.

NOTE Confidence: 0.95714504

00:06:10.699 --> 00:06:12.139 But in this Manhattan plot

NOTE Confidence: 0.95714504

00:06:12.139 --> 00:06:13.600 you can see that the,

NOTE Confidence: 0.9169148

00:06:14.220 --> 00:06:16.620 associations between genetic variants or

NOTE Confidence: 0.9169148

00:06:16.620 --> 00:06:18.320 these single nucleotide polymorphisms,

NOTE Confidence: 0.84956026

00:06:20.060 --> 00:06:21.440 those are distributed

NOTE Confidence: 0.99911886

00:06:21.900 --> 00:06:23.660 based on physical position across

NOTE Confidence: 0.99911886

00:06:23.660 --> 00:06:25.100 the genome along the x

NOTE Confidence: 0.99911886

00:06:25.100 --> 00:06:25.600 axis

NOTE Confidence: 0.9994352

00:06:26.464 --> 00:06:27.125 and then

NOTE Confidence: 0.98154473

00:06:27.745 --> 00:06:29.265 their position on the, oops,

NOTE Confidence: 0.98154473

00:06:29.265 --> 00:06:30.865 on the y axis indicates

NOTE Confidence: 0.98154473

00:06:30.865 --> 00:06:33.105 how strongly that particular variant

NOTE Confidence: 0.98154473

00:06:33.105 --> 00:06:34.404 is associated with,

NOTE Confidence: 0.980302

00:06:34.865 --> 00:06:36.145 the trait being studied, in

NOTE Confidence: 0.980302

00:06:36.145 --> 00:06:37.685 this case, alcohol dependence.

NOTE Confidence: 0.9896025

00:06:38.225 --> 00:06:39.580 So we can see, in

NOTE Confidence: 0.9896025

00:06:39.580 --> 00:06:41.100 this example that there's a

NOTE Confidence: 0.9896025

00:06:41.100 --> 00:06:42.800 region on chromosome four

NOTE Confidence: 0.9939833

00:06:43.100 --> 00:06:44.960 that was very strongly associated

NOTE Confidence: 0.9939833

00:06:45.100 --> 00:06:45.600 with,

NOTE Confidence: 0.99462754

00:06:46.300 --> 00:06:48.139 risk for alcohol dependence. In

NOTE Confidence: 0.99462754

00:06:48.139 --> 00:06:49.180 this case, this is a

NOTE Confidence: 0.99462754

00:06:49.180 --> 00:06:50.960 gene related to the metabolization

NOTE Confidence: 0.99462754

00:06:51.180 --> 00:06:51.919 of alcohol.

NOTE Confidence: 0.98252434

00:06:54.964 --> 00:06:57.145 So we have performed, GWAS

NOTE Confidence: 0.98252434

00:06:57.205 --> 00:06:58.585 of cannabis use disorder.

NOTE Confidence: 0.9631328

00:06:59.205 --> 00:07:00.645 This was a a GWAS

NOTE Confidence: 0.9631328

00:07:00.645 --> 00:07:02.085 published in twenty twenty in

NOTE Confidence: 0.9631328

00:07:02.085 --> 00:07:03.145 Lancet Psychiatry,

NOTE Confidence: 0.99158114

00:07:03.764 --> 00:07:04.664 and we identified,

NOTE Confidence: 0.9994223

00:07:05.205 --> 00:07:07.044 two genomic loci here that

NOTE Confidence: 0.9994223

00:07:07.044 --> 00:07:08.485 were associated with risk of

NOTE Confidence: 0.9994223

00:07:08.485 --> 00:07:09.705 cannabis use disorder.

NOTE Confidence: 0.97131366

00:07:10.470 --> 00:07:11.830 Since then, an even larger

NOTE Confidence: 0.97131366

00:07:11.830 --> 00:07:13.110 study has been published. This

NOTE Confidence: 0.97131366

00:07:13.110 --> 00:07:14.790 was a study led by,

NOTE Confidence: 0.97131366

00:07:15.110 --> 00:07:17.050 Dan Levy and Joel Galerter,

NOTE Confidence: 0.958854

00:07:17.830 --> 00:07:18.330 which,

NOTE Confidence: 0.9899136

00:07:18.710 --> 00:07:20.310 included many more cases than

NOTE Confidence: 0.9899136

00:07:20.310 --> 00:07:21.750 our twenty twenty GWAS, and

NOTE Confidence: 0.9899136

00:07:21.750 --> 00:07:22.970 we were able to identify

NOTE Confidence: 0.9899136

00:07:23.110 --> 00:07:23.770 many more

NOTE Confidence: 0.9992

00:07:24.104 --> 00:07:25.884 genomic loci that were associated

NOTE Confidence: 0.9992

00:07:25.944 --> 00:07:27.565 with cannabis use disorder.

NOTE Confidence: 0.9972947

00:07:30.505 --> 00:07:31.785 So we know that genetic

NOTE Confidence: 0.9972947

00:07:31.785 --> 00:07:33.485 factors can influence our likelihood

NOTE Confidence: 0.9972947

00:07:33.625 --> 00:07:35.544 to engage in substance use

NOTE Confidence: 0.9972947

00:07:35.544 --> 00:07:36.044 behaviors,

NOTE Confidence: 0.9832177

00:07:36.345 --> 00:07:38.505 our risk for developing substance

NOTE Confidence: 0.9832177

00:07:38.505 --> 00:07:39.324 use disorders.

NOTE Confidence: 0.9664243

00:07:41.860 --> 00:07:42.740 But the work I'm gonna

NOTE Confidence: 0.9664243

00:07:42.740 --> 00:07:44.020 talk about today is really

NOTE Confidence: 0.9664243

00:07:44.020 --> 00:07:45.940 more concerned with how substance

NOTE Confidence: 0.9664243

00:07:45.940 --> 00:07:47.880 use may affect our genome

NOTE Confidence: 0.9664243

00:07:47.940 --> 00:07:49.000 or more accurately,

NOTE Confidence: 0.9966766

00:07:49.780 --> 00:07:51.560 our epigenome and transcriptome.

NOTE Confidence: 0.9610086

00:07:54.085 --> 00:07:56.405 While our DNA sequence remains

NOTE Confidence: 0.9610086

00:07:56.405 --> 00:07:58.505 static from birth, our epigenome

NOTE Confidence: 0.9610086

00:07:58.805 --> 00:08:00.245 is dynamic so it can

NOTE Confidence: 0.9610086

00:08:00.245 --> 00:08:00.745 change,

NOTE Confidence: 0.9471233

00:08:01.205 --> 00:08:02.425 throughout our lifetime,

NOTE Confidence: 0.99957556

00:08:03.365 --> 00:08:05.125 and these epigenetic changes can

NOTE Confidence: 0.99957556

00:08:05.125 --> 00:08:06.745 actually influence the

NOTE Confidence: 0.9997769

00:08:07.610 --> 00:08:08.110 expression

NOTE Confidence: 0.9612862

00:08:08.410 --> 00:08:09.870 of of different genes.

NOTE Confidence: 0.9980752

00:08:10.330 --> 00:08:11.290 And there are different ways

NOTE Confidence: 0.9980752

00:08:11.290 --> 00:08:12.830 that this can happen. So,

NOTE Confidence: 0.9987151

00:08:13.210 --> 00:08:14.910 for example, histone modifications

NOTE Confidence: 0.9996503

00:08:15.450 --> 00:08:17.130 can increase or decrease gene

NOTE Confidence: 0.9996503

00:08:17.130 --> 00:08:17.630 expression

NOTE Confidence: 0.9990098

00:08:18.090 --> 00:08:19.850 by changing how tightly wound

NOTE Confidence: 0.9990098

00:08:19.850 --> 00:08:21.790 the DNA is around nucleosomes

NOTE Confidence: 0.9860846

00:08:22.685 --> 00:08:23.425 and how,

NOTE Confidence: 0.9997652

00:08:23.805 --> 00:08:25.725 easily accessible that DNA is

NOTE Confidence: 0.9997652

00:08:25.725 --> 00:08:27.265 for transcription factors

NOTE Confidence: 0.9949509

00:08:27.645 --> 00:08:28.865 related to gene expression.

NOTE Confidence: 0.9997164

00:08:29.565 --> 00:08:30.225 The addition

NOTE Confidence: 0.9873625

00:08:31.165 --> 00:08:33.245 of methyl groups to, certain

NOTE Confidence: 0.9873625

00:08:33.245 --> 00:08:34.605 spots in the DNA can

NOTE Confidence: 0.9873625

00:08:34.605 --> 00:08:36.785 also repress gene expression,

NOTE Confidence: 0.99389035

00:08:37.770 --> 00:08:40.170 again, by preventing transcription factors

NOTE Confidence: 0.99389035

00:08:40.170 --> 00:08:42.590 from from accessing the promoter

NOTE Confidence: 0.99389035

00:08:42.650 --> 00:08:43.870 region of genes.

NOTE Confidence: 0.9701973

00:08:46.090 --> 00:08:46.910 And environmental

NOTE Confidence: 0.98287594

00:08:47.450 --> 00:08:49.530 exposures like cannabis use can

NOTE Confidence: 0.98287594

00:08:49.530 --> 00:08:51.130 induce some of these changes

NOTE Confidence: 0.98287594

00:08:51.130 --> 00:08:52.430 in DNA methylation.

NOTE Confidence: 0.99823964

00:08:53.495 --> 00:08:54.375 And so the work that

NOTE Confidence: 0.99823964

00:08:54.375 --> 00:08:56.235 I'll present today really focuses

NOTE Confidence: 0.99823964

00:08:56.295 --> 00:08:58.475 on, this mechanism of,

NOTE Confidence: 0.9909483

00:08:58.934 --> 00:09:00.934 DNA methylation changes and how

NOTE Confidence: 0.9909483

00:09:00.934 --> 00:09:02.955 that, may be related to

NOTE Confidence: 0.9909483

00:09:03.015 --> 00:09:04.795 prenatal cannabis exposure.

NOTE Confidence: 0.98071426

00:09:08.270 --> 00:09:09.790 So I introduced a genome

NOTE Confidence: 0.98071426

00:09:09.790 --> 00:09:11.870 wide association earlier and that,

NOTE Confidence: 0.98071426

00:09:11.870 --> 00:09:12.670 you know, many of you

NOTE Confidence: 0.98071426

00:09:12.670 --> 00:09:13.790 may already be familiar with

NOTE Confidence: 0.98071426

00:09:13.790 --> 00:09:15.149 that. I think that's kind

NOTE Confidence: 0.98071426

00:09:15.149 --> 00:09:16.750 of helpful background for thinking

NOTE Confidence: 0.98071426

00:09:16.750 --> 00:09:18.610 about an epigenome wide association

NOTE Confidence: 0.98071426

00:09:18.750 --> 00:09:19.970 study or an EWAS,

NOTE Confidence: 0.9484678

00:09:20.434 --> 00:09:21.875 where here the question is

NOTE Confidence: 0.9484678

00:09:21.875 --> 00:09:24.054 slightly different. Instead of asking

NOTE Confidence: 0.9484678

00:09:24.355 --> 00:09:26.595 what genetic variants, what genes

NOTE Confidence: 0.9484678

00:09:26.595 --> 00:09:27.975 are associated with,

NOTE Confidence: 0.9218843

00:09:28.515 --> 00:09:29.975 cannabis use, for example,

NOTE Confidence: 0.9320683

00:09:30.434 --> 00:09:31.654 here we're asking,

NOTE Confidence: 0.9405523

00:09:32.399 --> 00:09:33.139 are there,

NOTE Confidence: 0.99858123

00:09:34.000 --> 00:09:35.920 regions of our genome where

NOTE Confidence: 0.99858123

00:09:35.920 --> 00:09:37.779 cannabis use has changed

NOTE Confidence: 0.98089385

00:09:38.160 --> 00:09:39.860 or is associated with changes

NOTE Confidence: 0.98089385

00:09:39.920 --> 00:09:41.220 in DNA methylation?

NOTE Confidence: 0.98153645

00:09:42.240 --> 00:09:43.679 So I'm showing here an

NOTE Confidence: 0.98153645

00:09:43.679 --> 00:09:45.379 example of an EWAS,

NOTE Confidence: 0.94289094

00:09:46.079 --> 00:09:47.279 from Fong and colleagues that

NOTE Confidence: 0.94289094

00:09:47.279 --> 00:09:48.545 was published in twenty twenty

NOTE Confidence: 0.94289094

00:09:48.545 --> 00:09:50.165 four where they identified,

NOTE Confidence: 0.9987733

00:09:51.585 --> 00:09:53.025 four spots in the genome

NOTE Confidence: 0.9987733

00:09:53.025 --> 00:09:54.625 that were associated with differential

NOTE Confidence: 0.9987733

00:09:54.625 --> 00:09:55.605 DNA methylation

NOTE Confidence: 0.9939826

00:09:56.304 --> 00:09:58.965 according to lifetime cannabis use.

NOTE Confidence: 0.9830274

00:10:02.330 --> 00:10:03.210 Actually, this is probably a

NOTE Confidence: 0.9830274

00:10:03.210 --> 00:10:04.650 good place to stop maybe.

NOTE Confidence: 0.9830274

00:10:04.970 --> 00:10:06.170 Are there any questions so

NOTE Confidence: 0.9830274

00:10:06.170 --> 00:10:06.670 far?

NOTE Confidence: 0.996233

00:10:10.330 --> 00:10:11.529 I maybe see something in

NOTE Confidence: 0.996233

00:10:11.529 --> 00:10:12.190 the chat.

NOTE Confidence: 0.9475643

00:10:15.075 --> 00:10:16.615 Oh, no. Thank you, Wendy.

NOTE Confidence: 0.9968338

00:10:16.995 --> 00:10:18.695 Okay. Well, hearing no questions,

NOTE Confidence: 0.9942751

00:10:19.155 --> 00:10:20.535 feel free to interrupt me,

NOTE Confidence: 0.9942751

00:10:20.835 --> 00:10:22.275 but I will keep going

NOTE Confidence: 0.9942751

00:10:22.275 --> 00:10:22.934 for now.

NOTE Confidence: 0.98865044

00:10:24.675 --> 00:10:25.554 So I wanted to take

NOTE Confidence: 0.98865044

00:10:25.554 --> 00:10:27.155 a step back first and

NOTE Confidence: 0.98865044

00:10:27.155 --> 00:10:28.320 talk a little bit about

NOTE Confidence: 0.98865044

00:10:28.400 --> 00:10:29.520 the changes that we're seeing

NOTE Confidence: 0.98865044

00:10:29.520 --> 00:10:31.360 in cannabis use, at least

NOTE Confidence: 0.98865044

00:10:31.360 --> 00:10:32.179 in the US.

NOTE Confidence: 0.9710188

00:10:33.679 --> 00:10:34.480 Many of you may know

NOTE Confidence: 0.9710188

00:10:34.480 --> 00:10:35.860 this already, but as legalization

NOTE Confidence: 0.99750644

00:10:36.240 --> 00:10:36.980 has expanded,

NOTE Confidence: 0.994975

00:10:37.440 --> 00:10:39.520 cannabis use, has continued to

NOTE Confidence: 0.994975

00:10:39.520 --> 00:10:41.140 rise in the United States.

NOTE Confidence: 0.9961624

00:10:41.894 --> 00:10:42.934 So in this figure on

NOTE Confidence: 0.9961624

00:10:42.934 --> 00:10:43.815 the left here, we can

NOTE Confidence: 0.9961624

00:10:43.815 --> 00:10:46.214 see increases in both, twelve

NOTE Confidence: 0.9961624

00:10:46.214 --> 00:10:46.714 months

NOTE Confidence: 0.9788286

00:10:47.015 --> 00:10:48.475 use and daily use,

NOTE Confidence: 0.9680367

00:10:49.015 --> 00:10:50.135 from two thousand eight to

NOTE Confidence: 0.9680367

00:10:50.135 --> 00:10:51.195 twenty twenty three.

NOTE Confidence: 0.96804255

00:10:51.654 --> 00:10:53.995 And this is, across both

NOTE Confidence: 0.985428

00:10:54.990 --> 00:10:56.910 early or younger adults as

NOTE Confidence: 0.985428

00:10:56.910 --> 00:10:58.690 well as, older adults.

NOTE Confidence: 0.99714583

00:11:00.110 --> 00:11:02.030 People generally report using cannabis

NOTE Confidence: 0.99714583

00:11:02.030 --> 00:11:02.530 to,

NOTE Confidence: 0.9965047

00:11:03.070 --> 00:11:04.130 help with their anxiety,

NOTE Confidence: 0.90499943

00:11:04.750 --> 00:11:06.670 to help with, pain as

NOTE Confidence: 0.90499943

00:11:06.670 --> 00:11:07.809 well as other issues,

NOTE Confidence: 0.98803174

00:11:08.115 --> 00:11:09.315 And many people who use

NOTE Confidence: 0.98803174

00:11:09.315 --> 00:11:11.554 cannabis won't experience any adverse

NOTE Confidence: 0.98803174

00:11:11.554 --> 00:11:12.054 effects,

NOTE Confidence: 0.99063975

00:11:12.675 --> 00:11:14.595 but some people may. And

NOTE Confidence: 0.99063975

00:11:14.595 --> 00:11:16.115 these potential issues can include

NOTE Confidence: 0.99063975

00:11:16.115 --> 00:11:17.815 symptoms of cannabis use disorder,

NOTE Confidence: 0.9996457

00:11:18.595 --> 00:11:19.815 even acute psychosis

NOTE Confidence: 0.9891352

00:11:20.480 --> 00:11:22.959 or cannabinoid hyperemesis syndrome. So

NOTE Confidence: 0.9891352

00:11:22.959 --> 00:11:24.179 there can be serious

NOTE Confidence: 0.99307173

00:11:24.559 --> 00:11:25.620 adverse side effects,

NOTE Confidence: 0.9971771

00:11:26.160 --> 00:11:27.279 for some folks who use

NOTE Confidence: 0.9971771

00:11:27.279 --> 00:11:27.779 cannabis.

NOTE Confidence: 0.9968541

00:11:30.959 --> 00:11:32.639 We're not only seeing increases

NOTE Confidence: 0.9968541

00:11:32.639 --> 00:11:33.679 in cannabis use in the

NOTE Confidence: 0.9968541

00:11:33.679 --> 00:11:35.394 general population, but we're also

NOTE Confidence: 0.9968541

00:11:35.394 --> 00:11:36.295 seeing increases

NOTE Confidence: 0.99934834

00:11:36.915 --> 00:11:38.375 in pregnant individuals.

NOTE Confidence: 0.98052555

00:11:38.915 --> 00:11:39.795 So in this,

NOTE Confidence: 0.9984862

00:11:40.915 --> 00:11:42.134 figure shown here,

NOTE Confidence: 0.98954487

00:11:42.754 --> 00:11:44.194 we're seeing from two thousand

NOTE Confidence: 0.98954487

00:11:44.194 --> 00:11:45.495 two to twenty sixteen

NOTE Confidence: 0.83154064

00:11:46.115 --> 00:11:46.615 decreases

NOTE Confidence: 0.9783281

00:11:47.074 --> 00:11:49.235 in, prenatal use of alcohol

NOTE Confidence: 0.9783281

00:11:49.235 --> 00:11:49.894 and cigarettes,

NOTE Confidence: 0.99967617

00:11:50.250 --> 00:11:51.550 but a slight increase

NOTE Confidence: 0.9996187

00:11:51.929 --> 00:11:53.710 in prenatal use of marijuana.

NOTE Confidence: 0.9986361

00:11:55.610 --> 00:11:57.530 Many people who, have used

NOTE Confidence: 0.9986361

00:11:57.530 --> 00:11:58.910 marijuana in their lifetime

NOTE Confidence: 0.9832568

00:11:59.290 --> 00:12:00.410 continue to use it during

NOTE Confidence: 0.9832568

00:12:00.410 --> 00:12:00.910 pregnancy,

NOTE Confidence: 0.9983085

00:12:01.370 --> 00:12:02.330 and this is because many

NOTE Confidence: 0.9983085

00:12:02.330 --> 00:12:04.170 of these individuals report believing

NOTE Confidence: 0.9983085

00:12:04.170 --> 00:12:06.345 that cannabis use is relatively

NOTE Confidence: 0.9983085

00:12:06.405 --> 00:12:08.265 safe to use while pregnant.

NOTE Confidence: 0.9941214

00:12:09.525 --> 00:12:10.885 However, we also know that

NOTE Confidence: 0.9941214

00:12:10.885 --> 00:12:12.725 the potency of cannabis, so

NOTE Confidence: 0.9941214

00:12:12.725 --> 00:12:14.025 the proportion of THC

NOTE Confidence: 0.9510171

00:12:14.565 --> 00:12:16.645 in cannabis samples, has also

NOTE Confidence: 0.9510171

00:12:16.645 --> 00:12:18.985 steadily increased over the years.

NOTE Confidence: 0.91145617

00:12:21.389 --> 00:12:22.829 So if we look, the

NOTE Confidence: 0.91145617

00:12:22.829 --> 00:12:24.769 proportion of THC and cannabis

NOTE Confidence: 0.91145617

00:12:24.829 --> 00:12:25.329 samples,

NOTE Confidence: 0.99283046

00:12:25.949 --> 00:12:27.569 it's essentially quadrupled,

NOTE Confidence: 0.99941957

00:12:28.110 --> 00:12:29.709 from nineteen ninety five to

NOTE Confidence: 0.99941957

00:12:29.709 --> 00:12:30.929 twenty twenty two.

NOTE Confidence: 0.9989853

00:12:31.725 --> 00:12:33.005 So the cannabis that people

NOTE Confidence: 0.9989853

00:12:33.005 --> 00:12:34.045 were using in the past

NOTE Confidence: 0.9989853

00:12:34.045 --> 00:12:35.265 is not the same cannabis

NOTE Confidence: 0.9989853

00:12:35.325 --> 00:12:36.865 that people are using today.

NOTE Confidence: 0.9465902

00:12:37.245 --> 00:12:38.045 It's has,

NOTE Confidence: 0.9995224

00:12:38.684 --> 00:12:39.804 a much higher level of

NOTE Confidence: 0.9995224

00:12:39.804 --> 00:12:40.304 THC

NOTE Confidence: 0.9990455

00:12:40.845 --> 00:12:42.304 in many cannabis samples.

NOTE Confidence: 0.99242127

00:12:46.580 --> 00:12:48.580 I'm showing here, another a

NOTE Confidence: 0.99242127

00:12:48.580 --> 00:12:49.960 figure from another study

NOTE Confidence: 0.9947239

00:12:50.740 --> 00:12:52.760 published in twenty nineteen that,

NOTE Confidence: 0.99973005

00:12:53.460 --> 00:12:53.960 compared

NOTE Confidence: 0.98218673

00:12:54.900 --> 00:12:56.740 cannabis use, from two thousand

NOTE Confidence: 0.98218673

00:12:56.740 --> 00:12:58.100 two, two thousand three with

NOTE Confidence: 0.98218673

00:12:58.100 --> 00:12:59.620 cannabis use from twenty sixteen

NOTE Confidence: 0.98218673

00:12:59.620 --> 00:13:00.760 to twenty seventeen.

NOTE Confidence: 0.953002

00:13:01.514 --> 00:13:03.054 And, again, we're seeing increases

NOTE Confidence: 0.953002

00:13:03.355 --> 00:13:05.274 in cannabis use not only

NOTE Confidence: 0.953002

00:13:05.274 --> 00:13:05.774 in,

NOTE Confidence: 0.94820654

00:13:06.634 --> 00:13:08.154 nonpregnant women, but also in

NOTE Confidence: 0.94820654

00:13:08.154 --> 00:13:10.074 pregnant women and especially during

NOTE Confidence: 0.94820654

00:13:10.074 --> 00:13:11.134 that first trimester.

NOTE Confidence: 0.9342415

00:13:13.550 --> 00:13:15.309 On the right, I'm showing,

NOTE Confidence: 0.9510523

00:13:15.709 --> 00:13:16.990 an excerpt from an article

NOTE Confidence: 0.9510523

00:13:16.990 --> 00:13:18.050 from The New York Times,

NOTE Confidence: 0.99914515

00:13:18.429 --> 00:13:19.730 back in twenty seventeen,

NOTE Confidence: 0.99411535

00:13:20.509 --> 00:13:22.429 which just includes some kind

NOTE Confidence: 0.99411535

00:13:22.429 --> 00:13:23.089 of interesting,

NOTE Confidence: 0.9998393

00:13:23.629 --> 00:13:24.129 anecdotal

NOTE Confidence: 0.93887395

00:13:24.509 --> 00:13:25.709 quotes from someone who was

NOTE Confidence: 0.93887395

00:13:25.709 --> 00:13:26.209 interviewed.

NOTE Confidence: 0.98840946

00:13:26.645 --> 00:13:27.925 And this person says that

NOTE Confidence: 0.98840946

00:13:27.925 --> 00:13:29.605 her OB GYN was concerned

NOTE Confidence: 0.98840946

00:13:29.605 --> 00:13:31.045 about whether she was using

NOTE Confidence: 0.98840946

00:13:31.045 --> 00:13:32.265 alcohol or tobacco

NOTE Confidence: 0.97892094

00:13:32.885 --> 00:13:33.945 while she was pregnant,

NOTE Confidence: 0.9997332

00:13:34.325 --> 00:13:35.925 but they weren't really concerned

NOTE Confidence: 0.9997332

00:13:35.925 --> 00:13:37.465 with her marijuana use

NOTE Confidence: 0.960553

00:13:37.925 --> 00:13:38.965 and said that since it

NOTE Confidence: 0.960553

00:13:38.965 --> 00:13:40.585 hadn't been studied that much,

NOTE Confidence: 0.97049475

00:13:41.059 --> 00:13:42.579 they couldn't advise her really

NOTE Confidence: 0.97049475

00:13:42.579 --> 00:13:43.620 one way or the other

NOTE Confidence: 0.97049475

00:13:43.620 --> 00:13:44.579 whether it was safe or

NOTE Confidence: 0.97049475

00:13:44.579 --> 00:13:45.079 unsafe.

NOTE Confidence: 0.9947799

00:13:46.019 --> 00:13:47.380 She also says that,

NOTE Confidence: 0.99783427

00:13:47.779 --> 00:13:50.100 because marijuana is natural and

NOTE Confidence: 0.99783427

00:13:50.100 --> 00:13:52.019 everyone's using it, she felt

NOTE Confidence: 0.99783427

00:13:52.019 --> 00:13:53.380 like it was probably okay

NOTE Confidence: 0.99783427

00:13:53.380 --> 00:13:54.040 to use.

NOTE Confidence: 0.9853252

00:13:55.304 --> 00:13:56.184 So this seems to be

NOTE Confidence: 0.9853252

00:13:56.184 --> 00:13:57.545 kind of the general attitude

NOTE Confidence: 0.9853252

00:13:57.545 --> 00:13:59.165 around cannabis use during pregnancy

NOTE Confidence: 0.9853252

00:13:59.225 --> 00:13:59.965 right now.

NOTE Confidence: 0.9624044

00:14:01.545 --> 00:14:02.585 But in part because of

NOTE Confidence: 0.9624044

00:14:02.585 --> 00:14:04.045 these increases in potency,

NOTE Confidence: 0.9984905

00:14:04.505 --> 00:14:05.945 it's really important for us

NOTE Confidence: 0.9984905

00:14:05.945 --> 00:14:07.545 to study prenatal cannabis use

NOTE Confidence: 0.9984905

00:14:07.545 --> 00:14:08.505 and whether it might be

NOTE Confidence: 0.9984905

00:14:08.505 --> 00:14:09.005 affecting

NOTE Confidence: 0.96529406

00:14:09.600 --> 00:14:11.620 birth outcomes as well as

NOTE Confidence: 0.96529406

00:14:11.920 --> 00:14:13.120 both short and long term

NOTE Confidence: 0.96529406

00:14:13.120 --> 00:14:14.179 child behaviors.

NOTE Confidence: 0.99971163

00:14:17.679 --> 00:14:19.380 In terms of birth outcomes,

NOTE Confidence: 0.9978988

00:14:20.000 --> 00:14:21.140 there's relatively

NOTE Confidence: 0.994168

00:14:21.535 --> 00:14:22.835 solid evidence that,

NOTE Confidence: 0.9914483

00:14:23.215 --> 00:14:24.815 low birth weight is associated

NOTE Confidence: 0.9914483

00:14:24.815 --> 00:14:26.975 with prenatal cannabis use. So

NOTE Confidence: 0.9914483

00:14:26.975 --> 00:14:28.175 as an example, I'm showing

NOTE Confidence: 0.9914483

00:14:28.175 --> 00:14:29.375 a figure here from a

NOTE Confidence: 0.9914483

00:14:29.375 --> 00:14:30.195 a meta analysis

NOTE Confidence: 0.9997466

00:14:30.575 --> 00:14:31.635 that did find

NOTE Confidence: 0.99231976

00:14:32.095 --> 00:14:33.535 higher risk of low birth

NOTE Confidence: 0.99231976

00:14:33.535 --> 00:14:35.295 weight in people who use

NOTE Confidence: 0.99231976

00:14:35.295 --> 00:14:36.275 cannabis prenatally.

NOTE Confidence: 0.9959904

00:14:38.389 --> 00:14:39.509 In terms of effects on

NOTE Confidence: 0.9959904

00:14:39.509 --> 00:14:40.329 child behavior,

NOTE Confidence: 0.98127174

00:14:40.630 --> 00:14:41.589 the literature is a little

NOTE Confidence: 0.98127174

00:14:41.589 --> 00:14:43.350 bit more mixed. So findings

NOTE Confidence: 0.98127174

00:14:43.350 --> 00:14:44.410 tend to be inconsistent.

NOTE Confidence: 0.9866086

00:14:45.029 --> 00:14:46.550 They've tended to come from

NOTE Confidence: 0.9866086

00:14:46.550 --> 00:14:47.529 smaller samples,

NOTE Confidence: 0.9845638

00:14:48.149 --> 00:14:49.370 and there are different confounders

NOTE Confidence: 0.9845638

00:14:49.509 --> 00:14:50.709 that can be really hard

NOTE Confidence: 0.9845638

00:14:50.709 --> 00:14:51.190 to,

NOTE Confidence: 0.9995899

00:14:51.910 --> 00:14:52.889 to tease apart.

NOTE Confidence: 0.9981047

00:14:56.765 --> 00:14:57.805 I wanted to highlight a

NOTE Confidence: 0.9981047

00:14:57.805 --> 00:14:58.705 couple of studies.

NOTE Confidence: 0.9653777

00:14:59.085 --> 00:15:00.765 The first one, this was

NOTE Confidence: 0.9653777

00:15:00.765 --> 00:15:02.525 a a study done using

NOTE Confidence: 0.9653777

00:15:02.525 --> 00:15:04.385 the adolescent brain cognitive development

NOTE Confidence: 0.9653777

00:15:04.445 --> 00:15:06.125 sample, which is a very

NOTE Confidence: 0.9653777

00:15:06.125 --> 00:15:06.625 large

NOTE Confidence: 0.99311143

00:15:07.170 --> 00:15:09.330 longitudinal study of children across

NOTE Confidence: 0.99311143

00:15:09.330 --> 00:15:10.310 the United States.

NOTE Confidence: 0.9625918

00:15:10.690 --> 00:15:11.570 And this is a paper

NOTE Confidence: 0.9625918

00:15:11.570 --> 00:15:13.890 led by Sarah Paul, here

NOTE Confidence: 0.9625918

00:15:13.890 --> 00:15:15.570 in the psychological and brain

NOTE Confidence: 0.9625918

00:15:15.570 --> 00:15:17.730 sciences department at WashU, mentored

NOTE Confidence: 0.9625918

00:15:17.730 --> 00:15:18.790 by Ryan Bogdan.

NOTE Confidence: 0.99760026

00:15:20.015 --> 00:15:22.415 And Sarah found that prenatal

NOTE Confidence: 0.99760026

00:15:22.415 --> 00:15:24.655 cannabis exposure was associated with

NOTE Confidence: 0.99760026

00:15:24.655 --> 00:15:25.715 a number of different,

NOTE Confidence: 0.9144938

00:15:26.655 --> 00:15:27.955 outcomes, including,

NOTE Confidence: 0.9914673

00:15:29.135 --> 00:15:31.475 higher BMI, lower cognitive function,

NOTE Confidence: 0.9994963

00:15:31.935 --> 00:15:33.475 as well as some behavioral

NOTE Confidence: 0.8742517

00:15:34.290 --> 00:15:34.790 outcomes,

NOTE Confidence: 0.9990122

00:15:35.330 --> 00:15:36.390 including externalizing

NOTE Confidence: 0.9997032

00:15:36.769 --> 00:15:37.269 problems

NOTE Confidence: 0.9916008

00:15:38.370 --> 00:15:40.070 and greater likelihood of attention

NOTE Confidence: 0.9916008

00:15:40.130 --> 00:15:40.630 problems.

NOTE Confidence: 0.9639589

00:15:41.089 --> 00:15:42.930 And importantly, she found this,

NOTE Confidence: 0.94370276

00:15:43.490 --> 00:15:46.070 these differences both in women

NOTE Confidence: 0.94370276

00:15:46.130 --> 00:15:46.630 who,

NOTE Confidence: 0.92732036

00:15:47.574 --> 00:15:48.394 use cannabis,

NOTE Confidence: 0.9976927

00:15:49.735 --> 00:15:50.235 both

NOTE Confidence: 0.98527944

00:15:51.014 --> 00:15:52.134 prior to when they they

NOTE Confidence: 0.98527944

00:15:52.134 --> 00:15:53.175 knew that they were pregnant

NOTE Confidence: 0.98527944

00:15:53.175 --> 00:15:54.214 as well as after they

NOTE Confidence: 0.98527944

00:15:54.214 --> 00:15:55.435 knew that they were pregnant.

NOTE Confidence: 0.9693408

00:15:58.454 --> 00:15:59.815 A paper led by David

NOTE Confidence: 0.9693408

00:15:59.815 --> 00:16:00.315 Behringer,

NOTE Confidence: 0.98028564

00:16:01.260 --> 00:16:02.080 looked at,

NOTE Confidence: 0.9788895

00:16:02.460 --> 00:16:04.140 a later follow-up, a later

NOTE Confidence: 0.9788895

00:16:04.140 --> 00:16:05.500 time point in the same

NOTE Confidence: 0.9788895

00:16:05.500 --> 00:16:06.720 ABCD study,

NOTE Confidence: 0.9918065

00:16:07.180 --> 00:16:08.720 and he found very similar,

NOTE Confidence: 0.99953496

00:16:09.740 --> 00:16:10.240 associations

NOTE Confidence: 0.9944003

00:16:10.620 --> 00:16:12.300 as Sarah did. So he

NOTE Confidence: 0.9944003

00:16:12.300 --> 00:16:14.060 saw that prenatal cannabis use

NOTE Confidence: 0.9944003

00:16:14.060 --> 00:16:15.280 was associated with,

NOTE Confidence: 0.9982177

00:16:15.660 --> 00:16:17.735 for example, conduct problems, ADHD

NOTE Confidence: 0.9984257

00:16:18.035 --> 00:16:18.535 problems,

NOTE Confidence: 0.9864136

00:16:19.075 --> 00:16:21.255 stress, and obsessive compulsive problems

NOTE Confidence: 0.9864136

00:16:21.315 --> 00:16:22.135 in these children.

NOTE Confidence: 0.9995009

00:16:26.755 --> 00:16:28.035 That might be another good

NOTE Confidence: 0.9995009

00:16:28.035 --> 00:16:29.095 place to pause.

NOTE Confidence: 0.9646981

00:16:30.630 --> 00:16:31.670 It looked like there might

NOTE Confidence: 0.9646981

00:16:31.670 --> 00:16:32.730 be a couple of

NOTE Confidence: 0.9902172

00:16:33.750 --> 00:16:35.030 questions. Yeah. I think,

NOTE Confidence: 0.8532885

00:16:35.750 --> 00:16:37.290 and Nikola had a question.

NOTE Confidence: 0.9528523

00:16:37.990 --> 00:16:39.190 Nikola, do you wanna ask

NOTE Confidence: 0.9528523

00:16:39.190 --> 00:16:40.630 a question, and then Joel

NOTE Confidence: 0.9528523

00:16:40.630 --> 00:16:41.770 has a question too?

NOTE Confidence: 0.95481354

00:16:44.954 --> 00:16:45.615 Hi, Emma.

NOTE Confidence: 0.90950346

00:16:46.074 --> 00:16:47.595 Yeah. I was wondering what

NOTE Confidence: 0.90950346

00:16:47.595 --> 00:16:49.115 issue I mean, was these

NOTE Confidence: 0.90950346

00:16:49.115 --> 00:16:50.634 questions referred to the to

NOTE Confidence: 0.90950346

00:16:50.634 --> 00:16:51.755 the first part of this

NOTE Confidence: 0.90950346

00:16:51.755 --> 00:16:53.355 talk. So what issue was

NOTE Confidence: 0.90950346

00:16:53.355 --> 00:16:54.735 used for the EWOS?

NOTE Confidence: 0.9415253

00:16:55.995 --> 00:16:57.115 That's a great for the

NOTE Confidence: 0.9415253

00:16:57.115 --> 00:16:58.654 g also for the GWOS?

NOTE Confidence: 0.9860549

00:16:59.970 --> 00:17:01.810 Yeah. That's a great question.

NOTE Confidence: 0.9860549

00:17:01.810 --> 00:17:03.089 For that EWAS, I was

NOTE Confidence: 0.9860549

00:17:03.089 --> 00:17:04.130 not a coauthor on that

NOTE Confidence: 0.9860549

00:17:04.130 --> 00:17:05.090 paper, so I would have

NOTE Confidence: 0.9860549

00:17:05.090 --> 00:17:06.309 to double check that.

NOTE Confidence: 0.9941398

00:17:07.730 --> 00:17:09.190 I thought that was done

NOTE Confidence: 0.9941398

00:17:09.410 --> 00:17:10.150 in blood,

NOTE Confidence: 0.99962187

00:17:11.570 --> 00:17:12.530 but I will I will

NOTE Confidence: 0.99962187

00:17:12.530 --> 00:17:13.910 have to double check that.

NOTE Confidence: 0.99663484

00:17:18.755 --> 00:17:19.554 Let's see. I see a

NOTE Confidence: 0.99663484

00:17:19.554 --> 00:17:21.414 question from Joel as well.

NOTE Confidence: 0.9379274

00:17:22.355 --> 00:17:24.034 But for the EWAS? Oh,

NOTE Confidence: 0.9379274

00:17:24.034 --> 00:17:25.075 yeah. For the EWAS, I

NOTE Confidence: 0.9379274

00:17:25.075 --> 00:17:26.115 believe it was in blood,

NOTE Confidence: 0.9379274

00:17:26.115 --> 00:17:26.835 but I will have to

NOTE Confidence: 0.9379274

00:17:26.835 --> 00:17:28.294 double check that for you.

NOTE Confidence: 0.9379274

00:17:28.355 --> 00:17:29.475 I for the GWAS, you

NOTE Confidence: 0.9379274

00:17:29.475 --> 00:17:30.434 you are not sure, but

NOTE Confidence: 0.9379274

00:17:30.434 --> 00:17:31.500 for the GWAS. But do

NOTE Confidence: 0.9379274

00:17:31.500 --> 00:17:32.240 you figure

NOTE Confidence: 0.9041798

00:17:32.619 --> 00:17:33.520 that the the

NOTE Confidence: 0.8888952

00:17:33.820 --> 00:17:35.340 the change in methylation is

NOTE Confidence: 0.8888952

00:17:35.340 --> 00:17:36.080 a consequence

NOTE Confidence: 0.9981962

00:17:36.940 --> 00:17:37.520 of the

NOTE Confidence: 0.91917574

00:17:37.820 --> 00:17:38.800 cannabis use?

NOTE Confidence: 0.9961767

00:17:39.900 --> 00:17:40.960 Is that a consequence?

NOTE Confidence: 0.9987138

00:17:41.420 --> 00:17:42.880 Sorry. Could you repeat that?

NOTE Confidence: 0.8198817

00:17:43.275 --> 00:17:45.035 Is it is Is that

NOTE Confidence: 0.8198817

00:17:45.035 --> 00:17:46.475 the is the the change

NOTE Confidence: 0.8198817

00:17:46.475 --> 00:17:47.595 in the methylation is a

NOTE Confidence: 0.8198817

00:17:47.595 --> 00:17:49.035 consequence of a of a

NOTE Confidence: 0.8198817

00:17:49.035 --> 00:17:50.015 cannabis use?

NOTE Confidence: 0.99267

00:17:51.275 --> 00:17:52.795 So, yeah, that's another great

NOTE Confidence: 0.99267

00:17:52.795 --> 00:17:54.234 question. I think that's something

NOTE Confidence: 0.99267

00:17:54.234 --> 00:17:54.734 that,

NOTE Confidence: 0.98258954

00:17:55.920 --> 00:17:56.880 you know, that EWAS had

NOTE Confidence: 0.98258954

00:17:56.880 --> 00:17:58.000 to kind of tease apart.

NOTE Confidence: 0.98258954

00:17:58.000 --> 00:17:59.300 Was that actually a consequence

NOTE Confidence: 0.98258954

00:17:59.359 --> 00:18:00.580 of the cannabis use?

NOTE Confidence: 0.9932956

00:18:00.960 --> 00:18:01.760 And one way you can

NOTE Confidence: 0.9932956

00:18:01.760 --> 00:18:02.720 do that is look at

NOTE Confidence: 0.9932956

00:18:02.720 --> 00:18:03.680 whether these,

NOTE Confidence: 0.9988907

00:18:04.960 --> 00:18:07.619 these methylation sites overlap with

NOTE Confidence: 0.9988907

00:18:07.840 --> 00:18:09.300 the sites from the GWAS.

NOTE Confidence: 0.975399

00:18:10.065 --> 00:18:11.664 If I remember correctly, in

NOTE Confidence: 0.975399

00:18:11.664 --> 00:18:13.024 that EWAS, I don't think

NOTE Confidence: 0.975399

00:18:13.024 --> 00:18:14.625 they overlap with,

NOTE Confidence: 0.98200744

00:18:15.024 --> 00:18:16.544 GWAS loci. And so it

NOTE Confidence: 0.98200744

00:18:16.544 --> 00:18:17.904 does seem like, you know,

NOTE Confidence: 0.98200744

00:18:17.904 --> 00:18:18.945 that would be evidence that

NOTE Confidence: 0.98200744

00:18:18.945 --> 00:18:19.845 this is potentially,

NOTE Confidence: 0.9917068

00:18:21.424 --> 00:18:23.605 a consequence of cannabis use,

NOTE Confidence: 0.9917068

00:18:23.880 --> 00:18:24.760 but that is a little

NOTE Confidence: 0.9917068

00:18:24.760 --> 00:18:26.040 bit hard to tease apart

NOTE Confidence: 0.9917068

00:18:26.040 --> 00:18:26.540 from,

NOTE Confidence: 0.90145254

00:18:27.640 --> 00:18:28.760 you know, for example, other

NOTE Confidence: 0.90145254

00:18:28.760 --> 00:18:30.780 substance use, other substance exposures,

NOTE Confidence: 0.90145254

00:18:30.840 --> 00:18:33.080 things like that. So so

NOTE Confidence: 0.90145254

00:18:33.080 --> 00:18:34.200 my point is that it

NOTE Confidence: 0.90145254

00:18:34.200 --> 00:18:35.980 doesn't mark the the

NOTE Confidence: 0.8393964

00:18:36.525 --> 00:18:37.025 the,

NOTE Confidence: 0.8228088

00:18:37.645 --> 00:18:39.325 how to say, it doesn't

NOTE Confidence: 0.8228088

00:18:39.325 --> 00:18:40.045 say that,

NOTE Confidence: 0.90566427

00:18:41.085 --> 00:18:42.685 that those those logos are

NOTE Confidence: 0.90566427

00:18:42.685 --> 00:18:44.365 risk factor for cannabis use

NOTE Confidence: 0.90566427

00:18:44.365 --> 00:18:44.865 disorder.

NOTE Confidence: 0.7675958

00:18:46.845 --> 00:18:47.345 In,

NOTE Confidence: 0.87931305

00:18:48.045 --> 00:18:49.244 if I'm understanding If I

NOTE Confidence: 0.87931305

00:18:49.244 --> 00:18:50.045 mean, if you if you

NOTE Confidence: 0.87931305

00:18:50.045 --> 00:18:50.765 are not if you do

NOTE Confidence: 0.87931305

00:18:50.765 --> 00:18:51.805 the GWAS for for a

NOTE Confidence: 0.87931305

00:18:51.805 --> 00:18:53.380 neuropsychiatric disorders and you see,

NOTE Confidence: 0.87931305

00:18:53.380 --> 00:18:54.660 you know, over sixty thousand

NOTE Confidence: 0.87931305

00:18:54.660 --> 00:18:55.726 people that there is a

NOTE Confidence: 0.87931305

00:18:55.726 --> 00:18:57.220 a a logo or a

NOTE Confidence: 0.87931305

00:18:57.220 --> 00:18:58.820 gene, which is basically Mhmm.

NOTE Confidence: 0.87931305

00:18:58.900 --> 00:19:00.020 As a variant, you can,

NOTE Confidence: 0.87931305

00:19:00.180 --> 00:19:01.540 you know, with some, you

NOTE Confidence: 0.87931305

00:19:01.540 --> 00:19:03.540 know, statistical analysis, you can

NOTE Confidence: 0.87931305

00:19:03.540 --> 00:19:04.980 say that, that that that

NOTE Confidence: 0.87931305

00:19:04.980 --> 00:19:06.420 variant is associated to the

NOTE Confidence: 0.87931305

00:19:06.420 --> 00:19:07.544 disease. So that to the,

NOTE Confidence: 0.87931305

00:19:07.544 --> 00:19:08.825 for example, to to autism

NOTE Confidence: 0.87931305

00:19:08.825 --> 00:19:09.484 or schizophrenia.

NOTE Confidence: 0.8693406

00:19:10.024 --> 00:19:11.304 In this case, the the

NOTE Confidence: 0.8693406

00:19:11.304 --> 00:19:13.164 increase in the methylation specific

NOTE Confidence: 0.8693406

00:19:13.225 --> 00:19:15.065 locus is a consequence of

NOTE Confidence: 0.8693406

00:19:15.065 --> 00:19:16.505 of the of of the

NOTE Confidence: 0.8693406

00:19:16.505 --> 00:19:18.125 fact that people smoke marijuana

NOTE Confidence: 0.8693406

00:19:18.264 --> 00:19:19.225 or it's be or or

NOTE Confidence: 0.8693406

00:19:19.225 --> 00:19:20.845 it's a it's a it's

NOTE Confidence: 0.8710683

00:19:21.529 --> 00:19:22.570 it's a it's a can

NOTE Confidence: 0.8710683

00:19:22.570 --> 00:19:23.230 can be,

NOTE Confidence: 0.88066584

00:19:24.250 --> 00:19:25.690 taught as a risk factor

NOTE Confidence: 0.88066584

00:19:25.690 --> 00:19:26.490 for for a for a

NOTE Confidence: 0.88066584

00:19:26.490 --> 00:19:28.169 cannabis use disorder. That's my

NOTE Confidence: 0.88066584

00:19:28.169 --> 00:19:29.309 question. Yeah.

NOTE Confidence: 0.8406789

00:19:30.730 --> 00:19:32.090 Yeah. I mean I mean,

NOTE Confidence: 0.8406789

00:19:32.090 --> 00:19:33.210 I think I think it's

NOTE Confidence: 0.8406789

00:19:33.210 --> 00:19:34.330 hard to That doesn't mean

NOTE Confidence: 0.8406789

00:19:34.330 --> 00:19:35.369 to be that's hard to

NOTE Confidence: 0.8406789

00:19:35.369 --> 00:19:36.570 tease apart. I think one

NOTE Confidence: 0.8406789

00:19:36.570 --> 00:19:37.265 way to look at that

NOTE Confidence: 0.8406789

00:19:37.265 --> 00:19:38.645 is just whether it's overlapping

NOTE Confidence: 0.8406789

00:19:38.705 --> 00:19:39.605 with those GWAS

NOTE Confidence: 0.99011403

00:19:39.985 --> 00:19:40.485 loci.

NOTE Confidence: 0.9738951

00:19:41.265 --> 00:19:42.065 You know, if it does,

NOTE Confidence: 0.9738951

00:19:42.065 --> 00:19:42.465 then,

NOTE Confidence: 0.990255

00:19:42.865 --> 00:19:43.905 that would be evidence that

NOTE Confidence: 0.990255

00:19:43.905 --> 00:19:44.945 it might be reflecting more

NOTE Confidence: 0.990255

00:19:44.945 --> 00:19:46.145 of a a risk factor

NOTE Confidence: 0.990255

00:19:46.145 --> 00:19:47.845 rather than a consequence. But,

NOTE Confidence: 0.9929313

00:19:48.705 --> 00:19:49.425 but I think if you

NOTE Confidence: 0.9929313

00:19:49.425 --> 00:19:50.625 don't see that overlap, I

NOTE Confidence: 0.9929313

00:19:50.625 --> 00:19:52.200 would interpret that as as

NOTE Confidence: 0.9929313

00:19:52.200 --> 00:19:53.240 evidence for it being more

NOTE Confidence: 0.9929313

00:19:53.240 --> 00:19:54.220 of a consequence

NOTE Confidence: 0.99034905

00:19:54.840 --> 00:19:55.740 driven locus.

NOTE Confidence: 0.8447612

00:19:57.559 --> 00:19:59.100 Does that make sense? Yeah.

NOTE Confidence: 0.76008636

00:20:01.159 --> 00:20:02.140 I think clarified

NOTE Confidence: 0.9392254

00:20:02.840 --> 00:20:04.119 that the EVAS was done

NOTE Confidence: 0.9392254

00:20:04.119 --> 00:20:04.779 in blood.

NOTE Confidence: 0.9979099

00:20:05.335 --> 00:20:06.695 Yeah. Thank you for looking

NOTE Confidence: 0.9979099

00:20:06.695 --> 00:20:08.455 that up. And then Joel

NOTE Confidence: 0.9979099

00:20:08.455 --> 00:20:09.275 has a question.

NOTE Confidence: 0.99610174

00:20:11.175 --> 00:20:13.015 Yeah. You pointed out that

NOTE Confidence: 0.99610174

00:20:13.015 --> 00:20:15.035 the THC content of cannabis

NOTE Confidence: 0.99610174

00:20:15.255 --> 00:20:16.635 has roughly quadrupled

NOTE Confidence: 0.99562836

00:20:17.494 --> 00:20:17.994 over

NOTE Confidence: 0.95356596

00:20:18.450 --> 00:20:20.149 relatively short period of time.

NOTE Confidence: 0.9460116

00:20:20.690 --> 00:20:21.649 My question is to what

NOTE Confidence: 0.9460116

00:20:21.649 --> 00:20:23.730 extent does that translate to

NOTE Confidence: 0.9460116

00:20:23.730 --> 00:20:25.809 increased THC exposure in a

NOTE Confidence: 0.9460116

00:20:25.809 --> 00:20:26.309 user?

NOTE Confidence: 0.96228296

00:20:27.169 --> 00:20:28.609 So for example, if someone

NOTE Confidence: 0.96228296

00:20:28.609 --> 00:20:30.690 switches from drinking beer to

NOTE Confidence: 0.96228296

00:20:30.690 --> 00:20:31.190 drinking

NOTE Confidence: 0.98763055

00:20:31.945 --> 00:20:33.065 whiskey or something with a

NOTE Confidence: 0.98763055

00:20:33.065 --> 00:20:34.365 higher alcohol content,

NOTE Confidence: 0.99936587

00:20:34.825 --> 00:20:36.025 they may always drink to

NOTE Confidence: 0.99936587

00:20:36.025 --> 00:20:37.225 about the same level of

NOTE Confidence: 0.99936587

00:20:37.225 --> 00:20:37.725 intoxication.

NOTE Confidence: 0.988915

00:20:39.465 --> 00:20:40.585 Is that the case also

NOTE Confidence: 0.988915

00:20:40.585 --> 00:20:42.665 with cannabis use, or are

NOTE Confidence: 0.988915

00:20:42.665 --> 00:20:43.565 people really

NOTE Confidence: 0.99902123

00:20:43.945 --> 00:20:45.545 becoming exposed to much higher

NOTE Confidence: 0.99902123

00:20:45.545 --> 00:20:47.244 levels of THC now?

NOTE Confidence: 0.9954689

00:20:48.609 --> 00:20:49.910 That's a really good question.

NOTE Confidence: 0.9954689

00:20:49.970 --> 00:20:51.010 I don't actually know if

NOTE Confidence: 0.9954689

00:20:51.010 --> 00:20:51.809 I know the answer to

NOTE Confidence: 0.9954689

00:20:51.809 --> 00:20:53.170 that. Cyril, do you have

NOTE Confidence: 0.9954689

00:20:53.170 --> 00:20:53.830 an idea?

NOTE Confidence: 0.96534765

00:20:55.010 --> 00:20:56.950 It's a great question, Joel.

NOTE Confidence: 0.9654308

00:20:57.250 --> 00:20:58.950 Many people have argued that

NOTE Confidence: 0.9654308

00:20:59.010 --> 00:21:00.929 people are just titrating the

NOTE Confidence: 0.9654308

00:21:00.929 --> 00:21:02.070 amount of THC

NOTE Confidence: 0.99537385

00:21:02.815 --> 00:21:03.855 they need to get to

NOTE Confidence: 0.99537385

00:21:03.855 --> 00:21:06.035 the desired level of high.

NOTE Confidence: 0.99517703

00:21:06.415 --> 00:21:07.375 But if you look at

NOTE Confidence: 0.99517703

00:21:07.375 --> 00:21:09.135 other outcomes and not just

NOTE Confidence: 0.99517703

00:21:09.135 --> 00:21:10.035 acute intoxication,

NOTE Confidence: 0.9990711

00:21:10.335 --> 00:21:11.155 it looks like

NOTE Confidence: 0.9627383

00:21:11.615 --> 00:21:12.915 if you're using higher

NOTE Confidence: 0.9892096

00:21:15.520 --> 00:21:17.700 products that contain higher THC

NOTE Confidence: 0.9892096

00:21:17.760 --> 00:21:18.260 levels,

NOTE Confidence: 0.9913658

00:21:18.720 --> 00:21:20.080 you're also more likely to

NOTE Confidence: 0.9913658

00:21:20.080 --> 00:21:22.179 be to become addicted to,

NOTE Confidence: 0.9678103

00:21:22.640 --> 00:21:24.500 to develop cannabis use disorder,

NOTE Confidence: 0.9966307

00:21:25.600 --> 00:21:26.100 because

NOTE Confidence: 0.98924446

00:21:26.480 --> 00:21:27.780 of the higher potency

NOTE Confidence: 0.98000264

00:21:28.240 --> 00:21:29.600 THC. So it it's a

NOTE Confidence: 0.98000264

00:21:29.600 --> 00:21:30.935 great question. I don't think

NOTE Confidence: 0.98000264

00:21:30.935 --> 00:21:32.775 anyone has actually looked at

NOTE Confidence: 0.98000264

00:21:32.775 --> 00:21:33.275 whether

NOTE Confidence: 0.97192925

00:21:33.895 --> 00:21:34.395 the,

NOTE Confidence: 0.97307193

00:21:34.935 --> 00:21:36.695 the the levels of THC

NOTE Confidence: 0.97307193

00:21:36.695 --> 00:21:38.215 that someone's exposed to when

NOTE Confidence: 0.97307193

00:21:38.215 --> 00:21:39.675 they're using these high potency

NOTE Confidence: 0.97307193

00:21:39.734 --> 00:21:41.115 products is any different

NOTE Confidence: 0.9982153

00:21:41.655 --> 00:21:42.155 from

NOTE Confidence: 0.90225714

00:21:43.519 --> 00:21:44.980 people who are using lower,

NOTE Confidence: 0.9990618

00:21:45.440 --> 00:21:46.419 potency products

NOTE Confidence: 0.99087524

00:21:47.039 --> 00:21:48.639 back in the seventies, eighties,

NOTE Confidence: 0.99087524

00:21:48.639 --> 00:21:50.080 and nineties. It's a great

NOTE Confidence: 0.99087524

00:21:50.080 --> 00:21:50.580 question.

NOTE Confidence: 0.9754641

00:21:55.855 --> 00:21:56.815 And then I see one

NOTE Confidence: 0.9754641

00:21:56.815 --> 00:21:58.095 more question in the chat

NOTE Confidence: 0.9754641

00:21:58.095 --> 00:21:59.774 about, is that low birth

NOTE Confidence: 0.9754641

00:21:59.774 --> 00:22:00.914 weight for gestational

NOTE Confidence: 0.9610537

00:22:01.294 --> 00:22:01.794 age?

NOTE Confidence: 0.9880891

00:22:02.654 --> 00:22:04.355 Yes. I believe so.

NOTE Confidence: 0.9104657

00:22:08.540 --> 00:22:09.919 Yeah. Wanna continue?

NOTE Confidence: 0.98166746

00:22:10.940 --> 00:22:11.900 Yeah. If there are no

NOTE Confidence: 0.98166746

00:22:11.900 --> 00:22:13.740 other questions for now, I'll

NOTE Confidence: 0.98166746

00:22:13.740 --> 00:22:14.799 keep going, but,

NOTE Confidence: 0.99930906

00:22:15.260 --> 00:22:16.000 thank you.

NOTE Confidence: 0.99901676

00:22:17.100 --> 00:22:17.600 Alright.

NOTE Confidence: 0.9461959

00:22:20.785 --> 00:22:21.845 Where were we?

NOTE Confidence: 0.96887004

00:22:23.425 --> 00:22:24.325 Right. So,

NOTE Confidence: 0.9884827

00:22:24.625 --> 00:22:25.665 you know, we see some

NOTE Confidence: 0.9884827

00:22:25.665 --> 00:22:26.165 evidence

NOTE Confidence: 0.9894683

00:22:26.545 --> 00:22:28.225 of prenatal cannabis use having

NOTE Confidence: 0.9894683

00:22:28.225 --> 00:22:29.744 an effect on these birth

NOTE Confidence: 0.9894683

00:22:29.744 --> 00:22:31.765 outcomes and potentially child

NOTE Confidence: 0.9559287

00:22:32.145 --> 00:22:33.570 behaviors later in life,

NOTE Confidence: 0.9997442

00:22:34.369 --> 00:22:35.809 but more research is really

NOTE Confidence: 0.9997442

00:22:35.809 --> 00:22:38.289 needed on the mechanisms behind

NOTE Confidence: 0.9997442

00:22:38.289 --> 00:22:39.109 these relationships

NOTE Confidence: 0.97548234

00:22:39.970 --> 00:22:41.250 and whether the in utero

NOTE Confidence: 0.97548234

00:22:41.250 --> 00:22:43.269 environment, the epigenome, the transcriptome

NOTE Confidence: 0.97548234

00:22:43.409 --> 00:22:45.109 might potentially be a mediating

NOTE Confidence: 0.97548234

00:22:45.250 --> 00:22:46.710 factor of these relationships.

NOTE Confidence: 0.97558117

00:22:48.994 --> 00:22:49.794 So what I mean by

NOTE Confidence: 0.97558117

00:22:49.794 --> 00:22:50.595 this is we can think

NOTE Confidence: 0.97558117

00:22:50.595 --> 00:22:52.595 about a direct path where

NOTE Confidence: 0.97558117

00:22:52.595 --> 00:22:53.794 if the mother is, you

NOTE Confidence: 0.97558117

00:22:53.794 --> 00:22:55.554 know, using cannabis while she's

NOTE Confidence: 0.97558117

00:22:55.554 --> 00:22:57.554 pregnant, the THC can pass

NOTE Confidence: 0.97558117

00:22:57.554 --> 00:22:58.914 directly from the mother's blood

NOTE Confidence: 0.97558117

00:22:58.914 --> 00:23:00.355 through the placenta to the

NOTE Confidence: 0.97558117

00:23:00.355 --> 00:23:00.855 fetus,

NOTE Confidence: 0.9989715

00:23:01.234 --> 00:23:02.355 and it can be exposed

NOTE Confidence: 0.9989715

00:23:02.355 --> 00:23:02.934 to THC

NOTE Confidence: 0.9594267

00:23:03.619 --> 00:23:04.900 that way. But we can

NOTE Confidence: 0.9594267

00:23:04.900 --> 00:23:06.900 also think about how the

NOTE Confidence: 0.9594267

00:23:06.900 --> 00:23:08.100 placenta might be kind of

NOTE Confidence: 0.9594267

00:23:08.100 --> 00:23:09.619 a a mediating factor and

NOTE Confidence: 0.9594267

00:23:09.619 --> 00:23:11.080 sort of an indirect pathway

NOTE Confidence: 0.9343751

00:23:11.700 --> 00:23:13.220 because the THC can bind

NOTE Confidence: 0.9343751

00:23:13.220 --> 00:23:13.960 to endocannabinoid

NOTE Confidence: 0.99967754

00:23:14.420 --> 00:23:14.920 receptors

NOTE Confidence: 0.9726017

00:23:15.540 --> 00:23:16.440 in the placenta.

NOTE Confidence: 0.9841553

00:23:17.735 --> 00:23:18.235 And,

NOTE Confidence: 0.9952484

00:23:19.655 --> 00:23:20.395 this endocannabinoid

NOTE Confidence: 0.9969037

00:23:20.695 --> 00:23:21.994 system is really important,

NOTE Confidence: 0.99321294

00:23:22.535 --> 00:23:24.135 in early pregnancy. It's important

NOTE Confidence: 0.99321294

00:23:24.135 --> 00:23:25.435 for embryo implantation

NOTE Confidence: 0.9824072

00:23:26.055 --> 00:23:27.195 as well as the formation

NOTE Confidence: 0.9824072

00:23:27.255 --> 00:23:28.875 and development of the placenta.

NOTE Confidence: 0.99115187

00:23:30.740 --> 00:23:32.500 Cannabinoid receptors are expressed in

NOTE Confidence: 0.99115187

00:23:32.500 --> 00:23:34.580 the placenta, and endocannabinoid levels

NOTE Confidence: 0.99115187

00:23:34.580 --> 00:23:36.200 vary with gestational

NOTE Confidence: 0.9905374

00:23:36.500 --> 00:23:37.000 age.

NOTE Confidence: 0.9920792

00:23:38.019 --> 00:23:39.139 And it's been shown that

NOTE Confidence: 0.9920792

00:23:39.139 --> 00:23:41.559 prenatal cannabis use, is associated

NOTE Confidence: 0.9920792

00:23:41.779 --> 00:23:43.639 with altered placental circulation

NOTE Confidence: 0.9870235

00:23:44.164 --> 00:23:45.865 as well as other potentially,

NOTE Confidence: 0.9956173

00:23:47.205 --> 00:23:48.825 harmful effects on the placenta

NOTE Confidence: 0.9956173

00:23:48.885 --> 00:23:50.965 during fetus development. And so

NOTE Confidence: 0.9956173

00:23:50.965 --> 00:23:52.184 it may be that,

NOTE Confidence: 0.9964265

00:23:52.645 --> 00:23:53.765 there's also this kind of

NOTE Confidence: 0.9964265

00:23:53.765 --> 00:23:56.505 indirect pathway where prenatal cannabis

NOTE Confidence: 0.9964265

00:23:56.565 --> 00:23:58.325 use affects the formation and

NOTE Confidence: 0.9964265

00:23:58.325 --> 00:23:59.770 the structure and function of

NOTE Confidence: 0.9964265

00:23:59.770 --> 00:24:00.430 the placenta,

NOTE Confidence: 0.9347946

00:24:01.050 --> 00:24:02.170 and that can then in

NOTE Confidence: 0.9347946

00:24:02.170 --> 00:24:02.670 turn,

NOTE Confidence: 0.99826396

00:24:03.210 --> 00:24:05.070 affect the the fetal development.

NOTE Confidence: 0.9776874

00:24:08.730 --> 00:24:09.850 There hasn't been,

NOTE Confidence: 0.9705322

00:24:10.994 --> 00:24:12.355 a ton of studies yet

NOTE Confidence: 0.9705322

00:24:12.355 --> 00:24:14.035 on how prenatal cannabis use

NOTE Confidence: 0.9705322

00:24:14.035 --> 00:24:14.935 might affect,

NOTE Confidence: 0.99925584

00:24:15.315 --> 00:24:17.315 the epigenome or transcriptome in

NOTE Confidence: 0.99925584

00:24:17.315 --> 00:24:18.375 placental tissue

NOTE Confidence: 0.95306164

00:24:18.915 --> 00:24:20.115 and then linking that with

NOTE Confidence: 0.95306164

00:24:20.115 --> 00:24:21.175 offspring behavior.

NOTE Confidence: 0.93130624

00:24:21.555 --> 00:24:22.515 But I did wanna point

NOTE Confidence: 0.93130624

00:24:22.515 --> 00:24:24.435 out a neat study from

NOTE Confidence: 0.93130624

00:24:24.435 --> 00:24:25.635 Rompaul and colleagues that was

NOTE Confidence: 0.93130624

00:24:25.635 --> 00:24:26.730 published in twenty twenty

NOTE Confidence: 0.98509055

00:24:28.330 --> 00:24:29.309 one. They studied,

NOTE Confidence: 0.9686879

00:24:29.770 --> 00:24:32.330 thirty maternal cannabis users. This

NOTE Confidence: 0.9686879

00:24:32.330 --> 00:24:33.770 was self report of cannabis

NOTE Confidence: 0.9686879

00:24:33.770 --> 00:24:35.950 use either prenatal or postnatal,

NOTE Confidence: 0.99389344

00:24:36.330 --> 00:24:37.230 so kind of,

NOTE Confidence: 0.9238496

00:24:37.530 --> 00:24:38.590 just around pregnancy,

NOTE Confidence: 0.9515991

00:24:39.130 --> 00:24:40.250 and compared them to,

NOTE Confidence: 0.9910452

00:24:41.185 --> 00:24:42.885 just over a hundred controls.

NOTE Confidence: 0.9901909

00:24:43.984 --> 00:24:45.025 And what they found was

NOTE Confidence: 0.9901909

00:24:45.025 --> 00:24:46.625 this maternal cannabis use,

NOTE Confidence: 0.9952364

00:24:47.345 --> 00:24:49.845 was associated with anxiety, aggression,

NOTE Confidence: 0.9952364

00:24:49.984 --> 00:24:50.484 hyperactivity

NOTE Confidence: 0.9981939

00:24:50.865 --> 00:24:52.305 in the children at three

NOTE Confidence: 0.9981939

00:24:52.305 --> 00:24:53.845 to six years of age.

NOTE Confidence: 0.9662235

00:24:55.010 --> 00:24:56.609 In the placental tissue, they

NOTE Confidence: 0.9662235

00:24:56.609 --> 00:24:59.029 found reduced gene expression specifically

NOTE Confidence: 0.9662235

00:24:59.090 --> 00:24:59.909 in immune

NOTE Confidence: 0.9489026

00:25:00.289 --> 00:25:01.830 related gene networks.

NOTE Confidence: 0.98528063

00:25:02.770 --> 00:25:03.270 And,

NOTE Confidence: 0.9951126

00:25:04.049 --> 00:25:05.409 these gene networks were then

NOTE Confidence: 0.9951126

00:25:05.409 --> 00:25:07.090 correlated with that increase in

NOTE Confidence: 0.9951126

00:25:07.090 --> 00:25:07.590 anxiety,

NOTE Confidence: 0.99963236

00:25:08.369 --> 00:25:09.190 in the children.

NOTE Confidence: 0.9963907

00:25:10.095 --> 00:25:11.794 So these are really, intriguing

NOTE Confidence: 0.90741

00:25:12.095 --> 00:25:12.595 findings,

NOTE Confidence: 0.9995075

00:25:14.734 --> 00:25:15.934 but we really need more

NOTE Confidence: 0.9995075

00:25:15.934 --> 00:25:17.635 research in this area.

NOTE Confidence: 0.97993994

00:25:19.695 --> 00:25:20.734 And so the work that

NOTE Confidence: 0.97993994

00:25:20.734 --> 00:25:21.990 I'll present today is based

NOTE Confidence: 0.97993994

00:25:22.070 --> 00:25:23.429 on the cannabis use during

NOTE Confidence: 0.97993994

00:25:23.429 --> 00:25:25.030 early life and development study

NOTE Confidence: 0.97993994

00:25:25.030 --> 00:25:26.250 or the cuddle study.

NOTE Confidence: 0.98310226

00:25:26.869 --> 00:25:28.150 This is a a study

NOTE Confidence: 0.98310226

00:25:28.150 --> 00:25:29.510 that was designed to assess

NOTE Confidence: 0.98310226

00:25:29.510 --> 00:25:31.109 the effects of prenatal cannabis

NOTE Confidence: 0.98310226

00:25:31.109 --> 00:25:32.710 use on baby's brain and

NOTE Confidence: 0.98310226

00:25:32.710 --> 00:25:33.210 behavior.

NOTE Confidence: 0.98006076

00:25:34.005 --> 00:25:35.285 And so the study recruited

NOTE Confidence: 0.98006076

00:25:35.285 --> 00:25:37.145 pregnant people with a lifetime

NOTE Confidence: 0.98006076

00:25:37.365 --> 00:25:39.685 history of cannabis use. So

NOTE Confidence: 0.98006076

00:25:39.685 --> 00:25:41.125 everyone in this study has

NOTE Confidence: 0.98006076

00:25:41.125 --> 00:25:41.865 used cannabis

NOTE Confidence: 0.9919588

00:25:42.484 --> 00:25:43.625 during their lifetime.

NOTE Confidence: 0.9947703

00:25:45.205 --> 00:25:46.885 Cases and controls simply differ

NOTE Confidence: 0.9947703

00:25:46.885 --> 00:25:48.165 on whether they continue to

NOTE Confidence: 0.9947703

00:25:48.165 --> 00:25:48.905 use cannabis

NOTE Confidence: 0.98523664

00:25:49.230 --> 00:25:50.210 during pregnancy.

NOTE Confidence: 0.98812747

00:25:55.309 --> 00:25:56.429 I won't spend too much

NOTE Confidence: 0.98812747

00:25:56.429 --> 00:25:57.390 time on this table because

NOTE Confidence: 0.98812747

00:25:57.390 --> 00:25:58.030 I think it's a little

NOTE Confidence: 0.98812747

00:25:58.030 --> 00:25:59.470 bit hard to read, but

NOTE Confidence: 0.98812747

00:25:59.470 --> 00:26:00.270 this should give you kind

NOTE Confidence: 0.98812747

00:26:00.270 --> 00:26:01.549 of a sense of what

NOTE Confidence: 0.98812747

00:26:01.549 --> 00:26:02.910 this sample looks like. These

NOTE Confidence: 0.98812747

00:26:02.910 --> 00:26:04.210 were all people recruited,

NOTE Confidence: 0.964921

00:26:04.845 --> 00:26:06.285 in St. Louis here at

NOTE Confidence: 0.964921

00:26:06.285 --> 00:26:06.785 WashU.

NOTE Confidence: 0.99077755

00:26:08.285 --> 00:26:09.025 I'm highlighting,

NOTE Confidence: 0.9997689

00:26:09.484 --> 00:26:09.984 some

NOTE Confidence: 0.9536565

00:26:10.765 --> 00:26:12.205 some numbers that I think

NOTE Confidence: 0.9536565

00:26:12.205 --> 00:26:13.984 might be of particular interest.

NOTE Confidence: 0.9536565

00:26:14.205 --> 00:26:16.044 As I mentioned earlier, everyone

NOTE Confidence: 0.9536565

00:26:16.044 --> 00:26:17.405 in the sample has used

NOTE Confidence: 0.9536565

00:26:17.405 --> 00:26:18.785 cannabis in their lifetime,

NOTE Confidence: 0.9953143

00:26:19.500 --> 00:26:21.260 and most of, the cases

NOTE Confidence: 0.9953143

00:26:21.260 --> 00:26:22.000 and controls

NOTE Confidence: 0.9986841

00:26:22.300 --> 00:26:23.660 had used cannabis in the

NOTE Confidence: 0.9986841

00:26:23.660 --> 00:26:25.500 two years prior to their

NOTE Confidence: 0.9986841

00:26:25.500 --> 00:26:26.000 pregnancy.

NOTE Confidence: 0.9966404

00:26:28.540 --> 00:26:29.680 In the cases,

NOTE Confidence: 0.98305064

00:26:31.734 --> 00:26:33.575 those individuals use marijuana at

NOTE Confidence: 0.98305064

00:26:33.575 --> 00:26:34.855 least four times or more

NOTE Confidence: 0.98305064

00:26:34.855 --> 00:26:35.434 a week.

NOTE Confidence: 0.98619753

00:26:36.455 --> 00:26:38.135 After awareness of pregnancy, eleven

NOTE Confidence: 0.98619753

00:26:38.135 --> 00:26:39.255 percent of them did. So

NOTE Confidence: 0.98619753

00:26:39.255 --> 00:26:40.375 we have some people who

NOTE Confidence: 0.98619753

00:26:40.375 --> 00:26:41.034 are still,

NOTE Confidence: 0.99956524

00:26:41.335 --> 00:26:43.255 using marijuana quite regularly during

NOTE Confidence: 0.99956524

00:26:43.255 --> 00:26:43.994 their pregnancy.

NOTE Confidence: 0.99836785

00:26:46.220 --> 00:26:47.740 In terms of what cannabis

NOTE Confidence: 0.99836785

00:26:47.740 --> 00:26:48.779 use looks like in this

NOTE Confidence: 0.99836785

00:26:48.779 --> 00:26:49.279 sample,

NOTE Confidence: 0.9931744

00:26:50.139 --> 00:26:52.139 about fifteen percent of these

NOTE Confidence: 0.9931744

00:26:52.139 --> 00:26:54.700 participants report, using cannabis by

NOTE Confidence: 0.9931744

00:26:54.700 --> 00:26:56.240 smoking it as a joint,

NOTE Confidence: 0.97474694

00:26:56.859 --> 00:26:58.299 whereas most of the sample

NOTE Confidence: 0.97474694

00:26:58.299 --> 00:26:59.340 reports using it,

NOTE Confidence: 0.9976128

00:27:00.335 --> 00:27:01.795 through smoking blunts.

NOTE Confidence: 0.9773014

00:27:02.734 --> 00:27:04.015 There's a little bit of

NOTE Confidence: 0.9773014

00:27:04.015 --> 00:27:04.515 vaping.

NOTE Confidence: 0.90578175

00:27:05.855 --> 00:27:07.475 About ten percent use cannabis,

NOTE Confidence: 0.9803704

00:27:07.935 --> 00:27:08.755 via edibles,

NOTE Confidence: 0.9985753

00:27:09.375 --> 00:27:10.655 and then four percent use

NOTE Confidence: 0.9985753

00:27:10.655 --> 00:27:12.435 cannabis through other forms.

NOTE Confidence: 0.97657716

00:27:13.869 --> 00:27:15.869 They also reported on, why

NOTE Confidence: 0.97657716

00:27:15.869 --> 00:27:17.650 they're using cannabis during pregnancy,

NOTE Confidence: 0.9843294

00:27:18.190 --> 00:27:19.470 and around fifty percent of

NOTE Confidence: 0.9843294

00:27:19.470 --> 00:27:21.230 them use it for, nausea

NOTE Confidence: 0.9843294

00:27:21.230 --> 00:27:21.970 and vomiting.

NOTE Confidence: 0.99482083

00:27:22.350 --> 00:27:23.630 Forty percent use it to

NOTE Confidence: 0.99482083

00:27:23.630 --> 00:27:25.390 manage their anxiety or stress

NOTE Confidence: 0.99482083

00:27:25.390 --> 00:27:25.890 levels.

NOTE Confidence: 0.9747715

00:27:26.434 --> 00:27:27.875 Around fifty percent are using

NOTE Confidence: 0.9747715

00:27:27.875 --> 00:27:29.174 it for appetite regulation.

NOTE Confidence: 0.99736506

00:27:30.355 --> 00:27:31.955 And then, the rest are

NOTE Confidence: 0.99736506

00:27:31.955 --> 00:27:33.415 using it for sleep difficulties,

NOTE Confidence: 0.99736506

00:27:33.554 --> 00:27:34.054 pain,

NOTE Confidence: 0.9987728

00:27:34.674 --> 00:27:35.975 and other motives.

NOTE Confidence: 0.96068007

00:27:40.090 --> 00:27:42.330 Some preliminary data from this

NOTE Confidence: 0.96068007

00:27:42.330 --> 00:27:43.230 Cuddl study

NOTE Confidence: 0.97607803

00:27:43.770 --> 00:27:45.130 suggests that we are seeing

NOTE Confidence: 0.97607803

00:27:45.130 --> 00:27:47.210 effects of prenatal cannabis exposure

NOTE Confidence: 0.97607803

00:27:47.210 --> 00:27:48.429 on birth weight.

NOTE Confidence: 0.9802014

00:27:48.809 --> 00:27:50.109 So this is very consistent

NOTE Confidence: 0.9802014

00:27:50.250 --> 00:27:51.770 with the the literature that

NOTE Confidence: 0.9802014

00:27:51.770 --> 00:27:52.890 I showed earlier in this

NOTE Confidence: 0.9802014

00:27:52.890 --> 00:27:54.265 talk. So we are seeing

NOTE Confidence: 0.9802014

00:27:54.265 --> 00:27:55.625 an effect of prenatal cannabis

NOTE Confidence: 0.9802014

00:27:55.625 --> 00:27:56.685 exposure on,

NOTE Confidence: 0.9933315

00:27:57.065 --> 00:27:58.205 lower birth weight

NOTE Confidence: 0.95829374

00:27:58.984 --> 00:28:00.765 relative to gestational age.

NOTE Confidence: 0.99748963

00:28:01.305 --> 00:28:02.585 And then we're also seeing

NOTE Confidence: 0.99748963

00:28:02.585 --> 00:28:04.365 some evidence for higher,

NOTE Confidence: 0.99932855

00:28:04.905 --> 00:28:05.405 externalizing

NOTE Confidence: 0.99969494

00:28:05.865 --> 00:28:07.484 behaviors in the children

NOTE Confidence: 0.9927733

00:28:08.050 --> 00:28:09.109 who were exposed,

NOTE Confidence: 0.9930796

00:28:09.410 --> 00:28:10.630 to prenatal cannabis.

NOTE Confidence: 0.9679259

00:28:14.369 --> 00:28:16.210 So we're seeing some, interesting

NOTE Confidence: 0.9679259

00:28:16.210 --> 00:28:18.230 preliminary findings from this study.

NOTE Confidence: 0.99709034

00:28:18.530 --> 00:28:19.030 And,

NOTE Confidence: 0.9864993

00:28:19.570 --> 00:28:20.625 the the data that I'll

NOTE Confidence: 0.9864993

00:28:20.625 --> 00:28:22.145 present now is from a

NOTE Confidence: 0.9864993

00:28:22.145 --> 00:28:24.484 twenty twenty, BDRF grant

NOTE Confidence: 0.9631581

00:28:25.185 --> 00:28:26.785 that we received to collect

NOTE Confidence: 0.9631581

00:28:26.785 --> 00:28:28.385 placental tissue from the CAUTL

NOTE Confidence: 0.9631581

00:28:28.385 --> 00:28:30.484 study and analyze DNA methylation

NOTE Confidence: 0.9631581

00:28:30.545 --> 00:28:32.005 signatures in this tissue.

NOTE Confidence: 0.98575175

00:28:32.720 --> 00:28:34.740 So we collected, DNA methylation

NOTE Confidence: 0.98575175

00:28:34.880 --> 00:28:36.320 data on one hundred and

NOTE Confidence: 0.98575175

00:28:36.320 --> 00:28:38.020 ninety two of these samples,

NOTE Confidence: 0.982044

00:28:38.640 --> 00:28:40.080 one hundred and twenty one,

NOTE Confidence: 0.982044

00:28:40.400 --> 00:28:42.320 with prenatal cannabis use and

NOTE Confidence: 0.982044

00:28:42.320 --> 00:28:44.320 seventy one without prenatal cannabis

NOTE Confidence: 0.982044

00:28:44.320 --> 00:28:46.205 use. And, I wanted to

NOTE Confidence: 0.982044

00:28:46.205 --> 00:28:47.485 highlight my two co mentors

NOTE Confidence: 0.982044

00:28:47.485 --> 00:28:48.925 on this grant, Ryan Bogdan

NOTE Confidence: 0.982044

00:28:48.925 --> 00:28:49.985 and Danny Fallon.

NOTE Confidence: 0.99691594

00:28:51.805 --> 00:28:53.105 And so the main questions,

NOTE Confidence: 0.9986482

00:28:53.645 --> 00:28:54.845 that we were seeking to

NOTE Confidence: 0.9986482

00:28:54.845 --> 00:28:56.125 answer with this grant or

NOTE Confidence: 0.9986482

00:28:56.125 --> 00:28:56.785 this project

NOTE Confidence: 0.9720554

00:28:57.245 --> 00:28:59.129 was, is prenatal cannabis use

NOTE Confidence: 0.9720554

00:28:59.129 --> 00:29:00.269 associated with

NOTE Confidence: 0.9677216

00:29:00.570 --> 00:29:02.409 differences in DNA methylation in

NOTE Confidence: 0.9677216

00:29:02.409 --> 00:29:03.710 the placental tissue?

NOTE Confidence: 0.99909467

00:29:04.090 --> 00:29:06.110 And do these epigenetic variations

NOTE Confidence: 0.99909467

00:29:06.330 --> 00:29:06.830 mediate

NOTE Confidence: 0.99680626

00:29:07.289 --> 00:29:08.889 any associations that we're seeing

NOTE Confidence: 0.99680626

00:29:08.889 --> 00:29:10.970 between prenatal cannabis use and

NOTE Confidence: 0.99680626

00:29:10.970 --> 00:29:12.110 these child outcomes?

NOTE Confidence: 0.9990336

00:29:15.825 --> 00:29:16.785 I see that there might

NOTE Confidence: 0.9990336

00:29:16.785 --> 00:29:17.825 be a question in the

NOTE Confidence: 0.9990336

00:29:17.825 --> 00:29:18.325 chat.

NOTE Confidence: 0.972733

00:29:21.185 --> 00:29:22.785 Is this controlling for other

NOTE Confidence: 0.972733

00:29:22.785 --> 00:29:24.225 drug use? Is that relating

NOTE Confidence: 0.972733

00:29:24.225 --> 00:29:25.745 to the Rompalla et al

NOTE Confidence: 0.972733

00:29:25.745 --> 00:29:26.245 study?

NOTE Confidence: 0.9590842

00:29:28.169 --> 00:29:29.210 Yeah. That was for me,

NOTE Confidence: 0.9590842

00:29:29.210 --> 00:29:30.429 Emma. That was

NOTE Confidence: 0.68576956

00:29:30.730 --> 00:29:31.230 the

NOTE Confidence: 0.91401803

00:29:31.929 --> 00:29:33.289 the the low birth weight

NOTE Confidence: 0.96122825

00:29:33.690 --> 00:29:35.770 Mhmm. In your Puddl sample,

NOTE Confidence: 0.96122825

00:29:35.770 --> 00:29:37.130 was that controlling for other

NOTE Confidence: 0.96122825

00:29:37.130 --> 00:29:38.429 drug use and other,

NOTE Confidence: 0.999346

00:29:38.890 --> 00:29:39.529 you know,

NOTE Confidence: 0.98938084

00:29:39.929 --> 00:29:40.429 confounding

NOTE Confidence: 0.8409026

00:29:40.809 --> 00:29:42.510 potential confounders like

NOTE Confidence: 0.99064034

00:29:43.495 --> 00:29:45.115 lifestyle and socioeconomic

NOTE Confidence: 0.9409167

00:29:45.415 --> 00:29:46.315 status, etcetera?

NOTE Confidence: 0.9996729

00:29:47.255 --> 00:29:48.475 Yes. Yes.

NOTE Confidence: 0.96495664

00:29:49.015 --> 00:29:50.335 That was. So I'll talk

NOTE Confidence: 0.96495664

00:29:50.335 --> 00:29:51.735 a little bit more. Right.

NOTE Confidence: 0.96495664

00:29:51.735 --> 00:29:52.535 Actually, this is a good

NOTE Confidence: 0.96495664

00:29:52.535 --> 00:29:53.674 time to talk about it.

NOTE Confidence: 0.97643524

00:29:54.054 --> 00:29:55.174 So in this study, we

NOTE Confidence: 0.97643524

00:29:55.174 --> 00:29:56.715 tried to exclude

NOTE Confidence: 0.99758404

00:29:57.660 --> 00:29:59.680 individuals who reported using tobacco,

NOTE Confidence: 0.9796791

00:30:00.460 --> 00:30:01.420 to try to, you know,

NOTE Confidence: 0.9796791

00:30:01.420 --> 00:30:02.960 kind of separate these associations

NOTE Confidence: 0.9796791

00:30:03.100 --> 00:30:04.640 as much as possible. But,

NOTE Confidence: 0.9906716

00:30:05.900 --> 00:30:07.740 we did perform urine drug

NOTE Confidence: 0.9906716

00:30:07.740 --> 00:30:10.140 screening tests on participants, and

NOTE Confidence: 0.9906716

00:30:10.140 --> 00:30:11.360 we were seeing that,

NOTE Confidence: 0.98432046

00:30:11.715 --> 00:30:12.835 you know, some who had

NOTE Confidence: 0.98432046

00:30:12.835 --> 00:30:14.595 reported not using tobacco were

NOTE Confidence: 0.98432046

00:30:14.595 --> 00:30:16.615 testing positive for cotinine exposure.

NOTE Confidence: 0.99135554

00:30:17.715 --> 00:30:18.595 We think some of that

NOTE Confidence: 0.99135554

00:30:18.595 --> 00:30:19.895 is related to,

NOTE Confidence: 0.9956099

00:30:21.235 --> 00:30:22.595 the the mode of cannabis

NOTE Confidence: 0.9956099

00:30:22.595 --> 00:30:24.355 use. So, again, a lot

NOTE Confidence: 0.9956099

00:30:24.355 --> 00:30:25.735 of these folks are using

NOTE Confidence: 0.95197034

00:30:26.100 --> 00:30:27.240 cannabis via blunts.

NOTE Confidence: 0.98846453

00:30:28.100 --> 00:30:29.540 So it's being wrapped in

NOTE Confidence: 0.98846453

00:30:29.540 --> 00:30:31.380 tobacco paper, and so we

NOTE Confidence: 0.98846453

00:30:31.380 --> 00:30:32.440 think that might be

NOTE Confidence: 0.98249227

00:30:33.059 --> 00:30:34.179 contributing to some of these

NOTE Confidence: 0.98249227

00:30:34.179 --> 00:30:35.080 positive cotinine,

NOTE Confidence: 0.95949745

00:30:36.100 --> 00:30:37.780 tests. So, anyway, all that

NOTE Confidence: 0.95949745

00:30:37.780 --> 00:30:38.900 to say, yes. That was

NOTE Confidence: 0.95949745

00:30:38.900 --> 00:30:39.780 controlling for,

NOTE Confidence: 0.94544494

00:30:40.595 --> 00:30:42.215 exposure to cotinine or tobacco.

NOTE Confidence: 0.99496377

00:30:44.035 --> 00:30:45.335 And I believe we're also

NOTE Confidence: 0.99489355

00:30:46.515 --> 00:30:47.655 accounting for,

NOTE Confidence: 0.9913287

00:30:48.275 --> 00:30:49.095 for SES.

NOTE Confidence: 0.9756721

00:30:51.155 --> 00:30:52.195 I can't remember the exact

NOTE Confidence: 0.9756721

00:30:52.195 --> 00:30:53.795 measure we used, but, yeah,

NOTE Confidence: 0.9756721

00:30:53.795 --> 00:30:54.915 that was accounting for,

NOTE Confidence: 0.99935496

00:30:56.100 --> 00:30:56.840 potential confounders.

NOTE Confidence: 0.98666435

00:31:00.500 --> 00:31:01.940 Any other questions at this

NOTE Confidence: 0.98666435

00:31:01.940 --> 00:31:02.440 point?

NOTE Confidence: 0.8993098

00:31:03.380 --> 00:31:04.340 I I think that's,

NOTE Confidence: 0.9862277

00:31:04.900 --> 00:31:06.260 that finding seems to be

NOTE Confidence: 0.9862277

00:31:06.260 --> 00:31:08.420 consistent with some studies done

NOTE Confidence: 0.9862277

00:31:08.420 --> 00:31:09.160 in the UK,

NOTE Confidence: 0.9455441

00:31:10.125 --> 00:31:11.825 looking at birth weight in

NOTE Confidence: 0.9455441

00:31:12.045 --> 00:31:13.665 in children born to Rastafarian

NOTE Confidence: 0.8498977

00:31:13.965 --> 00:31:15.985 mothers. Oh, interesting.

NOTE Confidence: 0.9352289

00:31:16.765 --> 00:31:18.445 That's an old fairly old

NOTE Confidence: 0.9352289

00:31:18.445 --> 00:31:20.045 study. That was one of

NOTE Confidence: 0.9352289

00:31:20.045 --> 00:31:21.345 the, findings.

NOTE Confidence: 0.98601925

00:31:22.710 --> 00:31:23.990 Yeah. It seems like this

NOTE Confidence: 0.98601925

00:31:23.990 --> 00:31:25.210 association between,

NOTE Confidence: 0.9815712

00:31:26.870 --> 00:31:27.670 let's see if I can

NOTE Confidence: 0.9815712

00:31:27.670 --> 00:31:28.650 go back, between

NOTE Confidence: 0.9817721

00:31:29.030 --> 00:31:30.470 prenatal cannabis use and low

NOTE Confidence: 0.9817721

00:31:30.470 --> 00:31:31.590 birth weight seems to be

NOTE Confidence: 0.9817721

00:31:31.590 --> 00:31:32.490 fairly consistent

NOTE Confidence: 0.9915083

00:31:33.190 --> 00:31:34.010 in the literature.

NOTE Confidence: 0.9842196

00:31:35.665 --> 00:31:36.625 So I think that's one

NOTE Confidence: 0.9842196

00:31:36.625 --> 00:31:38.545 that we're feeling, you know,

NOTE Confidence: 0.9842196

00:31:38.545 --> 00:31:39.665 we're feeling pretty good about

NOTE Confidence: 0.9842196

00:31:39.665 --> 00:31:40.325 that one.

NOTE Confidence: 0.985151

00:31:43.505 --> 00:31:45.045 Let's see. Okay.

NOTE Confidence: 0.99418145

00:31:45.425 --> 00:31:46.485 There's no questions.

NOTE Confidence: 0.9778121

00:31:46.945 --> 00:31:48.405 I'll keep going for now,

NOTE Confidence: 0.99961466

00:31:49.025 --> 00:31:49.985 but we can pause again

NOTE Confidence: 0.99961466

00:31:49.985 --> 00:31:50.805 in a minute.

NOTE Confidence: 0.98542494

00:31:52.580 --> 00:31:54.100 So in our study for

NOTE Confidence: 0.98542494

00:31:54.100 --> 00:31:54.840 these epigenetic,

NOTE Confidence: 0.97143465

00:31:55.460 --> 00:31:55.960 analyses,

NOTE Confidence: 0.9834942

00:31:56.420 --> 00:31:58.180 the DNA methylation data was

NOTE Confidence: 0.9834942

00:31:58.180 --> 00:31:59.780 collected using the Illumina EPIC

NOTE Confidence: 0.9834942

00:31:59.780 --> 00:32:00.280 array,

NOTE Confidence: 0.98208696

00:32:01.140 --> 00:32:02.980 and we perform pretty standard

NOTE Confidence: 0.98208696

00:32:02.980 --> 00:32:04.360 quality control procedures.

NOTE Confidence: 0.9913112

00:32:05.565 --> 00:32:07.164 For the actual EWAS, we're

NOTE Confidence: 0.9913112

00:32:07.164 --> 00:32:08.304 testing the association

NOTE Confidence: 0.9994708

00:32:08.605 --> 00:32:09.424 of methylation

NOTE Confidence: 0.960728

00:32:09.725 --> 00:32:11.745 at each site with prenatal

NOTE Confidence: 0.960728

00:32:11.804 --> 00:32:12.784 cannabis years.

NOTE Confidence: 0.92872375

00:32:13.485 --> 00:32:14.684 And then the analysis I'll

NOTE Confidence: 0.92872375

00:32:14.684 --> 00:32:16.205 present today, we're controlling for

NOTE Confidence: 0.92872375

00:32:16.205 --> 00:32:17.264 cotinine exposure,

NOTE Confidence: 0.97994184

00:32:18.370 --> 00:32:19.750 from the urine drug screening

NOTE Confidence: 0.97994184

00:32:19.809 --> 00:32:20.309 test,

NOTE Confidence: 0.9948811

00:32:20.850 --> 00:32:22.289 as well as age and

NOTE Confidence: 0.9948811

00:32:22.289 --> 00:32:23.270 sample plate.

NOTE Confidence: 0.9631034

00:32:23.650 --> 00:32:24.610 And then I'm also gonna

NOTE Confidence: 0.9631034

00:32:24.610 --> 00:32:26.210 present some follow-up analysis to

NOTE Confidence: 0.9631034

00:32:26.210 --> 00:32:28.309 this EWAS, looking at differentially

NOTE Confidence: 0.9631034

00:32:28.370 --> 00:32:30.470 methylated regions of the genome

NOTE Confidence: 0.9631034

00:32:30.530 --> 00:32:31.909 as well as gene enrichment

NOTE Confidence: 0.9631034

00:32:32.049 --> 00:32:32.549 analysis.

NOTE Confidence: 0.9845632

00:32:37.465 --> 00:32:38.424 So, again, I just wanted

NOTE Confidence: 0.9845632

00:32:38.424 --> 00:32:40.105 to present what the the

NOTE Confidence: 0.9845632

00:32:40.105 --> 00:32:42.264 motivations for using marijuana look

NOTE Confidence: 0.9845632

00:32:42.264 --> 00:32:42.764 like,

NOTE Confidence: 0.9674373

00:32:43.544 --> 00:32:44.684 in our subsample

NOTE Confidence: 0.89727294

00:32:44.985 --> 00:32:45.804 of individuals,

NOTE Confidence: 0.9847479

00:32:47.370 --> 00:32:49.050 who were included in this,

NOTE Confidence: 0.9107675

00:32:50.010 --> 00:32:50.510 EWAS.

NOTE Confidence: 0.98775053

00:32:50.970 --> 00:32:52.170 So the patterns within the

NOTE Confidence: 0.98775053

00:32:52.170 --> 00:32:53.850 subset are largely reflecting what

NOTE Confidence: 0.98775053

00:32:53.850 --> 00:32:54.970 we're seeing in the full

NOTE Confidence: 0.98775053

00:32:54.970 --> 00:32:56.650 cuddle sample. Most of these

NOTE Confidence: 0.98775053

00:32:56.650 --> 00:32:58.490 participants are reporting using to

NOTE Confidence: 0.98775053

00:32:58.490 --> 00:33:00.490 help with, nausea or to

NOTE Confidence: 0.98775053

00:33:00.490 --> 00:33:01.550 help with their appetite,

NOTE Confidence: 0.99782795

00:33:02.675 --> 00:33:04.115 but we're also seeing many

NOTE Confidence: 0.99782795

00:33:04.115 --> 00:33:06.115 report using marijuana to help

NOTE Confidence: 0.99782795

00:33:06.115 --> 00:33:08.295 with anxiety or stress levels,

NOTE Confidence: 0.99507827

00:33:08.835 --> 00:33:10.535 sleep, and managing pain.

NOTE Confidence: 0.97809345

00:33:14.900 --> 00:33:16.580 Here is the Manhattan plot

NOTE Confidence: 0.97809345

00:33:16.580 --> 00:33:18.020 from our EWAS of prenatal

NOTE Confidence: 0.97809345

00:33:18.020 --> 00:33:18.919 cannabis use.

NOTE Confidence: 0.9724808

00:33:19.620 --> 00:33:20.500 Again, this was in a

NOTE Confidence: 0.9724808

00:33:20.500 --> 00:33:21.700 sample of a hundred and

NOTE Confidence: 0.9724808

00:33:21.700 --> 00:33:22.919 ninety two participants.

NOTE Confidence: 0.99551237

00:33:23.620 --> 00:33:24.659 A hundred and twenty one

NOTE Confidence: 0.99551237

00:33:24.659 --> 00:33:26.340 of those participants had prenatal

NOTE Confidence: 0.99551237

00:33:26.340 --> 00:33:28.544 cannabis use and seventy one,

NOTE Confidence: 0.998698

00:33:28.945 --> 00:33:30.304 did not have prenatal cannabis

NOTE Confidence: 0.998698

00:33:30.304 --> 00:33:30.804 use.

NOTE Confidence: 0.9954216

00:33:31.184 --> 00:33:32.405 So as we might expect,

NOTE Confidence: 0.99492675

00:33:32.945 --> 00:33:34.945 with a sample size like

NOTE Confidence: 0.99492675

00:33:34.945 --> 00:33:36.725 this, we didn't find any,

NOTE Confidence: 0.9824719

00:33:37.825 --> 00:33:40.325 CpG sites that were significantly

NOTE Confidence: 0.9824719

00:33:40.544 --> 00:33:42.164 associated at the epigenome

NOTE Confidence: 0.99959165

00:33:42.625 --> 00:33:43.125 wide

NOTE Confidence: 0.9564001

00:33:43.480 --> 00:33:44.679 level correcting for all these

NOTE Confidence: 0.9564001

00:33:44.679 --> 00:33:45.500 different tests.

NOTE Confidence: 0.93550926

00:33:46.039 --> 00:33:47.399 And, again, this was controlling

NOTE Confidence: 0.93550926

00:33:47.399 --> 00:33:48.860 for codenine exposure.

NOTE Confidence: 0.99175805

00:33:51.639 --> 00:33:52.840 I wanted to zoom in

NOTE Confidence: 0.99175805

00:33:52.840 --> 00:33:54.120 and highlight just a couple

NOTE Confidence: 0.99175805

00:33:54.120 --> 00:33:55.159 of these. I'm not picking

NOTE Confidence: 0.99175805

00:33:55.159 --> 00:33:56.360 these two for any particular

NOTE Confidence: 0.99175805

00:33:56.360 --> 00:33:56.860 reason,

NOTE Confidence: 0.99635035

00:33:58.039 --> 00:33:58.735 but I just think it's

NOTE Confidence: 0.99635035

00:33:58.735 --> 00:34:00.655 kind of interesting to, actually

NOTE Confidence: 0.99635035

00:34:00.655 --> 00:34:01.934 look at the data a

NOTE Confidence: 0.99635035

00:34:01.934 --> 00:34:03.075 little bit more closely.

NOTE Confidence: 0.93378764

00:34:03.455 --> 00:34:04.174 So you can see at

NOTE Confidence: 0.93378764

00:34:04.174 --> 00:34:05.635 these two individual sites,

NOTE Confidence: 0.9876359

00:34:06.015 --> 00:34:07.615 again, these didn't quite reach

NOTE Confidence: 0.9876359

00:34:07.615 --> 00:34:08.015 the,

NOTE Confidence: 0.9703722

00:34:08.895 --> 00:34:10.915 significance threshold when we correct,

NOTE Confidence: 0.94131655

00:34:11.375 --> 00:34:12.515 across the genome,

NOTE Confidence: 0.9977281

00:34:13.230 --> 00:34:14.590 but we are seeing some

NOTE Confidence: 0.9977281

00:34:14.590 --> 00:34:16.270 differences here in terms of

NOTE Confidence: 0.9977281

00:34:16.270 --> 00:34:17.810 prenatal cannabis use.

NOTE Confidence: 0.973571

00:34:18.910 --> 00:34:20.270 So that's being shown on,

NOTE Confidence: 0.9683965

00:34:21.310 --> 00:34:22.270 the right side of these

NOTE Confidence: 0.9683965

00:34:22.270 --> 00:34:23.010 two panels,

NOTE Confidence: 0.99671495

00:34:23.310 --> 00:34:24.590 comparing that to people with

NOTE Confidence: 0.99671495

00:34:24.590 --> 00:34:26.635 no prenatal cannabis use. And

NOTE Confidence: 0.99671495

00:34:26.635 --> 00:34:27.755 at both of these sites,

NOTE Confidence: 0.99671495

00:34:27.755 --> 00:34:29.455 we are tending to see

NOTE Confidence: 0.9973848

00:34:29.995 --> 00:34:32.075 higher levels of methylation on

NOTE Confidence: 0.9973848

00:34:32.075 --> 00:34:32.575 average

NOTE Confidence: 0.98856443

00:34:33.035 --> 00:34:33.995 compared to,

NOTE Confidence: 0.986665

00:34:34.795 --> 00:34:36.075 the group of people with

NOTE Confidence: 0.986665

00:34:36.075 --> 00:34:37.995 with no pre prenatal cannabis

NOTE Confidence: 0.986665

00:34:37.995 --> 00:34:38.250 use.

NOTE Confidence: 0.9299929

00:34:39.210 --> 00:34:40.330 One other thing you'll know

NOTE Confidence: 0.9299929

00:34:40.330 --> 00:34:41.870 is that the the range

NOTE Confidence: 0.9299929

00:34:41.930 --> 00:34:42.430 of

NOTE Confidence: 0.9997293

00:34:42.730 --> 00:34:43.230 methylation

NOTE Confidence: 0.95773

00:34:43.850 --> 00:34:45.710 differs across these different sites.

NOTE Confidence: 0.95773

00:34:45.850 --> 00:34:46.890 So for example, we're seeing

NOTE Confidence: 0.95773

00:34:46.890 --> 00:34:47.790 a much tighter,

NOTE Confidence: 0.995301

00:34:49.370 --> 00:34:51.130 range, much less variation in

NOTE Confidence: 0.995301

00:34:51.130 --> 00:34:53.165 terms of the proportion of

NOTE Confidence: 0.995301

00:34:53.165 --> 00:34:53.665 methylation

NOTE Confidence: 0.99733454

00:34:53.965 --> 00:34:55.165 at this site on the

NOTE Confidence: 0.99733454

00:34:55.165 --> 00:34:56.605 left compared to that site

NOTE Confidence: 0.99733454

00:34:56.605 --> 00:34:57.344 on the right.

NOTE Confidence: 0.9606122

00:35:01.165 --> 00:35:02.705 We then looked at differentially

NOTE Confidence: 0.9606122

00:35:02.844 --> 00:35:05.025 methylated regions across the genome.

NOTE Confidence: 0.98621863

00:35:06.410 --> 00:35:07.610 So this is, if you're

NOTE Confidence: 0.98621863

00:35:07.610 --> 00:35:08.670 familiar with GWAS,

NOTE Confidence: 0.97259295

00:35:09.130 --> 00:35:10.330 this seems kind of somewhat

NOTE Confidence: 0.97259295

00:35:10.330 --> 00:35:12.190 similar to gene based analyses.

NOTE Confidence: 0.88321596

00:35:13.050 --> 00:35:14.510 We're here. We're combining

NOTE Confidence: 0.97766197

00:35:14.890 --> 00:35:16.810 we're basically aggregating the signals

NOTE Confidence: 0.97766197

00:35:16.810 --> 00:35:19.390 across these individual CPG sites,

NOTE Confidence: 0.9942011

00:35:21.065 --> 00:35:22.505 and sort of combining these

NOTE Confidence: 0.9942011

00:35:22.505 --> 00:35:23.005 signals,

NOTE Confidence: 0.9963295

00:35:23.465 --> 00:35:24.985 when the CpG sites are

NOTE Confidence: 0.9963295

00:35:24.985 --> 00:35:25.725 close together

NOTE Confidence: 0.985943

00:35:26.345 --> 00:35:28.265 to look, more at specific

NOTE Confidence: 0.985943

00:35:28.265 --> 00:35:30.445 genomic regions rather than individual

NOTE Confidence: 0.9924362

00:35:30.985 --> 00:35:31.805 site variation.

NOTE Confidence: 0.9994777

00:35:32.185 --> 00:35:33.705 And we did find some

NOTE Confidence: 0.9994777

00:35:33.705 --> 00:35:34.205 significant

NOTE Confidence: 0.953417

00:35:34.505 --> 00:35:37.090 different differentially methylated regions across

NOTE Confidence: 0.953417

00:35:37.090 --> 00:35:37.830 the genome.

NOTE Confidence: 0.99579525

00:35:39.090 --> 00:35:40.850 I then took these, the

NOTE Confidence: 0.99579525

00:35:40.850 --> 00:35:42.390 sites within these regions,

NOTE Confidence: 0.91719705

00:35:43.010 --> 00:35:44.690 into something called the EWAS

NOTE Confidence: 0.91719705

00:35:44.690 --> 00:35:45.190 Atlas.

NOTE Confidence: 0.99664235

00:35:46.130 --> 00:35:46.630 And,

NOTE Confidence: 0.99473506

00:35:47.170 --> 00:35:48.450 in the EWAS Atlas, you

NOTE Confidence: 0.99473506

00:35:48.450 --> 00:35:49.190 can see,

NOTE Confidence: 0.9728725

00:35:49.725 --> 00:35:51.405 you know, based on, prior

NOTE Confidence: 0.9728725

00:35:51.405 --> 00:35:53.165 published EWAS, what these different

NOTE Confidence: 0.9728725

00:35:53.165 --> 00:35:54.225 sites have been,

NOTE Confidence: 0.99193597

00:35:54.765 --> 00:35:55.905 associated with.

NOTE Confidence: 0.9863954

00:35:56.205 --> 00:35:57.085 And so we saw that

NOTE Confidence: 0.9863954

00:35:57.085 --> 00:35:58.845 these differentially methylated regions have

NOTE Confidence: 0.9863954

00:35:58.845 --> 00:36:01.185 been previously implicated in studies

NOTE Confidence: 0.9863954

00:36:01.245 --> 00:36:01.745 of,

NOTE Confidence: 0.9676029

00:36:02.480 --> 00:36:04.160 rheumatoid arthritis as well as

NOTE Confidence: 0.9676029

00:36:04.160 --> 00:36:05.540 maternal alcohol consumption,

NOTE Confidence: 0.9990655

00:36:06.480 --> 00:36:07.460 airway inflammation,

NOTE Confidence: 0.9818704

00:36:08.160 --> 00:36:09.940 asthma, preterm birth,

NOTE Confidence: 0.94522125

00:36:10.480 --> 00:36:12.420 cancer and autism spectrum disorder,

NOTE Confidence: 0.94522125

00:36:12.480 --> 00:36:12.980 BMI,

NOTE Confidence: 0.9904655

00:36:14.094 --> 00:36:16.415 smoking, cognitive function, air pollution,

NOTE Confidence: 0.9904655

00:36:16.415 --> 00:36:17.555 and childhood stress.

NOTE Confidence: 0.9990627

00:36:18.094 --> 00:36:19.475 So this was really interesting

NOTE Confidence: 0.9990627

00:36:19.535 --> 00:36:20.275 to see.

NOTE Confidence: 0.9913971

00:36:20.815 --> 00:36:21.695 First of all, it's interesting

NOTE Confidence: 0.9913971

00:36:21.695 --> 00:36:22.735 to see some of these

NOTE Confidence: 0.9913971

00:36:22.735 --> 00:36:23.235 inflammation

NOTE Confidence: 0.998637

00:36:23.614 --> 00:36:25.635 related phenotypes pop up.

NOTE Confidence: 0.9889362

00:36:25.935 --> 00:36:27.055 It was also interesting to

NOTE Confidence: 0.9889362

00:36:27.055 --> 00:36:28.655 see things like cognitive function

NOTE Confidence: 0.9889362

00:36:28.655 --> 00:36:29.315 and BMI,

NOTE Confidence: 0.98944724

00:36:29.640 --> 00:36:30.859 which I mentioned earlier,

NOTE Confidence: 0.99157363

00:36:31.640 --> 00:36:33.180 that Sarah Paul found

NOTE Confidence: 0.98750997

00:36:33.640 --> 00:36:35.480 related to prenatal cannabis use

NOTE Confidence: 0.98750997

00:36:35.480 --> 00:36:36.920 in her study in the

NOTE Confidence: 0.98750997

00:36:36.920 --> 00:36:38.140 ABCD study.

NOTE Confidence: 0.97943765

00:36:38.760 --> 00:36:39.719 So we're seeing a lot

NOTE Confidence: 0.97943765

00:36:39.719 --> 00:36:40.380 of these,

NOTE Confidence: 0.9874815

00:36:43.175 --> 00:36:44.775 child outcomes that have been

NOTE Confidence: 0.9874815

00:36:44.775 --> 00:36:47.035 implicated across multiple different studies,

NOTE Confidence: 0.9905093

00:36:47.655 --> 00:36:49.275 these inflammation related phenotypes

NOTE Confidence: 0.8710716

00:36:49.815 --> 00:36:50.875 as well as,

NOTE Confidence: 0.96533346

00:36:51.655 --> 00:36:53.435 different substance use related phenotypes

NOTE Confidence: 0.96533346

00:36:53.495 --> 00:36:55.355 like alcohol consumption and smoking.

NOTE Confidence: 0.9594917

00:36:58.670 --> 00:36:59.630 This might be another good

NOTE Confidence: 0.9594917

00:36:59.630 --> 00:37:00.750 place to stop. I see

NOTE Confidence: 0.9594917

00:37:00.750 --> 00:37:00.829 a

NOTE Confidence: 0.9804879

00:37:02.349 --> 00:37:03.790 oh, nope. Not a question.

NOTE Confidence: 0.9804879

00:37:03.790 --> 00:37:04.290 Okay.

NOTE Confidence: 0.9994629

00:37:04.670 --> 00:37:04.989 Alright.

NOTE Confidence: 0.9659338

00:37:06.750 --> 00:37:07.810 I will keep going.

NOTE Confidence: 0.96053267

00:37:08.910 --> 00:37:09.950 So next, I,

NOTE Confidence: 0.9991387

00:37:11.535 --> 00:37:12.035 sorted

NOTE Confidence: 0.9548887

00:37:12.974 --> 00:37:14.594 the effects from our EWAS

NOTE Confidence: 0.99521047

00:37:15.055 --> 00:37:16.915 according to their effect size,

NOTE Confidence: 0.97885984

00:37:17.694 --> 00:37:19.055 as well as how strongly

NOTE Confidence: 0.97885984

00:37:19.055 --> 00:37:20.835 they were associated with prenatal

NOTE Confidence: 0.97885984

00:37:20.895 --> 00:37:21.875 cannabis years.

NOTE Confidence: 0.9756887

00:37:22.974 --> 00:37:24.094 And so if we just

NOTE Confidence: 0.9756887

00:37:24.094 --> 00:37:24.570 take,

NOTE Confidence: 0.9992972

00:37:25.130 --> 00:37:27.150 these top nominally significant

NOTE Confidence: 0.8309906

00:37:27.770 --> 00:37:28.270 sites,

NOTE Confidence: 0.98934793

00:37:28.650 --> 00:37:29.690 again, this isn't,

NOTE Confidence: 0.97412014

00:37:30.090 --> 00:37:32.010 significant when we correct for

NOTE Confidence: 0.97412014

00:37:32.010 --> 00:37:33.790 the epigenome wide level significance,

NOTE Confidence: 0.97412014

00:37:34.010 --> 00:37:34.510 but,

NOTE Confidence: 0.9926919

00:37:34.890 --> 00:37:36.750 these are nominally significant.

NOTE Confidence: 0.9810507

00:37:38.055 --> 00:37:40.055 And I tested whether these

NOTE Confidence: 0.9810507

00:37:40.055 --> 00:37:42.215 specific sites were or genes

NOTE Confidence: 0.9810507

00:37:42.215 --> 00:37:43.815 at these sites were enriched

NOTE Confidence: 0.9810507

00:37:43.815 --> 00:37:44.795 for any specific

NOTE Confidence: 0.9871413

00:37:45.094 --> 00:37:46.955 cell types or biological pathways.

NOTE Confidence: 0.98249924

00:37:48.614 --> 00:37:50.395 And we see enrichment in,

NOTE Confidence: 0.93525517

00:37:50.935 --> 00:37:52.570 the amygdala nucleus, the b

NOTE Confidence: 0.93525517

00:37:52.570 --> 00:37:53.469 cells, the placenta,

NOTE Confidence: 0.99913025

00:37:54.089 --> 00:37:54.750 and excitatory

NOTE Confidence: 0.8542432

00:37:55.050 --> 00:37:55.550 neurons,

NOTE Confidence: 0.9986769

00:37:56.330 --> 00:37:58.109 some different biological pathways,

NOTE Confidence: 0.99643993

00:37:58.570 --> 00:38:00.010 including the regulation of cell

NOTE Confidence: 0.99643993

00:38:00.010 --> 00:38:00.510 cycles

NOTE Confidence: 0.9761736

00:38:00.810 --> 00:38:01.630 and neuroblast

NOTE Confidence: 0.78181386

00:38:01.930 --> 00:38:02.430 proliferation,

NOTE Confidence: 0.98574966

00:38:03.755 --> 00:38:05.355 as well as an association

NOTE Confidence: 0.98574966

00:38:05.355 --> 00:38:07.215 with respiratory system diseases.

NOTE Confidence: 0.9806927

00:38:08.395 --> 00:38:09.775 So again, this is preliminary

NOTE Confidence: 0.9806927

00:38:09.915 --> 00:38:11.835 data. We didn't find any,

NOTE Confidence: 0.9890507

00:38:12.235 --> 00:38:13.535 epigenome wide significant

NOTE Confidence: 0.99798256

00:38:14.075 --> 00:38:15.435 sites, but we are seeing

NOTE Confidence: 0.99798256

00:38:15.435 --> 00:38:16.895 some potentially interesting

NOTE Confidence: 0.98575467

00:38:17.410 --> 00:38:19.410 differentially methylated regions of the

NOTE Confidence: 0.98575467

00:38:19.410 --> 00:38:19.910 epigenome

NOTE Confidence: 0.9352784

00:38:20.610 --> 00:38:22.550 as well as enrichment in,

NOTE Confidence: 0.9914286

00:38:22.850 --> 00:38:25.010 potentially interesting cell types, tissues,

NOTE Confidence: 0.9914286

00:38:25.010 --> 00:38:26.390 and biological pathways.

NOTE Confidence: 0.9943128

00:38:29.170 --> 00:38:30.310 As I mentioned earlier,

NOTE Confidence: 0.9772679

00:38:30.770 --> 00:38:32.130 the regions that we found

NOTE Confidence: 0.9772679

00:38:32.130 --> 00:38:32.950 have been previously

NOTE Confidence: 0.96938074

00:38:33.265 --> 00:38:35.445 implicated in phenotypes like cognition,

NOTE Confidence: 0.98028564

00:38:36.145 --> 00:38:38.165 preterm birth, and inflammation.

NOTE Confidence: 0.99392223

00:38:41.105 --> 00:38:41.585 And,

NOTE Confidence: 0.98126656

00:38:41.984 --> 00:38:42.945 we did find that some

NOTE Confidence: 0.98126656

00:38:42.945 --> 00:38:44.065 of these genes were enriched

NOTE Confidence: 0.98126656

00:38:44.065 --> 00:38:46.484 for signaling pathways, respiratory disease,

NOTE Confidence: 0.9954884

00:38:47.140 --> 00:38:48.500 And so these may potentially

NOTE Confidence: 0.9954884

00:38:48.500 --> 00:38:50.580 be, different mechanisms by which

NOTE Confidence: 0.9954884

00:38:50.580 --> 00:38:52.760 prenatal cannabis use is influencing

NOTE Confidence: 0.9954884

00:38:52.980 --> 00:38:54.600 child behavioral outcomes.

NOTE Confidence: 0.99836063

00:38:57.219 --> 00:38:58.420 So in terms of what's

NOTE Confidence: 0.99836063

00:38:58.420 --> 00:38:58.920 next,

NOTE Confidence: 0.9566764

00:38:59.300 --> 00:39:00.420 for this study as well

NOTE Confidence: 0.9566764

00:39:00.420 --> 00:39:01.400 as future studies,

NOTE Confidence: 0.9922413

00:39:02.165 --> 00:39:03.285 the first thing I want

NOTE Confidence: 0.9922413

00:39:03.285 --> 00:39:04.645 to look at is whether

NOTE Confidence: 0.9922413

00:39:04.645 --> 00:39:06.025 these differentially methylated,

NOTE Confidence: 0.99939954

00:39:06.885 --> 00:39:08.744 sites or regions are overlapping

NOTE Confidence: 0.98612386

00:39:09.125 --> 00:39:11.125 with the GWAS loci. So

NOTE Confidence: 0.98612386

00:39:11.125 --> 00:39:12.244 this came up earlier when

NOTE Confidence: 0.98612386

00:39:12.244 --> 00:39:13.525 we were talking about how

NOTE Confidence: 0.98612386

00:39:13.525 --> 00:39:14.965 can we differentiate whether this

NOTE Confidence: 0.98612386

00:39:14.965 --> 00:39:15.545 is really,

NOTE Confidence: 0.9991698

00:39:16.320 --> 00:39:17.460 representing a consequence

NOTE Confidence: 0.9691015

00:39:17.840 --> 00:39:19.460 of cannabis use or cannabis

NOTE Confidence: 0.9691015

00:39:19.520 --> 00:39:20.020 exposure,

NOTE Confidence: 0.9886331

00:39:20.800 --> 00:39:22.160 or is this maybe just

NOTE Confidence: 0.9886331

00:39:22.160 --> 00:39:23.120 overlapping with,

NOTE Confidence: 0.97882974

00:39:23.760 --> 00:39:26.000 preexisting genetic liability for cannabis

NOTE Confidence: 0.97882974

00:39:26.000 --> 00:39:27.040 use? And so that's something

NOTE Confidence: 0.97882974

00:39:27.040 --> 00:39:28.340 that we wanna look at

NOTE Confidence: 0.97882974

00:39:28.560 --> 00:39:29.920 by testing whether these sites

NOTE Confidence: 0.97882974

00:39:29.920 --> 00:39:31.219 are overlapping with,

NOTE Confidence: 0.9993495

00:39:32.505 --> 00:39:33.864 sites that pop up in

NOTE Confidence: 0.9993495

00:39:33.864 --> 00:39:35.885 genetic studies of cannabis use.

NOTE Confidence: 0.9993857

00:39:38.344 --> 00:39:39.944 We're also interested in testing

NOTE Confidence: 0.9993857

00:39:39.944 --> 00:39:41.805 whether these epigenetic signals

NOTE Confidence: 0.99922454

00:39:42.265 --> 00:39:44.045 are potentially mediating associations

NOTE Confidence: 0.99807894

00:39:44.344 --> 00:39:46.204 between prenatal cannabis use

NOTE Confidence: 0.9490427

00:39:46.640 --> 00:39:48.239 and child behavioral outcomes in

NOTE Confidence: 0.9490427

00:39:48.239 --> 00:39:50.180 the Cuddl study. For example,

NOTE Confidence: 0.9490427

00:39:50.280 --> 00:39:50.780 those,

NOTE Confidence: 0.968005

00:39:51.120 --> 00:39:52.480 associations that we're seeing with

NOTE Confidence: 0.968005

00:39:52.480 --> 00:39:52.980 externalizing

NOTE Confidence: 0.9964924

00:39:53.600 --> 00:39:54.100 behaviors.

NOTE Confidence: 0.9918419

00:39:57.360 --> 00:39:58.020 And then,

NOTE Confidence: 0.9849255

00:39:58.627 --> 00:39:59.415 you know, as I mentioned

NOTE Confidence: 0.9849255

00:39:59.415 --> 00:40:01.195 earlier, this is really preliminary

NOTE Confidence: 0.9849255

00:40:01.335 --> 00:40:01.835 data.

NOTE Confidence: 0.9957068

00:40:02.215 --> 00:40:02.715 So,

NOTE Confidence: 0.98473907

00:40:03.815 --> 00:40:04.695 you know, this isn't a

NOTE Confidence: 0.98473907

00:40:04.695 --> 00:40:05.575 huge sample, and it would

NOTE Confidence: 0.98473907

00:40:05.575 --> 00:40:06.614 be really nice if we

NOTE Confidence: 0.98473907

00:40:06.614 --> 00:40:08.775 could potentially replicate this, in

NOTE Confidence: 0.98473907

00:40:08.775 --> 00:40:11.275 another study or meta analyze,

NOTE Confidence: 0.9990487

00:40:11.735 --> 00:40:13.175 with other studies out there.

NOTE Confidence: 0.9990487

00:40:13.175 --> 00:40:13.675 So

NOTE Confidence: 0.9381895

00:40:14.430 --> 00:40:15.790 the healthy brain and child

NOTE Confidence: 0.9381895

00:40:15.790 --> 00:40:16.930 development or the HPCD

NOTE Confidence: 0.99163246

00:40:17.230 --> 00:40:17.730 study,

NOTE Confidence: 0.9998027

00:40:18.270 --> 00:40:20.290 is collecting placental tissue.

NOTE Confidence: 0.99554455

00:40:20.670 --> 00:40:22.109 This is a study of,

NOTE Confidence: 0.99554455

00:40:22.109 --> 00:40:23.810 I believe, over seven thousand,

NOTE Confidence: 0.98034734

00:40:25.150 --> 00:40:26.369 mothers and children.

NOTE Confidence: 0.9986132

00:40:27.025 --> 00:40:28.545 Around twenty five percent of

NOTE Confidence: 0.9986132

00:40:28.545 --> 00:40:30.225 the sample will have substance

NOTE Confidence: 0.9986132

00:40:30.225 --> 00:40:30.725 use.

NOTE Confidence: 0.94516015

00:40:31.425 --> 00:40:32.725 So, you know, it's not

NOTE Confidence: 0.94516015

00:40:32.864 --> 00:40:33.985 an exact match for the

NOTE Confidence: 0.94516015

00:40:33.985 --> 00:40:34.885 Cuddl study,

NOTE Confidence: 0.98949957

00:40:35.265 --> 00:40:36.705 in terms of recruitment, but

NOTE Confidence: 0.98949957

00:40:36.705 --> 00:40:38.065 it could be a potentially

NOTE Confidence: 0.98949957

00:40:38.065 --> 00:40:40.225 useful replication sample and maybe

NOTE Confidence: 0.98949957

00:40:40.225 --> 00:40:41.605 useful for meta analysis.

NOTE Confidence: 0.95929873

00:40:42.410 --> 00:40:43.770 We're also looking at the,

NOTE Confidence: 0.96334165

00:40:44.170 --> 00:40:45.930 PACE consortium, the Pregnancy and

NOTE Confidence: 0.96334165

00:40:45.930 --> 00:40:46.830 Childhood Epigenetics

NOTE Confidence: 0.904341

00:40:47.770 --> 00:40:50.350 consortium as another potential opportunity

NOTE Confidence: 0.904341

00:40:50.489 --> 00:40:51.690 for some sort of meta

NOTE Confidence: 0.904341

00:40:51.690 --> 00:40:52.750 analysis here.

NOTE Confidence: 0.9926019

00:40:57.275 --> 00:40:58.555 And, with that, I would

NOTE Confidence: 0.9926019

00:40:58.555 --> 00:40:59.275 like to thank,

NOTE Confidence: 0.9492187

00:40:59.835 --> 00:41:01.594 support from BBRF for this

NOTE Confidence: 0.9492187

00:41:01.594 --> 00:41:02.795 project as well as all

NOTE Confidence: 0.9492187

00:41:02.795 --> 00:41:03.614 of my collaborators

NOTE Confidence: 0.9299639

00:41:04.474 --> 00:41:06.394 and, especially the CUDL PIs,

NOTE Confidence: 0.9299639

00:41:06.394 --> 00:41:08.494 Arbana Agarwal and Cynthia Rogers,

NOTE Confidence: 0.9299639

00:41:08.760 --> 00:41:10.780 the Cuddl participants and staff,

NOTE Confidence: 0.9299639

00:41:11.000 --> 00:41:11.480 and,

NOTE Confidence: 0.9937299

00:41:11.880 --> 00:41:12.940 support from NIDA.

NOTE Confidence: 0.99045247

00:41:17.560 --> 00:41:19.000 Thanks. I guess I'll take

NOTE Confidence: 0.99045247

00:41:19.000 --> 00:41:20.380 any other questions now.

NOTE Confidence: 0.99890566

00:41:22.755 --> 00:41:23.494 Great. Thank

NOTE Confidence: 0.9895946

00:41:23.875 --> 00:41:26.135 you. Questions? It's open to

NOTE Confidence: 0.9895946

00:41:26.434 --> 00:41:27.094 the floor.

NOTE Confidence: 0.97501427

00:41:32.275 --> 00:41:33.795 So if while we're waiting

NOTE Confidence: 0.97501427

00:41:33.795 --> 00:41:34.994 for others to drum up

NOTE Confidence: 0.97501427

00:41:34.994 --> 00:41:35.494 questions,

NOTE Confidence: 0.90373725

00:41:39.140 --> 00:41:40.500 can you comment on dose

NOTE Confidence: 0.90373725

00:41:40.500 --> 00:41:41.000 response?

NOTE Confidence: 0.8975928

00:41:43.380 --> 00:41:44.660 Did you have enough fine

NOTE Confidence: 0.8975928

00:41:44.660 --> 00:41:46.039 grain data on

NOTE Confidence: 0.94483095

00:41:46.660 --> 00:41:48.920 on Yeah. Cannabis exposure?

NOTE Confidence: 0.9998238

00:41:50.114 --> 00:41:51.335 That's a good question.

NOTE Confidence: 0.9976339

00:41:52.755 --> 00:41:53.875 That is something I would

NOTE Confidence: 0.9976339

00:41:53.875 --> 00:41:54.915 really like to look at.

NOTE Confidence: 0.9976339

00:41:54.915 --> 00:41:57.075 We we do have that

NOTE Confidence: 0.9976339

00:41:57.075 --> 00:41:57.575 data,

NOTE Confidence: 0.9780271

00:41:58.035 --> 00:41:58.935 to some extent.

NOTE Confidence: 0.9711259

00:42:00.594 --> 00:42:01.555 You know, so we did

NOTE Confidence: 0.9711259

00:42:01.555 --> 00:42:03.395 have participants self report,

NOTE Confidence: 0.96589714

00:42:04.880 --> 00:42:06.320 how much how frequently they

NOTE Confidence: 0.96589714

00:42:06.320 --> 00:42:08.080 were using cannabis at each

NOTE Confidence: 0.96589714

00:42:08.080 --> 00:42:09.300 trimester of pregnancy.

NOTE Confidence: 0.99185294

00:42:10.239 --> 00:42:11.600 And so that would that's

NOTE Confidence: 0.99185294

00:42:11.600 --> 00:42:12.560 something that would be really

NOTE Confidence: 0.99185294

00:42:12.560 --> 00:42:13.760 interesting to look at, I

NOTE Confidence: 0.99185294

00:42:13.760 --> 00:42:14.800 think, especially if we could

NOTE Confidence: 0.99185294

00:42:14.800 --> 00:42:16.260 kind of separate out these

NOTE Confidence: 0.9937251

00:42:16.905 --> 00:42:17.405 effects

NOTE Confidence: 0.9941561

00:42:17.945 --> 00:42:19.625 by trimester. I don't know

NOTE Confidence: 0.9941561

00:42:19.625 --> 00:42:20.844 if our sample size,

NOTE Confidence: 0.9771988

00:42:22.344 --> 00:42:23.785 you know, is really going

NOTE Confidence: 0.9771988

00:42:23.785 --> 00:42:25.385 to allow some of that,

NOTE Confidence: 0.9771988

00:42:25.385 --> 00:42:25.885 but,

NOTE Confidence: 0.99627453

00:42:27.785 --> 00:42:28.665 but that would be really

NOTE Confidence: 0.99627453

00:42:28.665 --> 00:42:30.105 interesting to to look at

NOTE Confidence: 0.99627453

00:42:30.105 --> 00:42:31.005 a measure of

NOTE Confidence: 0.9995026

00:42:32.130 --> 00:42:33.029 heaviness of

NOTE Confidence: 0.99390155

00:42:33.410 --> 00:42:34.529 use instead of this this

NOTE Confidence: 0.99390155

00:42:34.529 --> 00:42:35.029 dichotomous

NOTE Confidence: 0.9741157

00:42:35.489 --> 00:42:37.170 cannabis use versus no cannabis

NOTE Confidence: 0.9741157

00:42:37.170 --> 00:42:38.230 use during pregnancy.

NOTE Confidence: 0.971104

00:42:39.969 --> 00:42:41.269 And related to that,

NOTE Confidence: 0.99925196

00:42:43.329 --> 00:42:45.165 you know, given that cannabis

NOTE Confidence: 0.99925196

00:42:45.165 --> 00:42:46.225 has so many

NOTE Confidence: 0.9958297

00:42:46.685 --> 00:42:47.745 distinct compounds,

NOTE Confidence: 0.99916595

00:42:49.085 --> 00:42:50.465 can you comment on

NOTE Confidence: 0.99915856

00:42:50.925 --> 00:42:51.805 do you have any thoughts

NOTE Confidence: 0.99915856

00:42:51.805 --> 00:42:53.585 about CBD versus THC?

NOTE Confidence: 0.98671407

00:42:57.000 --> 00:42:57.500 I

NOTE Confidence: 0.97222346

00:42:58.440 --> 00:42:58.920 yeah.

NOTE Confidence: 0.99922603

00:42:59.239 --> 00:43:00.540 That's another good question.

NOTE Confidence: 0.99964714

00:43:01.320 --> 00:43:02.120 I don't know that I

NOTE Confidence: 0.99964714

00:43:02.120 --> 00:43:03.400 have any thoughts on that

NOTE Confidence: 0.99964714

00:43:03.400 --> 00:43:04.140 right now.

NOTE Confidence: 0.99490625

00:43:07.400 --> 00:43:08.360 Yeah. I mean, I wish

NOTE Confidence: 0.99490625

00:43:08.360 --> 00:43:09.800 we I wish we had

NOTE Confidence: 0.99490625

00:43:09.800 --> 00:43:11.484 more data on, you know,

NOTE Confidence: 0.99490625

00:43:11.484 --> 00:43:13.665 potency and the makeup of

NOTE Confidence: 0.99780625

00:43:14.445 --> 00:43:15.964 the cannabis that that our

NOTE Confidence: 0.99780625

00:43:15.964 --> 00:43:17.265 participants are using.

NOTE Confidence: 0.946466

00:43:19.565 --> 00:43:20.445 Yeah. I think it's kind

NOTE Confidence: 0.946466

00:43:20.445 --> 00:43:21.484 of tough to get at

NOTE Confidence: 0.946466

00:43:21.484 --> 00:43:22.625 some of that. But,

NOTE Confidence: 0.97759426

00:43:24.609 --> 00:43:25.730 yeah, but if you have

NOTE Confidence: 0.97759426

00:43:25.730 --> 00:43:26.770 any thoughts, I would love

NOTE Confidence: 0.97759426

00:43:26.770 --> 00:43:27.589 to hear them.

NOTE Confidence: 0.9978725

00:43:28.130 --> 00:43:29.030 Sure. Sure.

NOTE Confidence: 0.97207946

00:43:29.650 --> 00:43:30.770 I I should let you

NOTE Confidence: 0.97207946

00:43:30.770 --> 00:43:31.969 know that someone on the,

NOTE Confidence: 0.97207946

00:43:32.130 --> 00:43:34.130 who's attending this, your your

NOTE Confidence: 0.97207946

00:43:34.130 --> 00:43:35.730 webinar is actually doing some

NOTE Confidence: 0.97207946

00:43:35.730 --> 00:43:38.390 experimental work in nonhuman primates,

NOTE Confidence: 0.97575146

00:43:39.805 --> 00:43:41.085 and it'd be interesting for

NOTE Confidence: 0.97575146

00:43:41.085 --> 00:43:42.305 the two of you to

NOTE Confidence: 0.97575146

00:43:42.445 --> 00:43:43.245 to Yeah.

NOTE Confidence: 0.94381166

00:43:43.725 --> 00:43:44.385 To connect.

NOTE Confidence: 0.952935

00:43:45.165 --> 00:43:45.965 I don't know if you

NOTE Confidence: 0.952935

00:43:45.965 --> 00:43:47.025 want to say anything,

NOTE Confidence: 0.8761036

00:43:47.485 --> 00:43:48.945 about that, Nicola.

NOTE Confidence: 0.9250316

00:43:51.885 --> 00:43:52.925 Yeah. No. I I think

NOTE Confidence: 0.9250316

00:43:52.925 --> 00:43:53.165 it's,

NOTE Confidence: 0.93244106

00:43:56.140 --> 00:43:57.600 for the great talk. And,

NOTE Confidence: 0.92116344

00:43:58.339 --> 00:43:59.340 you know, I I have

NOTE Confidence: 0.92116344

00:43:59.340 --> 00:44:00.540 many ideas. For example, you

NOTE Confidence: 0.92116344

00:44:00.540 --> 00:44:01.739 know, I'm I was wondering

NOTE Confidence: 0.92116344

00:44:01.739 --> 00:44:03.120 if if you had considered

NOTE Confidence: 0.92116344

00:44:03.260 --> 00:44:03.340 to

NOTE Confidence: 0.9620883

00:44:04.300 --> 00:44:05.180 I mean, for sure, we

NOTE Confidence: 0.9620883

00:44:05.180 --> 00:44:07.120 will connect, actually. So so

NOTE Confidence: 0.9470677

00:44:07.665 --> 00:44:09.025 so I'm sure that that

NOTE Confidence: 0.9470677

00:44:09.025 --> 00:44:10.885 we will have, many points

NOTE Confidence: 0.9470677

00:44:11.105 --> 00:44:11.925 in common.

NOTE Confidence: 0.94244695

00:44:12.625 --> 00:44:14.945 Just just a last question

NOTE Confidence: 0.94244695

00:44:14.945 --> 00:44:15.985 for this talk. I was

NOTE Confidence: 0.94244695

00:44:15.985 --> 00:44:17.344 wondering if you consider to

NOTE Confidence: 0.94244695

00:44:17.344 --> 00:44:18.485 use the the,

NOTE Confidence: 0.83907413

00:44:20.065 --> 00:44:21.185 to to put in culture

NOTE Confidence: 0.83907413

00:44:21.185 --> 00:44:22.645 IPS cells from people,

NOTE Confidence: 0.87595683

00:44:23.090 --> 00:44:23.730 from children,

NOTE Confidence: 0.7411103

00:44:24.130 --> 00:44:25.489 predatally as opposed to,

NOTE Confidence: 0.8863088

00:44:26.050 --> 00:44:26.550 cannabis,

NOTE Confidence: 0.8599802

00:44:27.330 --> 00:44:28.070 to cannabinoids

NOTE Confidence: 0.92912054

00:44:28.450 --> 00:44:29.989 and maybe, you know, generate

NOTE Confidence: 0.92912054

00:44:30.050 --> 00:44:31.170 organoids and see if there

NOTE Confidence: 0.92912054

00:44:31.170 --> 00:44:32.210 is a you can see

NOTE Confidence: 0.92912054

00:44:32.450 --> 00:44:33.570 still, you can see those

NOTE Confidence: 0.92912054

00:44:33.570 --> 00:44:34.070 epigenetic

NOTE Confidence: 0.8556247

00:44:34.850 --> 00:44:36.370 modification in a in a

NOTE Confidence: 0.8556247

00:44:36.370 --> 00:44:37.515 in a in the in

NOTE Confidence: 0.8556247

00:44:37.515 --> 00:44:38.529 in a

NOTE Confidence: 0.9375776

00:44:39.057 --> 00:44:41.434 in this derived cells. Yeah.

NOTE Confidence: 0.9375776

00:44:41.434 --> 00:44:42.155 I mean, I think that

NOTE Confidence: 0.9375776

00:44:42.155 --> 00:44:43.275 would be very cool. That

NOTE Confidence: 0.9375776

00:44:43.275 --> 00:44:44.895 would be cool. Right? Yeah.

NOTE Confidence: 0.9842703

00:44:45.355 --> 00:44:46.255 That's the dream.

NOTE Confidence: 0.9261782

00:44:47.515 --> 00:44:48.474 Yeah. I I think that

NOTE Confidence: 0.9261782

00:44:48.474 --> 00:44:49.755 would be really cool. But

NOTE Confidence: 0.9261782

00:44:49.755 --> 00:44:50.795 but dream dream I mean,

NOTE Confidence: 0.9261782

00:44:50.795 --> 00:44:51.594 it's not like I mean,

NOTE Confidence: 0.9261782

00:44:51.594 --> 00:44:53.210 it can be it's doable.

NOTE Confidence: 0.9261782

00:44:53.350 --> 00:44:54.390 Why it's a dream, you

NOTE Confidence: 0.9261782

00:44:54.390 --> 00:44:54.890 think?

NOTE Confidence: 0.871676

00:44:55.590 --> 00:44:56.310 I mean, it's a dream

NOTE Confidence: 0.871676

00:44:56.310 --> 00:44:57.750 to find something probably, but

NOTE Confidence: 0.871676

00:44:57.750 --> 00:44:59.109 it's a doable from from

NOTE Confidence: 0.871676

00:44:59.109 --> 00:44:59.770 from the

NOTE Confidence: 0.81371844

00:45:00.070 --> 00:45:01.989 from the technical doable. Right?

NOTE Confidence: 0.81371844

00:45:01.989 --> 00:45:03.670 I mean, it's Yeah. Definitely.

NOTE Confidence: 0.81371844

00:45:03.750 --> 00:45:05.030 Much I mean, logistically, you

NOTE Confidence: 0.81371844

00:45:05.030 --> 00:45:06.650 need to recruit the the

NOTE Confidence: 0.81371844

00:45:06.905 --> 00:45:08.105 the children. So and they

NOTE Confidence: 0.81371844

00:45:08.105 --> 00:45:08.984 were all all I mean

NOTE Confidence: 0.81371844

00:45:09.145 --> 00:45:10.744 but but Yeah. Taking care

NOTE Confidence: 0.81371844

00:45:10.744 --> 00:45:11.484 of a

NOTE Confidence: 0.64647686

00:45:12.705 --> 00:45:14.204 a funding perspective.

NOTE Confidence: 0.9001333

00:45:14.585 --> 00:45:14.905 But,

NOTE Confidence: 0.71395004

00:45:15.785 --> 00:45:16.285 yeah.

NOTE Confidence: 0.98471856

00:45:16.984 --> 00:45:18.265 But, no. I think that

NOTE Confidence: 0.98471856

00:45:18.265 --> 00:45:19.864 would be that would be

NOTE Confidence: 0.98471856

00:45:19.864 --> 00:45:20.364 really,

NOTE Confidence: 0.8802599

00:45:20.780 --> 00:45:22.540 really interesting, I think. Because

NOTE Confidence: 0.8802599

00:45:22.540 --> 00:45:23.420 if if you find it

NOTE Confidence: 0.8802599

00:45:23.420 --> 00:45:25.280 is a you know, alteration

NOTE Confidence: 0.8802599

00:45:25.339 --> 00:45:26.619 of methylation in a in

NOTE Confidence: 0.8802599

00:45:26.619 --> 00:45:27.680 a specific loci,

NOTE Confidence: 0.91991794

00:45:28.060 --> 00:45:29.420 once in organoids, I mean,

NOTE Confidence: 0.91991794

00:45:29.420 --> 00:45:30.540 that would be actually I

NOTE Confidence: 0.91991794

00:45:30.540 --> 00:45:31.579 mean, you can do a

NOTE Confidence: 0.91991794

00:45:31.579 --> 00:45:33.520 functional analysis. Right? You know?

NOTE Confidence: 0.8292026

00:45:34.060 --> 00:45:35.280 I think. Yeah.

NOTE Confidence: 0.9671858

00:45:37.105 --> 00:45:38.805 Yeah. We should talk more.

NOTE Confidence: 0.9671858

00:45:38.864 --> 00:45:40.705 Okay. Thank you. Absolutely. For

NOTE Confidence: 0.9671858

00:45:40.705 --> 00:45:41.525 sure. Thanks.

NOTE Confidence: 0.9601628

00:45:42.385 --> 00:45:43.585 I see a a raised

NOTE Confidence: 0.9601628

00:45:43.585 --> 00:45:45.105 hand. There's a question in

NOTE Confidence: 0.9601628

00:45:45.105 --> 00:45:46.545 the chat, and there's, I

NOTE Confidence: 0.9601628

00:45:46.545 --> 00:45:47.045 suppose,

NOTE Confidence: 0.9997876

00:45:47.345 --> 00:45:47.845 someone

NOTE Confidence: 0.9539263

00:45:48.305 --> 00:45:50.145 who's raised their hand. Is

NOTE Confidence: 0.9539263

00:45:50.145 --> 00:45:50.645 that

NOTE Confidence: 0.9844046

00:45:52.839 --> 00:45:53.960 I'll go ahead and start.

NOTE Confidence: 0.9844046

00:45:54.200 --> 00:45:55.320 Emma, thank you very much.

NOTE Confidence: 0.9844046

00:45:55.320 --> 00:45:56.839 This is Kent Vrana from

NOTE Confidence: 0.9844046

00:45:56.839 --> 00:45:57.660 Penn State.

NOTE Confidence: 0.9973228

00:45:58.119 --> 00:45:59.000 I wonder if you could

NOTE Confidence: 0.9973228

00:45:59.000 --> 00:46:00.940 comment on the rationale

NOTE Confidence: 0.99942636

00:46:01.400 --> 00:46:02.140 for using

NOTE Confidence: 0.9999048

00:46:02.440 --> 00:46:03.660 peripheral blood

NOTE Confidence: 0.9899643

00:46:04.040 --> 00:46:05.880 for EWAS studies as a

NOTE Confidence: 0.9899643

00:46:05.880 --> 00:46:07.695 surrogate marker for anything that

NOTE Confidence: 0.9899643

00:46:07.695 --> 00:46:08.815 might be going on in

NOTE Confidence: 0.9899643

00:46:08.815 --> 00:46:10.195 circuitry in the brain,

NOTE Confidence: 0.99626845

00:46:10.495 --> 00:46:11.695 especially if you're going to

NOTE Confidence: 0.99626845

00:46:11.695 --> 00:46:12.675 correlate it

NOTE Confidence: 0.9803454

00:46:12.975 --> 00:46:14.655 later with behavior in the

NOTE Confidence: 0.9803454

00:46:14.655 --> 00:46:15.155 offspring?

NOTE Confidence: 0.9981116

00:46:18.015 --> 00:46:18.515 Yeah.

NOTE Confidence: 0.9817235

00:46:18.895 --> 00:46:19.935 That's a great question. So

NOTE Confidence: 0.9817235

00:46:19.935 --> 00:46:20.975 I think you're referring to

NOTE Confidence: 0.9817235

00:46:20.975 --> 00:46:22.160 that, the earlier

NOTE Confidence: 0.8616171

00:46:22.460 --> 00:46:23.359 EWAS that I presented,

NOTE Confidence: 0.97749215

00:46:24.619 --> 00:46:25.739 at the beginning where they

NOTE Confidence: 0.97749215

00:46:25.739 --> 00:46:27.440 were using that peripheral blood.

NOTE Confidence: 0.93730944

00:46:28.299 --> 00:46:29.280 That that's correct.

NOTE Confidence: 0.9996842

00:46:29.660 --> 00:46:30.160 Yeah.

NOTE Confidence: 0.8665962

00:46:31.180 --> 00:46:31.900 You know, I,

NOTE Confidence: 0.98612386

00:46:34.194 --> 00:46:34.994 actually don't know off the

NOTE Confidence: 0.98612386

00:46:34.994 --> 00:46:35.795 top of my head how

NOTE Confidence: 0.98612386

00:46:35.795 --> 00:46:36.295 well,

NOTE Confidence: 0.98290163

00:46:37.474 --> 00:46:39.075 those markers in peripheral blood

NOTE Confidence: 0.98290163

00:46:39.075 --> 00:46:40.835 overlap with with what has

NOTE Confidence: 0.98290163

00:46:40.835 --> 00:46:41.954 maybe been found in other

NOTE Confidence: 0.98290163

00:46:41.954 --> 00:46:42.454 tissues.

NOTE Confidence: 0.9885464

00:46:44.515 --> 00:46:45.234 You know, I don't know

NOTE Confidence: 0.9885464

00:46:45.234 --> 00:46:46.055 that they overlap

NOTE Confidence: 0.99161583

00:46:46.569 --> 00:46:47.690 very well, but I think

NOTE Confidence: 0.99161583

00:46:47.690 --> 00:46:48.190 it's,

NOTE Confidence: 0.99968046

00:46:48.890 --> 00:46:49.789 to some extent

NOTE Confidence: 0.9485824

00:46:50.089 --> 00:46:51.690 kind of logistics and and

NOTE Confidence: 0.9485824

00:46:51.690 --> 00:46:53.390 what they could collect,

NOTE Confidence: 0.9989966

00:46:53.849 --> 00:46:55.130 for those different studies that

NOTE Confidence: 0.9989966

00:46:55.130 --> 00:46:56.430 went into that meta analysis.

NOTE Confidence: 0.97773933

00:46:58.425 --> 00:46:59.305 So I don't think, you

NOTE Confidence: 0.97773933

00:46:59.305 --> 00:47:00.925 know, peripheral blood is ideal.

NOTE Confidence: 0.95280397

00:47:01.545 --> 00:47:02.505 And that's why, you know,

NOTE Confidence: 0.95280397

00:47:02.505 --> 00:47:03.785 we are really excited to

NOTE Confidence: 0.95280397

00:47:03.785 --> 00:47:05.225 look at placental tissue in

NOTE Confidence: 0.95280397

00:47:05.225 --> 00:47:05.725 particular,

NOTE Confidence: 0.9990712

00:47:07.465 --> 00:47:08.265 you know, as it is

NOTE Confidence: 0.9990712

00:47:08.265 --> 00:47:09.325 potentially so

NOTE Confidence: 0.9653416

00:47:09.785 --> 00:47:11.945 important for fetal development and,

NOTE Confidence: 0.9653416

00:47:11.945 --> 00:47:13.569 you know, can maybe have

NOTE Confidence: 0.9653416

00:47:13.569 --> 00:47:15.089 effects on on later child

NOTE Confidence: 0.9653416

00:47:15.089 --> 00:47:15.589 behavior.

NOTE Confidence: 0.95667136

00:47:16.049 --> 00:47:17.089 We don't quite know that

NOTE Confidence: 0.95667136

00:47:17.089 --> 00:47:17.809 yet. But,

NOTE Confidence: 0.97635037

00:47:19.329 --> 00:47:20.210 but I think based on

NOTE Confidence: 0.97635037

00:47:20.210 --> 00:47:21.569 that Rompalla study, it does

NOTE Confidence: 0.97635037

00:47:21.569 --> 00:47:22.950 seem like there's potential

NOTE Confidence: 0.99831337

00:47:23.410 --> 00:47:25.089 that placental tissue could be

NOTE Confidence: 0.99831337

00:47:25.089 --> 00:47:26.549 mediating this. So

NOTE Confidence: 0.9744494

00:47:27.094 --> 00:47:27.734 I don't know if that

NOTE Confidence: 0.9744494

00:47:27.734 --> 00:47:29.194 fully answers your question,

NOTE Confidence: 0.9975553

00:47:30.454 --> 00:47:30.954 but

NOTE Confidence: 0.9900787

00:47:31.255 --> 00:47:32.135 but I am glad that

NOTE Confidence: 0.9900787

00:47:32.135 --> 00:47:33.174 we could look specifically at

NOTE Confidence: 0.9900787

00:47:33.174 --> 00:47:34.234 placental tissue.

NOTE Confidence: 0.91181284

00:47:35.734 --> 00:47:37.174 Yeah. It's I've learned a

NOTE Confidence: 0.91181284

00:47:37.174 --> 00:47:38.214 lot, and I just wrestle

NOTE Confidence: 0.91181284

00:47:38.214 --> 00:47:39.015 with it because

NOTE Confidence: 0.9782448

00:47:39.575 --> 00:47:40.954 and even in your placental

NOTE Confidence: 0.9782448

00:47:41.015 --> 00:47:41.515 study,

NOTE Confidence: 0.9852047

00:47:42.760 --> 00:47:44.279 what what outcome and how

NOTE Confidence: 0.9852047

00:47:44.279 --> 00:47:45.559 would you correlate a change

NOTE Confidence: 0.9852047

00:47:45.559 --> 00:47:47.000 in in the behavior of

NOTE Confidence: 0.9852047

00:47:47.000 --> 00:47:48.680 the placenta or or its

NOTE Confidence: 0.9852047

00:47:48.680 --> 00:47:50.700 physiology with later outcomes?

NOTE Confidence: 0.99957156

00:47:52.680 --> 00:47:53.180 Yeah.

NOTE Confidence: 0.9990377

00:47:53.640 --> 00:47:54.299 I mean,

NOTE Confidence: 0.9944849

00:47:55.325 --> 00:47:56.465 it is just a correlation

NOTE Confidence: 0.9944849

00:47:56.525 --> 00:47:57.165 at the end of the

NOTE Confidence: 0.9944849

00:47:57.165 --> 00:47:58.365 day. You know, and I

NOTE Confidence: 0.9944849

00:47:58.365 --> 00:47:59.245 think we can try to

NOTE Confidence: 0.9944849

00:47:59.245 --> 00:48:01.425 control for as many confounding

NOTE Confidence: 0.9944849

00:48:01.485 --> 00:48:03.245 factors as possible, but it

NOTE Confidence: 0.9944849

00:48:03.245 --> 00:48:04.605 is kind of hard to

NOTE Confidence: 0.9944849

00:48:04.605 --> 00:48:05.345 to tie

NOTE Confidence: 0.9956895

00:48:05.885 --> 00:48:07.805 whatever we're finding specifically to,

NOTE Confidence: 0.9904145

00:48:10.059 --> 00:48:11.599 you know, changes in placental,

NOTE Confidence: 0.9895802

00:48:13.579 --> 00:48:14.940 gene expression and function and

NOTE Confidence: 0.9895802

00:48:14.940 --> 00:48:16.940 development with with these later

NOTE Confidence: 0.9895802

00:48:16.940 --> 00:48:18.640 child behaviors. But

NOTE Confidence: 0.9933607

00:48:19.739 --> 00:48:21.420 yeah. Yeah. It's a good

NOTE Confidence: 0.9933607

00:48:21.420 --> 00:48:21.920 question.

NOTE Confidence: 0.99702257

00:48:22.859 --> 00:48:24.559 There's a question from Angie

NOTE Confidence: 0.99702257

00:48:24.619 --> 00:48:25.119 Fritz.

NOTE Confidence: 0.9469484

00:48:26.614 --> 00:48:27.655 Do you I'll let you

NOTE Confidence: 0.9469484

00:48:27.655 --> 00:48:28.214 read it, or do you

NOTE Confidence: 0.9469484

00:48:28.214 --> 00:48:28.935 want me to read it

NOTE Confidence: 0.9469484

00:48:28.935 --> 00:48:30.555 out to the group? Oh,

NOTE Confidence: 0.99271584

00:48:30.935 --> 00:48:31.435 sure.

NOTE Confidence: 0.9691172

00:48:32.694 --> 00:48:33.655 Or, Angie, I see you've

NOTE Confidence: 0.9691172

00:48:33.655 --> 00:48:34.614 unmuted. I don't know if

NOTE Confidence: 0.9691172

00:48:34.614 --> 00:48:35.815 you wanna read your question

NOTE Confidence: 0.9691172

00:48:35.815 --> 00:48:36.315 maybe.

NOTE Confidence: 0.9696783

00:48:39.840 --> 00:48:41.040 I think this is related

NOTE Confidence: 0.9696783

00:48:41.040 --> 00:48:42.720 to talking about mediation between

NOTE Confidence: 0.9696783

00:48:42.720 --> 00:48:44.239 prenatal cannabis use and child

NOTE Confidence: 0.9696783

00:48:44.239 --> 00:48:46.020 behavioral outcomes. Would we also

NOTE Confidence: 0.9993054

00:48:46.560 --> 00:48:48.100 include the development of neurodevelopmental

NOTE Confidence: 0.9998758

00:48:48.800 --> 00:48:49.300 disorders

NOTE Confidence: 0.998693

00:48:50.000 --> 00:48:50.900 in that relationship?

NOTE Confidence: 0.994425

00:48:53.045 --> 00:48:54.725 Yes. Yeah. I think, we're

NOTE Confidence: 0.994425

00:48:54.725 --> 00:48:56.485 certainly interested in whether prenatal

NOTE Confidence: 0.994425

00:48:56.485 --> 00:48:57.385 cannabis use,

NOTE Confidence: 0.99894285

00:48:58.405 --> 00:48:59.305 also affects

NOTE Confidence: 0.9992636

00:48:59.685 --> 00:49:00.185 neurodevelopmental

NOTE Confidence: 0.99424905

00:49:00.645 --> 00:49:01.785 disorders in children.

NOTE Confidence: 0.95428026

00:49:03.364 --> 00:49:04.825 There's a question from

NOTE Confidence: 0.90262365

00:49:05.205 --> 00:49:06.345 Elizabeth Halvorsen.

NOTE Confidence: 0.96792054

00:49:11.170 --> 00:49:12.770 Oh, just a comment. Oh,

NOTE Confidence: 0.96792054

00:49:12.770 --> 00:49:14.210 thank you. And then there's

NOTE Confidence: 0.96792054

00:49:14.210 --> 00:49:15.170 a question from,

NOTE Confidence: 0.93944377

00:49:15.650 --> 00:49:17.109 from Mohini Ranganathan.

NOTE Confidence: 0.99848205

00:49:20.125 --> 00:49:21.565 Yeah. So this question is

NOTE Confidence: 0.99848205

00:49:21.565 --> 00:49:23.665 asking about sex dimorphic effects

NOTE Confidence: 0.8986093

00:49:23.965 --> 00:49:25.345 and in utero exposure.

NOTE Confidence: 0.9764457

00:49:26.525 --> 00:49:28.065 That's a really interesting question.

NOTE Confidence: 0.9764457

00:49:28.125 --> 00:49:29.745 That's something I haven't explored.

NOTE Confidence: 0.9815242

00:49:31.005 --> 00:49:31.885 So I don't really have

NOTE Confidence: 0.9815242

00:49:31.885 --> 00:49:32.765 a good answer for you

NOTE Confidence: 0.9815242

00:49:32.765 --> 00:49:33.245 now. But,

NOTE Confidence: 0.9917695

00:49:35.120 --> 00:49:36.719 yeah, that's potentially really interesting

NOTE Confidence: 0.9917695

00:49:36.719 --> 00:49:37.760 and and something we should

NOTE Confidence: 0.9917695

00:49:37.760 --> 00:49:38.500 look at.

NOTE Confidence: 0.97173774

00:49:40.560 --> 00:49:41.920 I I have a question

NOTE Confidence: 0.97173774

00:49:41.920 --> 00:49:43.200 that that may be a

NOTE Confidence: 0.97173774

00:49:43.200 --> 00:49:44.900 public health relevance. So

NOTE Confidence: 0.9385001

00:49:45.280 --> 00:49:46.239 do you have can you

NOTE Confidence: 0.9385001

00:49:46.239 --> 00:49:47.380 comment on whether,

NOTE Confidence: 0.99933386

00:49:48.320 --> 00:49:49.780 the timing of exposure

NOTE Confidence: 0.9565062

00:49:52.375 --> 00:49:53.174 matters in order to be

NOTE Confidence: 0.9565062

00:49:53.174 --> 00:49:54.694 able to advise women who

NOTE Confidence: 0.9565062

00:49:54.694 --> 00:49:55.194 are

NOTE Confidence: 0.9598526

00:49:55.815 --> 00:49:57.494 using cannabis. So that is

NOTE Confidence: 0.9598526

00:49:57.494 --> 00:49:58.855 to say, if,

NOTE Confidence: 0.9728063

00:49:59.734 --> 00:50:01.494 if we believe that if

NOTE Confidence: 0.9728063

00:50:01.494 --> 00:50:02.155 you stop

NOTE Confidence: 0.9764407

00:50:02.535 --> 00:50:04.075 using cannabis, say,

NOTE Confidence: 0.935762

00:50:04.640 --> 00:50:05.840 soon as you're informed and

NOTE Confidence: 0.935762

00:50:05.840 --> 00:50:07.380 it's only restricted to

NOTE Confidence: 0.9917582

00:50:07.920 --> 00:50:08.880 the early part of the

NOTE Confidence: 0.9917582

00:50:08.880 --> 00:50:10.340 first trimester, is that

NOTE Confidence: 0.96642923

00:50:11.440 --> 00:50:12.260 going to have

NOTE Confidence: 0.9979129

00:50:12.640 --> 00:50:13.540 fewer consequences

NOTE Confidence: 0.99216837

00:50:14.800 --> 00:50:16.160 relative to if you continue

NOTE Confidence: 0.99216837

00:50:16.160 --> 00:50:17.460 smoking throughout pregnancy?

NOTE Confidence: 0.98056424

00:50:19.925 --> 00:50:21.364 That's a great question. That's

NOTE Confidence: 0.98056424

00:50:21.364 --> 00:50:23.145 really important. I mean, I,

NOTE Confidence: 0.9928285

00:50:24.245 --> 00:50:25.364 you know, I don't know.

NOTE Confidence: 0.9928285

00:50:25.364 --> 00:50:26.485 I'm not a clinician. I

NOTE Confidence: 0.9928285

00:50:26.485 --> 00:50:27.844 should say that. But, you

NOTE Confidence: 0.9928285

00:50:27.844 --> 00:50:28.965 know, I think based on

NOTE Confidence: 0.9928285

00:50:28.965 --> 00:50:29.465 what

NOTE Confidence: 0.93548405

00:50:30.085 --> 00:50:31.765 Sarah Paul found, at least,

NOTE Confidence: 0.93548405

00:50:31.765 --> 00:50:33.305 in the ABCD study,

NOTE Confidence: 0.9973906

00:50:34.160 --> 00:50:35.300 you know, it seems like,

NOTE Confidence: 0.97750026

00:50:36.719 --> 00:50:38.260 you know, the effects on,

NOTE Confidence: 0.99346286

00:50:39.600 --> 00:50:41.140 BMI, cognitive function,

NOTE Confidence: 0.9025981

00:50:42.080 --> 00:50:43.680 these different child behaviors like

NOTE Confidence: 0.9025981

00:50:43.680 --> 00:50:44.660 attention problems.

NOTE Confidence: 0.99549437

00:50:45.760 --> 00:50:47.840 The associations between prenatal cannabis

NOTE Confidence: 0.99549437

00:50:47.840 --> 00:50:49.360 use and these different problems

NOTE Confidence: 0.99549437

00:50:49.360 --> 00:50:50.385 were attenuated,

NOTE Confidence: 0.96003485

00:50:50.765 --> 00:50:52.445 but they they were still

NOTE Confidence: 0.96003485

00:50:52.445 --> 00:50:54.445 there in the women who

NOTE Confidence: 0.96003485

00:50:54.445 --> 00:50:55.345 use cannabis,

NOTE Confidence: 0.9844891

00:50:56.205 --> 00:50:57.725 only before they knew that

NOTE Confidence: 0.9844891

00:50:57.725 --> 00:50:59.485 they were pregnant. So only

NOTE Confidence: 0.9844891

00:50:59.485 --> 00:51:00.605 in that you know, those

NOTE Confidence: 0.9844891

00:51:00.605 --> 00:51:02.785 really early stages of pregnancy.

NOTE Confidence: 0.991979

00:51:04.380 --> 00:51:06.079 We're still seeing these associations

NOTE Confidence: 0.991979

00:51:06.219 --> 00:51:07.279 with increased

NOTE Confidence: 0.9131162

00:51:07.660 --> 00:51:08.960 child attention problems,

NOTE Confidence: 0.9824495

00:51:09.980 --> 00:51:12.140 greater BMI, lower cognitive function.

NOTE Confidence: 0.9824495

00:51:12.140 --> 00:51:12.880 And so

NOTE Confidence: 0.9968165

00:51:13.500 --> 00:51:14.880 it does seem like there's

NOTE Confidence: 0.99430054

00:51:15.660 --> 00:51:17.258 there's not any period of

NOTE Confidence: 0.99430054

00:51:17.258 --> 00:51:19.145 pregnancy that is without risk.

NOTE Confidence: 0.98851585

00:51:21.045 --> 00:51:22.005 You know, and so those

NOTE Confidence: 0.98851585

00:51:22.005 --> 00:51:23.364 problems might be less if

NOTE Confidence: 0.98851585

00:51:23.364 --> 00:51:25.625 you stop using cannabis after

NOTE Confidence: 0.98851585

00:51:25.765 --> 00:51:26.805 after you realize that you're

NOTE Confidence: 0.98851585

00:51:26.805 --> 00:51:27.705 pregnant, but,

NOTE Confidence: 0.9991564

00:51:28.325 --> 00:51:29.285 it does seem like there's

NOTE Confidence: 0.9991564

00:51:29.285 --> 00:51:30.405 still a risk at those

NOTE Confidence: 0.9991564

00:51:30.405 --> 00:51:31.705 early stages of pregnancy.

NOTE Confidence: 0.89621437

00:51:34.739 --> 00:51:35.640 K. Great.

NOTE Confidence: 0.85508233

00:51:40.820 --> 00:51:42.200 You know, there there's also,

NOTE Confidence: 0.58698946

00:51:44.100 --> 00:51:44.920 their recommendations

NOTE Confidence: 0.88857114

00:51:45.335 --> 00:51:47.335 often from dispensaries where bud

NOTE Confidence: 0.88857114

00:51:47.335 --> 00:51:48.474 tenders are advising,

NOTE Confidence: 0.919127

00:51:49.734 --> 00:51:51.194 pregnant women to,

NOTE Confidence: 0.99023336

00:51:53.494 --> 00:51:54.694 to use certain kinds of

NOTE Confidence: 0.99023336

00:51:54.694 --> 00:51:55.194 cannabis.

NOTE Confidence: 0.9925454

00:51:55.894 --> 00:51:57.914 Mhmm. Have you had any

NOTE Confidence: 0.99508786

00:51:58.375 --> 00:52:00.394 success in in educating,

NOTE Confidence: 0.9411519

00:52:02.270 --> 00:52:04.210 you know, bartenders and dispensaries

NOTE Confidence: 0.9411519

00:52:04.350 --> 00:52:05.730 in your community?

NOTE Confidence: 0.987401

00:52:08.190 --> 00:52:08.690 No.

NOTE Confidence: 0.9994606

00:52:09.390 --> 00:52:10.850 I have heard of that.

NOTE Confidence: 0.9708729

00:52:12.590 --> 00:52:13.230 You know, we

NOTE Confidence: 0.9979192

00:52:14.325 --> 00:52:15.525 yeah. That's a great question.

NOTE Confidence: 0.9979192

00:52:15.525 --> 00:52:16.344 We haven't,

NOTE Confidence: 0.99798256

00:52:18.724 --> 00:52:19.765 you know, really tried to

NOTE Confidence: 0.99798256

00:52:19.765 --> 00:52:21.765 take this into that realm

NOTE Confidence: 0.99798256

00:52:21.765 --> 00:52:23.765 of actually talking to,

NOTE Confidence: 0.97522193

00:52:24.325 --> 00:52:26.265 dispensaries in the community, but

NOTE Confidence: 0.99811536

00:52:26.724 --> 00:52:27.445 but I think that's a

NOTE Confidence: 0.99811536

00:52:27.445 --> 00:52:28.885 really interesting idea and could

NOTE Confidence: 0.99811536

00:52:28.885 --> 00:52:29.864 potentially have

NOTE Confidence: 0.99516565

00:52:30.300 --> 00:52:32.400 major public health impact. So

NOTE Confidence: 0.9912038

00:52:33.260 --> 00:52:33.760 yeah.

NOTE Confidence: 0.96261364

00:52:34.300 --> 00:52:35.580 I see another question in

NOTE Confidence: 0.96261364

00:52:35.580 --> 00:52:36.620 the chat and then also

NOTE Confidence: 0.96261364

00:52:36.620 --> 00:52:37.600 a raised hand.

NOTE Confidence: 0.96567714

00:52:38.540 --> 00:52:39.739 This question in the chat

NOTE Confidence: 0.96567714

00:52:39.739 --> 00:52:41.180 is asking about, is there

NOTE Confidence: 0.96567714

00:52:41.180 --> 00:52:42.780 a description of cannabis withdrawal

NOTE Confidence: 0.96567714

00:52:42.780 --> 00:52:44.620 and neonates similar to opioid

NOTE Confidence: 0.96567714

00:52:44.620 --> 00:52:45.120 withdrawal?

NOTE Confidence: 0.99961144

00:52:46.594 --> 00:52:47.094 I

NOTE Confidence: 0.99548495

00:52:47.555 --> 00:52:48.515 I feel bad. I don't

NOTE Confidence: 0.99548495

00:52:48.515 --> 00:52:49.474 actually know the answer to

NOTE Confidence: 0.99548495

00:52:49.474 --> 00:52:49.974 this.

NOTE Confidence: 0.9079134

00:52:51.075 --> 00:52:52.295 Someone else might.

NOTE Confidence: 0.9870008

00:52:52.994 --> 00:52:53.315 But

NOTE Confidence: 0.91691095

00:52:54.355 --> 00:52:55.234 I I don't I don't

NOTE Confidence: 0.91691095

00:52:55.234 --> 00:52:56.114 know. I don't think it's

NOTE Confidence: 0.91691095

00:52:56.114 --> 00:52:57.895 been studied. Mhmm. But

NOTE Confidence: 0.80274695

00:53:00.480 --> 00:53:02.400 it'll be interesting. Yeah. That

NOTE Confidence: 0.80274695

00:53:02.400 --> 00:53:02.900 withdrawal

NOTE Confidence: 0.9463462

00:53:03.280 --> 00:53:05.360 in general is highly variable

NOTE Confidence: 0.9463462

00:53:05.360 --> 00:53:07.060 in its expression. You know?

NOTE Confidence: 0.9463462

00:53:07.120 --> 00:53:08.340 Some people experience

NOTE Confidence: 0.94387746

00:53:09.040 --> 00:53:10.880 significant withdrawal and others don't

NOTE Confidence: 0.94387746

00:53:10.880 --> 00:53:11.380 experience

NOTE Confidence: 0.9578023

00:53:11.840 --> 00:53:12.340 much.

NOTE Confidence: 0.9641797

00:53:13.065 --> 00:53:14.265 So I and I don't

NOTE Confidence: 0.9641797

00:53:14.265 --> 00:53:15.704 know if anyone's studying that.

NOTE Confidence: 0.9641797

00:53:15.704 --> 00:53:17.964 So Yeah. Interesting question.

NOTE Confidence: 0.8429576

00:53:19.704 --> 00:53:20.825 Someone else to see a

NOTE Confidence: 0.8429576

00:53:20.825 --> 00:53:21.645 hand raised.

NOTE Confidence: 0.9895208

00:53:22.025 --> 00:53:22.525 Yeah.

NOTE Confidence: 0.95347136

00:53:24.105 --> 00:53:25.545 Yes. Thanks so much for

NOTE Confidence: 0.95347136

00:53:25.545 --> 00:53:26.925 your presentation, Emma.

NOTE Confidence: 0.9575163

00:53:27.920 --> 00:53:29.460 I had a question concerning

NOTE Confidence: 0.97303057

00:53:30.480 --> 00:53:32.020 the study where you,

NOTE Confidence: 0.9753262

00:53:32.720 --> 00:53:34.740 processed the placenta samples,

NOTE Confidence: 0.93975306

00:53:35.760 --> 00:53:36.900 for the EWAS.

NOTE Confidence: 0.9987507

00:53:37.920 --> 00:53:38.660 Did you

NOTE Confidence: 0.99662226

00:53:38.960 --> 00:53:40.640 like, what part of the

NOTE Confidence: 0.99662226

00:53:40.640 --> 00:53:41.140 tissue

NOTE Confidence: 0.9601738

00:53:41.520 --> 00:53:43.475 was used? Because I'm assuming

NOTE Confidence: 0.9601738

00:53:43.475 --> 00:53:44.594 we you know, there's a

NOTE Confidence: 0.9601738

00:53:44.594 --> 00:53:46.755 decidua, the villi, and, you

NOTE Confidence: 0.9601738

00:53:46.755 --> 00:53:48.215 know, if we're making inferences,

NOTE Confidence: 0.9601738

00:53:48.355 --> 00:53:49.255 did you guys,

NOTE Confidence: 0.9750366

00:53:50.675 --> 00:53:52.355 were you guys specific about

NOTE Confidence: 0.9750366

00:53:52.355 --> 00:53:53.495 the tissue

NOTE Confidence: 0.8957063

00:53:55.075 --> 00:53:56.455 sample that you used?

NOTE Confidence: 0.9751868

00:53:57.230 --> 00:53:58.589 Yeah. We are using the

NOTE Confidence: 0.9751868

00:53:58.589 --> 00:53:59.569 villus tissue

NOTE Confidence: 0.9794506

00:54:00.109 --> 00:54:01.869 for for this for these

NOTE Confidence: 0.9794506

00:54:01.869 --> 00:54:02.849 EWAS samples.

NOTE Confidence: 0.99780047

00:54:03.710 --> 00:54:05.730 We took more tissue samples,

NOTE Confidence: 0.9952212

00:54:06.030 --> 00:54:07.309 from different regions of the

NOTE Confidence: 0.9952212

00:54:07.309 --> 00:54:08.989 placenta, but for this EWAS,

NOTE Confidence: 0.9952212

00:54:08.989 --> 00:54:10.609 we're using the villus tissue.

NOTE Confidence: 0.8518672

00:54:11.694 --> 00:54:12.194 Okay.

NOTE Confidence: 0.9990427

00:54:13.375 --> 00:54:14.355 And I had

NOTE Confidence: 0.9649805

00:54:14.895 --> 00:54:16.194 a a second question

NOTE Confidence: 0.7422299

00:54:16.494 --> 00:54:17.875 whether for the

NOTE Confidence: 0.99091005

00:54:18.734 --> 00:54:19.234 EWAS

NOTE Confidence: 0.7730507

00:54:19.535 --> 00:54:20.035 analysis,

NOTE Confidence: 0.9328041

00:54:21.055 --> 00:54:22.674 were was there any comparison

NOTE Confidence: 0.9245984

00:54:23.135 --> 00:54:25.295 between I'm just curious. Moms

NOTE Confidence: 0.9245984

00:54:25.295 --> 00:54:25.795 that,

NOTE Confidence: 0.97977453

00:54:27.020 --> 00:54:28.140 this is, like, their first

NOTE Confidence: 0.97977453

00:54:28.140 --> 00:54:29.660 pregnancy versus this is their

NOTE Confidence: 0.97977453

00:54:29.660 --> 00:54:31.119 second or third pregnancies.

NOTE Confidence: 0.99699366

00:54:31.739 --> 00:54:33.900 Are there any, you know,

NOTE Confidence: 0.99699366

00:54:33.900 --> 00:54:35.359 variations with that,

NOTE Confidence: 0.9562415

00:54:35.980 --> 00:54:36.940 if they were to be

NOTE Confidence: 0.9562415

00:54:36.940 --> 00:54:37.920 grouped into,

NOTE Confidence: 0.99829865

00:54:39.260 --> 00:54:41.520 the number of pregnancies?

NOTE Confidence: 0.9986032

00:54:43.815 --> 00:54:45.415 Another great question. I don't

NOTE Confidence: 0.9986032

00:54:45.415 --> 00:54:46.775 know that we've really looked

NOTE Confidence: 0.9986032

00:54:46.775 --> 00:54:47.835 at that yet.

NOTE Confidence: 0.9803457

00:54:49.015 --> 00:54:49.734 You know, I know we

NOTE Confidence: 0.9803457

00:54:49.734 --> 00:54:50.635 have that data,

NOTE Confidence: 0.98011416

00:54:51.494 --> 00:54:52.215 but I don't know that

NOTE Confidence: 0.98011416

00:54:52.215 --> 00:54:53.415 anyone in Cuddl has looked

NOTE Confidence: 0.98011416

00:54:53.415 --> 00:54:54.075 at whether,

NOTE Confidence: 0.95363873

00:54:55.890 --> 00:54:56.609 you know, whether it is

NOTE Confidence: 0.95363873

00:54:56.609 --> 00:54:57.969 the first or a later

NOTE Confidence: 0.95363873

00:54:57.969 --> 00:54:59.969 pregnancy, whether that's associated with

NOTE Confidence: 0.95363873

00:54:59.969 --> 00:55:01.269 cannabis use or,

NOTE Confidence: 0.9833818

00:55:02.049 --> 00:55:03.250 any of these outcomes that

NOTE Confidence: 0.9833818

00:55:03.250 --> 00:55:04.469 we're looking at. But,

NOTE Confidence: 0.99911296

00:55:05.329 --> 00:55:06.930 yeah, that that would be

NOTE Confidence: 0.99911296

00:55:06.930 --> 00:55:08.210 interesting to look at. Do

NOTE Confidence: 0.99911296

00:55:08.210 --> 00:55:09.029 you have any

NOTE Confidence: 0.98156387

00:55:09.805 --> 00:55:11.105 hypotheses? I'm curious.

NOTE Confidence: 0.8713695

00:55:14.045 --> 00:55:14.625 I'm not

NOTE Confidence: 0.9418341

00:55:15.325 --> 00:55:16.605 I'm not you know, like,

NOTE Confidence: 0.9418341

00:55:16.605 --> 00:55:17.185 I think,

NOTE Confidence: 0.9600646

00:55:18.045 --> 00:55:19.805 not having that clinical background,

NOTE Confidence: 0.9600646

00:55:19.805 --> 00:55:20.305 obviously,

NOTE Confidence: 0.9668473

00:55:20.925 --> 00:55:21.585 not much.

NOTE Confidence: 0.95883465

00:55:22.010 --> 00:55:23.130 But I think the reason

NOTE Confidence: 0.95883465

00:55:23.130 --> 00:55:24.750 why I asked the question

NOTE Confidence: 0.95883465

00:55:24.810 --> 00:55:25.210 was,

NOTE Confidence: 0.9988853

00:55:26.410 --> 00:55:28.109 I'm under the assumption that,

NOTE Confidence: 0.94387114

00:55:28.969 --> 00:55:30.410 you know, probably during the

NOTE Confidence: 0.94387114

00:55:30.410 --> 00:55:32.250 first pregnancy, there's not as

NOTE Confidence: 0.94387114

00:55:32.250 --> 00:55:33.930 much, you know, consumption and

NOTE Confidence: 0.94387114

00:55:33.930 --> 00:55:35.469 then they become more addicted.

NOTE Confidence: 0.98546433

00:55:36.174 --> 00:55:36.914 Is this,

NOTE Confidence: 0.99769926

00:55:37.535 --> 00:55:39.214 phenotype that we see more

NOTE Confidence: 0.99769926

00:55:39.214 --> 00:55:39.714 pronounced,

NOTE Confidence: 0.98577106

00:55:40.894 --> 00:55:42.974 for example, and are the

NOTE Confidence: 0.98577106

00:55:42.974 --> 00:55:44.434 effects on the babies,

NOTE Confidence: 0.9996791

00:55:44.734 --> 00:55:45.394 you know,

NOTE Confidence: 0.9947661

00:55:46.174 --> 00:55:47.555 reflecting that as well?

NOTE Confidence: 0.9632792

00:55:48.430 --> 00:55:49.870 Yeah. Yeah. And sorry to

NOTE Confidence: 0.9632792

00:55:49.870 --> 00:55:50.670 put you on the spot

NOTE Confidence: 0.9632792

00:55:50.670 --> 00:55:51.170 there.

NOTE Confidence: 0.98512506

00:55:51.790 --> 00:55:52.750 No worries. That was not

NOTE Confidence: 0.98512506

00:55:52.750 --> 00:55:53.570 nice. But,

NOTE Confidence: 0.98880166

00:55:53.870 --> 00:55:54.989 no. I think that's a

NOTE Confidence: 0.98880166

00:55:54.989 --> 00:55:56.590 really interesting question and just

NOTE Confidence: 0.98880166

00:55:56.590 --> 00:55:57.710 something that we haven't looked

NOTE Confidence: 0.98880166

00:55:57.710 --> 00:55:58.690 at yet. But,

NOTE Confidence: 0.96052593

00:56:01.385 --> 00:56:02.425 yeah, yeah, we might take

NOTE Confidence: 0.96052593

00:56:02.425 --> 00:56:03.244 a look at that.

NOTE Confidence: 0.98178625

00:56:04.185 --> 00:56:04.685 Okay.

NOTE Confidence: 0.93143135

00:56:05.465 --> 00:56:06.844 I I have a question,

NOTE Confidence: 0.93143135

00:56:06.984 --> 00:56:08.045 Emma. Thank you.

NOTE Confidence: 0.9557475

00:56:08.665 --> 00:56:09.145 To,

NOTE Confidence: 0.9985036

00:56:10.025 --> 00:56:11.785 could could your findings be

NOTE Confidence: 0.9985036

00:56:11.785 --> 00:56:12.925 explained by

NOTE Confidence: 0.9621985

00:56:14.270 --> 00:56:15.570 just the effects of,

NOTE Confidence: 0.90914047

00:56:17.310 --> 00:56:19.630 the burning by byproducts of

NOTE Confidence: 0.90914047

00:56:19.630 --> 00:56:20.450 plant material

NOTE Confidence: 0.9643011

00:56:21.230 --> 00:56:23.650 and not specifically to THC

NOTE Confidence: 0.98532194

00:56:24.109 --> 00:56:26.190 or which I'm which I'm

NOTE Confidence: 0.98532194

00:56:26.190 --> 00:56:27.790 assuming you're suggesting that this

NOTE Confidence: 0.98532194

00:56:27.790 --> 00:56:28.849 is related to

NOTE Confidence: 0.9967564

00:56:29.214 --> 00:56:30.915 the cannabinoids present in

NOTE Confidence: 0.9951562

00:56:31.535 --> 00:56:32.815 in cannabis. So could this

NOTE Confidence: 0.9951562

00:56:32.815 --> 00:56:33.555 be from,

NOTE Confidence: 0.991616

00:56:34.094 --> 00:56:35.075 you know, nonspecific,

NOTE Confidence: 0.99888355

00:56:36.175 --> 00:56:37.535 chemicals that are released when

NOTE Confidence: 0.99888355

00:56:37.535 --> 00:56:38.194 you combust

NOTE Confidence: 0.99455523

00:56:38.734 --> 00:56:39.714 plant material?

NOTE Confidence: 0.93434364

00:56:42.570 --> 00:56:43.070 I

NOTE Confidence: 0.99551046

00:56:43.450 --> 00:56:44.670 yeah. I mean, I

NOTE Confidence: 0.98912287

00:56:45.130 --> 00:56:46.350 guess I guess it could.

NOTE Confidence: 0.83674526

00:56:49.690 --> 00:56:50.190 Yeah.

NOTE Confidence: 0.98747355

00:56:51.610 --> 00:56:52.890 That's an interesting question. I'm

NOTE Confidence: 0.98747355

00:56:52.890 --> 00:56:53.690 not sure how we would

NOTE Confidence: 0.98747355

00:56:53.690 --> 00:56:54.969 get at that except maybe

NOTE Confidence: 0.98747355

00:56:54.969 --> 00:56:56.810 looking across the different modes

NOTE Confidence: 0.98747355

00:56:56.810 --> 00:56:57.550 of use.

NOTE Confidence: 0.89803255

00:56:58.235 --> 00:56:59.855 We don't have many people,

NOTE Confidence: 0.939429

00:57:00.955 --> 00:57:01.835 you know, that were using,

NOTE Confidence: 0.939429

00:57:01.835 --> 00:57:03.215 like, edibles or,

NOTE Confidence: 0.94594866

00:57:04.955 --> 00:57:05.455 nonsmoking

NOTE Confidence: 0.929448

00:57:06.235 --> 00:57:07.935 modes of use. But,

NOTE Confidence: 0.9785277

00:57:11.430 --> 00:57:13.270 yeah, you know, potentially, maybe

NOTE Confidence: 0.9785277

00:57:13.270 --> 00:57:14.469 we could look within those

NOTE Confidence: 0.9785277

00:57:14.469 --> 00:57:15.829 samples and see. It's just

NOTE Confidence: 0.9785277

00:57:15.829 --> 00:57:17.290 kind of a sensitivity analysis.

NOTE Confidence: 0.9586395

00:57:17.910 --> 00:57:19.109 I noticed that you had

NOTE Confidence: 0.9586395

00:57:19.109 --> 00:57:20.950 only about eight percent who

NOTE Confidence: 0.9586395

00:57:20.950 --> 00:57:22.570 were using edibles. And

NOTE Confidence: 0.98670924

00:57:23.030 --> 00:57:24.070 is it those is it

NOTE Confidence: 0.98670924

00:57:24.070 --> 00:57:25.530 that those eight percent were

NOTE Confidence: 0.9696422

00:57:26.035 --> 00:57:27.715 exclusively using edibles, or they

NOTE Confidence: 0.9696422

00:57:27.715 --> 00:57:29.255 were using edibles and

NOTE Confidence: 0.9368042

00:57:29.875 --> 00:57:30.375 other,

NOTE Confidence: 0.7574874

00:57:31.635 --> 00:57:32.135 products?

NOTE Confidence: 0.901138

00:57:33.075 --> 00:57:34.295 Or nine percent. Yeah.

NOTE Confidence: 0.8924139

00:57:35.395 --> 00:57:36.135 So I think,

NOTE Confidence: 0.97840536

00:57:37.955 --> 00:57:39.235 I added these numbers up

NOTE Confidence: 0.97840536

00:57:39.235 --> 00:57:40.420 right before this talk because

NOTE Confidence: 0.97840536

00:57:40.420 --> 00:57:41.300 I wanna make sure. So

NOTE Confidence: 0.97840536

00:57:41.300 --> 00:57:42.180 I think this adds up

NOTE Confidence: 0.97840536

00:57:42.180 --> 00:57:43.620 to a hundred percent. And

NOTE Confidence: 0.97840536

00:57:43.620 --> 00:57:44.120 so,

NOTE Confidence: 0.9819156

00:57:44.740 --> 00:57:46.100 I believe this question asked

NOTE Confidence: 0.9819156

00:57:46.100 --> 00:57:47.700 about the most common mode

NOTE Confidence: 0.9819156

00:57:47.700 --> 00:57:48.500 of use, and so I

NOTE Confidence: 0.9819156

00:57:48.500 --> 00:57:49.800 think they could only select

NOTE Confidence: 0.9819156

00:57:49.940 --> 00:57:51.940 one for this Okay. Which

NOTE Confidence: 0.9819156

00:57:51.940 --> 00:57:52.740 kind of gets at your

NOTE Confidence: 0.9819156

00:57:52.740 --> 00:57:53.240 question.

NOTE Confidence: 0.9972261

00:57:54.585 --> 00:57:55.785 So I think those ten

NOTE Confidence: 0.9972261

00:57:55.785 --> 00:57:58.045 percent are are primarily using

NOTE Confidence: 0.98932755

00:57:58.425 --> 00:57:59.805 edible forms of cannabis.

NOTE Confidence: 0.97473377

00:58:02.105 --> 00:58:03.305 So that could be something,

NOTE Confidence: 0.97473377

00:58:03.305 --> 00:58:04.265 or maybe we can look

NOTE Confidence: 0.97473377

00:58:04.265 --> 00:58:05.565 specifically at those samples.

NOTE Confidence: 0.9754092

00:58:07.200 --> 00:58:08.480 And I suppose you if

NOTE Confidence: 0.9754092

00:58:08.480 --> 00:58:09.200 you compare,

NOTE Confidence: 0.9087078

00:58:10.320 --> 00:58:11.520 two samples of women who

NOTE Confidence: 0.9087078

00:58:11.520 --> 00:58:12.260 smoked tobacco

NOTE Confidence: 0.9723034

00:58:12.720 --> 00:58:14.000 and you find similar kinds

NOTE Confidence: 0.9723034

00:58:14.000 --> 00:58:15.520 of findings that might indicate

NOTE Confidence: 0.9723034

00:58:15.520 --> 00:58:16.180 that it's

NOTE Confidence: 0.99756235

00:58:16.480 --> 00:58:18.099 related to just the combustion

NOTE Confidence: 0.99756235

00:58:18.160 --> 00:58:18.480 of

NOTE Confidence: 0.99704015

00:58:18.960 --> 00:58:19.460 Yeah.

NOTE Confidence: 0.9051402

00:58:19.760 --> 00:58:20.260 Mhmm.

NOTE Confidence: 0.97933733

00:58:23.595 --> 00:58:24.415 Other questions?

NOTE Confidence: 0.87277347

00:58:24.955 --> 00:58:26.575 We have a minute two

NOTE Confidence: 0.98410416

00:58:27.515 --> 00:58:29.915 two messages. Let's see. And

NOTE Confidence: 0.98410416

00:58:29.915 --> 00:58:30.795 I see a hand up

NOTE Confidence: 0.98410416

00:58:30.795 --> 00:58:31.535 as well.

NOTE Confidence: 0.9948498

00:58:32.155 --> 00:58:32.655 Yes.

NOTE Confidence: 0.95427924

00:58:33.115 --> 00:58:34.555 Talida, do you have another

NOTE Confidence: 0.95427924

00:58:34.555 --> 00:58:35.055 question?

NOTE Confidence: 0.9194082

00:58:37.830 --> 00:58:38.310 Yes.

NOTE Confidence: 0.95585644

00:58:38.790 --> 00:58:40.310 I was curious to see,

NOTE Confidence: 0.95585644

00:58:40.310 --> 00:58:41.690 did you find any,

NOTE Confidence: 0.97476023

00:58:43.430 --> 00:58:44.570 differentially expressed,

NOTE Confidence: 0.9401606

00:58:45.190 --> 00:58:46.630 T cell signatures in the

NOTE Confidence: 0.9401606

00:58:46.630 --> 00:58:47.910 EOS? Because I know you'd

NOTE Confidence: 0.9401606

00:58:47.910 --> 00:58:49.190 mentioned the b cell, but

NOTE Confidence: 0.9401606

00:58:49.190 --> 00:58:50.650 I'm curious to see if,

NOTE Confidence: 0.9635333

00:58:51.455 --> 00:58:52.655 there's anything that came up

NOTE Confidence: 0.9635333

00:58:52.655 --> 00:58:53.635 for the t cells.

NOTE Confidence: 0.98819035

00:58:54.415 --> 00:58:55.775 I don't think we found

NOTE Confidence: 0.98819035

00:58:55.775 --> 00:58:57.215 anything related to t cells

NOTE Confidence: 0.98819035

00:58:57.215 --> 00:58:58.755 at this point, but,

NOTE Confidence: 0.9533391

00:59:00.815 --> 00:59:02.175 yeah, I don't think so.

NOTE Confidence: 0.9533391

00:59:02.175 --> 00:59:02.675 But

NOTE Confidence: 0.9998153

00:59:03.150 --> 00:59:04.109 but I can double check

NOTE Confidence: 0.9998153

00:59:04.109 --> 00:59:04.609 that.

NOTE Confidence: 0.99185276

00:59:05.069 --> 00:59:06.690 Okay. Okay. Yeah. Thanks.

NOTE Confidence: 0.94516414

00:59:07.230 --> 00:59:09.069 Yeah. I I asked because

NOTE Confidence: 0.94516414

00:59:09.069 --> 00:59:09.809 there is,

NOTE Confidence: 0.995592

00:59:10.510 --> 00:59:12.430 studies have shown that at

NOTE Confidence: 0.995592

00:59:12.430 --> 00:59:13.569 the second trimester,

NOTE Confidence: 0.99178755

00:59:14.270 --> 00:59:15.010 there is

NOTE Confidence: 0.9176007

00:59:15.605 --> 00:59:17.045 an increase in T cell

NOTE Confidence: 0.9176007

00:59:17.045 --> 00:59:17.545 population

NOTE Confidence: 0.9928199

00:59:18.005 --> 00:59:19.125 when they did the single

NOTE Confidence: 0.9928199

00:59:19.125 --> 00:59:19.865 cell analysis.

NOTE Confidence: 0.94197804

00:59:20.964 --> 00:59:23.065 B cell, not as much.

NOTE Confidence: 0.94197804

00:59:23.204 --> 00:59:24.984 That's why I was wondering

NOTE Confidence: 0.94197804

00:59:25.204 --> 00:59:26.345 what that can imply.

NOTE Confidence: 0.9991659

00:59:28.484 --> 00:59:30.085 Yeah. Yeah. That's interesting. We'll

NOTE Confidence: 0.9991659

00:59:30.085 --> 00:59:31.224 have to think about that.

NOTE Confidence: 0.85239005

00:59:32.140 --> 00:59:33.520 Oh, yeah. Thank you.

NOTE Confidence: 0.9841085

00:59:34.060 --> 00:59:35.020 So we are we are

NOTE Confidence: 0.9841085

00:59:35.020 --> 00:59:36.300 out of time, but, Emma,

NOTE Confidence: 0.9841085

00:59:36.300 --> 00:59:37.420 thank you very much. This

NOTE Confidence: 0.9841085

00:59:37.420 --> 00:59:38.780 is really great. I'm so

NOTE Confidence: 0.9841085

00:59:38.780 --> 00:59:39.820 glad that we were able

NOTE Confidence: 0.9841085

00:59:39.820 --> 00:59:41.580 to ask you questions on

NOTE Confidence: 0.9841085

00:59:41.580 --> 00:59:43.120 the fly during the presentation.

NOTE Confidence: 0.9841085

00:59:43.420 --> 00:59:44.700 It certainly made for a

NOTE Confidence: 0.9841085

00:59:44.700 --> 00:59:46.880 much more interactive experience, and

NOTE Confidence: 0.9841085

00:59:47.075 --> 00:59:48.515 this is really exciting work,

NOTE Confidence: 0.9841085

00:59:48.515 --> 00:59:49.395 and I hope that you

NOTE Confidence: 0.9841085

00:59:49.395 --> 00:59:49.895 and,

NOTE Confidence: 0.93934083

00:59:50.915 --> 00:59:53.015 Nicola can, you know, continue

NOTE Confidence: 0.93934083

00:59:53.075 --> 00:59:55.235 our discussions about your common

NOTE Confidence: 0.93934083

00:59:55.235 --> 00:59:57.155 interests. So thanks very much.

NOTE Confidence: 0.93934083

00:59:57.155 --> 00:59:58.055 Really appreciate

NOTE Confidence: 0.9812849

00:59:58.355 --> 00:59:59.315 it. Thank you so much.

NOTE Confidence: 0.9812849

00:59:59.315 --> 01:00:00.330 And I if it's okay,

NOTE Confidence: 0.9812849

01:00:00.330 --> 01:00:01.770 I was gonna pop my

NOTE Confidence: 0.9812849

01:00:01.770 --> 01:00:02.970 email on the chat, or

NOTE Confidence: 0.9812849

01:00:02.970 --> 01:00:04.170 maybe people already have it

NOTE Confidence: 0.9812849

01:00:04.170 --> 01:00:05.690 if there were questions that

NOTE Confidence: 0.9812849

01:00:05.690 --> 01:00:06.810 I didn't get to answer.

NOTE Confidence: 0.9812849

01:00:06.810 --> 01:00:08.830 Oh, that's fabulous. Thank you.

NOTE Confidence: 0.9812849

01:00:08.970 --> 01:00:10.090 Yeah. Let me do that

NOTE Confidence: 0.9812849

01:00:10.090 --> 01:00:10.590 now.

NOTE Confidence: 0.96589726

01:00:12.475 --> 01:00:13.355 Thank you so much for

NOTE Confidence: 0.96589726

01:00:13.355 --> 01:00:14.315 having me. This was really

NOTE Confidence: 0.96589726

01:00:14.315 --> 01:00:15.135 nice. You.

NOTE Confidence: 0.99763757

01:00:16.235 --> 01:00:18.655 Thank you. Thanks. Bye. Bye.