00:00:00.000 --> 00:00:02.403 We have a lot to go through today and

00:00:02.403 --> 00:00:05.019 some exciting science to hear from some

00:00:05.019 --> 00:00:07.310 wonderful trainees in our department.

00:00:07.310 --> 00:00:09.998 I want to welcome you to grand rounds

00:00:09.998 --> 00:00:13.862 into the 2021 Seymour Lustman Memorial

00:00:13.862 --> 00:00:17.054 Awards in psychiatric research.

00:00:17.060 --> 00:00:19.681 This I have to say is one of my favorite

00:00:19.681 --> 00:00:22.051 days in the life of our department

00:00:22.051 --> 00:00:24.265 and in our grand rounds series.

00:00:24.270 --> 00:00:26.475 As we acknowledge the work of trainees

00:00:26.475 --> 00:00:28.473 in our department and the research

00:00:28.473 --> 00:00:30.286 that they've done, and we also

00:00:30.286 --> 00:00:32.389 celebrate the legacy of our department,

00:00:32.389 --> 00:00:35.280 the Lastman Awards has been his allotment.

NOTE Confidence: 0.86898927

00:00:35.280 --> 00:00:37.130 Orders been given since 1973,

NOTE Confidence: 0.86898927

00:00:37.130 --> 00:00:38.880 and if you look over the list

NOTE Confidence: 0.86898927

00:00:38.880 --> 00:00:39.630 of past winners.

NOTE Confidence: 0.86898927

00:00:39.630 --> 00:00:42.045 Who are in an engraved plaque outside

NOTE Confidence: 0.86898927

00:00:42.045 --> 00:00:43.869 the the auditorium where unfortunately

NOTE Confidence: 0.86898927

00:00:43.869 --> 00:00:46.410 not able to meet in person today.

NOTE Confidence: 0.86898927

00:00:46.410 --> 00:00:49.122 It's really an extraordinary list and we have

NOTE Confidence: 0.86898927

00:00:49.122 --> 00:00:52.067 some new people to add to that plaque today.

NOTE Confidence: 0.86898927

00:00:52.070 --> 00:00:54.002 I want to thank the

NOTE Confidence: 0.86898927

00:00:54.002 --> 00:00:56.530 Lustman family Susan Katz,

NOTE Confidence: 0.86898927

00:00:56.530 --> 00:00:57.354 Jeffrey Lastman,

NOTE Confidence: 0.86898927

00:00:57.354 --> 00:00:59.414 Seymour Lessmann's children and the

NOTE Confidence: 0.86898927

00:00:59.414 --> 00:01:01.898 less than Family Foundation who have

NOTE Confidence: 0.86898927

00:01:01.898 --> 00:01:03.474 generously provided support for

NOTE Confidence: 0.86898927

00:01:03.474 --> 00:01:06.234 this award for decades now and have

NOTE Confidence: 0.86898927

00:01:06.234 --> 00:01:08.124 therefore contributed to an enabled.

NOTE Confidence: 0.86898927

00:01:08.130 --> 00:01:12.892 The history that I referred to.

NOTE Confidence: 0.86898927

00:01:12.892 --> 00:01:16.732 So see more lost men. Make me you you.

NOTE Confidence: 0.86898927

00:01:16.732 --> 00:01:17.864 You might not feel,

NOTE Confidence: 0.86898927

00:01:17.870 --> 00:01:18.854 especially if this is the first

NOTE Confidence: 0.86898927

00:01:18.854 --> 00:01:19.949 time you've come to the last

NOTE Confidence: 0.86898927

00:01:19.949 --> 00:01:20.549 minute award ceremony.

NOTE Confidence: 0.86898927

00:01:20.550 --> 00:01:23.392 You may not know the history of

NOTE Confidence: 0.86898927

00:01:23.392 --> 00:01:25.378 Seymour last minum less been served

NOTE Confidence: 0.86898927

00:01:25.380 --> 00:01:27.256 in the army in World War Two,

NOTE Confidence: 0.86898927

00:01:27.260 --> 00:01:29.423 he obtained his PhD in psychology at

NOTE Confidence: 0.86898927

00:01:29.423 --> 00:01:31.336 the University of Chicago and then

NOTE Confidence: 0.86898927

00:01:31.336 --> 00:01:33.499 his MD at the University of Illinois.

NOTE Confidence: 0.86898927

00:01:33.500 --> 00:01:36.188 Before coming to Yale for his

NOTE Confidence: 0.86898927

00:01:36.188 --> 00:01:38.060 psychiatry residency in 1955.

NOTE Confidence: 0.86898927

00:01:38.060 --> 00:01:40.140 During his PhD studies,

NOTE Confidence: 0.86898927

00:01:40.140 --> 00:01:41.252 before coming to Yale,

NOTE Confidence: 0.86898927

00:01:41.252 --> 00:01:42.920 he became very interested in the

NOTE Confidence: 0.86898927

00:01:42.977 --> 00:01:44.697 question of nature versus nurture.

NOTE Confidence: 0.86898927

00:01:44.700 --> 00:01:46.728 In the words of the day,

NOTE Confidence: 0.86898927

00:01:46.730 --> 00:01:51.315 we might call it environment versus genetics.

NOTE Confidence: 0.86898927

00:01:51.320 --> 00:01:54.050 And he he continued with that interest

NOTE Confidence: 0.86898927

00:01:54.050 --> 00:01:56.550 throughout his clinical and research career.

NOTE Confidence: 0.86898927

00:01:56.550 --> 00:01:58.128 After completing his psychiatry

NOTE Confidence: 0.86898927

00:01:58.128 --> 00:01:59.948 residency in his child Fellowship,

NOTE Confidence: 0.86898927

00:01:59.950 --> 00:02:03.207 he joined the faculty in 1962 and a

NOTE Confidence: 0.86898927

00:02:03.207 --> 00:02:05.440 grand total of two years later was

NOTE Confidence: 0.86898927

00:02:05.513 --> 00:02:08.278 promoted to the rank of full professor,

NOTE Confidence: 0.86898927

00:02:08.280 --> 00:02:10.020 which is a rather impressive

NOTE Confidence: 0.86898927

00:02:10.020 --> 00:02:11.680 trajectory that speaks, I think,

NOTE Confidence: 0.86898927

00:02:11.680 --> 00:02:13.205 to how evidenced his his,

NOTE Confidence: 0.86898927

4

00:02:13.210 --> 00:02:15.315 his excellence in his contributions

NOTE Confidence: 0.86898927

00:02:15.315 --> 00:02:16.999 to the department were.

NOTE Confidence: 0.86898927

00:02:17.000 --> 00:02:18.540 He was a dedicated teacher,

NOTE Confidence: 0.86898927

00:02:18.540 --> 00:02:21.053 gifted clinician and a very

NOTE Confidence: 0.86898927

00:02:21.053 --> 00:02:22.617 careful and creative scientist.

NOTE Confidence: 0.86898927

00:02:22.620 --> 00:02:25.108 One thing he did.

NOTE Confidence: 0.86898927

00:02:25.110 --> 00:02:27.862 That that story I've heard told many times

NOTE Confidence: 0.86898927

00:02:27.862 --> 00:02:30.789 this was after the polio was on the wane,

NOTE Confidence: 0.86898927

00:02:30.790 --> 00:02:32.630 and there were all of these iron lungs.

NOTE Confidence: 0.86898927

00:02:32.630 --> 00:02:35.108 These big breathing machines that were used,

NOTE Confidence: 0.86898927

00:02:35.110 --> 00:02:37.396 but it had been used to keep people alive

NOTE Confidence: 0.86898927

00:02:37.396 --> 00:02:39.429 when they had severe cases of polio,

NOTE Confidence: 0.86898927

00:02:39.430 --> 00:02:41.150 and they weren't needed anymore,

NOTE Confidence: 0.86898927

00:02:41.150 --> 00:02:43.195 and lessman repurpose them into

NOTE Confidence: 0.86898927

00:02:43.195 --> 00:02:45.748 basically laboratories to study to study

NOTE Confidence: 0.86898927

00:02:45.748 --> 00:02:47.968 children in a controlled environment,

00:02:47.970 --> 00:02:50.360 and shows both creativity and

00:02:50.360 --> 00:02:53.303 dedication to to advancing the

00:02:53.303 --> 00:02:55.286 understanding of children.

00:02:55.290 --> 00:02:56.220 And child development.

00:02:56.220 --> 00:02:58.810 And that became the touchstone of his career.

00:02:58.810 --> 00:03:00.844 He was particularly well known for

00:03:00.844 --> 00:03:02.556 working together with other luminaries

00:03:02.556 --> 00:03:04.940 of our department of end of our field.

00:03:04.940 --> 00:03:07.824 Also let Anna Freud and JoJo Goldstein,

00:03:07.830 --> 00:03:09.860 and they wrote a text called Beyond

00:03:09.860 --> 00:03:11.489 the best interests of the child,

00:03:11.490 --> 00:03:14.148 which is really a landmark in

00:03:14.150 --> 00:03:16.445 in the development of child

00:03:16.445 --> 00:03:18.740 psychiatry in the last century.

00:03:18.740 --> 00:03:19.900 Seymour, less than tragically,

00:03:19.900 --> 00:03:21.636 died at the age of I believe,

NOTE Confidence: 0.894491630769231

00:03:21.640 --> 00:03:25.399 51 in 1971 in a boating accident,

NOTE Confidence: 0.894491630769231

00:03:25.400 --> 00:03:27.278 and our department was robbed of

NOTE Confidence: 0.894491630769231

00:03:27.278 --> 00:03:29.800 one of its one of its luminaries.

NOTE Confidence: 0.894491630769231

00:03:29.800 --> 00:03:32.770 And shortly thereafter, in 1973,

NOTE Confidence: 0.894491630769231

00:03:32.770 --> 00:03:35.380 his family began their support of

NOTE Confidence: 0.894491630769231

00:03:35.380 --> 00:03:38.386 this award to honor his legacy and

NOTE Confidence: 0.894491630769231

00:03:38.386 --> 00:03:41.144 to honor the causes of science in

NOTE Confidence: 0.894491630769231

00:03:41.228 --> 00:03:44.018 the service of great clinical care

NOTE Confidence: 0.894491630769231

00:03:44.020 --> 00:03:45.880 that we continue to celebrate.

NOTE Confidence: 0.88204783

00:03:47.900 --> 00:03:49.788 So, remembering and celebrating

NOTE Confidence: 0.881005435294118

00:03:49.800 --> 00:03:50.830 that history of our department

NOTE Confidence: 0.881005435294118

00:03:50.830 --> 00:03:52.382 is one reason that I think this

NOTE Confidence: 0.881005435294118

00:03:52.382 --> 00:03:53.567 is a particularly special day.

NOTE Confidence: 0.756742466666667

00:03:53.890 --> 00:03:54.700 A second reason

NOTE Confidence: 0.92832107

00:03:54.710 --> 00:03:55.730 is that it's a chance to

NOTE Confidence: 0.86971968

00:03:55.740 --> 00:03:57.500 honor and celebrate our commitment

NOTE Confidence: 0.86971968

00:03:57.500 --> 00:04:00.048 to our trainings. I think that, uh.

NOTE Confidence: 0.86971968

00:04:00.048 --> 00:04:01.536 A particular characteristic of

NOTE Confidence: 0.86971968

00:04:01.536 --> 00:04:03.401 the department and one that I

NOTE Confidence: 0.86971968

00:04:03.401 --> 00:04:04.991 think through many of us here,

NOTE Confidence: 0.86971968

00:04:05.000 --> 00:04:06.638 is that our dedication to supporting

NOTE Confidence: 0.86971968

00:04:06.638 --> 00:04:08.270 the young people in our field.

NOTE Confidence: 0.86971968

00:04:08.270 --> 00:04:09.966 The people who are going to bring new,

NOTE Confidence: 0.86971968

00:04:09.970 --> 00:04:12.460 exciting ideas and move us forward.

NOTE Confidence: 0.86971968

00:04:12.460 --> 00:04:14.640 And that's what we do today.

NOTE Confidence: 0.86971968

00:04:14.640 --> 00:04:15.309 And of course,

NOTE Confidence: 0.86971968

00:04:15.310 --> 00:04:17.192 we also celebrate great science,

NOTE Confidence: 0.86971968

00:04:17.192 --> 00:04:19.538 and you're going to hear some

NOTE Confidence: 0.86971968

00:04:19.538 --> 00:04:22.027 wonderful science across a wide range

NOTE Confidence: 0.86971968

00:04:22.027 --> 00:04:23.667 of clinical translational areas.

NOTE Confidence: 0.86971968

00:04:23.670 --> 00:04:26.480 In the five presentations today.

NOTE Confidence: 0.86971968

00:04:26.480 --> 00:04:28.131 And the final thing that we honor in

NOTE Confidence: 0.86971968

00:04:28.131 --> 00:04:31.358 this in this grand rounds is mentorship.

NOTE Confidence: 0.86971968

00:04:31.360 --> 00:04:32.860 The you know, bringing new,

NOTE Confidence: 0.86971968

00:04:32.860 --> 00:04:35.998 bringing new scientists into the field,

NOTE Confidence: 0.86971968

00:04:36.000 --> 00:04:36.924 training new clinicians,

NOTE Confidence: 0.86971968

00:04:36.924 --> 00:04:38.464 and advancing the careers of

NOTE Confidence: 0.86971968

00:04:38.464 --> 00:04:40.378 those who are going to lead us

NOTE Confidence: 0.86971968

00:04:40.378 --> 00:04:41.623 forward in the coming decades,

NOTE Confidence: 0.86971968

00:04:41.630 --> 00:04:44.116 only happens with the dedication of

NOTE Confidence: 0.86971968

00:04:44.116 --> 00:04:46.495 mentors who are willing to give of

NOTE Confidence: 0.86971968

00:04:46.495 --> 00:04:48.349 their time their energy and their

NOTE Confidence: 0.86971968

00:04:48.349 --> 00:04:50.580 caring to the to the young people

NOTE Confidence: 0.86971968

00:04:50.580 --> 00:04:52.434 who are entering our field and

NOTE Confidence: 0.86971968

00:04:52.440 --> 00:04:54.673 and so each of our honorees today

NOTE Confidence: 0.86971968

00:04:54.673 --> 00:04:56.500 will be introduced very briefly.

NOTE Confidence: 0.86971968

00:04:56.500 --> 00:04:57.864 Because of our schedule,

NOTE Confidence: 0.86971968

00:04:57.864 --> 00:04:59.569 but very importantly by mentor

NOTE Confidence: 0.86971968

00:04:59.569 --> 00:05:01.388 who they've selected and who's

NOTE Confidence: 0.86971968

00:05:01.388 --> 00:05:03.506 been important to them and guiding

NOTE Confidence: 0.86971968

00:05:03.568 --> 00:05:05.675 their work and and in addition to

NOTE Confidence: 0.86971968

00:05:05.675 --> 00:05:07.368 honoring the award is we want to,

NOTE Confidence: 0.86971968

00:05:07.368 --> 00:05:08.550 we want to honor their mentors.

NOTE Confidence: 0.86971968

00:05:08.550 --> 00:05:09.020 Thank you.

NOTE Confidence: 0.86971968

00:05:09.020 --> 00:05:10.430 Thank you to those mentors for

NOTE Confidence: 0.94170117

00:05:10.440 --> 00:05:11.488 being with us today.

NOTE Confidence: 0.9103648

00:05:13.370 --> 00:05:15.297 The last man selection committee,

NOTE Confidence: 0.9103648

00:05:15.297 --> 00:05:16.839 who I really want to thank,

NOTE Confidence: 0.9103648

00:05:16.840 --> 00:05:18.270 consists of my Co chair,

NOTE Confidence: 0.9103648

00:05:18.270 --> 00:05:20.262 young Sunchoke, Kristen Brennan,

NOTE Confidence: 0.9103648

00:05:20.262 --> 00:05:21.798 Marina Picciotto, Khushoo,

NOTE Confidence: 0.9103648

00:05:21.798 --> 00:05:23.950 Mark Potenze, Tom Fernandez,

NOTE Confidence: 0.9103648

00:05:23.950 --> 00:05:26.092 Jerry Santa Cora with the support in

NOTE Confidence: 0.9103648

00:05:26.092 --> 00:05:27.779 the background from John Crystal.

NOTE Confidence: 0.9103648

00:05:27.780 --> 00:05:29.444 So I want to thank them for the

NOTE Confidence: 0.9103648

00:05:29.444 --> 00:05:31.190 time that went into this selection.

NOTE Confidence: 0.9103648

00:05:31.190 --> 00:05:33.574 We had an unusually difficult job this year.

NOTE Confidence: 0.9103648

00:05:33.580 --> 00:05:35.656 We had really a an unusually

NOTE Confidence: 0.9103648

00:05:35.656 --> 00:05:37.534 large group of really excellent

NOTE Confidence: 0.9103648

00:05:37.534 --> 00:05:39.614 presentations and we're able to

NOTE Confidence: 0.9103648

00:05:39.614 --> 00:05:42.543 honor five of them today too with

NOTE Confidence: 0.9103648

00:05:42.543 --> 00:05:44.533 first price first place awards.

NOTE Confidence: 0.9103648

00:05:44.540 --> 00:05:45.800 And three with one runner up

NOTE Confidence: 0.9103648

00:05:45.800 --> 00:05:46.955 awards and we'll hear brief

NOTE Confidence: 0.9103648

00:05:46.955 --> 00:05:48.285 presentations from each of them.

NOTE Confidence: 0.8986194

00:05:49.510 --> 00:05:50.590 But the last thing I want to say

NOTE Confidence: 0.826499665833333

00:05:50.600 --> 00:05:51.940 in introducing here is you

NOTE Confidence: 0.826499665833333

00:05:51.940 --> 00:05:54.250 know a bit of a poignant note.

NOTE Confidence: 0.826499665833333

00:05:54.250 --> 00:05:58.324 It's bittersweet to me to introduce this

NOTE Confidence: 0.826499665833333

00:05:58.324 --> 00:06:01.706 award today and to manage these ceremonies,

NOTE Confidence: 0.826499665833333

00:06:01.710 --> 00:06:03.520 because that's previously been done

NOTE Confidence: 0.826499665833333

00:06:03.520 --> 00:06:06.276 by one of my mentors, Bob Malison,

NOTE Confidence: 0.826499665833333

00:06:06.276 --> 00:06:09.114 who shepherded this process for the

NOTE Confidence: 0.826499665833333

00:06:09.114 --> 00:06:13.230 last 20 years and was taken from us.

NOTE Confidence: 0.826499665833333

00:06:13.230 --> 00:06:15.215 Like Seymour last man far

NOTE Confidence: 0.826499665833333

00:06:15.215 --> 00:06:16.670 too soon last summer.

NOTE Confidence: 0.826499665833333

00:06:16.670 --> 00:06:19.731 And so I I regret that Bob is not

NOTE Confidence: 0.826499665833333

00:06:19.731 --> 00:06:22.097 with us today and I honor his

NOTE Confidence: 0.826499665833333

00:06:22.097 --> 00:06:24.899 memory in this in this presentation.

NOTE Confidence: 0.88412726

00:06:27.370 --> 00:06:29.640 So with that introduction, let's

NOTE Confidence: 0.872006036363636

00:06:29.650 --> 00:06:32.650 move on. We have 5 great talks to

NOTE Confidence: 0.872006036363636

00:06:32.650 --> 00:06:35.445 here today and 1st is by ARCO.

NOTE Confidence: 0.872006036363636

00:06:35.445 --> 00:06:37.170 First place winner Zach Harvin.

NOTE Confidence: 0.872006036363636

00:06:37.170 --> 00:06:39.546 And I'm going to invite his mentor Riggi

NOTE Confidence: 0.872006036363636

00:06:39.546 --> 00:06:41.957 to Sinha to give a brief introduction.

NOTE Confidence: 0.872006036363636

00:06:41.960 --> 00:06:42.944 Oh, I'm sorry.

NOTE Confidence: 0.872006036363636

00:06:42.944 --> 00:06:44.256 Just one brigitta sorry.

NOTE Confidence: 0.872006036363636

00:06:44.260 --> 00:06:46.756 One logistical thing which is about

NOTE Confidence: 0.872006036363636

00:06:46.756 --> 00:06:49.688 question since we do have five talks,

NOTE Confidence: 0.872006036363636

00:06:49.690 --> 00:06:50.560 we're going to go through today.

NOTE Confidence: 0.872006036363636

00:06:50.560 --> 00:06:52.051 It's going to be a little tight

NOTE Confidence: 0.872006036363636

00:06:52.051 --> 00:06:53.776 so we're going to limit it to one

NOTE Confidence: 0.872006036363636

00:06:53.776 --> 00:06:55.096 or two questions after the longer

NOTE Confidence: 0.872006036363636

00:06:55.096 --> 00:06:56.713 Co first place talks and we're not

NOTE Confidence: 0.872006036363636

00:06:56.713 --> 00:06:58.430 going to be able to have questions

NOTE Confidence: 0.872006036363636

00:06:58.430 --> 00:07:00.010 after the shorter runner up talks.

NOTE Confidence: 0.872006036363636

00:07:00.010 --> 00:07:01.535 If we stayed remarkably on

NOTE Confidence: 0.872006036363636

00:07:01.535 --> 00:07:03.639 time and have time at the end,

13

NOTE Confidence: 0.872006036363636

00:07:03.640 --> 00:07:05.383 then we can perhaps have a little

NOTE Confidence: 0.872006036363636

00:07:05.383 --> 00:07:06.673 time for questions and discussion

NOTE Confidence: 0.872006036363636

00:07:06.673 --> 00:07:08.137 for any of the presenters at

NOTE Confidence: 0.872006036363636

00:07:08.137 --> 00:07:09.450 the end if time permits.

NOTE Confidence: 0.872006036363636

00:07:09.450 --> 00:07:10.488 So with that,

NOTE Confidence: 0.872006036363636

00:07:10.488 --> 00:07:11.180 Regina, please.

NOTE Confidence: 0.865723695

00:07:12.180 --> 00:07:15.840 Thank you Chris. It's my real pleasure.

NOTE Confidence: 0.865723695

00:07:15.840 --> 00:07:17.880 An honor to introduce Doctor Zachary.

NOTE Confidence: 0.865723695

00:07:17.880 --> 00:07:21.653 Have our neck and congratulations Zach.

NOTE Confidence: 0.865723695

00:07:21.653 --> 00:07:24.477 Let me give you a little quick background.

NOTE Confidence: 0.865723695

00:07:24.480 --> 00:07:27.808 Zach grew up in Boulder, Co and attended Duke

NOTE Confidence: 0.860402983333333

00:07:27.820 --> 00:07:30.090 University for undergraduate work, where

NOTE Confidence: 0.888533950666667

00:07:30.100 --> 00:07:31.984 he studied biomedical engineering

NOTE Confidence: 0.888533950666667

00:07:31.984 --> 00:07:34.339 and biology and then became

NOTE Confidence: 0.888533950666667

00:07:34.339 --> 00:07:36.449 interested in the biology of aging.

NOTE Confidence: 0.888533950666667

14

00:07:36.450 --> 00:07:39.145 He went on to the University of

NOTE Confidence: 0.888533950666667

00:07:39.145 --> 00:07:41.350 Michigan for his MD and pH D.

NOTE Confidence: 0.888533950666667

00:07:41.350 --> 00:07:43.234 His dissertation was focused

NOTE Confidence: 0.888533950666667

00:07:43.234 --> 00:07:44.647 on neurobiological mechanisms

NOTE Confidence: 0.8272593975

00:07:44.660 --> 00:07:46.980 through which social stressors

NOTE Confidence: 0.866349392

00:07:46.990 --> 00:07:49.500 influenced aging and fruit flies.

NOTE Confidence: 0.866349392

00:07:49.500 --> 00:07:51.070 That was really fruitful.

NOTE Confidence: 0.866349392

00:07:51.070 --> 00:07:54.430 It led to four top notch

NOTE Confidence: 0.866349392

00:07:54.430 --> 00:07:55.790 publications in science,

NOTE Confidence: 0.866349392

00:07:55.790 --> 00:07:58.190 nature, ecology and so on.

NOTE Confidence: 0.866349392

00:07:58.190 --> 00:08:00.486 And then after returning to medical school,

NOTE Confidence: 0.866349392

00:08:00.490 --> 00:08:02.880 he developed an interest in

NOTE Confidence: 0.866349392

00:08:02.880 --> 00:08:05.220 psychiatry and the mechanisms through

NOTE Confidence: 0.866349392

00:08:05.220 --> 00:08:06.670 which stress and mental illness

NOTE Confidence: 0.866349392

00:08:06.670 --> 00:08:08.804 influence physical health and aging.

NOTE Confidence: 0.866349392

00:08:08.804 --> 00:08:12.008 He came to Yale and we were thrilled

NOTE Confidence: 0.866349392

00:08:12.010 --> 00:08:14.894 to have him and has worked with

NOTE Confidence: 0.866349392

00:08:14.894 --> 00:08:16.370 myself at the Yale Stress Center

NOTE Confidence: 0.866349392

00:08:16.370 --> 00:08:18.918 as well as with Doctor Kasshu.

NOTE Confidence: 0.866349392

00:08:18.920 --> 00:08:20.656 Really in, I guess,

NOTE Confidence: 0.866349392

00:08:20.656 --> 00:08:22.826 very apropos for this award.

NOTE Confidence: 0.866349392

00:08:22.830 --> 00:08:25.378 An in the legacy of Seymour Lessman,

NOTE Confidence: 0.866349392

00:08:25.380 --> 00:08:26.835 a sort of bringing nature

NOTE Confidence: 0.866349392

00:08:26.835 --> 00:08:28.095 and nurture together,

NOTE Confidence: 0.866349392

00:08:28.095 --> 00:08:30.528 looking at epigenetic mechanisms

NOTE Confidence: 0.866349392

00:08:30.530 --> 00:08:32.890 by which stress may influence

NOTE Confidence: 0.866349392

00:08:32.890 --> 00:08:34.083 the process of aging.

NOTE Confidence: 0.866349392

00:08:34.083 --> 00:08:36.441 He's also collaborating with the sickle

NOTE Confidence: 0.866349392

00:08:36.441 --> 00:08:38.830 cell program to examine psychological

NOTE Confidence: 0.866349392

00:08:38.830 --> 00:08:41.030 resilience influences on pain,

NOTE Confidence: 0.866349392

00:08:41.030 --> 00:08:42.419 an overall health.

NOTE Confidence: 0.866349392

00:08:42.420 --> 00:08:44.270 It's been a real pleasure

NOTE Confidence: 0.801790105

00:08:44.340 --> 00:08:46.948 for Doctor Kosu and myself to work closely

NOTE Confidence: 0.851915884

00:08:46.960 --> 00:08:48.900 with Zach. He's been wonderful.

NOTE Confidence: 0.851915884

00:08:48.900 --> 00:08:50.444 His optimism and positive

NOTE Confidence: 0.851915884

00:08:50.444 --> 00:08:53.263 energy and an just burst of new

NOTE Confidence: 0.851915884

00:08:53.263 --> 00:08:55.388 ideas has been very refreshing,

NOTE Confidence: 0.851915884

00:08:55.390 --> 00:09:00.290 and so I'm thrilled to.

NOTE Confidence: 0.851915884

00:09:00.290 --> 00:09:02.478 Congratulate him and would invite

NOTE Confidence: 0.851915884

00:09:02.478 --> 00:09:05.936 you to join me in in wishing him and

NOTE Confidence: 0.851915884

00:09:05.936 --> 00:09:09.800 in hearing what he has to say. Zach

NOTE Confidence: 0.857937652222222

00:09:10.740 --> 00:09:12.825 thank you for that overly

NOTE Confidence: 0.857937652222222

00:09:12.825 --> 00:09:14.493 kind introduction for beta.

NOTE Confidence: 0.856069037272727

00:09:17.570 --> 00:09:19.621 So, uh, today I'll be talking to

NOTE Confidence: 0.856069037272727

00:09:19.621 --> 00:09:21.492 you about how psychological and

NOTE Confidence: 0.856069037272727

00:09:21.492 --> 00:09:23.348 biological resilience modulate the

NOTE Confidence: 0.856069037272727

00:09:23.348 --> 00:09:26.359 effects of stress on epigenetic aging.

NOTE Confidence: 0.856069037272727

00:09:26.360 --> 00:09:30.400 Next slide. 1st, I have no relevant

NOTE Confidence: 0.856069037272727

00:09:30.400 --> 00:09:32.390 disclosures or conflicts of interest,

NOTE Confidence: 0.856069037272727

00:09:32.390 --> 00:09:34.466 but now, as Regina mentioned before,

NOTE Confidence: 0.856069037272727

00:09:34.470 --> 00:09:36.962 coming to GAIL, I studied the mechanisms

NOTE Confidence: 0.856069037272727

00:09:36.962 --> 00:09:38.504 through which social stressors

NOTE Confidence: 0.856069037272727

00:09:38.504 --> 00:09:40.549 regulate aging and intra Sofala,

NOTE Confidence: 0.856069037272727

00:09:40.550 --> 00:09:41.663 and I'm not going to bore you

NOTE Confidence: 0.856069037272727

00:09:41.663 --> 00:09:42.610 with talk about fruit flies.

NOTE Confidence: 0.856069037272727

00:09:42.610 --> 00:09:45.190 But fundamentally what we found was

NOTE Confidence: 0.856069037272727

00:09:45.190 --> 00:09:47.950 that perception of the opposite sex,

NOTE Confidence: 0.856069037272727

00:09:47.950 --> 00:09:50.680 basically a social stress led to changes

NOTE Confidence: 0.856069037272727

00:09:50.680 --> 00:09:52.550 in neuropeptide ergic signaling,

NOTE Confidence: 0.856069037272727

00:09:52.550 --> 00:09:53.576 downstream Physiology,

NOTE Confidence: 0.856069037272727

00:09:53.576 --> 00:09:56.654 and ultimately accelerated aging and death.

NOTE Confidence: 0.856069037272727

00:09:56.660 --> 00:09:59.156 However, these negative outcomes could be

NOTE Confidence: 0.856069037272727

18

00:09:59.156 --> 00:10:01.330 minimized by specific protective factors.

NOTE Confidence: 0.856069037272727

00:10:01.330 --> 00:10:02.956 In this case it was successful

NOTE Confidence: 0.856069037272727

00:10:02.956 --> 00:10:03.769 made next slide.

NOTE Confidence: 0.867585632222222

00:10:07.660 --> 00:10:09.070 After finishing my PhD in

NOTE Confidence: 0.867585632222222

00:10:09.070 --> 00:10:10.198 returning to medical school,

NOTE Confidence: 0.867585632222222

00:10:10.200 --> 00:10:12.349 I learned what psychiatry and I suspect

NOTE Confidence: 0.867585632222222

00:10:12.349 --> 00:10:14.776 most people here have known for a long

NOTE Confidence: 0.867585632222222

00:10:14.776 --> 00:10:16.647 time that patients with serious mental

NOTE Confidence: 0.867585632222222

00:10:16.647 --> 00:10:18.807 illness die earlier than those without.

NOTE Confidence: 0.867585632222222

00:10:18.810 --> 00:10:20.619 The plot on the left is from a study

NOTE Confidence: 0.867585632222222

00:10:20.619 --> 00:10:22.065 out of Denmark demonstrating that

NOTE Confidence: 0.867585632222222

00:10:22.065 --> 00:10:24.244 for pretty much all causes of death

NOTE Confidence: 0.867585632222222

00:10:24.244 --> 00:10:25.612 and mortality rates significantly

NOTE Confidence: 0.867585632222222

00:10:25.612 --> 00:10:27.818 higher in patients with mood disorders

NOTE Confidence: 0.867585632222222

00:10:27.818 --> 00:10:29.770 compared to healthy controls,

NOTE Confidence: 0.867585632222222

00:10:29.770 --> 00:10:31.840 and they've gone to demonstrate similar

19

NOTE Confidence: 0.867585632222222

00:10:31.840 --> 00:10:33.770 findings for other psychiatric disorders.

NOTE Confidence: 0.867585632222222

00:10:33.770 --> 00:10:34.236 Now, notably,

NOTE Confidence: 0.867585632222222

00:10:34.236 --> 00:10:35.867 this isn't just true for things we

NOTE Confidence: 0.867585632222222

00:10:35.867 --> 00:10:37.570 might expect to be psychiatric related.

NOTE Confidence: 0.867585632222222

00:10:37.570 --> 00:10:40.002 Also infections, cardiovascular disease,

NOTE Confidence: 0.867585632222222

00:10:40.002 --> 00:10:41.826 other similar costs.

NOTE Confidence: 0.867585632222222

00:10:41.830 --> 00:10:43.060 And this is a pattern similar

NOTE Confidence: 0.867585632222222

00:10:43.060 --> 00:10:44.589 to what we see as people age.

NOTE Confidence: 0.867585632222222

00:10:44.590 --> 00:10:46.837 You are risk for many different diseases

NOTE Confidence: 0.867585632222222

00:10:46.837 --> 00:10:49.041 increases as we get older and on the

NOTE Confidence: 0.867585632222222

00:10:49.041 --> 00:10:51.158 right is a data from a meta analysis

NOTE Confidence: 0.867585632222222

00:10:51.158 --> 00:10:53.209 showing that across a wide range of

NOTE Confidence: 0.867585632222222

00:10:53.210 --> 00:10:55.650 different categories of mental disorders,

NOTE Confidence: 0.867585632222222

00:10:55.650 --> 00:10:57.732 patients tend to have shorter TILA

NOTE Confidence: 0.867585632222222

00:10:57.732 --> 00:10:59.456 mirrors than healthy controls and

NOTE Confidence: 0.867585632222222

00:10:59.456 --> 00:11:01.388 shorten telem ears are thought to be

00:11:01.388 --> 00:11:03.468 related to accelerated rates of aging.

00:11:03.470 --> 00:11:05.710 Next slide.

00:11:05.710 --> 00:11:07.798 Now one uncertain thing about our

00:11:07.798 --> 00:11:09.640 mental health diagnostics is that

00:11:09.640 --> 00:11:11.605 the difference between pathologic and

00:11:11.605 --> 00:11:13.570 non pathologic isn't always clear.

00:11:13.570 --> 00:11:15.655 Other researches has shown that

00:11:15.655 --> 00:11:16.489 certain stressors,

00:11:16.490 --> 00:11:18.527 even in the absence of a diagnosed

00:11:18.527 --> 00:11:19.109 mental illness,

00:11:19.110 --> 00:11:20.998 can cause similar patterns

00:11:20.998 --> 00:11:22.414 of accelerated aging.

00:11:22.420 --> 00:11:24.232 A range of studies have examined

00:11:24.232 --> 00:11:25.440 physical health outcomes and

00:11:25.492 --> 00:11:27.297 stealing your length associated with

NOTE Confidence: 0.867585632222222

00:11:27.297 --> 00:11:29.102 stressors like early life adversity,

NOTE Confidence: 0.867585632222222

00:11:29.110 --> 00:11:31.118 associate economic status, discrimination,

NOTE Confidence: 0.867585632222222

00:11:31.118 --> 00:11:33.126 or even medical internship.

NOTE Confidence: 0.867585632222222

00:11:33.130 --> 00:11:34.621 The plot here is from the intern

NOTE Confidence: 0.867585632222222

00:11:34.621 --> 00:11:35.047 Health study,

NOTE Confidence: 0.867585632222222

00:11:35.050 --> 00:11:37.154 which is actually being run by a yell

NOTE Confidence: 0.867585632222222

00:11:37.154 --> 00:11:39.112 cyka lump doctor Sen and shows the

NOTE Confidence: 0.867585632222222

00:11:39.112 --> 00:11:41.049 more hours per week into his work.

NOTE Confidence: 0.867585632222222

00:11:41.050 --> 00:11:42.038 The more their tillers,

NOTE Confidence: 0.867585632222222

00:11:42.038 --> 00:11:44.050 short and over the course of that year.

NOTE Confidence: 0.867585632222222

00:11:44.050 --> 00:11:46.710 Now this idea brought me back to my PhD work.

NOTE Confidence: 0.867585632222222

00:11:46.710 --> 00:11:48.696 If a stress like this can

NOTE Confidence: 0.867585632222222

00:11:48.696 --> 00:11:49.689 cause accelerated aging,

NOTE Confidence: 0.867585632222222

00:11:49.690 --> 00:11:51.384 we should be able to identify the

NOTE Confidence: 0.867585632222222

00:11:51.384 --> 00:11:52.539 physiologic pathways to which is.

NOTE Confidence: 0.867585632222222

00:11:52.540 --> 00:11:54.820 Happening and hopefully we can identify

NOTE Confidence: 0.867585632222222

00:11:54.820 --> 00:11:58.400 ways to protect against next slide.

NOTE Confidence: 0.867585632222222

00:11:58.400 --> 00:11:59.688 And while psychiatric diagnosis

NOTE Confidence: 0.867585632222222

00:11:59.688 --> 00:12:00.654 can be unclear,

NOTE Confidence: 0.867585632222222

00:12:00.660 --> 00:12:03.076 the term stress can times be equally vague.

NOTE Confidence: 0.867585632222222

00:12:03.080 --> 00:12:04.556 So I want to provide a

NOTE Confidence: 0.867585632222222

00:12:04.556 --> 00:12:05.980 definition that can be helped.

NOTE Confidence: 0.867585632222222

00:12:05.980 --> 00:12:08.437 We can define stress as a process,

NOTE Confidence: 0.867585632222222

00:12:08.440 --> 00:12:10.066 and it's the process of identifying,

NOTE Confidence: 0.867585632222222

00:12:10.070 --> 00:12:11.429 interpreting, responding to,

NOTE Confidence: 0.867585632222222

00:12:11.429 --> 00:12:13.241 and adapting to potential

NOTE Confidence: 0.867585632222222

00:12:13.241 --> 00:12:14.600 threats or challenges.

NOTE Confidence: 0.867585632222222

00:12:14.600 --> 00:12:16.875 Now first it involves individuals

NOTE Confidence: 0.867585632222222

00:12:16.875 --> 00:12:18.240 identifying these stressors,

NOTE Confidence: 0.867585632222222

00:12:18.240 --> 00:12:18.902 and second,

NOTE Confidence: 0.867585632222222

00:12:18.902 --> 00:12:20.557 it involves their interpretation of

NOTE Confidence: 0.867585632222222

00:12:20.557 --> 00:12:22.705 the stressor which could include both

NOTE Confidence: 0.867585632222222

00:12:22.705 --> 00:12:24.169 societal and individual factors.

NOTE Confidence: 0.867585632222222

00:12:24.170 --> 00:12:26.798 And this interpretation could lead to

NOTE Confidence: 0.867585632222222

00:12:26.798 --> 00:12:29.310 either amplifying or suppressing the stress.

NOTE Confidence: 0.867585632222222

00:12:29.310 --> 00:12:30.542 Depending on these factors,

NOTE Confidence: 0.867585632222222

00:12:30.542 --> 00:12:30.850 next,

NOTE Confidence: 0.867585632222222

00:12:30.850 --> 00:12:32.270 there's an acute response and

NOTE Confidence: 0.867585632222222

00:12:32.270 --> 00:12:34.136 it can be behavioral but also

NOTE Confidence: 0.867585632222222

00:12:34.136 --> 00:12:36.066 physiological heart rate might elevate.

NOTE Confidence: 0.867585632222222

00:12:36.070 --> 00:12:37.514 Specific circuits might fire

NOTE Confidence: 0.867585632222222

00:12:37.514 --> 00:12:39.319 changes might occur in cortisol

NOTE Confidence: 0.867585632222222

00:12:39.319 --> 00:12:40.830 or metabolic pathways,

NOTE Confidence: 0.867585632222222

00:12:40.830 --> 00:12:43.110 and ultimately these short term

NOTE Confidence: 0.867585632222222

00:12:43.110 --> 00:12:46.500 responses can lead to long term effects.

NOTE Confidence: 0.867585632222222

00:12:46.500 --> 00:12:48.680 Next slide.

NOTE Confidence: 0.867585632222222

00:12:48.680 --> 00:12:49.016 Now,

NOTE Confidence: 0.867585632222222

00:12:49.016 --> 00:12:50.696 using this definition of stress,

NOTE Confidence: 0.867585632222222

00:12:50.700 --> 00:12:53.458 we can return to this overall hypothesis

NOTE Confidence: 0.867585632222222

00:12:53.458 --> 00:12:55.518 that stress accelerates aging via

NOTE Confidence: 0.867585632222222

00:12:55.518 --> 00:12:57.142 physiologic changes moderated by

NOTE Confidence: 0.867585632222222

00:12:57.142 --> 00:12:59.760 protective factors in a systematic way.

NOTE Confidence: 0.867585632222222

00:12:59.760 --> 00:13:00.081 First,

NOTE Confidence: 0.867585632222222

00:13:00.081 --> 00:13:01.686 we can ask whether cumulative

NOTE Confidence: 0.867585632222222

00:13:01.686 --> 00:13:02.970 lifetime stress leads to

NOTE Confidence: 0.82803308

00:13:03.031 --> 00:13:05.243 accelerated aging as a long term consequence

NOTE Confidence: 0.82803308

00:13:05.243 --> 00:13:07.780 in an otherwise healthy Community population.

NOTE Confidence: 0.82803308

00:13:07.780 --> 00:13:09.436 Even in the absence of diagnosis,

NOTE Confidence: 0.82803308

00:13:09.440 --> 00:13:12.744 mental illness. If so, we can ask whether

NOTE Confidence: 0.82803308

00:13:12.744 --> 00:13:14.998 stress related Physiology like changes

NOTE Confidence: 0.82803308

00:13:14.998 --> 00:13:18.148 in the HPA axis and insulin signaling

NOTE Confidence: 0.82803308

00:13:18.225 --> 00:13:21.027 are also related to accelerated aging.

NOTE Confidence: 0.82803308

00:13:21.030 --> 00:13:24.174 And finally, we can ask if an individual

NOTE Confidence: 0.82803308

00:13:24.174 --> 00:13:26.532 psychological resilience can serve as a

NOTE Confidence: 0.82803308

00:13:26.532 --> 00:13:28.412 protective factor in these relationships.

NOTE Confidence: 0.82803308

00:13:28.420 --> 00:13:31.464 Next slide. Now to measure aging,

NOTE Confidence: 0.82803308

00:13:31.464 --> 00:13:33.460 a lot of the previous studies I've

NOTE Confidence: 0.82803308

00:13:33.460 --> 00:13:35.335 mentioned utilized stealing their life,

NOTE Confidence: 0.82803308

00:13:35.340 --> 00:13:37.108 particularly in young populations.

NOTE Confidence: 0.82803308

00:13:37.108 --> 00:13:40.260 We we don't have more obvious indications

NOTE Confidence: 0.82803308

00:13:40.260 --> 00:13:42.804 of aging like frailty or death,

NOTE Confidence: 0.82803308

00:13:42.810 --> 00:13:45.029 but telomere length is really only weakly

NOTE Confidence: 0.82803308

00:13:45.029 --> 00:13:46.920 correlated to aging related outcomes.

NOTE Confidence: 0.82803308

00:13:46.920 --> 00:13:48.890 Might care about like morbidity

NOTE Confidence: 0.82803308

00:13:48.890 --> 00:13:49.678 and mortality.

NOTE Confidence: 0.82803308

00:13:49.680 --> 00:13:51.918 Luckily, recent advances in epigenetics have

NOTE Confidence: 0.82803308

00:13:51.918 --> 00:13:54.640 led to the development of epigenetic clocks,

NOTE Confidence: 0.82803308

00:13:54.640 --> 00:13:56.690 and these are based on

NOTE Confidence: 0.82803308

00:13:56.690 --> 00:13:57.920 DNA methylation patterns,

NOTE Confidence: 0.82803308

00:13:57.920 --> 00:13:59.880 and these clocks have really been a leap

NOTE Confidence: 0.82803308

00:13:59.880 --> 00:14:01.956 forward in terms of predictions of frailty,

NOTE Confidence: 0.82803308

00:14:01.960 --> 00:14:03.820 morbidity and mortality when

NOTE Confidence: 0.82803308

00:14:03.820 --> 00:14:06.145 compared to tumor based studies.

NOTE Confidence: 0.82803308

00:14:06.150 --> 00:14:07.595 Here we're going to utilize

NOTE Confidence: 0.82803308

00:14:07.595 --> 00:14:09.040 one of these epigenetic clocks,

NOTE Confidence: 0.82803308

00:14:09.040 --> 00:14:11.330 rimage, to address our hypothesis,

NOTE Confidence: 0.82803308

00:14:11.330 --> 00:14:13.090 but I think we might actually hear more

NOTE Confidence: 0.82803308

00:14:13.090 --> 00:14:15.010 about how we can continue to improve our

NOTE Confidence: 0.82803308

00:14:15.010 --> 00:14:16.690 measures of aging from Albert Higgins,

NOTE Confidence: 0.82803308

00:14:16.690 --> 00:14:17.214 Chanina.

NOTE Confidence: 0.82803308

00:14:17.214 --> 00:14:18.262 Later presentation,

NOTE Confidence: 0.82803308

00:14:18.262 --> 00:14:19.310 next slide.

NOTE Confidence: 0.852387335714286

00:14:21.820 --> 00:14:24.793 Our study population was a group of 444

NOTE Confidence: 0.852387335714286

00:14:24.793 --> 00:14:27.297 individuals between the ages of 18 and 50,

NOTE Confidence: 0.852387335714286

00:14:27.300 --> 00:14:29.440 taking no prescription medications with

NOTE Confidence: 0.852387335714286

00:14:29.440 --> 00:14:32.400 no chronic health issues and with no DSM.

NOTE Confidence: 0.852387335714286

00:14:32.400 --> 00:14:34.020 Four diagnosis of their

NOTE Confidence: 0.852387335714286

00:14:34.020 --> 00:14:35.235 indicati use disorder.

NOTE Confidence: 0.852387335714286

00:14:35.240 --> 00:14:37.470 So healthy in this group,

NOTE Confidence: 0.852387335714286

00:14:37.470 --> 00:14:39.295 we obtained survey measurements of

NOTE Confidence: 0.852387335714286

00:14:39.295 --> 00:14:40.755 stress and psychological resilience,

NOTE Confidence: 0.852387335714286

00:14:40.760 --> 00:14:43.616 as well as physiological epigeic measure.

NOTE Confidence: 0.852387335714286

00:14:43.620 --> 00:14:47.158 Next slide. Now in this population

NOTE Confidence: 0.852387335714286

00:14:47.158 --> 00:14:49.150 we see a positive correlation between

NOTE Confidence: 0.852387335714286

00:14:49.205 --> 00:14:51.725 cumulative stress levels as measured by

NOTE Confidence: 0.852387335714286

00:14:51.725 --> 00:14:53.405 interview and grammage acceleration.

NOTE Confidence: 0.852387335714286

00:14:53.410 --> 00:14:55.082 I want to take a moment to discuss

NOTE Confidence: 0.852387335714286

00:14:55.082 --> 00:14:56.282 these measures because we're going

NOTE Confidence: 0.852387335714286

00:14:56.282 --> 00:14:57.990 to be using them throughout the talk.

NOTE Confidence: 0.852387335714286

00:14:57.990 --> 00:14:59.358 The cumulative adversity index

NOTE Confidence: 0.852387335714286

00:14:59.358 --> 00:15:01.969 or CE AI is on the X axis,

NOTE Confidence: 0.852387335714286

00:15:01.970 --> 00:15:04.133 and it's an interview based measure of

NOTE Confidence: 0.852387335714286

00:15:04.133 --> 00:15:05.690 cumulative stress taking into account

NOTE Confidence: 0.852387335714286

00:15:05.690 --> 00:15:07.713 of a multitude of different types of

NOTE Confidence: 0.852387335714286

00:15:07.713 --> 00:15:09.293 stressors across the lifespan and

NOTE Confidence: 0.852387335714286

00:15:09.293 --> 00:15:11.147 higher lifetime stress leads to higher.

NOTE Confidence: 0.852387335714286

00:15:11.150 --> 00:15:11.939 See AI score.

NOTE Confidence: 0.852387335714286

00:15:11.939 --> 00:15:14.491 You can see that see AI is positively

NOTE Confidence: 0.852387335714286

00:15:14.491 --> 00:15:17.067 correlated with brimmage acceleration,

NOTE Confidence: 0.852387335714286

00:15:17.070 --> 00:15:19.110 which fundamentally represents the

NOTE Confidence: 0.852387335714286

00:15:19.110 --> 00:15:20.640 difference between individuals.

NOTE Confidence: 0.852387335714286

00:15:20.640 --> 00:15:22.670 Epigenetic age and chronological age

NOTE Confidence: 0.852387335714286

00:15:22.670 --> 00:15:24.700 with a positive number indicating

NOTE Confidence: 0.852387335714286

00:15:24.765 --> 00:15:27.099 that they are biologically older than

NOTE Confidence: 0.852387335714286

00:15:27.099 --> 00:15:29.180 their chronological age would suggest.

NOTE Confidence: 0.852387335714286

00:15:29.180 --> 00:15:31.240 Next slide.

NOTE Confidence: 0.852387335714286

00:15:31.240 --> 00:15:32.968 The one potential explanation for these

NOTE Confidence: 0.852387335714286

00:15:32.968 --> 00:15:34.716 findings is that stress might result

NOTE Confidence: 0.852387335714286

00:15:34.716 --> 00:15:36.348 in substance use, behavior changes,

NOTE Confidence: 0.852387335714286

00:15:36.348 --> 00:15:39.176 or be due to different demographic factors.

NOTE Confidence: 0.852387335714286

00:15:39.180 --> 00:15:42.316 But even when we take into account

NOTE Confidence: 0.852387335714286

00:15:42.316 --> 00:15:45.280 a smoking BMI, alcohol use, race,

NOTE Confidence: 0.852387335714286

00:15:45.280 --> 00:15:47.378 sex, marital status, income,

NOTE Confidence: 0.852387335714286

00:15:47.378 --> 00:15:47.856 education,

NOTE Confidence: 0.852387335714286

00:15:47.856 --> 00:15:50.724 when we do that via multivariate

NOTE Confidence: 0.852387335714286

00:15:50.724 --> 00:15:51.680 linear regression,

NOTE Confidence: 0.852387335714286

00:15:51.680 --> 00:15:54.145 there's still a significant independent

NOTE Confidence: 0.852387335714286

00:15:54.145 --> 00:15:56.610 effective stress on grammage acceleration.

NOTE Confidence: 0.852387335714286

00:15:56.610 --> 00:15:58.368 Now, except where I mentioned otherwise,

NOTE Confidence: 0.852387335714286

00:15:58.370 --> 00:16:00.085 all the rest of our analysis will

NOTE Confidence: 0.852387335714286

00:16:00.085 --> 00:16:01.869 account for all of these covariates,

NOTE Confidence: 0.852387335714286

00:16:01.870 --> 00:16:02.820 and notably,

NOTE Confidence: 0.852387335714286

00:16:02.820 --> 00:16:06.145 these covers are related to to aging,

NOTE Confidence: 0.852387335714286

00:16:06.150 --> 00:16:08.621 as demonstrated by the large change in

NOTE Confidence: 0.852387335714286

00:16:08.621 --> 00:16:11.179 the R-squared you get from the simple

NOTE Confidence: 0.852387335714286

00:16:11.179 --> 00:16:12.974 going from the simple relationship

NOTE Confidence: 0.852387335714286

00:16:12.974 --> 00:16:15.480 on the plot to the full models R ^2.

NOTE Confidence: 0.852387335714286

00:16:15.480 --> 00:16:17.070 Next slide.

NOTE Confidence: 0.852387335714286

00:16:17.070 --> 00:16:18.870 So going back to our hypothesis,

NOTE Confidence: 0.852387335714286

00:16:18.870 --> 00:16:19.490 cumulative stress,

NOTE Confidence: 0.852387335714286

00:16:19.490 --> 00:16:21.660 even in the absence of mental illness,

NOTE Confidence: 0.852387335714286

00:16:21.660 --> 00:16:23.820 is associated with accelerated aging.

NOTE Confidence: 0.852387335714286

00:16:23.820 --> 00:16:25.950 Even were accounting for all of

NOTE Confidence: 0.852387335714286

00:16:25.950 --> 00:16:26.660 those covariates.

NOTE Confidence: 0.852387335714286

00:16:26.660 --> 00:16:28.788 So next we decided to look at measures

NOTE Confidence: 0.852387335714286

00:16:28.788 --> 00:16:30.440 of stress related Physiology,

NOTE Confidence: 0.852387335714286

00:16:30.440 --> 00:16:32.720 including both metabolic and hormonal

NOTE Confidence: 0.852387335714286

00:16:32.720 --> 00:16:33.176 factors,

NOTE Confidence: 0.852387335714286

00:16:33.180 --> 00:16:35.539 and see if they are also related

NOTE Confidence: 0.852387335714286

00:16:35.539 --> 00:16:36.960 to accelerated biological aging.

NOTE Confidence: 0.852387335714286

00:16:36.960 --> 00:16:38.790 Next slide.

NOTE Confidence: 0.852387335714286

00:16:38.790 --> 00:16:41.130 So we first assess the relationship

NOTE Confidence: 0.852387335714286

00:16:41.130 --> 00:16:42.870 between grim age acceleration in

NOTE Confidence: 0.852387335714286

00:16:42.870 --> 00:16:44.688 HP I8HP axis via the cortisol.

NOTE Confidence: 0.852387335714286

00:16:44.690 --> 00:16:45.935 The ACTH ratio,

NOTE Confidence: 0.852387335714286

00:16:45.935 --> 00:16:48.840 which is a measure of adrenal sensitivity.

NOTE Confidence: 0.852387335714286

00:16:48.840 --> 00:16:51.016 Now in this plot you can see a

NOTE Confidence: 0.852387335714286

00:16:51.016 --> 00:16:51.945 significant negative correlation

NOTE Confidence: 0.852387335714286

00:16:51.945 --> 00:16:53.925 between adrenal sensitivity on the X

NOTE Confidence: 0.852387335714286

00:16:53.925 --> 00:16:56.626 axis and grim age acceleration on the Y axis,

NOTE Confidence: 0.852387335714286

00:16:56.630 --> 00:16:58.810 But this relationship becomes nonsignificant

NOTE Confidence: 0.852387335714286

00:16:58.810 --> 00:17:00.990 when we account for covariates.

NOTE Confidence: 0.852387335714286

00:17:00.990 --> 00:17:02.390 This does seem to be appeared to be.

NOTE Confidence: 0.852387335714286

00:17:02.390 --> 00:17:05.360 This appears to be driven in part by a

NOTE Confidence: 0.852387335714286

00:17:05.360 --> 00:17:07.281 differential responses in men and women's.

NOTE Confidence: 0.852387335714286

00:17:07.281 --> 00:17:09.129 When we remove sex is a covariant that.

NOTE Confidence: 0.852387335714286

00:17:09.130 --> 00:17:11.680 Their relationship is once again significant.

NOTE Confidence: 0.852387335714286

00:17:11.680 --> 00:17:13.830 Next slide.

NOTE Confidence: 0.852387335714286

00:17:13.830 --> 00:17:16.030 We next examined insulin resistance,

NOTE Confidence: 0.852387335714286

00:17:16.030 --> 00:17:18.010 which is another physiologic process,

NOTE Confidence: 0.852387335714286

00:17:18.010 --> 00:17:19.711 are related to stress and to do

NOTE Confidence: 0.852387335714286

00:17:19.711 --> 00:17:21.748 this we use the measurement Houma,

NOTE Confidence: 0.852387335714286

00:17:21.750 --> 00:17:23.685 which is calculated based on

NOTE Confidence: 0.852387335714286

00:17:23.685 --> 00:17:24.780 individuals glucose, insulin.

NOTE Confidence: 0.852387335714286

00:17:24.780 --> 00:17:27.660 Now in this plot you can see that Houma,

NOTE Confidence: 0.8497675

00:17:27.660 --> 00:17:30.065 which increases as an individual's

33

NOTE Confidence: 0.8497675

00:17:30.065 --> 00:17:31.508 insulin resistance increases,

NOTE Confidence: 0.8497675

00:17:31.510 --> 00:17:32.911 is positively correlated

NOTE Confidence: 0.8497675

00:17:32.911 --> 00:17:34.779 with cream age acceleration.

NOTE Confidence: 0.8497675

00:17:34.780 --> 00:17:36.928 Now, unlike the cortisol ACTH ratio,

NOTE Confidence: 0.8497675

00:17:36.930 --> 00:17:38.666 this relationship remains significant

NOTE Confidence: 0.8497675

00:17:38.666 --> 00:17:42.890 after accounting for ARCO very next slide.

NOTE Confidence: 0.8497675

00:17:42.890 --> 00:17:45.151 So thus far we've identified at least

NOTE Confidence: 0.8497675

00:17:45.151 --> 00:17:46.546 one potential physiologic mechanism

NOTE Confidence: 0.8497675

00:17:46.546 --> 00:17:48.736 through which stress might influence aging

NOTE Confidence: 0.8497675

00:17:48.736 --> 00:17:50.859 through changes in insulin resistance,

NOTE Confidence: 0.8497675

00:17:50.860 --> 00:17:52.981 as well as a potentially more complex

NOTE Confidence: 0.8497675

00:17:52.981 --> 00:17:54.979 story with adrenal sensitivity in sex.

NOTE Confidence: 0.8497675

00:17:54.980 --> 00:17:56.756 It's also worth noting that while

NOTE Confidence: 0.8497675

00:17:56.756 --> 00:17:58.320 accounting for both of these,

NOTE Confidence: 0.8497675

00:17:58.320 --> 00:18:00.798 we continue to see an independent

NOTE Confidence: 0.8497675

00:18:00.798 --> 00:18:03.618 effect of stress on aging as well.

NOTE Confidence: 0.8497675

00:18:03.620 --> 00:18:05.020 Now, as I mentioned earlier,

NOTE Confidence: 0.8497675

00:18:05.020 --> 00:18:06.640 we don't just want to find

NOTE Confidence: 0.8497675

00:18:06.640 --> 00:18:08.180 ways how we're aging faster,

NOTE Confidence: 0.8497675

00:18:08.180 --> 00:18:09.938 but ways to protect against it,

NOTE Confidence: 0.8497675

00:18:09.940 --> 00:18:11.975 and one potential counter distress

NOTE Confidence: 0.8497675

00:18:11.975 --> 00:18:13.603 would be psychological resilience.

NOTE Confidence: 0.8497675

00:18:13.610 --> 00:18:15.716 So we next asked whether characteristics

NOTE Confidence: 0.8497675

00:18:15.716 --> 00:18:18.244 such as emotion regulation and self control

NOTE Confidence: 0.8497675

00:18:18.244 --> 00:18:20.374 might alter the relationship between stress,

NOTE Confidence: 0.8497675

00:18:20.380 --> 00:18:22.996 Physiology, and aging.

NOTE Confidence: 0.8497675

00:18:22.996 --> 00:18:24.740 Next slide.

NOTE Confidence: 0.8497675

00:18:24.740 --> 00:18:26.581 Well when we assess self control we

NOTE Confidence: 0.8497675

00:18:26.581 --> 00:18:28.794 see that it moderates the relationship

NOTE Confidence: 0.8497675

00:18:28.794 --> 00:18:31.069 between stress and insulin resistance.

NOTE Confidence: 0.8497675

00:18:31.070 --> 00:18:33.398 In this plot you can see three lines

NOTE Confidence: 0.8497675

00:18:33.398 --> 00:18:34.624 representing the relationship between

NOTE Confidence: 0.8497675

00:18:34.624 --> 00:18:37.304 stress on the X axis in Houma on the

NOTE Confidence: 0.8497675

00:18:37.304 --> 00:18:39.044 Y axis for individuals with good,

NOTE Confidence: 0.8497675

00:18:39.050 --> 00:18:41.490 fair or poor self control.

NOTE Confidence: 0.8497675

00:18:41.490 --> 00:18:42.890 You'll notice that the individual

NOTE Confidence: 0.8497675

00:18:42.890 --> 00:18:43.730 good self control.

NOTE Confidence: 0.8497675

00:18:43.730 --> 00:18:46.005 There's little effect of stress

NOTE Confidence: 0.8497675

00:18:46.005 --> 00:18:47.370 on insulin resistance,

NOTE Confidence: 0.8497675

00:18:47.370 --> 00:18:48.945 but in those with poor self control,

NOTE Confidence: 0.8497675

00:18:48.950 --> 00:18:50.422 there's a large effect,

NOTE Confidence: 0.8497675

00:18:50.422 --> 00:18:51.894 and this moderating effective

NOTE Confidence: 0.8497675

00:18:51.894 --> 00:18:53.530 self control is significant.

NOTE Confidence: 0.8497675

00:18:53.530 --> 00:18:56.020 Even we were accounting for covariance.

NOTE Confidence: 0.8497675

00:18:56.020 --> 00:18:59.244 Now one cover it. I do want to.

NOTE Confidence: 0.8497675

00:18:59.250 --> 00:19:00.142 A1 covariate.

NOTE Confidence: 0.8497675

00:19:00.142 --> 00:19:03.710 I'd like to point out there is BMI.

NOTE Confidence: 0.8497675

00:19:03.710 --> 00:19:04.022 Hey,

NOTE Confidence: 0.8497675

00:19:04.022 --> 00:19:05.894 well BMI is related to both

NOTE Confidence: 0.8497675

00:19:05.894 --> 00:19:07.570 stress and insulin resistance.

NOTE Confidence: 0.8497675

00:19:07.570 --> 00:19:09.490 I want to emphasize that this

NOTE Confidence: 0.8497675

00:19:09.490 --> 00:19:10.450 relationship between stress,

NOTE Confidence: 0.8497675

00:19:10.450 --> 00:19:12.405 self control and insulin resistance

NOTE Confidence: 0.8497675

00:19:12.405 --> 00:19:14.360 is still significant after accounting

NOTE Confidence: 0.8497675

00:19:14.419 --> 00:19:16.855 for BMI and that self control is

NOTE Confidence: 0.8497675

00:19:16.855 --> 00:19:17.899 actually specifically moderating

NOTE Confidence: 0.8497675

00:19:17.960 --> 00:19:20.065 the relationship between stress and

NOTE Confidence: 0.8497675

00:19:20.065 --> 00:19:23.742 insulin resistance, not stress and BMI.

NOTE Confidence: 0.8497675

00:19:23.742 --> 00:19:25.158 Next slide.

NOTE Confidence: 0.8497675

00:19:25.160 --> 00:19:27.320 So now we've identified at least

NOTE Confidence: 0.8497675

00:19:27.320 --> 00:19:28.760 one psychological resilience factor,

NOTE Confidence: 0.8497675

00:19:28.760 --> 00:19:31.640 self control that can influence stress

NOTE Confidence: 0.8497675

00:19:31.640 --> 00:19:34.070 related Physiology and thus aging.

NOTE Confidence: 0.8497675

00:19:34.070 --> 00:19:35.990 But it was striking to us that there

NOTE Confidence: 0.8497675

00:19:35.990 --> 00:19:37.528 still remains a significant independent

NOTE Confidence: 0.8497675

00:19:37.528 --> 00:19:39.208 effects of stress on grammage,

NOTE Confidence: 0.8497675

00:19:39.210 --> 00:19:41.100 so we access with their other

NOTE Confidence: 0.8497675

00:19:41.100 --> 00:19:42.045 psychological resilience factors.

NOTE Confidence: 0.8497675

00:19:42.050 --> 00:19:43.950 Might moderate this seemingly

NOTE Confidence: 0.8497675

00:19:43.950 --> 00:19:46.325 independent effective stress on H.

NOTE Confidence: 0.8497675

00:19:46.330 --> 00:19:46.810 Excite

NOTE Confidence: 0.861093793846154

00:19:49.070 --> 00:19:51.485 so next we asked whether emotion regulation

NOTE Confidence: 0.861093793846154

00:19:51.485 --> 00:19:53.810 might be important for this relationship.

NOTE Confidence: 0.861093793846154

00:19:53.810 --> 00:19:55.791 When we examine the effects of emotion

NOTE Confidence: 0.861093793846154

00:19:55.791 --> 00:19:57.606 regulation on the relationship between

NOTE Confidence: 0.861093793846154

00:19:57.606 --> 00:19:59.426 stress and grammage acceleration,

NOTE Confidence: 0.861093793846154

00:19:59.430 --> 00:20:01.590 we see a strong moderating effect.

NOTE Confidence: 0.861093793846154

00:20:01.590 --> 00:20:03.830 As you can see in the plot.

NOTE Confidence: 0.861093793846154

00:20:03.830 --> 00:20:05.690 People with better emotion regulation

NOTE Confidence: 0.861093793846154

00:20:05.690 --> 00:20:08.524 as represented by the blue line leads

NOTE Confidence: 0.861093793846154

00:20:08.524 --> 00:20:10.340 have blunted relationship between

NOTE Confidence: 0.861093793846154

00:20:10.340 --> 00:20:12.156 stress and grammage acceleration,

NOTE Confidence: 0.861093793846154

00:20:12.160 --> 00:20:14.155 whereas poor emotion regulation is

NOTE Confidence: 0.861093793846154

00:20:14.155 --> 00:20:16.818 represented by the red line amplifies

NOTE Confidence: 0.861093793846154

00:20:16.818 --> 00:20:20.290 that relationship. Next slide.

NOTE Confidence: 0.861093793846154

00:20:20.290 --> 00:20:21.496 So going back to our model,

NOTE Confidence: 0.861093793846154

00:20:21.500 --> 00:20:24.041 we can think of stress is directly

NOTE Confidence: 0.861093793846154

00:20:24.041 --> 00:20:26.359 impacting age acceleration in a fashion

NOTE Confidence: 0.861093793846154

00:20:26.359 --> 00:20:28.294 that's moderated by emotion regulation.

NOTE Confidence: 0.861093793846154

00:20:28.300 --> 00:20:29.790 And after adding emotion regulation,

NOTE Confidence: 0.861093793846154

00:20:29.790 --> 00:20:31.920 stress does continue to impact aging

NOTE Confidence: 0.861093793846154

00:20:31.920 --> 00:20:33.340 through elevated insulin resistance,

NOTE Confidence: 0.861093793846154

00:20:33.340 --> 00:20:35.937 which again is influenced by self control.

NOTE Confidence: 0.861093793846154

00:20:35.940 --> 00:20:38.140 Next slide.

NOTE Confidence: 0.861093793846154

00:20:38.140 --> 00:20:40.006 So to bring these results together,

NOTE Confidence: 0.861093793846154

00:20:40.010 --> 00:20:42.500 we wanted to compare the

NOTE Confidence: 0.861093793846154

00:20:42.500 --> 00:20:43.994 contributions of stress,

NOTE Confidence: 0.861093793846154

00:20:44.000 --> 00:20:45.776 emotion regulation and insulin

NOTE Confidence: 0.861093793846154

00:20:45.776 --> 00:20:48.440 resistance to aging in the context

NOTE Confidence: 0.861093793846154

00:20:48.513 --> 00:20:50.768 of other more familiar variables.

NOTE Confidence: 0.861093793846154

00:20:50.770 --> 00:20:51.550 To do this,

NOTE Confidence: 0.861093793846154

00:20:51.550 --> 00:20:52.590 we used estimated marginal

NOTE Confidence: 0.861093793846154

00:20:52.590 --> 00:20:54.090 means in the linear model,

NOTE Confidence: 0.861093793846154

00:20:54.090 --> 00:20:56.790 incorporating all of our covariates are

NOTE Confidence: 0.861093793846154

00:20:56.790 --> 00:20:59.165 stress related Physiology factors and

NOTE Confidence: 0.861093793846154

00:20:59.165 --> 00:21:01.189 our psychological resilience factors.

NOTE Confidence: 0.861093793846154

00:21:01.190 --> 00:21:02.480 And when we do this,

NOTE Confidence: 0.861093793846154

00:21:02.480 --> 00:21:04.696 we see that stress continues to have a

NOTE Confidence: 0.861093793846154

00:21:04.696 --> 00:21:05.829 significant relationship to grammage.

NOTE Confidence: 0.861093793846154

00:21:05.830 --> 00:21:08.360 That's moderated by emotion regulation.

NOTE Confidence: 0.861093793846154

00:21:08.360 --> 00:21:10.800 And it's worth noting that when we assess

NOTE Confidence: 0.861093793846154

00:21:10.800 --> 00:21:13.089 our model at poor emotion regulation.

NOTE Confidence: 0.861093793846154

00:21:13.090 --> 00:21:15.040 And there's a highly significant

NOTE Confidence: 0.861093793846154

00:21:15.040 --> 00:21:16.990 effect of stress on crymych.

NOTE Confidence: 0.861093793846154

00:21:16.990 --> 00:21:19.080 In these individuals, stress alone,

NOTE Confidence: 0.861093793846154

00:21:19.080 --> 00:21:21.168 independent of our covariates,

NOTE Confidence: 0.861093793846154

00:21:21.168 --> 00:21:25.290 has a strong impact on Grim Age's BMI.

NOTE Confidence: 0.861093793846154

00:21:25.290 --> 00:21:25.518 However,

NOTE Confidence: 0.861093793846154

00:21:25.518 --> 00:21:27.114 when we assess our models in those

NOTE Confidence: 0.861093793846154

00:21:27.114 --> 00:21:28.520 with good emotional regulation,

NOTE Confidence: 0.861093793846154

00:21:28.520 --> 00:21:30.806 this relationship becomes

NOTE Confidence: 0.861093793846154

00:21:30.806 --> 00:21:32.330 entirely nonsignificant.

NOTE Confidence: 0.861093793846154

00:21:32.330 --> 00:21:33.102 Insulin resistance,

NOTE Confidence: 0.861093793846154

00:21:33.102 --> 00:21:34.646 which, as we've shown,

NOTE Confidence: 0.861093793846154

00:21:34.650 --> 00:21:36.365 is related to stress via self control,

NOTE Confidence: 0.861093793846154

00:21:36.370 --> 00:21:39.110 predicts a further increase in

NOTE Confidence: 0.861093793846154

00:21:39.110 --> 00:21:40.690 inflammation cellarage next slide.

NOTE Confidence: 0.761497820555556

00:21:42.730 --> 00:21:45.490 So in summary, today I've shown you that

NOTE Confidence: 0.761497820555556

00:21:45.490 --> 00:21:47.009 cumulative stress predicts biological

NOTE Confidence: 0.761497820555556

00:21:47.009 --> 00:21:49.289 aging is measured by cream age,

NOTE Confidence: 0.761497820555556

00:21:49.290 --> 00:21:51.789 and this is not accounted for by

NOTE Confidence: 0.761497820555556

00:21:51.789 --> 00:21:53.610 demographic or behavioral covariates.

NOTE Confidence: 0.761497820555556

00:21:53.610 --> 00:21:56.234 We see that these interactions are at part

NOTE Confidence: 0.761497820555556

00:21:56.234 --> 00:21:58.350 mediated through insulin resistance and that

NOTE Confidence: 0.761497820555556

00:21:58.350 --> 00:22:00.790 adrenal sensitivity may also play a role.

NOTE Confidence: 0.761497820555556

00:22:00.790 --> 00:22:02.975 Remarkably, these interactions are highly

NOTE Confidence: 0.761497820555556

00:22:02.975 --> 00:22:04.723 dependent on psychological resilience.

NOTE Confidence: 0.761497820555556

00:22:04.730 --> 00:22:06.785 Factors with strong self control

NOTE Confidence: 0.761497820555556

00:22:06.785 --> 00:22:08.429 blunting the relationship between

NOTE Confidence: 0.761497820555556

00:22:08.429 --> 00:22:10.545 stress and insulin resistance and

NOTE Confidence: 0.761497820555556

00:22:10.545 --> 00:22:12.600 strong emotion regulation dampening the

NOTE Confidence: 0.761497820555556

00:22:12.600 --> 00:22:14.818 direct effects of stress on scrimmage.

NOTE Confidence: 0.761497820555556

00:22:14.820 --> 00:22:18.183 Next slide. So looking forward,

NOTE Confidence: 0.761497820555556

00:22:18.183 --> 00:22:20.150 I would like to use the theoretical

NOTE Confidence: 0.761497820555556

00:22:20.205 --> 00:22:22.197 model we built the highlight potential,

NOTE Confidence: 0.761497820555556

00:22:22.200 --> 00:22:22.880 future directions,

NOTE Confidence: 0.761497820555556

00:22:22.880 --> 00:22:24.240 and possible interventions that

NOTE Confidence: 0.761497820555556

00:22:24.240 --> 00:22:25.260 could decrease age,

NOTE Confidence: 0.761497820555556

00:22:25.260 --> 00:22:28.480 acceleration in highly stressed populations.

NOTE Confidence: 0.761497820555556

00:22:28.480 --> 00:22:30.300 Looking at our biological factors,

NOTE Confidence: 0.761497820555556

00:22:30.300 --> 00:22:33.036 an obvious place to intervene is

NOTE Confidence: 0.761497820555556

00:22:33.036 --> 00:22:34.404 on insulin resistance.

NOTE Confidence: 0.761497820555556

00:22:34.410 --> 00:22:36.180 Metformin is actually being investigated

NOTE Confidence: 0.761497820555556

00:22:36.180 --> 00:22:38.739 as an anti-aging broke now is part of

NOTE Confidence: 0.761497820555556

00:22:38.739 --> 00:22:40.440 the team trial in future work could

NOTE Confidence: 0.761497820555556

00:22:40.498 --> 00:22:42.613 determine if it's effective specifically

NOTE Confidence: 0.761497820555556

00:22:42.613 --> 00:22:44.305 in highly stressed populations.

NOTE Confidence: 0.761497820555556

00:22:44.310 --> 00:22:46.000 Further studies might also clarify

NOTE Confidence: 0.761497820555556

00:22:46.000 --> 00:22:47.690 both the rollup adrenal sensitivity,

NOTE Confidence: 0.761497820555556

00:22:47.690 --> 00:22:49.910 but also potentially new neural for

NOTE Confidence: 0.761497820555556

00:22:49.910 --> 00:22:51.917 modal or cellular pathways that

NOTE Confidence: 0.761497820555556

00:22:51.917 --> 00:22:53.777 mediate this seemingly independent

NOTE Confidence: 0.761497820555556

00:22:53.777 --> 00:22:56.102 relationship between stress and aging,

NOTE Confidence: 0.761497820555556

00:22:56.110 --> 00:22:58.162 as well as the mechanisms through

NOTE Confidence: 0.761497820555556

00:22:58.162 --> 00:22:59.530 which emotion regulation is

NOTE Confidence: 0.761497820555556

00:22:59.592 --> 00:23:01.218 moderating this relationship.

NOTE Confidence: 0.761497820555556

00:23:01.220 --> 00:23:03.400 There's also the potential for

NOTE Confidence: 0.761497820555556

00:23:03.400 --> 00:23:04.708 psychotherapeutic interventions that

NOTE Confidence: 0.761497820555556

00:23:04.708 --> 00:23:06.232 prove psychological resilience to

NOTE Confidence: 0.761497820555556

00:23:06.232 --> 00:23:08.332 decrease the effects of stress on aging.

NOTE Confidence: 0.761497820555556

00:23:08.340 --> 00:23:09.188 For example,

NOTE Confidence: 0.761497820555556

00:23:09.188 --> 00:23:11.308 there's evidence that mindfulness based

NOTE Confidence: 0.761497820555556

00:23:11.308 --> 00:23:13.618 interventions may improve emotion right now.

NOTE Confidence: 0.761497820555556

00:23:13.620 --> 00:23:16.604 And finally we can work for social changes

NOTE Confidence: 0.761497820555556

00:23:16.604 --> 00:23:19.079 to decrease environmental stressors.

NOTE Confidence: 0.761497820555556

00:23:19.080 --> 00:23:21.340 Societal changes that address poverty,

NOTE Confidence: 0.761497820555556

00:23:21.340 --> 00:23:21.688 racism,

NOTE Confidence: 0.761497820555556

00:23:21.688 --> 00:23:23.776 and other sources of trauma could

NOTE Confidence: 0.761497820555556

00:23:23.776 --> 00:23:25.661 ultimately lead to decreases in

NOTE Confidence: 0.761497820555556

00:23:25.661 --> 00:23:27.217 lifetime stress and improvements

NOTE Confidence: 0.761497820555556

00:23:27.217 --> 00:23:29.180 in overall health and aging.

NOTE Confidence: 0.761497820555556

00:23:29.180 --> 00:23:29.818 And ultimately,

NOTE Confidence: 0.761497820555556

00:23:29.818 --> 00:23:32.051 this work could be extended beyond the

NOTE Confidence: 0.761497820555556

00:23:32.051 --> 00:23:33.820 healthy population to other groups,

NOTE Confidence: 0.761497820555556

00:23:33.820 --> 00:23:35.872 such as those with serious mental

NOTE Confidence: 0.761497820555556

00:23:35.872 --> 00:23:38.543 illness in whom stress and adversity are

NOTE Confidence: 0.761497820555556

00:23:38.543 --> 00:23:40.603 obviously a significant risk factor,

NOTE Confidence: 0.761497820555556

00:23:40.610 --> 00:23:43.074 and that might allow us to address that

NOTE Confidence: 0.761497820555556

00:23:43.074 --> 00:23:44.909 mortality gap I mentioned earlier.

NOTE Confidence: 0.761497820555556

00:23:44.910 --> 00:23:45.400 Next slide.

NOTE Confidence: 0.850858968

00:23:47.500 --> 00:23:48.984 So finally I just like to thank

NOTE Confidence: 0.850858968

00:23:48.984 --> 00:23:50.933 the last Min family and the Lessman

NOTE Confidence: 0.850858968

00:23:50.933 --> 00:23:52.503 Foundation and the selection Committee

NOTE Confidence: 0.850858968

00:23:52.503 --> 00:23:54.292 for giving me the opportunity to talk

NOTE Confidence: 0.850858968

00:23:54.292 --> 00:23:56.756 to you about my work today. My mentors,

NOTE Confidence: 0.850858968

00:23:56.756 --> 00:23:59.030 including Ira Cheetos and Hypo Shoe,

NOTE Confidence: 0.850858968

00:23:59.030 --> 00:24:01.368 as well as neofolk woman who helped

NOTE Confidence: 0.850858968

00:24:01.368 --> 00:24:03.020 tremendously with stats and Albert

NOTE Confidence: 0.850858968

00:24:03.020 --> 00:24:05.372 Higgins Chen who provided a lot of fruit.

NOTE Confidence: 0.850858968

00:24:05.380 --> 00:24:08.005 Early guidance on using aperture that clocks.

NOTE Confidence: 0.850858968

00:24:08.010 --> 00:24:09.602 But also like to thank the yell at

NOTE Confidence: 0.850858968

00:24:09.602 --> 00:24:11.290 RTP and residency and our funding,

NOTE Confidence: 0.850858968

00:24:11.290 --> 00:24:13.036 I'm happy to take any questions.

NOTE Confidence: 0.7438214

00:24:17.810 --> 00:24:19.944 Create. Thank you Zack,

NOTE Confidence: 0.7438214

00:24:19.944 --> 00:24:21.470 and I applaud both the quality of

NOTE Confidence: 0.851762478947368

00:24:21.520 --> 00:24:22.755 your science and the quality

NOTE Confidence: 0.851762478947368

00:24:22.755 --> 00:24:23.743 of your time control.

NOTE Confidence: 0.851762478947368

00:24:23.750 --> 00:24:26.150 That was 14 minutes 57 seconds,

NOTE Confidence: 0.851762478947368

00:24:26.150 --> 00:24:27.956 which is about as spot on

NOTE Confidence: 0.8615791825

00:24:27.970 --> 00:24:28.938 as I've ever seen.

NOTE Confidence: 0.896888041428571

00:24:30.480 --> 00:24:32.520 We do have time for a question or two

NOTE Confidence: 0.896888041428571

00:24:32.520 --> 00:24:36.720 before moving on to our next presentation.

NOTE Confidence: 0.896888041428571

00:24:36.720 --> 00:24:38.216 But how am I going to see if

NOTE Confidence: 0.896888041428571

00:24:38.216 --> 00:24:39.459 people are asking questions?

NOTE Confidence: 0.896888041428571

00:24:39.460 --> 00:24:41.266 Please raise your hand, use the zoom.

NOTE Confidence: 0.75846835

00:24:43.790 --> 00:24:45.402 Button to raise your hand. If you

NOTE Confidence: 0.75846835

00:24:45.402 --> 00:24:47.820 have any questions for Zach. Debbie

NOTE Confidence: 0.899316912

00:24:48.620 --> 00:24:51.170 I I just want to say

NOTE Confidence: 0.899316912

00:24:51.170 --> 00:24:52.870 that was extremely clear.

NOTE Confidence: 0.899316912

00:24:52.870 --> 00:24:54.970 An in the world of epigenetics.

NOTE Confidence: 0.899316912

00:24:54.970 --> 00:24:56.602 I'm practically layperson Anzac.

NOTE Confidence: 0.899316912

00:24:56.602 --> 00:24:58.642 You made this absolutely understandable

NOTE Confidence: 0.899316912

00:24:58.642 --> 00:25:00.848 an as a proponent of psychotherapy,

NOTE Confidence: 0.899316912

00:25:00.850 --> 00:25:02.954 I'd love to see how that fit in,

NOTE Confidence: 0.899316912

00:25:02.960 --> 00:25:04.704 and I found that this is the kind

NOTE Confidence: 0.899316912

00:25:04.704 --> 00:25:05.988 of research that our department

NOTE Confidence: 0.899316912

00:25:05.988 --> 00:25:07.582 is very proud to sponsor.

NOTE Confidence: 0.899316912

00:25:07.582 --> 00:25:09.470 So well done and well presented.

NOTE Confidence: 0.899316912

00:25:09.470 --> 00:25:10.030 Thank you.

NOTE Confidence: 0.915197714

00:25:12.310 --> 00:25:15.030 Thank you and I am I.

NOTE Confidence: 0.915197714

00:25:15.030 --> 00:25:16.950 I'm looking forward to looking into

NOTE Confidence: 0.915197714

00:25:16.950 --> 00:25:18.491 these sort of psychotherapeutic

NOTE Confidence: 0.915197714

00:25:18.491 --> 00:25:20.559 interventions as to how.

NOTE Confidence: 0.915197714

00:25:20.560 --> 00:25:22.964 We can use psychotherapeutic

NOTE Confidence: 0.915197714

00:25:22.964 --> 00:25:24.166 interventions too.

NOTE Confidence: 0.915197714

00:25:24.170 --> 00:25:25.322 Improve both physical health,

NOTE Confidence: 0.915197714

00:25:25.322 --> 00:25:27.050 as in addition to mental health.

NOTE Confidence: 0.9005376

00:25:35.990 --> 00:25:38.970 OK. Seeing no further questions right now,

NOTE Confidence: 0.862355242

00:25:38.970 --> 00:25:40.657 so we'll go on to our next

NOTE Confidence: 0.862355242

00:25:40.657 --> 00:25:41.845 presentation and perhaps have a

NOTE Confidence: 0.862355242

00:25:41.845 --> 00:25:44.050 little time for discussion at the end.

NOTE Confidence: 0.862355242

00:25:44.050 --> 00:25:47.287 So our second Co first place winner of

NOTE Confidence: 0.862355242

00:25:47.287 --> 00:25:50.052 the last minute work is Emily Olson,

NOTE Confidence: 0.862355242

00:25:50.060 --> 00:25:53.138 and to invite her I'm sorry to introduce her.

NOTE Confidence: 0.862355242

00:25:53.138 --> 00:25:54.674 I'm going to remember Tom Fernandez.

NOTE Confidence: 0.88532317

00:25:56.620 --> 00:25:57.996 Good morning everyone. I'm so

NOTE Confidence: 0.88532317

00:25:57.996 --> 00:25:59.730 happy for all the the Lessmann

NOTE Confidence: 0.790711831538462

00:25:59.791 --> 00:26:00.739 award winners this

NOTE Confidence: 0.7817538325

00:26:00.750 --> 00:26:02.150 year. So my Congrats to

NOTE Confidence: 0.7817538325

00:26:02.150 --> 00:26:04.440 you all. I'm in especially

NOTE Confidence: 0.84998075

00:26:04.450 --> 00:26:08.560 happy to introduce Doctor Emily often.

NOTE Confidence: 0.84998075

00:26:08.560 --> 00:26:10.156 There's a little bit of background.

NOTE Confidence: 0.84998075

00:26:10.160 --> 00:26:13.638 Emily earned her MD and PhD in Human

NOTE Confidence: 0.84998075

00:26:13.638 --> 00:26:16.670 and statistical genetics in 2016

NOTE Confidence: 0.893749286666667

00:26:16.680 --> 00:26:18.039 from Washington University

NOTE Confidence: 0.893749286666667

00:26:18.040 --> 00:26:20.410 in Saint Louis. We're

NOTE Confidence: 0.804724783333333

00:26:20.420 --> 00:26:22.660 very fortunate that that Emily

NOTE Confidence: 0.804724783333333

00:26:22.660 --> 00:26:24.462 matched into our Solnit integrated

NOTE Confidence: 0.804724783333333

00:26:24.462 --> 00:26:26.360 training program at that time,

NOTE Confidence: 0.804724783333333

00:26:26.360 --> 00:26:29.284 and since then I have to say she

NOTE Confidence: 0.804724783333333

00:26:29.284 --> 00:26:31.622 is proven on every level to be

NOTE Confidence: 0.804724783333333

00:26:31.622 --> 00:26:34.250 really a model clinician scientist.

NOTE Confidence: 0.804724783333333

00:26:34.250 --> 00:26:36.351 She's been incredibly productive

NOTE Confidence: 0.804724783333333

00:26:36.351 --> 00:26:38.659 with research during residency.

NOTE Confidence: 0.804724783333333

00:26:38.660 --> 00:26:39.998 She's leading several

NOTE Confidence: 0.804724783333333

00:26:40.000 --> 00:26:41.203 gene discovery projects,

NOTE Confidence: 0.804724783333333

00:26:41.203 --> 00:26:44.010 including the one you'll hear about today,

NOTE Confidence: 0.804724783333333

00:26:44.010 --> 00:26:44.694 but also others,

NOTE Confidence: 0.804724783333333

00:26:44.694 --> 00:26:47.100 but I hope you'll hear about in the future,

NOTE Confidence: 0.804724783333333

00:26:47.100 --> 00:26:50.160 and those include projects discovering

NOTE Confidence: 0.804724783333333

00:26:50.160 --> 00:26:52.204 new risk, genes for hair pulling,

NOTE Confidence: 0.804724783333333

00:26:52.204 --> 00:26:53.740 and skin picking disorders.

NOTE Confidence: 0.804724783333333

00:26:53.740 --> 00:26:57.443 And ADHD. And just in summary,

NOTE Confidence: 0.804724783333333

00:26:57.443 --> 00:26:59.846 you know Emily continues to amaze me with

NOTE Confidence: 0.804724783333333

00:26:59.846 --> 00:27:01.646 their ongoing research accomplishments.

NOTE Confidence: 0.804724783333333

00:27:01.650 --> 00:27:03.958 Despite her busy clinical schedule.

NOTE Confidence: 0.804724783333333

00:27:03.960 --> 00:27:05.074 And I should also mention

NOTE Confidence: 0.804724783333333

00:27:05.074 --> 00:27:06.610 a busy family schedule.

NOTE Confidence: 0.804724783333333

00:27:06.610 --> 00:27:08.350 Emily and her husband have welcomed

NOTE Confidence: 0.804724783333333

00:27:08.350 --> 00:27:10.640 2 new additions to their family

NOTE Confidence: 0.804724783333333

00:27:10.640 --> 00:27:13.982 during her training and what a way to

NOTE Confidence: 0.804724783333333

00:27:13.982 --> 00:27:15.770 welcome me back from maternity leave.

NOTE Confidence: 0.804724783333333

00:27:15.770 --> 00:27:17.240 With this award today.

NOTE Confidence: 0.92045784

00:27:19.310 --> 00:27:21.716 I am certain that Emily, as a researcher,

NOTE Confidence: 0.896696033333333

00:27:21.720 --> 00:27:24.175 will continue to advance the field of

NOTE Confidence: 0.896696033333333

00:27:24.175 --> 00:27:25.891 psychiatric genetics for years to come,

NOTE Confidence: 0.896696033333333

00:27:25.891 --> 00:27:27.258 and I really look forward to

NOTE Confidence: 0.896696033333333

00:27:27.258 --> 00:27:29.238 continuing to work with her as a

NOTE Confidence: 0.896696033333333

00:27:29.238 --> 00:27:30.686 clinical and research colleague.

NOTE Confidence: 0.896696033333333

00:27:30.686 --> 00:27:33.640 So thank you Emily. The floor is yours.

NOTE Confidence: 0.862712684285714

00:27:36.230 --> 00:27:38.402 Thank you Tom for that very

NOTE Confidence: 0.862712684285714

00:27:38.402 --> 00:27:42.960 kind introduction slide.

NOTE Confidence: 0.862712684285714

00:27:42.960 --> 00:27:47.190 So I don't have any disclosures today, fine.

NOTE Confidence: 0.862712684285714

00:27:47.190 --> 00:27:49.621 So before I get started, I just wanted

NOTE Confidence: 0.862712684285714

00:27:49.621 --> 00:27:52.063 to thank the Seymour Lessman award,

NOTE Confidence: 0.862712684285714

00:27:52.070 --> 00:27:54.482 and although I never had the chance to meet

NOTE Confidence: 0.862712684285714

00:27:54.482 --> 00:27:56.519 Doctor Glassman from reading about him,

NOTE Confidence: 0.862712684285714

00:27:56.520 --> 00:27:58.998 I feel that his legacy has really

NOTE Confidence: 0.862712684285714

00:27:58.998 --> 00:28:00.949 influenced my training here at Yale.

NOTE Confidence: 0.862712684285714

00:28:00.950 --> 00:28:02.990 And I thought I would just

NOTE Confidence: 0.862712684285714

00:28:02.990 --> 00:28:05.144 highlight this quote written by the

NOTE Confidence: 0.862712684285714

00:28:05.144 --> 00:28:06.954 namesake of the residency program.

NOTE Confidence: 0.862712684285714

00:28:06.960 --> 00:28:08.236 I'm in Doctor Schoolnet,

NOTE Confidence: 0.862712684285714

00:28:08.236 --> 00:28:10.721 and so he writes in a scholarly

NOTE Confidence: 0.862712684285714

00:28:10.721 --> 00:28:12.227 and courageous way.

NOTE Confidence: 0.862712684285714

00:28:12.230 --> 00:28:14.696 Dr Lessman repeatedly wrote about the

NOTE Confidence: 0.862712684285714

00:28:14.696 --> 00:28:17.280 importance of basic research and spoke out.

NOTE Confidence: 0.862712684285714

00:28:17.280 --> 00:28:19.310 For conditions that would promote

NOTE Confidence: 0.862712684285714

00:28:19.310 --> 00:28:21.352 opportunities for young investigators to

NOTE Confidence: 0.862712684285714

00:28:21.352 --> 00:28:23.554 develop their interests and capacities,

NOTE Confidence: 0.862712684285714

00:28:23.554 --> 00:28:26.446 and I'm so grateful to doctor

NOTE Confidence: 0.862712684285714

00:28:26.446 --> 00:28:28.060 Lessman doctor Solnit,

NOTE Confidence: 0.862712684285714

00:28:28.060 --> 00:28:29.776 my mentors and the many others

NOTE Confidence: 0.862712684285714

00:28:29.776 --> 00:28:31.993 who paved the way for me to be

NOTE Confidence: 0.862712684285714

00:28:31.993 --> 00:28:33.499 able to work on the research.

NOTE Confidence: 0.862712684285714

00:28:33.500 --> 00:28:34.460 Then going to present with

NOTE Confidence: 0.862712684285714

00:28:34.460 --> 00:28:38.330 you to you today slide.

NOTE Confidence: 0.862712684285714

00:28:38.330 --> 00:28:40.328 So today in the next I

NOTE Confidence: 0.862712684285714

00:28:40.328 --> 00:28:41.980 guess 14 minutes or so,

NOTE Confidence: 0.862712684285714

00:28:41.980 --> 00:28:44.104 I'm going to talk to you a little bit

NOTE Confidence: 0.862712684285714

00:28:44.104 --> 00:28:46.097 about our genomics work of childhood,

NOTE Confidence: 0.862712684285714

00:28:46.100 --> 00:28:48.730 anxiety disorders,

NOTE Confidence: 0.862712684285714

00:28:48.730 --> 00:28:51.330 and this makes up the most common class

NOTE Confidence: 0.862712684285714

00:28:51.330 --> 00:28:53.479 of childhood psychiatric conditions.

NOTE Confidence: 0.862712684285714

00:28:53.480 --> 00:28:55.016 And for a long time we've known that

NOTE Confidence: 0.862712684285714

00:28:55.016 --> 00:28:56.592 genetic factors are important than

NOTE Confidence: 0.862712684285714

00:28:56.592 --> 00:28:58.224 we know this from family studies,

NOTE Confidence: 0.862712684285714

00:28:58.230 --> 00:29:00.470 and we know this from twin studies.

NOTE Confidence: 0.862712684285714

00:29:00.470 --> 00:29:02.325 And he studies show us that there

NOTE Confidence: 0.862712684285714

00:29:02.325 --> 00:29:04.006 is a genetic overlap between

NOTE Confidence: 0.862712684285714

00:29:04.006 --> 00:29:05.662 different anxiety disorders and

NOTE Confidence: 0.862712684285714

00:29:05.662 --> 00:29:07.706 that the contribution of genetic

NOTE Confidence: 0.862712684285714

00:29:07.706 --> 00:29:09.316 factors to anxiety may change

NOTE Confidence: 0.862712684285714

00:29:09.316 --> 00:29:11.117 over the course of development.

NOTE Confidence: 0.862712684285714

00:29:11.117 --> 00:29:12.131 And specifically,

NOTE Confidence: 0.862712684285714

00:29:12.131 --> 00:29:14.666 there's some evidence there's a.

NOTE Confidence: 0.862712684285714

00:29:14.670 --> 00:29:17.592 There's a larger genetic contribution to

NOTE Confidence: 0.862712684285714

00:29:17.592 --> 00:29:20.820 anxiety that develops in early childhood,

NOTE Confidence: 0.862712684285714

00:29:20.820 --> 00:29:23.880 and so this highlights the discovery

NOTE Confidence: 0.862712684285714

00:29:23.880 --> 00:29:26.485 potential of genomic investigations that

NOTE Confidence: 0.862712684285714

00:29:26.485 --> 00:29:31.270 focus on childhood anxiety disorders slide.

NOTE Confidence: 0.862712684285714

00:29:31.270 --> 00:29:32.890 And so we know that genetic

NOTE Confidence: 0.862712684285714

00:29:32.890 --> 00:29:33.700 factors are important,

NOTE Confidence: 0.862712684285714

00:29:33.700 --> 00:29:35.905 but something that's been harder

NOTE Confidence: 0.862712684285714

00:29:35.905 --> 00:29:37.669 for scientists until recently

NOTE Confidence: 0.862712684285714

00:29:37.669 --> 00:29:40.080 is finding specific risk genes.

NOTE Confidence: 0.862712684285714

00:29:40.080 --> 00:29:41.960 And when we think about

NOTE Confidence: 0.862712684285714

00:29:41.960 --> 00:29:43.088 identifying druggable targets,

NOTE Confidence: 0.862712684285714

00:29:43.090 --> 00:29:44.950 this process of finding risk

NOTE Confidence: 0.862712684285714

00:29:44.950 --> 00:29:46.438 streams is really important.

NOTE Confidence: 0.862712684285714

00:29:46.440 --> 00:29:48.192 And it's only been in the

NOTE Confidence: 0.862712684285714

00:29:48.192 --> 00:29:49.630 last five years or so.

NOTE Confidence: 0.862712684285714

00:29:49.630 --> 00:29:51.590 With Genome wide association studies

NOTE Confidence: 0.862712684285714

00:29:51.590 --> 00:29:54.464 that a few common variants have been

NOTE Confidence: 0.862712684285714

00:29:54.464 --> 00:29:56.579 associated with anxiety disorders and

NOTE Confidence: 0.862712684285714

00:29:56.579 --> 00:29:58.983 actually the largest of these studies

NOTE Confidence: 0.862712684285714

00:29:58.983 --> 00:30:01.468 was led by Daniel Levy Angelica learner.

NOTE Confidence: 0.862712684285714

00:30:01.470 --> 00:30:02.790 Here at Yale.

NOTE Confidence: 0.862712684285714

00:30:02.790 --> 00:30:05.430 But in addition to common variance,

NOTE Confidence: 0.862712684285714

00:30:05.430 --> 00:30:08.052 it's also likely that rare variants

NOTE Confidence: 0.862712684285714

00:30:08.052 --> 00:30:11.259 influence the risk of anxiety disorders,

NOTE Confidence: 0.862712684285714

00:30:11.260 --> 00:30:15.070 and to study these we need

NOTE Confidence: 0.862712684285714

00:30:15.070 --> 00:30:17.610 DNA sequencing studies slide.

NOTE Confidence: 0.862712684285714

00:30:17.610 --> 00:30:19.455 And one approach that's been

NOTE Confidence: 0.862712684285714

00:30:19.455 --> 00:30:21.750 especially fruitful in the field of

NOTE Confidence: 0.862712684285714

00:30:21.750 --> 00:30:23.665 child psychiatry is DNA sequencing.

NOTE Confidence: 0.862712684285714

00:30:23.670 --> 00:30:25.950 Studies of parent child trios,

NOTE Confidence: 0.862712684285714

00:30:25.950 --> 00:30:28.926 where the child is impacted by the disorder.

NOTE Confidence: 0.862712684285714

00:30:28.930 --> 00:30:32.090 So since all of us inherit half of our DNA,

NOTE Confidence: 0.862712684285714

00:30:32.090 --> 00:30:34.190 in theory from our parents,

NOTE Confidence: 0.862712684285714

00:30:34.190 --> 00:30:37.095 this process can allow us to identify

NOTE Confidence: 0.862712684285714

00:30:37.095 --> 00:30:38.837 rare variants associated with

NOTE Confidence: 0.862712684285714

00:30:38.837 --> 00:30:40.957 the condition that are inherited,

NOTE Confidence: 0.862712684285714

00:30:40.960 --> 00:30:44.308 but also new or DENOVO mutations

NOTE Confidence: 0.862712684285714

00:30:44.308 --> 00:30:46.550 that are specific only found

NOTE Confidence: 0.862712684285714

00:30:46.550 --> 00:30:48.230 in the child and not found.

NOTE Confidence: 0.862712684285714

00:30:48.230 --> 00:30:49.370 In the parents.

NOTE Confidence: 0.862712684285714

00:30:49.370 --> 00:30:52.955 And all of us have about 50 to 100

NOTE Confidence: 0.862712684285714

00:30:52.955 --> 00:30:55.040 knew or de Novo mutations.

NOTE Confidence: 0.862712684285714

00:30:55.040 --> 00:30:57.950 And when these occur within genes,

NOTE Confidence: 0.86865248375

00:30:57.950 --> 00:31:00.572 they can actually impact the resulting

NOTE Confidence: 0.86865248375

00:31:00.572 --> 00:31:02.578 protein function. Anhava impact

NOTE Confidence: 0.86865248375

00:31:02.578 --> 00:31:07.470 on brain function as well slide.

NOTE Confidence: 0.86865248375

00:31:07.470 --> 00:31:09.619 And so this approach of sequencing parent,

NOTE Confidence: 0.86865248375

00:31:09.620 --> 00:31:12.284 child trios an looking for these de Novo

NOTE Confidence: 0.86865248375

00:31:12.284 --> 00:31:15.128 variants in order to find risk genes was

NOTE Confidence: 0.86865248375

00:31:15.128 --> 00:31:17.628 initially pioneered in the field of autism.

NOTE Confidence: 0.86865248375

00:31:17.630 --> 00:31:19.058 In the first study,

NOTE Confidence: 0.86865248375

00:31:19.058 --> 00:31:22.525 only had about 200 trios and they were able

NOTE Confidence: 0.86865248375

00:31:22.525 --> 00:31:25.319 to find a high confidence Christine SCN,

NOTE Confidence: 0.86865248375

00:31:25.319 --> 00:31:28.100 2A, which is now continues to be one of

NOTE Confidence: 0.86865248375

00:31:28.175 --> 00:31:31.263 the most well studied risk genes for autism.

NOTE Confidence: 0.86865248375

00:31:31.270 --> 00:31:32.710 But since that time,

NOTE Confidence: 0.86865248375

00:31:32.710 --> 00:31:34.510 now they've sequenced thousands of

NOTE Confidence: 0.86865248375

00:31:34.510 --> 00:31:36.866 it treos an I'm highlighting here.

NOTE Confidence: 0.86865248375

00:31:36.870 --> 00:31:39.446 A recent paper where they've now found over

NOTE Confidence: 0.86865248375

00:31:39.446 --> 00:31:42.200 100 high confidence risk genes for autism.

NOTE Confidence: 0.86865248375

00:31:42.200 --> 00:31:44.490 Slide.

NOTE Confidence: 0.86865248375

00:31:44.490 --> 00:31:47.227 And this is important because these risk

NOTE Confidence: 0.86865248375

00:31:47.227 --> 00:31:50.088 genes are already impacting clinical care.

NOTE Confidence: 0.86865248375

00:31:50.090 --> 00:31:53.060 So for families just knowing why

NOTE Confidence: 0.86865248375

00:31:53.060 --> 00:31:56.250 their child has autism is important,

NOTE Confidence: 0.86865248375

00:31:56.250 --> 00:31:58.475 understanding the likelihood of other

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NOTE Confidence: 0.86865248375

00:31:58.475 --> 00:32:01.130 family members being impacted and some

NOTE Confidence: 0.86865248375

00:32:01.130 --> 00:32:03.308 of these risk genes are associated

NOTE Confidence: 0.86865248375

00:32:03.308 --> 00:32:04.899 with other medical comorbidities

NOTE Confidence: 0.86865248375

00:32:04.899 --> 00:32:07.479 that impact clinical care as well,

NOTE Confidence: 0.86865248375

00:32:07.480 --> 00:32:10.896 and so this approach was pioneered in autism,

NOTE Confidence: 0.86865248375

00:32:10.900 --> 00:32:14.080 but more recently it's been shown.

NOTE Confidence: 0.86865248375

00:32:14.080 --> 00:32:17.674 To have discovery potential and several

NOTE Confidence: 0.86865248375

00:32:17.674 --> 00:32:20.070 other psychiatric conditions slide.

NOTE Confidence: 0.86865248375

00:32:20.070 --> 00:32:21.780 And so here I'm just highlighting

NOTE Confidence: 0.86865248375

00:32:21.780 --> 00:32:23.768 two papers led by my mentor Tom,

NOTE Confidence: 0.86865248375

00:32:23.770 --> 00:32:25.826 that use this approach to find risk genes,

NOTE Confidence: 0.86865248375

00:32:25.830 --> 00:32:30.348 interet disorder and OC D sign.

NOTE Confidence: 0.86865248375

00:32:30.350 --> 00:32:32.317 And so our goal really was trying

NOTE Confidence: 0.86865248375

00:32:32.317 --> 00:32:34.881 to use this approach to see if we

NOTE Confidence: 0.86865248375

00:32:34.881 --> 00:32:36.536 could similarly find risk genes

NOTE Confidence: 0.86865248375

00:32:36.602 --> 00:32:38.538 in childhood anxiety disorders.

NOTE Confidence: 0.86865248375

00:32:38.540 --> 00:32:41.109 So we collaborated with the program for

NOTE Confidence: 0.86865248375

00:32:41.109 --> 00:32:43.688 Anxiety disorders at the Child Study Center,

NOTE Confidence: 0.86865248375

00:32:43.690 --> 00:32:45.394 and I want to give a big thank

NOTE Confidence: 0.86865248375

00:32:45.394 --> 00:32:46.810 you to Wendy Silverman.

NOTE Confidence: 0.86865248375

00:32:46.810 --> 00:32:48.690 Annelie Liebowitz,

NOTE Confidence: 0.86865248375

00:32:48.690 --> 00:32:51.195 who let our recruitment and clinical

NOTE Confidence: 0.86865248375

00:32:51.195 --> 00:32:53.290 assessments and gave me the opportunity

NOTE Confidence: 0.938355074

00:32:53.300 --> 00:32:54.780 to work on this project.

NOTE Confidence: 0.880598765384615

00:32:55.580 --> 00:32:58.240 So we recruited children who were presenting

NOTE Confidence: 0.880598765384615

00:32:58.240 --> 00:33:00.670 with a primary concern of anxiety.

NOTE Confidence: 0.880598765384615

00:33:00.670 --> 00:33:02.180 In both of their parents,

NOTE Confidence: 0.880598765384615

00:33:02.180 --> 00:33:05.240 we collected saliva for DNA analysis

NOTE Confidence: 0.880598765384615

00:33:05.240 --> 00:33:08.179 and all families completed the aidas.

NOTE Confidence: 0.880598765384615

00:33:08.180 --> 00:33:11.130 The anxiety disorder interview schedule

NOTE Confidence: 0.880598765384615

00:33:11.130 --> 00:33:14.080 that assesses for anxiety disorders

NOTE Confidence: 0.880598765384615

00:33:14.159 --> 00:33:17.069 and commonly Co occurring conditions.

NOTE Confidence: 0.880598765384615

00:33:17.070 --> 00:33:19.560 We then conducted high coverage

NOTE Confidence: 0.880598765384615

00:33:19.560 --> 00:33:22.510 whole exome sequencing of at 76

NOTE Confidence: 0.880598765384615

00:33:22.510 --> 00:33:24.810 parent child trios with anxiety,

NOTE Confidence: 0.880598765384615

00:33:24.810 --> 00:33:28.532 and we compared this to 225 controls

NOTE Confidence: 0.880598765384615

00:33:28.532 --> 00:33:30.779 and we did a variety of quality

NOTE Confidence: 0.880598765384615

00:33:30.779 --> 00:33:33.016 control checks on our sequencing data.

NOTE Confidence: 0.880598765384615

00:33:33.020 --> 00:33:37.840 And we ended up comparing 65 trios to

NOTE Confidence: 0.880598765384615

00:33:37.840 --> 00:33:41.490 222 previously sequence control trios.

NOTE Confidence: 0.880598765384615

00:33:41.490 --> 00:33:43.680 Next slide.

NOTE Confidence: 0.880598765384615

00:33:43.680 --> 00:33:46.760 So here are the characteristics of the

NOTE Confidence: 0.880598765384615

00:33:46.760 --> 00:33:49.178 68 children with anxiety disorders that

NOTE Confidence: 0.880598765384615

00:33:49.178 --> 00:33:51.963 we ended up including in our Dinovo

NOTE Confidence: 0.880598765384615

00:33:51.963 --> 00:33:54.177 analysis and what I'm highlighting here

NOTE Confidence: 0.880598765384615

00:33:54.177 --> 00:33:57.045 in the red box is that many of these

NOTE Confidence: 0.880598765384615

00:33:57.045 --> 00:34:00.429 children met criteria for several.

NOTE Confidence: 0.880598765384615

00:34:00.430 --> 00:34:02.860 Anxiety disorders and this is really

NOTE Confidence: 0.880598765384615

00:34:02.860 --> 00:34:05.309 typical of clinical samples and anxiety.

NOTE Confidence: 0.880598765384615

00:34:05.310 --> 00:34:07.932 So the most common disorders were

NOTE Confidence: 0.880598765384615

00:34:07.932 --> 00:34:09.243 generalized anxiety disorder,

NOTE Confidence: 0.880598765384615

00:34:09.250 --> 00:34:10.780 social phobia,

NOTE Confidence: 0.880598765384615

00:34:10.780 --> 00:34:11.545 separation,

NOTE Confidence: 0.880598765384615

00:34:11.545 --> 00:34:16.135 anxiety disorder and specific phobia slide.

NOTE Confidence: 0.880598765384615

00:34:16.140 --> 00:34:18.230 And in our genomic analysis,

NOTE Confidence: 0.880598765384615

00:34:18.230 --> 00:34:20.715 we focused on rare de Novo variants

NOTE Confidence: 0.880598765384615

00:34:20.715 --> 00:34:22.615 that were thought to influence

NOTE Confidence: 0.880598765384615

00:34:22.615 --> 00:34:24.530 the coding region of genes,

NOTE Confidence: 0.880598765384615

00:34:24.530 --> 00:34:26.846 and our hypothesis was based on

NOTE Confidence: 0.880598765384615

00:34:26.846 --> 00:34:28.886 studies of other neuro psychiatric

NOTE Confidence: 0.880598765384615

00:34:28.886 --> 00:34:31.418 conditions and that we thought we

NOTE Confidence: 0.880598765384615

00:34:31.418 --> 00:34:34.084 would find an enrichment of these

NOTE Confidence: 0.880598765384615

00:34:34.084 --> 00:34:36.299 Sonoma de Novo damaging mutations

NOTE Confidence: 0.880598765384615

00:34:36.299 --> 00:34:39.869 in cases versus controls slide.

NOTE Confidence: 0.889142758333333

00:34:42.510 --> 00:34:45.258 And So what we found here

NOTE Confidence: 0.889142758333333

00:34:45.258 --> 00:34:47.870 what I'm showing here in red.

NOTE Confidence: 0.889142758333333

00:34:47.870 --> 00:34:50.089 Are the anxiety cases an in blue?

NOTE Confidence: 0.889142758333333

00:34:50.090 --> 00:34:52.274 Are the controls and I'm showing you

NOTE Confidence: 0.889142758333333

00:34:52.274 --> 00:34:54.682 that there is an enrichment of these

NOTE Confidence: 0.889142758333333

00:34:54.682 --> 00:34:56.782 damaging de Novo mutations and so

NOTE Confidence: 0.889142758333333

00:34:56.848 --> 00:34:59.081 this shows for the first time that

NOTE Confidence: 0.889142758333333

00:34:59.081 --> 00:35:01.668 this approach of focusing on de Novo

NOTE Confidence: 0.889142758333333

00:35:01.668 --> 00:35:04.110 variants in anxiety has the potential

NOTE Confidence: 0.889142758333333

00:35:04.186 --> 00:35:06.712 to identify risk genes and these

NOTE Confidence: 0.889142758333333

00:35:06.712 --> 00:35:08.882 damaging variants that are enriched

NOTE Confidence: 0.889142758333333

00:35:08.882 --> 00:35:11.731 in cases compared to the controls are

NOTE Confidence: 0.889142758333333

00:35:11.731 --> 00:35:13.945 thought to alter protein functions.

NOTE Confidence: 0.889142758333333

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00:35:13.945 --> 00:35:15.805 So specifically here we're

NOTE Confidence: 0.889142758333333

00:35:15.805 --> 00:35:17.850 focusing on damaging variance.

NOTE Confidence: 0.889142758333333

00:35:17.850 --> 00:35:19.680 That are likely Jinja struct?

NOTE Confidence: 0.889142758333333

00:35:19.680 --> 00:35:22.564 If so, these may introduce a stop

NOTE Confidence: 0.889142758333333

00:35:22.564 --> 00:35:25.258 codon early in the gene cause a

NOTE Confidence: 0.889142758333333

00:35:25.260 --> 00:35:27.512 frameshift insertion or deletion

NOTE Confidence: 0.889142758333333

00:35:27.512 --> 00:35:30.890 or alter a critical splice site.

NOTE Confidence: 0.889142758333333

00:35:30.890 --> 00:35:33.310 We also included missense variants

NOTE Confidence: 0.889142758333333

00:35:33.310 --> 00:35:37.122 that may change in amino acid that is

NOTE Confidence: 0.889142758333333

00:35:37.122 --> 00:35:40.167 predicted to be damaging of the protein.

NOTE Confidence: 0.889142758333333

00:35:40.170 --> 00:35:40.522 Uhm?

NOTE Confidence: 0.889142758333333

00:35:40.522 --> 00:35:40.874 So.

NOTE Confidence: 0.889142758333333

00:35:40.874 --> 00:35:43.338 I guess I just want to highlight

NOTE Confidence: 0.889142758333333

00:35:43.338 --> 00:35:45.529 that this was very exciting,

NOTE Confidence: 0.889142758333333

00:35:45.530 --> 00:35:48.127 that even for this common class of

NOTE Confidence: 0.889142758333333

00:35:48.127 --> 00:35:49.960 conditions for anxiety disorders,

NOTE Confidence: 0.889142758333333

00:35:49.960 --> 00:35:52.445 we still see this enrichment

NOTE Confidence: 0.889142758333333

00:35:52.445 --> 00:35:54.930 of de Novo variance slide.

NOTE Confidence: 0.862579132333333

00:35:57.180 --> 00:35:59.600 And what we can do is we can look at

NOTE Confidence: 0.862579132333333

00:35:59.674 --> 00:36:02.264 the list of genes that have damaging

NOTE Confidence: 0.862579132333333

00:36:02.264 --> 00:36:04.519 mutations in these anxiety cases and

NOTE Confidence: 0.862579132333333

00:36:04.519 --> 00:36:07.018 see if they overlap with risk genes

NOTE Confidence: 0.862579132333333

00:36:07.020 --> 00:36:09.670 for other nuro psychiatric conditions.

NOTE Confidence: 0.862579132333333

00:36:09.670 --> 00:36:11.340 And I'm highlighting here the

NOTE Confidence: 0.862579132333333

00:36:11.340 --> 00:36:13.260 two dream jeans that did so.

NOTE Confidence: 0.862579132333333

00:36:13.260 --> 00:36:16.050 The first gene CAC N A1A in codes of

NOTE Confidence: 0.862579132333333

00:36:16.050 --> 00:36:17.979 voltage gated calcium channel and

NOTE Confidence: 0.862579132333333

00:36:17.979 --> 00:36:20.864 this has been identified as a risk

NOTE Confidence: 0.862579132333333

00:36:20.864 --> 00:36:22.808 gene for developmental disorders

NOTE Confidence: 0.862579132333333

00:36:22.808 --> 00:36:25.238 in denovo sequencing studies as

NOTE Confidence: 0.862579132333333

00:36:25.240 --> 00:36:27.900 well as epileptic encephalopathies.

NOTE Confidence: 0.862579132333333

00:36:27.900 --> 00:36:31.655 The second gene is a regulatory

NOTE Confidence: 0.862579132333333

00:36:31.655 --> 00:36:34.580 subunit of protein phosphatase 2A,

NOTE Confidence: 0.862579132333333

00:36:34.580 --> 00:36:38.000 and this has been associated with

NOTE Confidence: 0.862579132333333

00:36:38.000 --> 00:36:40.280 developmental disorders as well

NOTE Confidence: 0.862579132333333

00:36:40.369 --> 00:36:44.830 as intellectual disability slide.

NOTE Confidence: 0.862579132333333

00:36:44.830 --> 00:36:47.798 But here in our cohort we're finding

NOTE Confidence: 0.862579132333333

00:36:47.798 --> 00:36:50.087 damaging mutations in these genes

NOTE Confidence: 0.862579132333333

00:36:50.087 --> 00:36:52.437 and individuals who have anxiety.

NOTE Confidence: 0.862579132333333

00:36:52.440 --> 00:36:55.030 They don't have any known history of

NOTE Confidence: 0.862579132333333

00:36:55.030 --> 00:36:56.790 neurologic or neurodevelopmental conditions,

NOTE Confidence: 0.862579132333333

00:36:56.790 --> 00:36:58.582 and so this really gets at this

NOTE Confidence: 0.862579132333333

00:36:58.582 --> 00:37:00.831 idea of Pleo tropi wear jeans with

NOTE Confidence: 0.862579132333333

00:37:00.831 --> 00:37:02.961 damaging variants may lead to different

NOTE Confidence: 0.862579132333333

00:37:03.022 --> 00:37:04.766 clinical manifestations in different

NOTE Confidence: 0.862579132333333

00:37:04.766 --> 00:37:06.946 individuals and this is something

NOTE Confidence: 0.862579132333333

00:37:06.946 --> 00:37:11.318 that we're continuing to explore.

NOTE Confidence: 0.862579132333333

00:37:11.318 --> 00:37:12.300 Slide.

NOTE Confidence: 0.862579132333333

00:37:12.300 --> 00:37:14.604 So we can also use this list of

NOTE Confidence: 0.862579132333333

00:37:14.604 --> 00:37:16.734 genes with damaging mutations to

NOTE Confidence: 0.862579132333333

00:37:16.734 --> 00:37:18.710 conduct exploratory pathway analysis

NOTE Confidence: 0.862579132333333

00:37:18.710 --> 00:37:21.560 by looking at whether these genes

NOTE Confidence: 0.862579132333333

00:37:21.560 --> 00:37:23.720 cluster in certain pathways more

NOTE Confidence: 0.862579132333333

00:37:23.720 --> 00:37:26.078 than might be expected by chance.

NOTE Confidence: 0.862579132333333

00:37:26.078 --> 00:37:29.099 And here I'm showing all of the gene

NOTE Confidence: 0.862579132333333

00:37:29.099 --> 00:37:31.598 ontology based sets that have a Q

NOTE Confidence: 0.862579132333333

00:37:31.598 --> 00:37:34.140 value less than .05 and the darker

NOTE Confidence: 0.862579132333333

00:37:34.140 --> 00:37:35.940 red indicates more significance and

NOTE Confidence: 0.862579132333333

00:37:35.940 --> 00:37:37.951 the bigger circle indicates that

NOTE Confidence: 0.862579132333333

00:37:37.951 --> 00:37:40.333 more genes are contributing and you

NOTE Confidence: 0.862579132333333

00:37:40.399 --> 00:37:42.506 can see here that the top pathway,

NOTE Confidence: 0.862579132333333

00:37:42.510 --> 00:37:44.897 which is the darkest red in terms

NOTE Confidence: 0.862579132333333

00:37:44.897 --> 00:37:46.378 of significance is glutamatergic

NOTE Confidence: 0.862579132333333

00:37:46.378 --> 00:37:49.129 synapse and so this is kind of

NOTE Confidence: 0.862579132333333

00:37:49.129 --> 00:37:51.380 consistent with the potential role

NOTE Confidence: 0.862579132333333

00:37:51.380 --> 00:37:53.240 of glutamate neurotransmission in

NOTE Confidence: 0.862579132333333

00:37:53.240 --> 00:37:57.240 the development of anxiety.

NOTE Confidence: 0.862579132333333

00:37:57.240 --> 00:37:57.938 Uhm?

NOTE Confidence: 0.862579132333333

00:37:57.938 --> 00:38:02.126 And so this further highlights the

NOTE Confidence: 0.862579132333333

00:38:02.126 --> 00:38:04.917 significant discovery potential of

NOTE Confidence: 0.862579132333333

00:38:04.917 --> 00:38:08.511 using this approach to understand the

NOTE Confidence: 0.862579132333333

00:38:08.511 --> 00:38:11.790 pathways involved in anxiety slide.

NOTE Confidence: 0.862579132333333

00:38:11.790 --> 00:38:13.568 So at the beginning of this talk,

NOTE Confidence: 0.862579132333333

00:38:13.570 --> 00:38:15.676 I discussed how this approach of

NOTE Confidence: 0.862579132333333

00:38:15.676 --> 00:38:17.416 sequencing parent child trios had

NOTE Confidence: 0.862579132333333

00:38:17.416 --> 00:38:19.348 led to the discovery of risk genes,

NOTE Confidence: 0.862579132333333

00:38:19.350 --> 00:38:20.922 first in autism,

NOTE Confidence: 0.862579132333333

00:38:20.922 --> 00:38:24.066 and now many other psychiatric conditions.

NOTE Confidence: 0.862579132333333

00:38:24.070 --> 00:38:26.420 Sign.

NOTE Confidence: 0.862579132333333

00:38:26.420 --> 00:38:28.802 And today I'm showed you new

NOTE Confidence: 0.862579132333333

00:38:28.802 --> 00:38:31.038 evidence that this approach also

NOTE Confidence: 0.862579132333333

00:38:31.038 --> 00:38:33.338 has significant discovery potential

NOTE Confidence: 0.862579132333333

00:38:33.338 --> 00:38:35.638 in childhood anxiety conditions.

NOTE Confidence: 0.862579132333333

00:38:35.640 --> 00:38:38.020 And as Tom mentioned,

NOTE Confidence: 0.862579132333333

00:38:38.020 --> 00:38:42.540 we also have promising data looking at ADHD,

NOTE Confidence: 0.862579132333333

00:38:42.540 --> 00:38:44.004 trichotillomania and excoriation

NOTE Confidence: 0.862579132333333

00:38:44.004 --> 00:38:45.468 disorder as well,

NOTE Confidence: 0.862579132333333

00:38:45.470 --> 00:38:47.882 and it's likely that many other

NOTE Confidence: 0.862579132333333

00:38:47.882 --> 00:38:49.088 psychiatric conditions could

NOTE Confidence: 0.862579132333333

00:38:49.088 --> 00:38:51.322 benefit from this approach for

NOTE Confidence: 0.862579132333333

00:38:51.322 --> 00:38:54.130 finding risk genes side.

NOTE Confidence: 0.862579132333333

00:38:54.130 --> 00:38:55.588 So in terms of next steps,

NOTE Confidence: 0.862579132333333

00:38:55.590 --> 00:38:57.566 given our promising data,

NOTE Confidence: 0.862579132333333

00:38:57.566 --> 00:39:00.036 we're continuing to recruit and

NOTE Confidence: 0.862579132333333

00:39:00.036 --> 00:39:02.403 sequence parent child trios to

NOTE Confidence: 0.862579132333333

00:39:02.403 --> 00:39:04.648 find high confidence risk genes.

NOTE Confidence: 0.862579132333333

00:39:04.650 --> 00:39:06.498 As I mentioned previously,

NOTE Confidence: 0.862579132333333

00:39:06.498 --> 00:39:09.270 usually studies have needed about a

NOTE Confidence: 0.862579132333333

00:39:09.351 --> 00:39:12.575 few 100 trios to find these first high

NOTE Confidence: 0.862579132333333

00:39:12.575 --> 00:39:15.470 competence risk genes due to rare variants.

NOTE Confidence: 0.862579132333333

00:39:15.470 --> 00:39:19.718 And then I also want to highlight that

NOTE Confidence: 0.862579132333333

00:39:19.720 --> 00:39:21.995 you know my talk today focused really

NOTE Confidence: 0.862579132333333

00:39:21.995 --> 00:39:24.410 on the process of finding risk genes,

NOTE Confidence: 0.862579132333333

00:39:24.410 --> 00:39:26.097 and I think it's important to highlight

NOTE Confidence: 0.862579132333333

00:39:26.097 --> 00:39:27.610 that that's really just a first step.

NOTE Confidence: 0.862579132333333

00:39:27.610 --> 00:39:29.200 It's an important first step,

NOTE Confidence: 0.862579132333333

00:39:29.200 --> 00:39:31.650 but once we find these risk genes

NOTE Confidence: 0.862579132333333

00:39:31.650 --> 00:39:33.810 understanding the pathways that are involved,

NOTE Confidence: 0.862579132333333

00:39:33.810 --> 00:39:35.665 the mechanisms for which they

NOTE Confidence: 0.862579132333333

00:39:35.665 --> 00:39:37.520 contribute to anxiety and other

NOTE Confidence: 0.894576832222222

00:39:37.583 --> 00:39:38.813 psychiatric conditions is

NOTE Confidence: 0.894576832222222

00:39:38.813 --> 00:39:40.863 really a critical next step.

NOTE Confidence: 0.894576832222222

00:39:40.870 --> 00:39:43.516 In turn, when we think of

NOTE Confidence: 0.894576832222222

00:39:43.516 --> 00:39:44.839 developing better treatments.

NOTE Confidence: 0.894576832222222

00:39:44.840 --> 00:39:47.668 Sign. So with that,

NOTE Confidence: 0.894576832222222

00:39:47.668 --> 00:39:50.376 I first want to thank all of the family

NOTE Confidence: 0.894576832222222

00:39:50.376 --> 00:39:52.704 members who participated in the study.

NOTE Confidence: 0.894576832222222

00:39:52.710 --> 00:39:55.076 It wouldn't have been possible without them.

NOTE Confidence: 0.894576832222222

00:39:55.080 --> 00:39:57.810 I want to thank my mentor,

NOTE Confidence: 0.894576832222222

00:39:57.810 --> 00:39:59.950 Tom Fernandez, who's been

NOTE Confidence: 0.894576832222222

00:39:59.950 --> 00:40:02.090 incredibly supportive and generous,

NOTE Confidence: 0.894576832222222

00:40:02.090 --> 00:40:03.818 and I've just learned so much

NOTE Confidence: 0.894576832222222

00:40:03.818 --> 00:40:05.984 working in his lab and I'm looking

NOTE Confidence: 0.894576832222222

00:40:05.984 --> 00:40:07.892 forward to continuing to work on

NOTE Confidence: 0.894576832222222

00:40:07.892 --> 00:40:09.770 this and other projects slide.

00:40:09.770 --> 00:40:12.530 I also want to take Wendy Silverman Eli

00:40:12.530 --> 00:40:14.699 Lebowitz for giving me the opportunity

00:40:14.699 --> 00:40:17.885 to work on this project and for leading

00:40:17.885 --> 00:40:20.400 our recruitment and clinical assessments.

00:40:20.400 --> 00:40:22.829 I also want to thank Michael Block.

00:40:22.830 --> 00:40:25.062 He wasn't directly involved in this

00:40:25.062 --> 00:40:27.681 project but has mentored me on several

00:40:27.681 --> 00:40:30.159 projects during my time in residency slide.

00:40:30.160 --> 00:40:32.544 And I want to thank everyone who's part

00:40:32.544 --> 00:40:34.790 of all their groups have contributed

00:40:34.790 --> 00:40:37.160 to this Ain other projects that

00:40:37.233 --> 00:40:39.308 neurogenetics group here at Yale

00:40:39.310 --> 00:40:41.018 the Psychiatry residency program,

00:40:41.018 --> 00:40:42.299 the NRT PHE,

00:40:42.300 --> 00:40:44.020 and especially this moment program.

NOTE Confidence: 0.894576832222222

00:40:44.020 --> 00:40:46.987 The work I presented today was funded by

NOTE Confidence: 0.894576832222222

00:40:46.987 --> 00:40:49.603 the Yale Child Study Center and the NIH.

NOTE Confidence: 0.894576832222222

00:40:49.610 --> 00:40:52.976 I also want to give a big thank you

NOTE Confidence: 0.894576832222222

00:40:52.976 --> 00:40:55.750 for to the Seaman Lessman award in

NOTE Confidence: 0.894576832222222

00:40:55.750 --> 00:40:57.780 the selection committee as well.

NOTE Confidence: 0.894576832222222

00:40:57.780 --> 00:40:58.143 Fine.

NOTE Confidence: 0.894576832222222

00:40:58.143 --> 00:41:01.047 And I want to thank this is my

NOTE Confidence: 0.894576832222222

00:41:01.047 --> 00:41:03.896 village so all my family and friends.

NOTE Confidence: 0.894576832222222

00:41:03.900 --> 00:41:05.832 These are my Co residents both

NOTE Confidence: 0.894576832222222

00:41:05.832 --> 00:41:07.120 in the adult program.

NOTE Confidence: 0.894576832222222

00:41:07.120 --> 00:41:08.860 The sole net program, my parents,

NOTE Confidence: 0.894576832222222

00:41:08.860 --> 00:41:11.626 my sister, my husband and I

NOTE Confidence: 0.894576832222222

00:41:11.626 --> 00:41:14.559 couldn't not mention my two kiddos.

NOTE Confidence: 0.894576832222222

00:41:14.560 --> 00:41:16.114 So next slide.

NOTE Confidence: 0.894576832222222

00:41:16.114 --> 00:41:17.668 So with that,

NOTE Confidence: 0.894576832222222

00:41:17.670 --> 00:41:21.960 I'm happy to take any questions.

NOTE Confidence: 0.894576832222222

00:41:21.960 --> 00:41:24.464 I guess I'm only allowed a few questions.

NOTE Confidence: 0.894576832222222

00:41:24.470 --> 00:41:25.020 Yeah couple

NOTE Confidence: 0.88657859

00:41:25.030 --> 00:41:25.750 questions though. Again,

NOTE Confidence: 0.88657859

00:41:25.750 --> 00:41:28.209 you were right on time and I appreciate that.

NOTE Confidence: 0.88657859

00:41:28.210 --> 00:41:30.186 So yeah, we have time for a couple

NOTE Confidence: 0.88657859

00:41:30.186 --> 00:41:31.790 questions for Emily on that wonderful

NOTE Confidence: 0.88657859

00:41:31.790 --> 00:41:33.647 talk in the data she showed us

NOTE Confidence: 0.88657859

00:41:33.647 --> 00:41:35.009 I did miss a couple questions

NOTE Confidence: 0.88657859

00:41:35.009 --> 00:41:36.410 in the chat after Zacks talks.

NOTE Confidence: 0.88657859

00:41:36.410 --> 00:41:37.850 I'll keep an eye on that,

NOTE Confidence: 0.88657859

00:41:37.850 --> 00:41:38.840 so please raise your hand

NOTE Confidence: 0.88657859

00:41:38.840 --> 00:41:40.084 or put something in the chat

NOTE Confidence: 0.88657859

00:41:40.084 --> 00:41:41.129 if you have any questions.

NOTE Confidence: 0.88657859

00:41:41.130 --> 00:41:42.058 Family at this time.

NOTE Confidence: 0.58428305

00:41:50.460 --> 00:41:52.659 Emily, I have a question if I may.

NOTE Confidence: 0.58428305

00:41:52.660 --> 00:41:55.412 So in this study with the 70 ish

NOTE Confidence: 0.58428305

00:41:55.412 --> 00:41:57.690 trios you found a bunch of hits,

NOTE Confidence: 0.58428305

00:41:57.690 --> 00:42:00.620 but you didn't find any duplicates, right?

NOTE Confidence: 0.58428305

00:42:00.620 --> 00:42:03.224 And then you compared to the existing,

NOTE Confidence: 0.58428305

00:42:03.230 --> 00:42:04.750 you know the data that's already out there,

NOTE Confidence: 0.58428305

00:42:04.750 --> 00:42:06.346 and I know that in the original

NOTE Confidence: 0.58428305

00:42:06.346 --> 00:42:07.831 studies that are looking at this

NOTE Confidence: 0.58428305

00:42:07.831 --> 00:42:09.337 kind of exome sequence that hits

NOTE Confidence: 0.58428305

00:42:09.337 --> 00:42:11.027 were continued considered real when

NOTE Confidence: 0.58428305

00:42:11.027 --> 00:42:12.757 you have duplicates because that

NOTE Confidence: 0.58428305

00:42:12.757 --> 00:42:14.055 increases your statistical confidence.

NOTE Confidence: 0.58428305

00:42:14.055 --> 00:42:15.945 But I think it's really interesting

NOTE Confidence: 0.58428305

00:42:15.945 --> 00:42:17.626 what you did now that we're getting

NOTE Confidence: 0.58428305

00:42:17.626 --> 00:42:19.010 more hits in more disorders.

NOTE Confidence: 0.58428305

00:42:19.010 --> 00:42:20.320 That kind of you know,

NOTE Confidence: 0.58428305

00:42:20.320 --> 00:42:22.348 overlap with existing with findings from

NOTE Confidence: 0.58428305

00:42:22.348 --> 00:42:24.510 other disorders is a really interesting

NOTE Confidence: 0.58428305

00:42:24.510 --> 00:42:26.754 alternative way to find valid hits,

NOTE Confidence: 0.58428305

00:42:26.760 --> 00:42:27.621 and I wonder if you can speak

NOTE Confidence: 0.58428305

00:42:27.621 --> 00:42:28.180 a little to that.

NOTE Confidence: 0.58428305

00:42:28.180 --> 00:42:30.259 Do you consider these proven hits or

NOTE Confidence: 0.58428305

00:42:30.259 --> 00:42:31.811 do you consider these provisional

NOTE Confidence: 0.58428305

00:42:31.811 --> 00:42:33.677 until replicated an you know they

NOTE Confidence: 0.58428305

00:42:33.677 --> 00:42:35.862 are the things that we should we

NOTE Confidence: 0.58428305

00:42:35.862 --> 00:42:37.265 should run within functional studies?

NOTE Confidence: 0.58428305

00:42:37.265 --> 00:42:38.152 Or is this still?

NOTE Confidence: 0.58428305

00:42:38.152 --> 00:42:40.056 A little work to do before we

NOTE Confidence: 0.58428305

00:42:40.056 --> 00:42:41.370 get to that point,

NOTE Confidence: 0.58428305

00:42:41.370 --> 00:42:41.680 I'd

NOTE Confidence: 0.824154758

00:42:41.690 --> 00:42:43.170 say they're still provisional. I.

NOTE Confidence: 0.824154758

00:42:43.170 --> 00:42:44.605 I mean, you made a great point,

NOTE Confidence: 0.824154758

00:42:44.610 --> 00:42:47.630 so I tried to allude to this a little bit,

NOTE Confidence: 0.824154758

00:42:47.630 --> 00:42:49.667 but in autism the first study they

NOTE Confidence: 0.824154758

00:42:49.667 --> 00:42:51.802 did 200 trios and they found one

NOTE Confidence: 0.824154758

00:42:51.802 --> 00:42:54.053 risk gene in that first study, right?

NOTE Confidence: 0.824154758

00:42:54.053 --> 00:42:56.368 They got 1 double hit.

NOTE Confidence: 0.824154758

00:42:56.370 --> 00:42:59.700 So I think you're right, it's like

NOTE Confidence: 0.905713934285714

00:42:59.710 --> 00:43:01.607 lightning striking twice in the same place.

NOTE Confidence: 0.905713934285714

00:43:01.610 --> 00:43:02.605 So then you know something

NOTE Confidence: 0.905713934285714

00:43:02.605 --> 00:43:04.060 weird is going on right, right?

NOTE Confidence: 0.892376651111111

00:43:04.070 --> 00:43:05.470 So that's really the statistical

NOTE Confidence: 0.892376651111111

00:43:05.470 --> 00:43:06.891 power of this approach, right?

NOTE Confidence: 0.892376651111111

00:43:06.891 --> 00:43:08.396 Is because these de Novo

NOTE Confidence: 0.892376651111111

00:43:08.396 --> 00:43:09.600 variants are so rare.

NOTE Confidence: 0.892376651111111

00:43:09.600 --> 00:43:12.288 If you see them in unrelated individuals,

NOTE Confidence: 0.892376651111111

00:43:12.290 --> 00:43:14.240 it's likely that that's very

NOTE Confidence: 0.892376651111111

00:43:14.240 --> 00:43:17.019 unlikely to just be due to chance.

00:43:17.020 --> 00:43:18.124 And so you're right,

00:43:18.124 --> 00:43:20.759 that's kind of what we were harnessing here.

00:43:20.760 --> 00:43:23.042 I think there's a lot of evidence

00:43:23.042 --> 00:43:24.771 across different areas of psychiatry

00:43:24.771 --> 00:43:26.823 that instead of thinking of risk,

00:43:26.830 --> 00:43:28.406 genes for individual disorders,

00:43:28.406 --> 00:43:30.376 we may be thinking more

00:43:30.376 --> 00:43:32.318 about brain genes in general.

00:43:32.320 --> 00:43:33.224 But I think still,

00:43:33.224 --> 00:43:34.870 they're going to be jeans that are

00:43:34.870 --> 00:43:36.334 more common in one disorder versus

00:43:36.334 --> 00:43:37.900 more common in another disorder.

00:43:37.900 --> 00:43:40.875 And I think sorting that out is

00:43:40.875 --> 00:43:42.400 important in terms of understanding.

00:43:42.400 --> 00:43:45.730 Kind of the circuits involved.

NOTE Confidence: 0.892376651111111

00:43:45.730 --> 00:43:47.860 So this that was the approach,

NOTE Confidence: 0.892376651111111

00:43:47.860 --> 00:43:49.380 as he said that we took here because

NOTE Confidence: 0.892376651111111

00:43:49.380 --> 00:43:50.896 we thought it could give more insight.

NOTE Confidence: 0.892376651111111

00:43:50.900 --> 00:43:52.580 I I wouldn't run with these yet.

NOTE Confidence: 0.892376651111111

00:43:52.580 --> 00:43:54.752 I I think getting these double

NOTE Confidence: 0.892376651111111

00:43:54.752 --> 00:43:56.200 hits will be helpful.

NOTE Confidence: 0.892376651111111

00:43:56.200 --> 00:43:57.736 I think the thing here that

NOTE Confidence: 0.892376651111111

00:43:57.736 --> 00:43:59.070 was encouraging is you know,

NOTE Confidence: 0.892376651111111

00:43:59.070 --> 00:44:00.648 even though we had this hypothesis,

NOTE Confidence: 0.892376651111111

00:44:00.650 --> 00:44:02.214 anxiety is different than

NOTE Confidence: 0.892376651111111

00:44:02.214 --> 00:44:03.387 these other conditions,

NOTE Confidence: 0.892376651111111

00:44:03.390 --> 00:44:05.613 so we weren't even sure we would see this

NOTE Confidence: 0.892376651111111

00:44:05.613 --> 00:44:07.579 damn increase in damaging mutations.

NOTE Confidence: 0.892376651111111

00:44:07.580 --> 00:44:09.278 But I think this is reassuring

NOTE Confidence: 0.892376651111111

00:44:09.278 --> 00:44:10.979 that using this approach in larger

NOTE Confidence: 0.892376651111111

00:44:10.979 --> 00:44:12.778 cohorts may lead us to those double

NOTE Confidence: 0.892376651111111

00:44:12.778 --> 00:44:15.610 hits that you're alluding to.

NOTE Confidence: 0.892376651111111

00:44:15.610 --> 00:44:18.480 So that's the whole great stay tuned.

NOTE Confidence: 0.823786119166667

00:44:19.790 --> 00:44:21.824 Well, we have a question in

NOTE Confidence: 0.823786119166667

00:44:21.824 --> 00:44:23.890 the chat from Zarins in below.

NOTE Confidence: 0.823786119166667

00:44:23.890 --> 00:44:25.110 It says great talk Emily.

NOTE Confidence: 0.823786119166667

00:44:25.110 --> 00:44:26.540 Any evidence that the same

NOTE Confidence: 0.823786119166667

00:44:26.540 --> 00:44:28.574 gene like a phosphatase,

NOTE Confidence: 0.823786119166667

00:44:28.574 --> 00:44:31.014 for example with different mutations,

NOTE Confidence: 0.823786119166667

00:44:31.020 --> 00:44:32.510 might lead to different disorders.

NOTE Confidence: 0.823786119166667

00:44:32.510 --> 00:44:34.016 It's kind of the converse of

NOTE Confidence: 0.823786119166667

00:44:34.016 --> 00:44:35.940 the point you were just. Making

NOTE Confidence: 0.875171442857143

00:44:35.970 --> 00:44:40.345 yeah so that I think as we.

NOTE Confidence: 0.875171442857143

00:44:40.350 --> 00:44:41.870 That's something that's really interesting.

NOTE Confidence: 0.875171442857143

00:44:41.870 --> 00:44:44.358 I didn't spend just because of the numbers,

NOTE Confidence: 0.875171442857143

00:44:44.360 --> 00:44:45.944 and I only I didn't have a double hit.

NOTE Confidence: 0.875171442857143

00:44:45.950 --> 00:44:47.763 I didn't spend time looking at exactly

NOTE Confidence: 0.875171442857143

00:44:47.763 --> 00:44:49.479 where like the point mutation is,

NOTE Confidence: 0.875171442857143

00:44:49.480 --> 00:44:51.916 but there are definitely examples in other

NOTE Confidence: 0.875171442857143

00:44:51.916 --> 00:44:54.505 areas of genetics where a mutation in one

NOTE Confidence: 0.875171442857143

00:44:54.505 --> 00:44:56.652 area predisposes you to one condition in

NOTE Confidence: 0.875171442857143

00:44:56.652 --> 00:44:59.068 a mutation in a different area than the

NOTE Confidence: 0.875171442857143

00:44:59.070 --> 00:45:03.570 gene predisposes you to another mutation.

NOTE Confidence: 0.875171442857143

00:45:03.570 --> 00:45:06.108 Actually, that SCN 2A mutation that

NOTE Confidence: 0.875171442857143

00:45:06.108 --> 00:45:08.470 gene that I mentioned earlier?

NOTE Confidence: 0.875171442857143

00:45:08.470 --> 00:45:10.300 That's an example of that where?

NOTE Confidence: 0.875171442857143

00:45:10.300 --> 00:45:13.540 You get epilepsy if the mutations

NOTE Confidence: 0.875171442857143

00:45:13.540 --> 00:45:16.734 gain of function and you get autism.

NOTE Confidence: 0.875171442857143

00:45:16.734 --> 00:45:18.926 If it's kind of a loss of function.

NOTE Confidence: 0.875171442857143

00:45:18.930 --> 00:45:21.000 So so there definitely is something

NOTE Confidence: 0.875171442857143

00:45:21.000 --> 00:45:23.720 in that I didn't quite do that here.

NOTE Confidence: 0.875171442857143

00:45:23.720 --> 00:45:25.589 'cause I think it's a little premature,

NOTE Confidence: 0.875171442857143

00:45:25.590 --> 00:45:27.882 but definitely something worth

NOTE Confidence: 0.875171442857143

00:45:27.882 --> 00:45:29.028 thinking about.

NOTE Confidence: 0.875171442857143

00:45:29.030 --> 00:45:32.607 As more and more genes pop up.

NOTE Confidence: 0.875171442857143

00:45:32.610 --> 00:45:35.490 Great, thank you.

NOTE Confidence: 0.83642531625

00:45:35.490 --> 00:45:36.910 Alright, another great talk

NOTE Confidence: 0.83642531625

00:45:36.910 --> 00:45:39.509 and we'll move on to our three

NOTE Confidence: 0.83642531625

00:45:39.509 --> 00:45:41.867 runners up for this year's award,

NOTE Confidence: 0.83642531625

00:45:41.870 --> 00:45:44.570 beginning with Albert Higgins Chen.

NOTE Confidence: 0.83642531625

00:45:44.570 --> 00:45:46.614 Albert Albert's primary mentor,

NOTE Confidence: 0.83642531625

00:45:46.614 --> 00:45:47.636 Morgan Levine,

NOTE Confidence: 0.83642531625

00:45:47.640 --> 00:45:49.040 was unable to be with us today,

NOTE Confidence: 0.83642531625

00:45:49.040 --> 00:45:50.546 but she's written up an introduction,

NOTE Confidence: 0.83642531625

00:45:50.550 --> 00:45:53.030 which I will give.

NOTE Confidence: 0.83642531625

00:45:53.030 --> 00:45:54.885 So Morgan says I would like to

NOTE Confidence: 0.83642531625

00:45:54.890 --> 00:45:56.692 introduce Doctor Albert Higgins Chen

NOTE Confidence: 0.83642531625

00:45:56.692 --> 00:45:58.798 and congratulate him on being selected

NOTE Confidence: 0.83642531625

00:45:58.798 --> 00:46:01.066 for honorable mention for the 2021 Last

NOTE Confidence: 0.83642531625

00:46:01.066 --> 00:46:02.806 minute award for psychiatric research.

NOTE Confidence: 0.83642531625

00:46:02.810 --> 00:46:05.015 Albert was the recipient of the 2020

NOTE Confidence: 0.83642531625

00:46:05.015 --> 00:46:07.358 Lustman Award and is being honored again.

NOTE Confidence: 0.83642531625

00:46:07.360 --> 00:46:10.033 The only goes to show how remarkable he is.

NOTE Confidence: 0.83642531625

00:46:10.040 --> 00:46:11.601 Albert is the embodiment of what it

NOTE Confidence: 0.83642531625

00:46:11.601 --> 00:46:13.370 means to be a physician scientist.

NOTE Confidence: 0.83642531625

00:46:13.370 --> 00:46:15.506 He is a brilliant independent researcher

NOTE Confidence: 0.83642531625

00:46:15.506 --> 00:46:16.930 with deep scientific knowledge,

NOTE Confidence: 0.83642531625

00:46:16.930 --> 00:46:18.334 intellectual curiosity,

NOTE Confidence: 0.83642531625

00:46:18.334 --> 00:46:20.440 creativity and compassion.

NOTE Confidence: 0.83642531625

00:46:20.440 --> 00:46:22.630 Albert has perfectly melded his research

NOTE Confidence: 0.83642531625

00:46:22.630 --> 00:46:24.939 training in genetics and aging biology.

NOTE Confidence: 0.83642531625

00:46:24.940 --> 00:46:27.278 With his work as a psychiatry resident,

NOTE Confidence: 0.83642531625

00:46:27.280 --> 00:46:29.074 as the field continues to delve

NOTE Confidence: 0.83642531625

00:46:29.074 --> 00:46:30.270 into the molecular mechanisms

NOTE Confidence: 0.83642531625

00:46:30.321 --> 00:46:31.938 underlying psychiatric disorders,

NOTE Confidence: 0.83642531625

00:46:31.940 --> 00:46:34.145 progress will depend on people like Albert,

NOTE Confidence: 0.83642531625

00:46:34.150 --> 00:46:35.839 who have interdisciplinary,

NOTE Confidence: 0.83642531625

00:46:35.839 --> 00:46:36.402 clinical,

NOTE Confidence: 0.83642531625

00:46:36.402 --> 00:46:38.091 molecular and computational

NOTE Confidence: 0.83642531625

00:46:38.091 --> 00:46:40.833 expertise to unravel the complex

NOTE Confidence: 0.83642531625

00:46:40.833 --> 00:46:42.797 signals of multifactorial traits.

NOTE Confidence: 0.83642531625

00:46:42.800 --> 00:46:44.739 Today he will discuss his recent paper,

NOTE Confidence: 0.83642531625

00:46:44.740 --> 00:46:46.484 aimed at dramatically bolstering

NOTE Confidence: 0.83642531625

00:46:46.484 --> 00:46:48.228 the reliability of epigenetic

NOTE Confidence: 0.83642531625

00:46:48.228 --> 00:46:49.510 biomarkers of aging.

NOTE Confidence: 0.83642531625

00:46:49.510 --> 00:46:51.770 While our lab was not the first to show

NOTE Confidence: 0.83642531625

00:46:51.770 --> 00:46:53.695 that these measures can be extremely noisy,

NOTE Confidence: 0.83642531625

00:46:53.700 --> 00:46:55.370 Albert's paper is the first

NOTE Confidence: 0.83642531625

00:46:55.370 --> 00:46:56.706 to offer a solution.

NOTE Confidence: 0.83642531625

00:46:56.710 --> 00:46:57.373 In doing so,

NOTE Confidence: 0.83642531625

00:46:57.373 --> 00:46:58.699 the work he presents today will

NOTE Confidence: 0.83642531625

00:46:58.699 --> 00:47:00.114 have far reaching implications

NOTE Confidence: 0.83642531625

00:47:00.114 --> 00:47:01.638 for longitudinal an intervention,

NOTE Confidence: 0.83642531625

00:47:01.640 --> 00:47:04.460 studies of aging and disease.

NOTE Confidence: 0.83642531625

00:47:04.460 --> 00:47:07.110 So with that Albert take it away.

NOTE Confidence: 0.83642531625

00:47:07.110 --> 00:47:07.530 OK,

NOTE Confidence: 0.792656638888889

00:47:07.910 --> 00:47:10.375 thank you Chris and thank

NOTE Confidence: 0.792656638888889

00:47:10.375 --> 00:47:12.347 you Morgan by proxy.

NOTE Confidence: 0.792656638888889

00:47:12.350 --> 00:47:15.890 Exline for disclosure is the

NOTE Confidence: 0.792656638888889

00:47:15.890 --> 00:47:17.092 methodology presented in this

NOTE Confidence: 0.792656638888889

00:47:17.092 --> 00:47:19.150 talk is the subject of a pending

NOTE Confidence: 0.792656638888889

00:47:19.217 --> 00:47:20.913 patent application and related

NOTE Confidence: 0.792656638888889

00:47:20.913 --> 00:47:22.609 technologies have been licensed

NOTE Confidence: 0.792656638888889

00:47:22.609 --> 00:47:24.639 to Alicia Mhealth next slide.

NOTE Confidence: 0.79436129

00:47:26.680 --> 00:47:27.868 So a patient comes

NOTE Confidence: 0.885461302857143

00:47:27.880 --> 00:47:30.855 to your office 65 year old veteran,

NOTE Confidence: 0.885461302857143

00:47:30.860 --> 00:47:33.005 recently placed in assisted Living

NOTE Confidence: 0.885461302857143

00:47:33.005 --> 00:47:35.690 Quick chart review shows that he

NOTE Confidence: 0.885461302857143

00:47:35.690 --> 00:47:37.674 has schizophrenia, PTSD, HIV, A50,

NOTE Confidence: 0.885461302857143

00:47:37.674 --> 00:47:39.772 plus pack year, smoking history,

NOTE Confidence: 0.885461302857143

00:47:39.772 --> 00:47:41.350 and multiple comorbidities,

NOTE Confidence: 0.885461302857143

00:47:41.350 --> 00:47:43.254 and the first thing you notice about

NOTE Confidence: 0.885461302857143

00:47:43.254 --> 00:47:45.460 him when he walks into your office is

NOTE Confidence: 0.885461302857143

00:47:45.460 --> 00:47:47.760 that he looks like he is 85 years old.

NOTE Confidence: 0.885461302857143

00:47:47.760 --> 00:47:49.434 So all of these conditions along

NOTE Confidence: 0.885461302857143

00:47:49.434 --> 00:47:50.902 with the social diversity and

NOTE Confidence: 0.885461302857143

00:47:50.902 --> 00:47:52.678 discrimination that goes along with it,

NOTE Confidence: 0.885461302857143

00:47:52.680 --> 00:47:55.560 accelerates the biological aging process.

NOTE Confidence: 0.885461302857143

00:47:55.560 --> 00:47:57.720 Now this patient has a far higher risk

NOTE Confidence: 0.885461302857143

00:47:57.720 --> 00:47:59.306 of cardiovascular disease, dementia,

NOTE Confidence: 0.885461302857143

00:47:59.306 --> 00:48:01.730 and numerous other conditions.

NOTE Confidence: 0.885461302857143

00:48:01.730 --> 00:48:04.234 So turns out that we can actually quantify

NOTE Confidence: 0.885461302857143

00:48:04.234 --> 00:48:06.298 this accelerated aging with the blood test.

NOTE Confidence: 0.885461302857143

00:48:06.300 --> 00:48:08.264 As Zach is mentioned.

NOTE Confidence: 0.885461302857143

00:48:08.264 --> 00:48:09.246 Next slide.

NOTE Confidence: 0.901401721428572

00:48:11.430 --> 00:48:13.860 So this is the difference between

NOTE Confidence: 0.901401721428572

00:48:13.860 --> 00:48:16.129 chronological age and biological age.

NOTE Confidence: 0.901401721428572

00:48:16.130 --> 00:48:18.750 So chronological age is simply time

NOTE Confidence: 0.901401721428572

00:48:18.750 --> 00:48:20.436 since birth, it's not modifiable

NOTE Confidence: 0.901401721428572

00:48:20.436 --> 00:48:22.480 and we can't do anything about it.

NOTE Confidence: 0.901401721428572

00:48:22.480 --> 00:48:23.222 But importantly,

NOTE Confidence: 0.901401721428572

00:48:23.222 --> 00:48:25.077 it has positive connotations and

NOTE Confidence: 0.901401721428572

00:48:25.077 --> 00:48:27.000 it is something to celebrate.

NOTE Confidence: 0.901401721428572

00:48:27.000 --> 00:48:28.203 Biological age, however,

NOTE Confidence: 0.901401721428572

00:48:28.203 --> 00:48:30.609 quantify is how much ones biology

NOTE Confidence: 0.901401721428572

00:48:30.609 --> 00:48:32.149 actually changes with time,

NOTE Confidence: 0.901401721428572

00:48:32.150 --> 00:48:34.236 and this is something that is modifiable,

NOTE Confidence: 0.901401721428572

00:48:34.240 --> 00:48:37.601 and it predicts morbidity and mortality.

NOTE Confidence: 0.901401721428572

00:48:37.601 --> 00:48:39.725 Importantly, these are separable

NOTE Confidence: 0.901401721428572

00:48:39.725 --> 00:48:42.380 and people can differ dramatically

NOTE Confidence: 0.901401721428572

00:48:42.451 --> 00:48:44.629 in the rate of biological aging,

NOTE Confidence: 0.901401721428572

00:48:44.630 --> 00:48:46.856 and we can measure this using aging

NOTE Confidence: 0.901401721428572

00:48:46.856 --> 00:48:48.656 biomarkers, and if you can measure it,

NOTE Confidence: 0.901401721428572

00:48:48.660 --> 00:48:51.996 you can manage it next line.

NOTE Confidence: 0.901401721428572

00:48:52.000 --> 00:48:54.806 So some of the best current biomarkers

NOTE Confidence: 0.901401721428572

00:48:54.806 --> 00:48:57.743 of aging are ethnic locks as Zach heads

NOTE Confidence: 0.901401721428572

00:48:57.743 --> 00:48:59.915 discussing it in his excellent talk.

NOTE Confidence: 0.901401721428572

00:48:59.920 --> 00:49:01.516 These use the insight of that

NOTE Confidence: 0.901401721428572

00:49:01.516 --> 00:49:02.884 millions of DNA metalation sites

NOTE Confidence: 0.901401721428572

00:49:02.884 --> 00:49:04.648 change with age and we can use

NOTE Confidence: 0.901401721428572

00:49:04.648 --> 00:49:05.969 machine learning techniques to select

NOTE Confidence: 0.901401721428572

00:49:05.969 --> 00:49:07.761 a few hundred that predict age or

NOTE Confidence: 0.901401721428572

00:49:07.770 --> 00:49:11.070 mortality risk with high accuracy.

NOTE Confidence: 0.901401721428572

00:49:11.070 --> 00:49:12.858 Now I previously found that these

NOTE Confidence: 0.901401721428572

00:49:12.858 --> 00:49:14.620 clocks are the predicted mortality.

NOTE Confidence: 0.901401721428572

00:49:14.620 --> 00:49:16.245 Find that people with schizophrenia

NOTE Confidence: 0.901401721428572

00:49:16.245 --> 00:49:16.895 are older,

NOTE Confidence: 0.901401721428572

00:49:16.900 --> 00:49:18.855 consistent with him dying 15

NOTE Confidence: 0.901401721428572

00:49:18.855 --> 00:49:20.810 years earlier than everyone else.

NOTE Confidence: 0.901401721428572

00:49:20.810 --> 00:49:22.357 So there is a ton of interest.

NOTE Confidence: 0.901401721428572

00:49:22.360 --> 00:49:24.604 Then eventually using these biomarkers in

NOTE Confidence: 0.901401721428572

00:49:24.604 --> 00:49:27.019 clinical practice or in clinical trial,

NOTE Confidence: 0.901401721428572

00:49:27.020 --> 00:49:27.461 however,

NOTE Confidence: 0.901401721428572

00:49:27.461 --> 00:49:30.989 I found that there is a major problem

NOTE Confidence: 0.901401721428572

00:49:30.989 --> 00:49:33.598 with these epigenetic clocks.

NOTE Confidence: 0.901401721428572

00:49:33.600 --> 00:49:34.260 Next slide.

NOTE Confidence: 0.729820886363637

00:49:36.400 --> 00:49:38.008 So I looked at these aging

NOTE Confidence: 0.729820886363637

00:49:38.008 --> 00:49:39.560 clocks an ask very simply.

NOTE Confidence: 0.729820886363637

00:49:39.560 --> 00:49:41.495 If you measure the same

NOTE Confidence: 0.729820886363637

00:49:41.495 --> 00:49:42.656 sample multiple times,

NOTE Confidence: 0.729820886363637

00:49:42.660 --> 00:49:44.988 do you get the same answer?

NOTE Confidence: 0.729820886363637

00:49:44.990 --> 00:49:48.278 No, so I looked at 36 blood samples,

NOTE Confidence: 0.729820886363637

00:49:48.280 --> 00:49:50.170 each measured twice and I calculated

NOTE Confidence: 0.729820886363637

00:49:50.170 --> 00:49:51.791 the epigenetic clocks and plotted

NOTE Confidence: 0.729820886363637

00:49:51.791 --> 00:49:53.926 in the biological ages of the two

NOTE Confidence: 0.729820886363637

00:49:53.926 --> 00:49:55.150 replicates against each other.

NOTE Confidence: 0.729820886363637

00:49:55.150 --> 00:49:56.254 Here on the left,

NOTE Confidence: 0.729820886363637

00:49:56.254 --> 00:49:58.205 and the correlation is not nearly as

NOTE Confidence: 0.729820886363637

00:49:58.205 --> 00:50:00.125 strong as one with like on the right.

NOTE Confidence: 0.729820886363637

00:50:00.130 --> 00:50:02.716 Then I plotted the difference between

NOTE Confidence: 0.729820886363637

00:50:02.716 --> 00:50:05.169 the two repeated measurements and some

NOTE Confidence: 0.729820886363637

00:50:05.169 --> 00:50:07.793 samples differed by as much as nine years.

NOTE Confidence: 0.729820886363637

00:50:07.800 --> 00:50:08.892 So in plain English,

NOTE Confidence: 0.729820886363637

00:50:08.892 --> 00:50:11.102 what that means is that if I could

NOTE Confidence: 0.729820886363637

00:50:11.102 --> 00:50:13.142 measure your age one day and it says

NOTE Confidence: 0.729820886363637

00:50:13.210 --> 00:50:15.418 you're 50 and next day says you're 59.

NOTE Confidence: 0.729820886363637

00:50:15.420 --> 00:50:18.785 Oh, so these are not

NOTE Confidence: 0.729820886363637

00:50:18.785 --> 00:50:21.477 particularly reliable next line.

NOTE Confidence: 0.729820886363637

00:50:21.480 --> 00:50:23.814 So I tried many methods of improving

NOTE Confidence: 0.729820886363637

00:50:23.814 --> 00:50:25.659 the reliability of these clocks

NOTE Confidence: 0.729820886363637

00:50:25.659 --> 00:50:27.939 and eventually I found a simple

NOTE Confidence: 0.729820886363637

00:50:27.939 --> 00:50:29.502 solution using principle component

NOTE Confidence: 0.729820886363637

00:50:29.502 --> 00:50:31.312 analysis which I won't describe

NOTE Confidence: 0.729820886363637

00:50:31.312 --> 00:50:33.672 in detail but just know that it

NOTE Confidence: 0.729820886363637

00:50:33.672 --> 00:50:35.496 is a method that can separate

NOTE Confidence: 0.729820886363637

00:50:35.496 --> 00:50:37.385 signal from noise and instead

NOTE Confidence: 0.729820886363637

00:50:37.385 --> 00:50:39.280 of using directly the metalation

NOTE Confidence: 0.729820886363637

00:50:39.280 --> 00:50:41.339 sites to predict biological age,

NOTE Confidence: 0.729820886363637

00:50:41.340 --> 00:50:43.725 I transformed the DNA methylation

NOTE Confidence: 0.729820886363637

00:50:43.725 --> 00:50:45.633 using principle component Alesis

NOTE Confidence: 0.729820886363637

00:50:45.633 --> 00:50:48.554 and then used the new variables to

NOTE Confidence: 0.729820886363637

00:50:48.554 --> 00:50:50.550 predict biological age next line.

NOTE Confidence: 0.8348008825

00:50:52.610 --> 00:50:55.274 And this new clocks are way more reliable.

NOTE Confidence: 0.8348008825

00:50:55.280 --> 00:50:57.422 Here we can look again at 36 samples each,

NOTE Confidence: 0.8348008825

00:50:57.430 --> 00:51:01.070 measure twice and blue is our new clocks.

NOTE Confidence: 0.8348008825

00:51:01.070 --> 00:51:02.390 And now the replicates.

NOTE Confidence: 0.8348008825

00:51:02.390 --> 00:51:05.074 Now agree far more closely and most agree

NOTE Confidence: 0.8348008825

00:51:05.074 --> 00:51:07.386 within one year and we applied this

NOTE Confidence: 0.8348008825

00:51:07.386 --> 00:51:09.851 method to six commonly used clocks and

NOTE Confidence: 0.8348008825

00:51:09.851 --> 00:51:13.720 they all greatly improved next slide.

NOTE Confidence: 0.8348008825

00:51:13.720 --> 00:51:16.324 And so does this mean the clocks

NOTE Confidence: 0.8348008825

00:51:16.324 --> 00:51:17.440 more clinically relevant?

NOTE Confidence: 0.8348008825

00:51:17.440 --> 00:51:19.526 Yes, so I showed that these have

NOTE Confidence: 0.8348008825

00:51:19.526 --> 00:51:20.793 much stronger relationships with

NOTE Confidence: 0.8348008825

00:51:20.793 --> 00:51:22.368 mortality and many other factors,

NOTE Confidence: 0.8348008825

00:51:22.370 --> 00:51:24.876 and because they are now less noisy

NOTE Confidence: 0.8348008825

00:51:24.876 --> 00:51:26.750 and furthermore we can actually

NOTE Confidence: 0.8348008825

00:51:26.750 --> 00:51:29.056 use these clocks to track someones

NOTE Confidence: 0.8348008825

00:51:29.056 --> 00:51:30.238 aging process overtime.

NOTE Confidence: 0.8348008825

00:51:30.240 --> 00:51:32.752 So I looked at 300 people followed for

NOTE Confidence: 0.8348008825

00:51:32.752 --> 00:51:35.900 20 years and we see that the original

NOTE Confidence: 0.8348008825

00:51:35.900 --> 00:51:38.269 clocks actually fluctuate wildly over time.

NOTE Confidence: 0.8348008825

00:51:38.270 --> 00:51:40.358 Turns out that this is mostly just noise,

NOTE Confidence: 0.8348008825

00:51:40.360 --> 00:51:43.496 so and our new clocks actually show

NOTE Confidence: 0.8348008825

00:51:43.496 --> 00:51:46.435 a nice steady aging trend there

NOTE Confidence: 0.8348008825

00:51:46.435 --> 00:51:49.423 on the bottom right next slide.

NOTE Confidence: 0.8348008825

00:51:49.430 --> 00:51:51.096 And could we even use this to

NOTE Confidence: 0.8348008825

00:51:51.096 --> 00:51:52.824 discover new treatments that might

NOTE Confidence: 0.8348008825

00:51:52.824 --> 00:51:54.930 be able to help our patient?

NOTE Confidence: 0.8348008825

00:51:54.930 --> 00:51:55.243 Yes,

NOTE Confidence: 0.8348008825

00:51:55.243 --> 00:51:57.434 so I simulated a clinical trial that

NOTE Confidence: 0.8348008825

00:51:57.434 --> 00:52:00.298 aims to modify someone's trajectory of aging.

NOTE Confidence: 0.8348008825

00:52:00.298 --> 00:52:01.639 Measuring these epigenetic

NOTE Confidence: 0.8348008825

00:52:01.639 --> 00:52:02.533 clocks longitudinally.

NOTE Confidence: 0.8348008825

00:52:02.540 --> 00:52:04.145 Now the issue of reliability

NOTE Confidence: 0.8348008825

00:52:04.145 --> 00:52:05.108 is critical here,

NOTE Confidence: 0.8348008825

00:52:05.110 --> 00:52:07.475 because noise affects both baseline

NOTE Confidence: 0.8348008825

00:52:07.475 --> 00:52:09.367 and follow up measurements.

NOTE Confidence: 0.8348008825

00:52:09.370 --> 00:52:11.848 It's cures our ability to detect the

NOTE Confidence: 0.8348008825

00:52:11.848 --> 00:52:14.452 effect of an intervention and power

NOTE Confidence: 0.8348008825

00:52:14.452 --> 00:52:15.932 analysis indicate that these new

NOTE Confidence: 0.8348008825

00:52:15.932 --> 00:52:17.890 PC clocks are far more sensitive,

NOTE Confidence: 0.8348008825

00:52:17.890 --> 00:52:20.122 reducing the sample size needed to

95

NOTE Confidence: 0.8348008825

00:52:20.122 --> 00:52:22.650 detect an effect by up to tenfold.

NOTE Confidence: 0.8348008825

00:52:22.650 --> 00:52:24.258 Now given how challenging clinical trials

NOTE Confidence: 0.8348008825

00:52:24.258 --> 00:52:25.776 are, this could save a lot of money.

NOTE Confidence: 0.8348008825

00:52:25.780 --> 00:52:28.988 And resources next slide.

NOTE Confidence: 0.8348008825

00:52:28.990 --> 00:52:30.610 So what can we actually do for our patient?

NOTE Confidence: 0.8348008825

00:52:30.610 --> 00:52:30.877 Well,

NOTE Confidence: 0.8348008825

00:52:30.877 --> 00:52:32.746 we can measure his biological age and

NOTE Confidence: 0.8348008825

00:52:32.746 --> 00:52:34.640 find that all those years of living,

NOTE Confidence: 0.8348008825

00:52:34.640 --> 00:52:36.614 mental illness and all the discrimination

NOTE Confidence: 0.8348008825

00:52:36.614 --> 00:52:39.141 is a social hardships that put him at a

NOTE Confidence: 0.8348008825

00:52:39.141 --> 00:52:40.870 high risk of morbidity and mortality.

NOTE Confidence: 0.8348008825

00:52:40.870 --> 00:52:42.926 And we can look to the many aging

NOTE Confidence: 0.8348008825

00:52:42.926 --> 00:52:44.029 treatments currently being investigated

NOTE Confidence: 0.8348008825

00:52:44.029 --> 00:52:46.197 and we may eventually be able to treat

NOTE Confidence: 0.8348008825

00:52:46.247 --> 00:52:47.767 this problem at least partially.

NOTE Confidence: 0.8348008825

00:52:47.770 --> 00:52:48.095 Importantly,

NOTE Confidence: 0.8348008825

00:52:48.095 --> 00:52:50.370 this would help prevent all the diseases

NOTE Confidence: 0.8348008825

00:52:50.370 --> 00:52:52.709 of aging or once cardiovascular disease,

NOTE Confidence: 0.8348008825

00:52:52.710 --> 00:52:53.492 cancer, dementia,

NOTE Confidence: 0.8348008825

00:52:53.492 --> 00:52:53.883 etc.

NOTE Confidence: 0.8348008825

00:52:53.883 --> 00:52:56.620 And this will be made possible by

NOTE Confidence: 0.8348008825

00:52:56.694 --> 00:52:58.999 aging biomarkers that are highly.

NOTE Confidence: 0.8348008825

00:52:59.000 --> 00:53:01.712 Reliable so I will wrap up a wrap

NOTE Confidence: 0.8348008825

00:53:01.712 --> 00:53:03.370 up there next slide.

NOTE Confidence: 0.8348008825

00:53:03.370 --> 00:53:05.232 And I like to think that lesson

NOTE Confidence: 0.8348008825

00:53:05.232 --> 00:53:07.205 family that live in lab is she

NOTE Confidence: 0.8348008825

00:53:07.205 --> 00:53:08.595 doctor been all my collaborators

NOTE Confidence: 0.8348008825

00:53:08.595 --> 00:53:10.538 and everybody else in time trade.

NOTE Confidence: 0.9079392

00:53:14.620 --> 00:53:16.675 Great thank you. Albert was very

NOTE Confidence: 0.9079392

00:53:16.675 --> 00:53:17.602 clearly presented presentation

NOTE Confidence: 0.9079392

00:53:17.602 --> 00:53:20.420 of very important work.

NOTE Confidence: 0.872676488181818

00:53:20.420 --> 00:53:22.028 We're not going to have time

NOTE Confidence: 0.872676488181818

00:53:22.028 --> 00:53:23.480 for questions at this point.

NOTE Confidence: 0.872676488181818

00:53:23.480 --> 00:53:27.040 We're going to move on to our our

NOTE Confidence: 0.872676488181818

00:53:27.040 --> 00:53:29.336 second honorable mentioning here.

NOTE Confidence: 0.872676488181818

00:53:29.336 --> 00:53:31.466 The 2021 Last Minute awards.

NOTE Confidence: 0.872676488181818

00:53:31.470 --> 00:53:33.423 Peter Na and I want to invite

NOTE Confidence: 0.872676488181818

00:53:33.423 --> 00:53:34.986 Rob Pietrzak to come and

NOTE Confidence: 0.872676488181818

00:53:34.986 --> 00:53:36.626 introduce Peter in his work.

NOTE Confidence: 0.831199593333333

00:53:38.120 --> 00:53:39.260 Thank you Chris.

NOTE Confidence: 0.831199593333333

00:53:39.260 --> 00:53:40.400 Good morning everyone.

NOTE Confidence: 0.831199593333333

00:53:40.400 --> 00:53:42.152 Thank you to the Lawson family

NOTE Confidence: 0.831199593333333

00:53:42.152 --> 00:53:43.616 and congratulations to all of

NOTE Confidence: 0.831199593333333

00:53:43.616 --> 00:53:44.880 the last minute award ease.

NOTE Confidence: 0.831199593333333

00:53:44.880 --> 00:53:46.704 Well it's my pleasure this morning

NOTE Confidence: 0.831199593333333

00:53:46.704 --> 00:53:48.284 to introduce Doctor Peter Na,

NOTE Confidence: 0.831199593333333

98

00:53:48.290 --> 00:53:50.180 recipient of an honorable mention

NOTE Confidence: 0.831199593333333

00:53:50.180 --> 00:53:52.240 for the 2021 lesson in the world.

NOTE Confidence: 0.831199593333333

00:53:52.240 --> 00:53:54.132 I first met Peter just five months ago

NOTE Confidence: 0.831199593333333

00:53:54.132 --> 00:53:56.324 when he reached out to me to inquire

NOTE Confidence: 0.831199593333333

00:53:56.324 --> 00:53:57.748 about potential research opportunities

NOTE Confidence: 0.831199593333333

00:53:57.748 --> 00:53:59.971 using data from the National Health

NOTE Confidence: 0.831199593333333

00:53:59.971 --> 00:54:01.816 and Resilience and Veterans Study.

NOTE Confidence: 0.831199593333333

00:54:01.820 --> 00:54:03.760 This is a nationally representative

NOTE Confidence: 0.831199593333333

00:54:03.760 --> 00:54:05.312 prospective cohort study of

NOTE Confidence: 0.831199593333333

00:54:05.312 --> 00:54:06.888 veterans that Steve Southwick,

NOTE Confidence: 0.831199593333333

00:54:06.890 --> 00:54:07.336 John Crystal,

NOTE Confidence: 0.831199593333333

00:54:07.336 --> 00:54:08.451 and I have been conducting

NOTE Confidence: 0.831199593333333

00:54:08.451 --> 00:54:10.106 for the past 10 years.

NOTE Confidence: 0.831199593333333

00:54:10.106 --> 00:54:12.072 I was immediately impressed by

NOTE Confidence: 0.831199593333333

00:54:12.072 --> 00:54:13.385 Peter's academic background,

NOTE Confidence: 0.831199593333333

00:54:13.385 --> 00:54:15.124 which includes an undergraduate

NOTE Confidence: 0.831199593333333

00:54:15.124 --> 00:54:17.064 degree from Seoul National University

NOTE Confidence: 0.831199593333333

00:54:17.064 --> 00:54:19.138 where he graduated Summa Cloudy.

NOTE Confidence: 0.831199593333333

00:54:19.140 --> 00:54:21.168 An MD degree also from Seoul

NOTE Confidence: 0.831199593333333

00:54:21.168 --> 00:54:23.071 National and MPH from Harvard

NOTE Confidence: 0.831199593333333

00:54:23.071 --> 00:54:25.441 internship training at the Male

NOTE Confidence: 0.831199593333333

00:54:25.441 --> 00:54:27.680 Clinic Psychiatry Residency at NYU,

NOTE Confidence: 0.831199593333333

00:54:27.680 --> 00:54:29.648 and most recently in addiction psychiatry.

NOTE Confidence: 0.831199593333333

00:54:29.650 --> 00:54:31.330 Quite so much chip at Yale.

NOTE Confidence: 0.831199593333333

00:54:31.330 --> 00:54:32.860 In recognition of his work,

NOTE Confidence: 0.831199593333333

00:54:32.860 --> 00:54:35.146 Peter has already received three awards,

NOTE Confidence: 0.831199593333333

00:54:35.150 --> 00:54:37.628 including a Samsung Fellowship from Appa,

NOTE Confidence: 0.831199593333333

00:54:37.630 --> 00:54:39.810 the NMH Outstanding Resident Award,

NOTE Confidence: 0.831199593333333

00:54:39.810 --> 00:54:40.412 Honorable mention.

NOTE Confidence: 0.831199593333333

00:54:40.412 --> 00:54:42.218 And the John Runner Award from

NOTE Confidence: 0.831199593333333

00:54:42.218 --> 00:54:43.898 the American Academy of Addiction,

NOTE Confidence: 0.831199593333333

00:54:43.900 --> 00:54:44.490 Psychiatry.

NOTE Confidence: 0.831199593333333

00:54:44.490 --> 00:54:48.030 In addition to his academic accomplishments,

NOTE Confidence: 0.831199593333333

00:54:48.030 --> 00:54:50.106 Peter has served as a senior

NOTE Confidence: 0.831199593333333

00:54:50.106 --> 00:54:51.490 noncommissioned officer of the

NOTE Confidence: 0.831199593333333

00:54:51.550 --> 00:54:53.804 G3 Liaison Office as part of the

NOTE Confidence: 0.831199593333333

00:54:53.804 --> 00:54:55.538 Korean augmentation of the US Army,

NOTE Confidence: 0.831199593333333

00:54:55.540 --> 00:54:58.636 otherwise known as Catoosa in Camp Red Cloud.

NOTE Confidence: 0.831199593333333

00:54:58.640 --> 00:55:00.220 In recognition of his service,

NOTE Confidence: 0.831199593333333

00:55:00.220 --> 00:55:02.135 he received 2US Army achievement

NOTE Confidence: 0.831199593333333

00:55:02.135 --> 00:55:04.050 medals and a certificate of

NOTE Confidence: 0.831199593333333

00:55:04.114 --> 00:55:06.539 Achievement for excellence in service.

NOTE Confidence: 0.831199593333333

00:55:06.540 --> 00:55:07.735 Peter came to Yale,

NOTE Confidence: 0.831199593333333

00:55:07.735 --> 00:55:09.472 already quite accomplished with three.

NOTE Confidence: 0.831199593333333

00:55:09.472 --> 00:55:11.650 First off in manuscripts and eight

NOTE Confidence: 0.831199593333333

00:55:11.714 --> 00:55:13.504 first offered meeting abstract since

NOTE Confidence: 0.831199593333333

00:55:13.504 --> 00:55:16.078 the start of his fellowship in July 2020.

NOTE Confidence: 0.831199593333333

00:55:16.080 --> 00:55:17.274 Peter has accelerated

NOTE Confidence: 0.831199593333333

00:55:17.274 --> 00:55:18.468 his productivity further.

NOTE Confidence: 0.831199593333333

00:55:18.470 --> 00:55:19.814 First authoring 9 manuscripts

NOTE Confidence: 0.831199593333333

00:55:19.814 --> 00:55:21.494 that are currently in press,

NOTE Confidence: 0.831199593333333

00:55:21.500 --> 00:55:23.080 except that are under review,

NOTE Confidence: 0.831199593333333

00:55:23.080 --> 00:55:25.066 including five in which I've been

NOTE Confidence: 0.831199593333333

00:55:25.066 --> 00:55:26.820 fortunate to services primary mentor.

NOTE Confidence: 0.831199593333333

00:55:26.820 --> 00:55:28.368 So run on average right now

NOTE Confidence: 0.831199593333333

00:55:28.368 --> 00:55:30.121 with paper per month will see if

NOTE Confidence: 0.831199593333333

00:55:30.121 --> 00:55:31.447 we can keep up with that.

NOTE Confidence: 0.831199593333333

00:55:31.450 --> 00:55:33.154 Peters exemplary productivity speaks

NOTE Confidence: 0.831199593333333

00:55:33.154 --> 00:55:35.146 to his deep rooted interest and

NOTE Confidence: 0.831199593333333

00:55:35.146 --> 00:55:37.096 commitment to a career as a clinician,

NOTE Confidence: 0.831199593333333

00:55:37.100 --> 00:55:37.408 scholar,

NOTE Confidence: 0.831199593333333

00:55:37.408 --> 00:55:39.564 and psychiatry as well as to his

NOTE Confidence: 0.831199593333333

00:55:39.564 --> 00:55:41.100 dedication to make meaningful

NOTE Confidence: 0.831199593333333

00:55:41.100 --> 00:55:43.260 scientific contributions to our field,

NOTE Confidence: 0.831199593333333

00:55:43.260 --> 00:55:45.276 particularly in veteran mental

NOTE Confidence: 0.831199593333333

00:55:45.276 --> 00:55:46.788 health this July.

NOTE Confidence: 0.831199593333333

00:55:46.790 --> 00:55:48.500 Peter will join the VA Connecticut

NOTE Confidence: 0.831199593333333

00:55:48.500 --> 00:55:50.003 staff and is currently already

NOTE Confidence: 0.831199593333333

00:55:50.003 --> 00:55:51.553 preparing an application for a

NOTE Confidence: 0.831199593333333

00:55:51.553 --> 00:55:53.367 be a career development award to

NOTE Confidence: 0.831199593333333

00:55:53.367 --> 00:55:54.667 expand his research to consider

NOTE Confidence: 0.831199593333333

00:55:54.667 --> 00:55:56.731 the role of genetic factors in

NOTE Confidence: 0.831199593333333

00:55:56.731 --> 00:55:58.866 suicide and substance use disorders.

NOTE Confidence: 0.831199593333333

00:55:58.870 --> 00:56:00.560 He's already developed a detailed

NOTE Confidence: 0.831199593333333

00:56:00.560 --> 00:56:02.250 research and primary mentor ship

NOTE Confidence: 0.831199593333333

00:56:02.303 --> 00:56:03.989 plan with Doctor Joel Gelernter and

NOTE Confidence: 0.831199593333333

00:56:03.989 --> 00:56:06.124 me that will enable him to develop

NOTE Confidence: 0.831199593333333

00:56:06.124 --> 00:56:08.026 new skills and expertise in genetic

NOTE Confidence: 0.831199593333333

00:56:08.026 --> 00:56:09.940 psychiatric epidemiology with the

NOTE Confidence: 0.831199593333333

00:56:09.940 --> 00:56:12.060 ultimate goal of identifying

NOTE Confidence: 0.831199593333333

00:56:12.060 --> 00:56:13.120 modifiable psychosocial,

NOTE Confidence: 0.831199593333333

00:56:13.120 --> 00:56:15.125 moderators or polygenic risk for

NOTE Confidence: 0.831199593333333

00:56:15.125 --> 00:56:17.130 suicide and substance use disorders.

NOTE Confidence: 0.831199593333333

00:56:17.130 --> 00:56:18.504 I must note that throughout my

NOTE Confidence: 0.831199593333333

00:56:18.504 --> 00:56:19.710 experience of working with Peter,

NOTE Confidence: 0.831199593333333

00:56:19.710 --> 00:56:21.368 I've been impressed by his scientific

NOTE Confidence: 0.831199593333333

00:56:21.370 --> 00:56:23.400 writing and critical thinking skills,

NOTE Confidence: 0.831199593333333

00:56:23.400 --> 00:56:25.698 as well as his remarkable ability

NOTE Confidence: 0.831199593333333

00:56:25.698 --> 00:56:27.230 to translate very complex

NOTE Confidence: 0.831199593333333

00:56:27.298 --> 00:56:29.344 epidemiological findings into

NOTE Confidence: 0.831199593333333

00:56:29.344 --> 00:56:31.390 actionable clinical implications.

NOTE Confidence: 0.831199593333333

00:56:31.390 --> 00:56:33.304 I'd also like to highlight that

NOTE Confidence: 0.831199593333333

00:56:33.304 --> 00:56:34.580 Peters research and veteran

NOTE Confidence: 0.809649877333333

00:56:34.643 --> 00:56:36.806 mental health and suicide is inspired by

NOTE Confidence: 0.809649877333333

00:56:36.806 --> 00:56:38.796 his own military experience and losses

NOTE Confidence: 0.809649877333333

00:56:38.796 --> 00:56:41.148 that he personally endured on that note,

NOTE Confidence: 0.809649877333333

00:56:41.150 --> 00:56:43.187 as we head into Memorial Day weekend,

NOTE Confidence: 0.809649877333333

00:56:43.190 --> 00:56:44.855 I'd like to share a quote from the author,

NOTE Confidence: 0.809649877333333

00:56:44.860 --> 00:56:48.059 Richelle Goodrich, who said on Memorial Day.

NOTE Confidence: 0.809649877333333

00:56:48.060 --> 00:56:50.844 Take time to remember those who have fallen,

NOTE Confidence: 0.809649877333333

00:56:50.850 --> 00:56:52.370 but on every day after,

NOTE Confidence: 0.809649877333333

00:56:52.370 --> 00:56:54.953 do more put the freedoms that they

NOTE Confidence: 0.809649877333333

00:56:54.953 --> 00:56:58.078 died for to greater and nobler uses.

NOTE Confidence: 0.809649877333333

00:56:58.080 --> 00:57:00.103 Today Peter will present results of a

NOTE Confidence: 0.809649877333333

00:57:00.103 --> 00:57:02.135 recent study on factors associated with

NOTE Confidence: 0.809649877333333

00:57:02.135 --> 00:57:04.355 suicidal thinking during the pandemic and

NOTE Confidence: 0.809649877333333

00:57:04.355 --> 00:57:06.860 US veterans with pre-existing conditions.

NOTE Confidence: 0.809649877333333

00:57:06.860 --> 00:57:09.056 To speak to Peter's amazing efficiency,

NOTE Confidence: 0.809649877333333

00:57:09.060 --> 00:57:11.335 he wrote this paper in one week.

NOTE Confidence: 0.809649877333333

00:57:11.340 --> 00:57:14.290 Peter, please. Thank

NOTE Confidence: 0.777818684285714

00:57:14.300 --> 00:57:16.310 you Doctor Pietrzak for your

NOTE Confidence: 0.777818684285714

00:57:16.310 --> 00:57:17.473 kind introduction. Today.

NOTE Confidence: 0.777818684285714

00:57:17.473 --> 00:57:19.944 I'll be presenting our research on factors

NOTE Confidence: 0.777818684285714

00:57:19.944 --> 00:57:21.976 associated with suicidal ideations during

NOTE Confidence: 0.777818684285714

00:57:21.976 --> 00:57:24.514 the COVID-19 pandemic and veterans with

NOTE Confidence: 0.777818684285714

00:57:24.514 --> 00:57:26.250 pre-existing psychiatric conditions.

NOTE Confidence: 0.777818684285714

00:57:26.250 --> 00:57:29.010 I do not have any disclosures to report.

NOTE Confidence: 0.777818684285714

00:57:29.010 --> 00:57:31.770 This paper was published in the Journal of

NOTE Confidence: 0.777818684285714

00:57:31.770 --> 00:57:33.509 Psychiatric Research earlier this year.

NOTE Confidence: 0.777818684285714

00:57:33.510 --> 00:57:35.750 Next slide.

NOTE Confidence: 0.777818684285714

00:57:35.750 --> 00:57:37.520 As we're all aware mental health

NOTE Confidence: 0.777818684285714

00:57:37.520 --> 00:57:39.300 burden during the pandemic is on

NOTE Confidence: 0.777818684285714

00:57:39.300 --> 00:57:40.920 the rise with reports of increased

NOTE Confidence: 0.777818684285714

00:57:40.920 --> 00:57:42.070 prevalence of depression,

NOTE Confidence: 0.777818684285714

00:57:42.070 --> 00:57:43.722 anxiety and alcohol consumption

NOTE Confidence: 0.777818684285714

00:57:43.722 --> 00:57:45.374 of the general public.

NOTE Confidence: 0.777818684285714

00:57:45.380 --> 00:57:47.240 There were also concerns about

NOTE Confidence: 0.777818684285714

00:57:47.240 --> 00:57:48.728 possible increase in suicidal

NOTE Confidence: 0.777818684285714

00:57:48.728 --> 00:57:51.199 behavior based on the fact that during

NOTE Confidence: 0.777818684285714

00:57:51.199 --> 00:57:52.559 previous pandemics and outbreaks,

NOTE Confidence: 0.777818684285714

00:57:52.560 --> 00:57:54.632 suicide rate increased historically.

NOTE Confidence: 0.777818684285714

00:57:54.632 --> 00:57:55.668 For example,

NOTE Confidence: 0.777818684285714

00:57:55.670 --> 00:57:58.085 during the SARS outbreak in Hong Kong,

NOTE Confidence: 0.777818684285714

00:57:58.090 --> 00:58:00.005 the most significant increase were

NOTE Confidence: 0.777818684285714

00:58:00.005 --> 00:58:04.130 found among older adults, next light.

NOTE Confidence: 0.777818684285714

00:58:04.130 --> 00:58:05.225 Possible vulnerable groups

NOTE Confidence: 0.777818684285714

00:58:05.225 --> 00:58:06.320 during the pandemic.

NOTE Confidence: 0.777818684285714

00:58:06.320 --> 00:58:08.536 Identify where older adults,

NOTE Confidence: 0.777818684285714

00:58:08.536 --> 00:58:11.860 possibly due to more physical comorbidities.

NOTE Confidence: 0.777818684285714

00:58:11.860 --> 00:58:13.612 Also, who experienced greater

NOTE Confidence: 0.777818684285714

00:58:13.612 --> 00:58:15.364 social isolation and loneliness.

NOTE Confidence: 0.777818684285714

00:58:15.370 --> 00:58:15.766 Also,

NOTE Confidence: 0.777818684285714

00:58:15.766 --> 00:58:17.746 individuals with mental disorders retreat

NOTE Confidence: 0.777818684285714

00:58:17.746 --> 00:58:20.858 who may be uniquely vulnerable to increase

NOTE Confidence: 0.777818684285714

00:58:20.858 --> 00:58:23.298 psychological distress during the pandemic.

NOTE Confidence: 0.777818684285714

00:58:23.300 --> 00:58:23.640 Also,

NOTE Confidence: 0.777818684285714

00:58:23.640 --> 00:58:25.340 military veterans were well known.

NOTE Confidence: 0.777818684285714

00:58:25.340 --> 00:58:27.447 High risk group for suicide as well

NOTE Confidence: 0.777818684285714

00:58:27.447 --> 00:58:29.163 as COVID-19 survivors who showed

NOTE Confidence: 0.777818684285714

00:58:29.163 --> 00:58:30.675 higher prevalence of depression,

NOTE Confidence: 0.777818684285714

00:58:30.680 --> 00:58:34.586 anxiety and PTSD compared to non survivors.

NOTE Confidence: 0.777818684285714

00:58:34.590 --> 00:58:37.194 Next slide so to meet this

NOTE Confidence: 0.777818684285714

00:58:37.194 --> 00:58:38.930 urgent public health concern,

NOTE Confidence: 0.777818684285714

00:58:38.930 --> 00:58:41.730 we analyze the 2019 to 20 National

NOTE Confidence: 0.777818684285714

00:58:41.730 --> 00:58:44.014 Health and resilience in various study

NOTE Confidence: 0.777818684285714

00:58:44.014 --> 00:58:47.010 and HRV S among the total 4000 samples.

NOTE Confidence: 0.777818684285714

00:58:47.010 --> 00:58:49.740 We analyze subsample of 6061 veterans

NOTE Confidence: 0.777818684285714

00:58:49.740 --> 00:58:52.614 who screen positive for pre pandemic

NOTE Confidence: 0.777818684285714

00:58:52.614 --> 00:58:55.524 major psychiatric disorders such as MD,

NOTE Confidence: 0.777818684285714

00:58:55.530 --> 00:58:59.370 JD, PTSD, and or SUT.

NOTE Confidence: 0.777818684285714

00:58:59.370 --> 00:59:02.106 Baseline survey or wave one survey as well.

NOTE Confidence: 0.777818684285714

00:59:02.110 --> 00:59:04.462 Call Pre Pandemic survey was completed

NOTE Confidence: 0.777818684285714

00:59:04.462 --> 00:59:06.827 prior to the first known identified

NOTE Confidence: 0.777818684285714

00:59:06.827 --> 00:59:09.739 COVID-19 case in the US and then the

NOTE Confidence: 0.777818684285714

00:59:09.813 --> 00:59:12.173 follow up survey wave two or refer to

NOTE Confidence: 0.777818684285714

00:59:12.173 --> 00:59:14.426 a pre pandemic survey was conducted

NOTE Confidence: 0.777818684285714

00:59:14.426 --> 00:59:16.496 nine months into the pandemic.

NOTE Confidence: 0.777818684285714

00:59:16.500 --> 00:59:17.160 Next line.

NOTE Confidence: 0.828337100714286

00:59:19.230 --> 00:59:20.830 Suicidal ideations was measured,

NOTE Confidence: 0.828337100714286

00:59:20.830 --> 00:59:23.966 but the two items adapted from page tonight

NOTE Confidence: 0.828337100714286

00:59:23.966 --> 00:59:26.654 at 9:00 and purpose in life was assessed

109

NOTE Confidence: 0.828337100714286

00:59:26.723 --> 00:59:29.387 using the purpose in life test short form.

NOTE Confidence: 0.828337100714286

00:59:29.390 --> 00:59:31.980 Here's a sample item here and also

NOTE Confidence: 0.828337100714286

00:59:31.980 --> 00:59:34.213 be gathered kovin related variables

NOTE Confidence: 0.828337100714286

00:59:34.213 --> 00:59:36.843 including COVID-19 infection status that

NOTE Confidence: 0.828337100714286

00:59:36.843 --> 00:59:41.810 was reported by Self Report next line.

NOTE Confidence: 0.828337100714286

00:59:41.810 --> 00:59:44.180 We ran multivariable logistic regression

NOTE Confidence: 0.828337100714286

00:59:44.180 --> 00:59:47.011 analysis as well as interaction analysis

NOTE Confidence: 0.828337100714286

00:59:47.011 --> 00:59:49.776 of COVID-19 infection by age and also

NOTE Confidence: 0.828337100714286

00:59:49.776 --> 00:59:51.640 by protective psychosocial factors

NOTE Confidence: 0.828337100714286

00:59:51.640 --> 00:59:56.130 based on prior literature next line.

NOTE Confidence: 0.828337100714286

00:59:56.130 --> 00:59:58.776 The results mean age was 55.2

NOTE Confidence: 0.828337100714286

00:59:58.776 --> 01:00:01.120 predominantly male and white,

NOTE Confidence: 0.828337100714286

01:00:01.120 --> 01:00:04.690 40% were combat veterans and apparel.

NOTE Confidence: 0.828337100714286

01:00:04.690 --> 01:00:05.986 Pandemic assessment.

NOTE Confidence: 0.828337100714286

01:00:05.986 --> 01:00:09.874 Almost 20% screen positive for suicidal

NOTE Confidence: 0.828337100714286

01:00:09.874 --> 01:00:13.086 ideations and among them 58.9% reported

NOTE Confidence: 0.828337100714286

01:00:13.086 --> 01:00:15.924 both pre and Peri pandemic aside,

NOTE Confidence: 0.828337100714286

01:00:15.930 --> 01:00:19.365 an 8.9% developed essay during

NOTE Confidence: 0.828337100714286

01:00:19.365 --> 01:00:22.113 the pandemic next slide.

NOTE Confidence: 0.828337100714286

01:00:22.120 --> 01:00:23.484 This is the multivariable

NOTE Confidence: 0.828337100714286

01:00:23.484 --> 01:00:24.848 regression model we found.

NOTE Confidence: 0.828337100714286

01:00:24.850 --> 01:00:26.480 So as you can see,

NOTE Confidence: 0.828337100714286

01:00:26.480 --> 01:00:28.810 higher household income and also

NOTE Confidence: 0.828337100714286

01:00:28.810 --> 01:00:31.140 greater scores and purpose in

NOTE Confidence: 0.828337100714286

01:00:31.222 --> 01:00:33.627 life scale were associated with.

NOTE Confidence: 0.828337100714286

01:00:33.630 --> 01:00:35.630 Lower risk of suicidal ideations

NOTE Confidence: 0.828337100714286

01:00:35.630 --> 01:00:36.830 during the pandemic,

NOTE Confidence: 0.828337100714286

01:00:36.830 --> 01:00:38.918 whereas Eyecatch greater psychiatric

NOTE Confidence: 0.828337100714286

01:00:38.918 --> 01:00:42.050 symptoms severity as well as previous

NOTE Confidence: 0.828337100714286

01:00:42.123 --> 01:00:45.087 suicidal behaviors and cover 19 infection

NOTE Confidence: 0.828337100714286

01:00:45.087 --> 01:00:47.908 were associated with greater risk of SI.

NOTE Confidence: 0.828337100714286

01:00:47.910 --> 01:00:50.560 Next slide.

NOTE Confidence: 0.828337100714286

01:00:50.560 --> 01:00:52.785 Interaction analysis showed that among

NOTE Confidence: 0.828337100714286

01:00:52.785 --> 01:00:55.690 those who are infected with COVID-19,

NOTE Confidence: 0.828337100714286

01:00:55.690 --> 01:00:57.760 those age 45 or older were

NOTE Confidence: 0.828337100714286

01:00:57.760 --> 01:00:59.569 more likely to endorse as I,

NOTE Confidence: 0.828337100714286

01:00:59.570 --> 01:01:02.160 as you can see during in the 45 to 59

NOTE Confidence: 0.828337100714286

01:01:02.230 --> 01:01:05.160 year old bracket, it's close to 60%.

NOTE Confidence: 0.828337100714286

01:01:05.160 --> 01:01:07.335 One possible mechanism to this

NOTE Confidence: 0.828337100714286

01:01:07.335 --> 01:01:09.877 finding is that older adults tend

NOTE Confidence: 0.828337100714286

01:01:09.877 --> 01:01:12.590 to have more severe illness courses,

NOTE Confidence: 0.828337100714286

01:01:12.590 --> 01:01:14.912 or also when they're infected they

NOTE Confidence: 0.828337100714286

01:01:14.912 --> 01:01:17.411 may suffer more anticipo Tori anxiety

NOTE Confidence: 0.828337100714286

01:01:17.411 --> 01:01:20.063 because of the possible higher mortality.

NOTE Confidence: 0.828337100714286

01:01:20.070 --> 01:01:22.600 Next line.

NOTE Confidence: 0.828337100714286

01:01:22.600 --> 01:01:24.445 Another interaction analysis found that

NOTE Confidence: 0.828337100714286

01:01:24.445 --> 01:01:26.819 among those were infected with covin 19,

NOTE Confidence: 0.828337100714286

01:01:26.820 --> 01:01:29.142 those in the lowest quartile of

NOTE Confidence: 0.828337100714286

01:01:29.142 --> 01:01:31.702 purpose in life score almost 80%,

NOTE Confidence: 0.828337100714286

01:01:31.702 --> 01:01:33.220 indoors suicidal ideations,

NOTE Confidence: 0.828337100714286

01:01:33.220 --> 01:01:36.808 and during the pandemic next line.

NOTE Confidence: 0.828337100714286

01:01:36.810 --> 01:01:39.160 Policy clinical implications of our

NOTE Confidence: 0.828337100714286

01:01:39.160 --> 01:01:42.003 findings that veterans age 45 or

NOTE Confidence: 0.828337100714286

01:01:42.003 --> 01:01:44.098 older with COVID-19 infection and

NOTE Confidence: 0.828337100714286

01:01:44.098 --> 01:01:46.342 also has pre existing psychiatric

NOTE Confidence: 0.828337100714286

01:01:46.342 --> 01:01:48.797 disorders may require more close

NOTE Confidence: 0.828337100714286

01:01:48.797 --> 01:01:51.508 monitoring as an policy measures to

NOTE Confidence: 0.828337100714286

01:01:51.508 --> 01:01:52.984 mitigate financial stress interventions

NOTE Confidence: 0.828337100714286

01:01:52.984 --> 01:01:54.770 to enhance purpose in life.

NOTE Confidence: 0.828337100714286

01:01:54.770 --> 01:01:56.084 Size chess acceptance,

NOTE Confidence: 0.828337100714286

01:01:56.084 --> 01:01:58.274 commitment therapy logotherapy as well

NOTE Confidence: 0.828337100714286

01:01:58.274 --> 01:02:01.044 as chaplain care which is known to

NOTE Confidence: 0.828337100714286

01:02:01.044 --> 01:02:02.874 enhance religiosity or in spirituality

NOTE Confidence: 0.828337100714286

01:02:02.937 --> 01:02:04.647 which is closely associated with

NOTE Confidence: 0.828337100714286

01:02:04.647 --> 01:02:07.278 purpose in life may help mitigate suicide.

NOTE Confidence: 0.828337100714286

01:02:07.278 --> 01:02:09.573 Risk behavior risk in veterans

NOTE Confidence: 0.828337100714286

01:02:09.573 --> 01:02:10.950 during the pandemic.

NOTE Confidence: 0.828337100714286

01:02:10.950 --> 01:02:12.970 Nick lied.

NOTE Confidence: 0.828337100714286

01:02:12.970 --> 01:02:14.870 Future directions it's Doctor Pietrzak

NOTE Confidence: 0.828337100714286

01:02:14.870 --> 01:02:17.230 measured with Doctor Pietrzak angoul counter.

NOTE Confidence: 0.828337100714286

01:02:17.230 --> 01:02:18.460 I'll be applying for the VA,

NOTE Confidence: 0.828337100714286

01:02:18.460 --> 01:02:22.372 CDA this fall with plans with proposal to

NOTE Confidence: 0.828337100714286

01:02:22.372 --> 01:02:25.119 identify modifiable psychosocial factors.

NOTE Confidence: 0.828337100714286

01:02:25.120 --> 01:02:27.196 Then we interact with.

NOTE Confidence: 0.828337100714286

01:02:27.196 --> 01:02:29.791 G was derived polygenic risk

NOTE Confidence: 0.828337100714286

01:02:29.791 --> 01:02:32.553 scores of suicidality as Westworld

NOTE Confidence: 0.828337100714286

01:02:32.553 --> 01:02:34.719 ssed and as a starter.

NOTE Confidence: 0.828337100714286

01:02:34.719 --> 01:02:37.260 We just submitted a paper to the

NOTE Confidence: 0.828337100714286

01:02:37.342 --> 01:02:39.868 journal looking at a seven year.

NOTE Confidence: 0.828337100714286

01:02:39.870 --> 01:02:42.712 Prospective cord of an HRV S looking

NOTE Confidence: 0.828337100714286

01:02:42.712 --> 01:02:45.880 at PRS by psychosocial factors.

NOTE Confidence: 0.828337100714286

01:02:45.880 --> 01:02:48.110 Next line.

NOTE Confidence: 0.828337100714286

01:02:48.110 --> 01:02:49.600 These are the findings we

NOTE Confidence: 0.828337100714286

01:02:49.600 --> 01:02:51.420 found and as you can see,

NOTE Confidence: 0.828337100714286

01:02:51.420 --> 01:02:54.040 those with higher suicidality

NOTE Confidence: 0.828337100714286

01:02:54.040 --> 01:02:57.315 collision at risk for suicidality.

NOTE Confidence: 0.828337100714286

01:02:57.320 --> 01:03:00.265 And also endorsed lower dispositional

NOTE Confidence: 0.828337100714286

01:03:00.265 --> 01:03:03.747 optimism and lower social support were

NOTE Confidence: 0.828337100714286

01:03:03.747 --> 01:03:06.435 more likely to endorse Chronicus I

NOTE Confidence: 0.828337100714286

01:03:06.435 --> 01:03:09.442 or develop new onset SI respectively

NOTE Confidence: 0.828337100714286

01:03:09.442 --> 01:03:12.592 during the seven year study period.

NOTE Confidence: 0.771111305

01:03:12.600 --> 01:03:17.390 I'll put this papers under review next line.

NOTE Confidence: 0.771111305

01:03:17.390 --> 01:03:18.972 We would like to thank the veterans

NOTE Confidence: 0.771111305

01:03:18.972 --> 01:03:19.940 participating in our study,

NOTE Confidence: 0.771111305

01:03:19.940 --> 01:03:22.055 especially with Memorial Day coming

NOTE Confidence: 0.771111305

01:03:22.055 --> 01:03:24.605 around and also our collaborators as

NOTE Confidence: 0.771111305

01:03:24.605 --> 01:03:27.181 well as the crew addictions that country

NOTE Confidence: 0.771111305

01:03:27.181 --> 01:03:28.810 fellowship crew, including doctors,

NOTE Confidence: 0.771111305

01:03:28.810 --> 01:03:31.480 meaning that raucous thank you everyone.

NOTE Confidence: 0.8094771

01:03:35.390 --> 01:03:38.230 Wonderful thank you one week, really.

NOTE Confidence: 0.7182042

01:03:39.510 --> 01:03:42.910 Wow, wait. We have time crunch.

NOTE Confidence: 0.860790427142857

01:03:45.090 --> 01:03:47.134 Important to get this out so we're

NOTE Confidence: 0.841051909375

01:03:47.560 --> 01:03:48.619 very timely. Alright,

NOTE Confidence: 0.841051909375

01:03:48.619 --> 01:03:51.611 so we'll move on to our last speaker

NOTE Confidence: 0.841051909375

01:03:51.611 --> 01:03:53.846 in our last honorable mention,

NOTE Confidence: 0.841051909375

01:03:53.850 --> 01:03:56.270 and this is Ryan O'dell.

NOTE Confidence: 0.841051909375

01:03:56.270 --> 01:03:57.710 He'll be introduced by his mentor,

NOTE Confidence: 0.841051909375

01:03:57.710 --> 01:03:58.739 Chris Van ****.

NOTE Confidence: 0.875938383529412

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01:04:01.060 --> 01:04:03.908 Great thank you Chris and I want to

NOTE Confidence: 0.875938383529412

01:04:03.908 --> 01:04:06.656 congratulate all of the awards and I'm

NOTE Confidence: 0.875938383529412

01:04:06.656 --> 01:04:09.393 especially honored to introduce Ryan O'dell,

NOTE Confidence: 0.875938383529412

01:04:09.393 --> 01:04:13.817 whom we felt very fortunate to have as

NOTE Confidence: 0.875938383529412

01:04:13.817 --> 01:04:17.046 a member of our research team with the

NOTE Confidence: 0.875938383529412

01:04:17.046 --> 01:04:19.471 Alzheimer's Research Unit and Alzheimer's

NOTE Confidence: 0.875938383529412

01:04:19.471 --> 01:04:23.230 Research Center for the past three years.

NOTE Confidence: 0.875938383529412

01:04:23.230 --> 01:04:24.570 Starting with this case,

NOTE Confidence: 0.875938383529412

01:04:24.570 --> 01:04:27.405 rotation and then continuing throughout this

NOTE Confidence: 0.875938383529412

01:04:27.405 --> 01:04:32.000 Presidency through the N R&R TP program Ryan.

NOTE Confidence: 0.875938383529412

01:04:32.000 --> 01:04:33.056 As you will see,

NOTE Confidence: 0.875938383529412

01:04:33.056 --> 01:04:36.488 has focused his research in Nuro pet imaging,

NOTE Confidence: 0.875938383529412

01:04:36.488 --> 01:04:41.009 in which he is Co mentored by Adam Mecca,

NOTE Confidence: 0.875938383529412

01:04:41.010 --> 01:04:43.580 an in which he's proven to be a very,

NOTE Confidence: 0.875938383529412

01:04:43.580 --> 01:04:48.278 very quick study of complex neuroimaging

NOTE Confidence: 0.875938383529412

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01:04:48.280 --> 01:04:50.050 methodology's in statistics,

NOTE Confidence: 0.875938383529412

01:04:50.050 --> 01:04:52.242 and I think his research abilities will speak

NOTE Confidence: 0.875938383529412

01:04:52.242 --> 01:04:54.126 for themselves through the paper that Hill.

NOTE Confidence: 0.875938383529412

01:04:54.126 --> 01:04:57.138 Be presenting to you.

NOTE Confidence: 0.875938383529412

01:04:57.140 --> 01:04:59.954 But Ryan, I wanted to really emphasize

NOTE Confidence: 0.875938383529412

01:04:59.954 --> 01:05:03.260 as a person of extraordinary ability,

NOTE Confidence: 0.875938383529412

01:05:03.260 --> 01:05:05.672 curiosity, and dedication,

NOTE Confidence: 0.875938383529412

01:05:05.672 --> 01:05:10.496 but also compassion as a clinician.

NOTE Confidence: 0.875938383529412

01:05:10.500 --> 01:05:14.868 And also you know rare generosity as he

NOTE Confidence: 0.875938383529412

01:05:14.868 --> 01:05:18.151 regularly shares his his knowledge and

NOTE Confidence: 0.875938383529412

01:05:18.151 --> 01:05:22.840 experience with our students with our.

NOTE Confidence: 0.875938383529412

01:05:22.840 --> 01:05:24.384 Staff and with collaborators.

NOTE Confidence: 0.875938383529412

01:05:24.384 --> 01:05:26.700 And I think he certainly has

NOTE Confidence: 0.875938383529412

01:05:26.773 --> 01:05:28.039 a brilliant future.

NOTE Confidence: 0.875938383529412

01:05:28.040 --> 01:05:28.190 As

NOTE Confidence: 0.90567448

01:05:28.200 --> 01:05:30.744 a physician, scientist and

NOTE Confidence: 0.90567448

01:05:30.744 --> 01:05:32.788 teacher, but maybe at least as

NOTE Confidence: 0.900792508

01:05:32.800 --> 01:05:35.060 importantly as a new father.

NOTE Confidence: 0.900792508

01:05:35.060 --> 01:05:37.395 So multiple. Congratulations

NOTE Confidence: 0.900792508

01:05:37.395 --> 01:05:41.085 to Ryan and also to Milda.

NOTE Confidence: 0.900792508

01:05:41.090 --> 01:05:44.340 So take it away, Ryan. Thank

NOTE Confidence: 0.874919461428571

01:05:44.350 --> 01:05:47.087 you Chris for that very kind introduction.

NOTE Confidence: 0.874919461428571

01:05:47.090 --> 01:05:48.962 And before I begin I also want to

NOTE Confidence: 0.874919461428571

01:05:48.962 --> 01:05:51.090 thank the Lussman family as well as

NOTE Confidence: 0.874919461428571

01:05:51.090 --> 01:05:52.695 the award selection committee for

NOTE Confidence: 0.874919461428571

01:05:52.751 --> 01:05:54.707 this opportunity to present my work.

NOTE Confidence: 0.874919461428571

01:05:54.710 --> 01:05:57.094 My recent work using a novel pet imaging

NOTE Confidence: 0.874919461428571

01:05:57.094 --> 01:05:59.197 tracer to characterize the relationship

NOTE Confidence: 0.874919461428571

01:05:59.197 --> 01:06:01.607 between amyloid accumulation and synaptic

NOTE Confidence: 0.874919461428571

01:06:01.607 --> 01:06:04.188 health in early Alzheimer's disease.

NOTE Confidence: 0.874919461428571

01:06:04.190 --> 01:06:07.725 Next slide, I have no personal disclosures,

NOTE Confidence: 0.874919461428571

01:06:07.730 --> 01:06:08.888 so next slide.

NOTE Confidence: 0.874919461428571

01:06:08.888 --> 01:06:11.590 And so just to dive right in.

NOTE Confidence: 0.874919461428571

01:06:11.590 --> 01:06:13.738 So synaptic loss has been demonstrated

NOTE Confidence: 0.874919461428571

01:06:13.738 --> 01:06:15.788 both as an early pathological

NOTE Confidence: 0.874919461428571

01:06:15.788 --> 01:06:17.976 event in Alzheimer's disease,

NOTE Confidence: 0.874919461428571

01:06:17.980 --> 01:06:20.932 but also a significant major structural

NOTE Confidence: 0.874919461428571

01:06:20.932 --> 01:06:22.900 correlate with cognitive impairment.

NOTE Confidence: 0.874919461428571

01:06:22.900 --> 01:06:25.378 An as synaptic loss in Alzheimer's

NOTE Confidence: 0.874919461428571

01:06:25.378 --> 01:06:27.561 disease has been investigated primarily

NOTE Confidence: 0.874919461428571

01:06:27.561 --> 01:06:30.327 via postmortem and brain biopsy studies.

NOTE Confidence: 0.874919461428571

01:06:30.330 --> 01:06:32.268 The ability to measure synaptic density

NOTE Confidence: 0.874919461428571

01:06:32.268 --> 01:06:35.170 in vivo would not only allow for a

NOTE Confidence: 0.874919461428571

01:06:35.170 --> 01:06:37.100 more complete understanding of synaptic

NOTE Confidence: 0.874919461428571

01:06:37.100 --> 01:06:38.910 alterations in early disease stages,

NOTE Confidence: 0.874919461428571

01:06:38.910 --> 01:06:40.828 but would also be a great utility.

NOTE Confidence: 0.874919461428571

01:06:40.830 --> 01:06:43.357 For tracking a deep regression and also

NOTE Confidence: 0.874919461428571

01:06:43.357 --> 01:06:45.202 monitoring the efficacy of potential

NOTE Confidence: 0.874919461428571

01:06:45.202 --> 01:06:47.308 therapies in clinical trials and so,

NOTE Confidence: 0.874919461428571

01:06:47.310 --> 01:06:49.434 one suitable target is the synaptic

NOTE Confidence: 0.874919461428571

01:06:49.434 --> 01:06:51.393 vesicle glycoprotein 2 which is circled

NOTE Confidence: 0.874919461428571

01:06:51.393 --> 01:06:53.730 in blue in the bottom left of the slide.

NOTE Confidence: 0.874919461428571

01:06:53.730 --> 01:06:56.194 This is an essential component of synaptic

NOTE Confidence: 0.874919461428571

01:06:56.194 --> 01:06:58.319 vesicles is located in the presynaptic

NOTE Confidence: 0.874919461428571

01:06:58.319 --> 01:07:00.329 terminals and one of its isoforms.

NOTE Confidence: 0.874919461428571

01:07:00.330 --> 01:07:01.930 SV 2A is ubiquitously expressed

NOTE Confidence: 0.874919461428571

01:07:01.930 --> 01:07:03.909 in almost all of the synapses

NOTE Confidence: 0.874919461428571

01:07:03.909 --> 01:07:06.065 in the CNS and could be useful.

NOTE Confidence: 0.874919461428571

01:07:06.070 --> 01:07:07.438 Useful biomarker for synaptic

NOTE Confidence: 0.874919461428571

01:07:07.438 --> 01:07:09.490 density and so to that end,

NOTE Confidence: 0.874919461428571

01:07:09.490 --> 01:07:10.967 such a tracer known as you see,

NOTE Confidence: 0.874919461428571

01:07:10.970 --> 01:07:12.836 BJ's shown in the bottom right.

NOTE Confidence: 0.874919461428571

01:07:12.840 --> 01:07:14.886 Has been developed for quantitative SV

NOTE Confidence: 0.874919461428571

01:07:14.886 --> 01:07:17.528 2A pet imaging at the Yale Pet Center.

NOTE Confidence: 0.874919461428571

01:07:17.530 --> 01:07:18.664 Next slide please.

NOTE Confidence: 0.874919461428571

01:07:18.664 --> 01:07:20.932 So in our previous work with

NOTE Confidence: 0.874919461428571

01:07:20.932 --> 01:07:22.429 UCB JPEG image Ng,

NOTE Confidence: 0.874919461428571

01:07:22.430 --> 01:07:24.178 we've demonstrated widespread reductions

NOTE Confidence: 0.874919461428571

01:07:24.178 --> 01:07:26.363 in synaptic density in Alzheimer's

NOTE Confidence: 0.874919461428571

01:07:26.363 --> 01:07:28.330 disease in the medial temporal lobe,

NOTE Confidence: 0.874919461428571

01:07:28.330 --> 01:07:29.482 and also neocortical regions,

NOTE Confidence: 0.874919461428571

01:07:29.482 --> 01:07:32.311 and on the left this is a slide from

NOTE Confidence: 0.874919461428571

01:07:32.311 --> 01:07:34.051 a recent publication that displays

NOTE Confidence: 0.874919461428571

01:07:34.051 --> 01:07:35.761 average coronial images of synaptic

NOTE Confidence: 0.874919461428571

01:07:35.761 --> 01:07:37.361 density for 19 cognitively normal

NOTE Confidence: 0.874919461428571

01:07:37.361 --> 01:07:39.630 on the left and 34 Alzheimer's

NOTE Confidence: 0.874919461428571

01:07:39.630 --> 01:07:41.655 disease participants on the right,

NOTE Confidence: 0.874919461428571

01:07:41.660 --> 01:07:43.884 and you can see visibly reduced you CBJ

NOTE Confidence: 0.874919461428571

01:07:43.884 --> 01:07:45.897 binding in the medial temporal lobe,

NOTE Confidence: 0.874919461428571

01:07:45.900 --> 01:07:48.940 which is the bottom row of corona sections.

NOTE Confidence: 0.874919461428571

01:07:48.940 --> 01:07:50.704 But you can also see there's a

NOTE Confidence: 0.874919461428571

01:07:50.704 --> 01:07:52.183 reduction in synaptic density throughout

NOTE Confidence: 0.874919461428571

01:07:52.183 --> 01:07:53.848 the NEO cortex and subcortex.

NOTE Confidence: 0.874919461428571

01:07:53.850 --> 01:07:55.800 Which we have quantified below,

NOTE Confidence: 0.874919461428571

01:07:55.800 --> 01:07:58.670 and although this study did seek out,

NOTE Confidence: 0.874919461428571

01:07:58.670 --> 01:07:59.432 you know,

NOTE Confidence: 0.874919461428571

01:07:59.432 --> 01:08:01.337 to fully characterize the extent

NOTE Confidence: 0.874919461428571

01:08:01.337 --> 01:08:03.411 of synaptic alterations in early AD

NOTE Confidence: 0.874919461428571

01:08:03.411 --> 01:08:05.145 using SV2 Apetit did leave unclear

NOTE Confidence: 0.874919461428571

01:08:05.145 --> 01:08:07.225 the relationship of these synaptic

NOTE Confidence: 0.874919461428571

01:08:07.225 --> 01:08:08.957 alterations with more traditional

NOTE Confidence: 0.874919461428571

01:08:08.957 --> 01:08:10.766 markers of 80 pathology,

NOTE Confidence: 0.874919461428571

01:08:10.766 --> 01:08:13.574 specifically amyloid or a beta deposition,

NOTE Confidence: 0.874919461428571

01:08:13.580 --> 01:08:15.080 and so therefore in the present

NOTE Confidence: 0.874919461428571

01:08:15.080 --> 01:08:16.841 study we set out to characterize

NOTE Confidence: 0.874919461428571

01:08:16.841 --> 01:08:18.611 the relationship between a measure

NOTE Confidence: 0.874919461428571

01:08:18.611 --> 01:08:20.556 of global amyloid deposition and SV

NOTE Confidence: 0.874919461428571

01:08:20.556 --> 01:08:22.488 two way binding in early Ady across

NOTE Confidence: 0.874919461428571

01:08:22.490 --> 01:08:24.248 a broad range of cortical regions.

NOTE Confidence: 0.874919461428571

01:08:24.250 --> 01:08:24.932 Next slide.

NOTE Confidence: 0.874919461428571

01:08:24.932 --> 01:08:28.350 And so, in the era of amyloid PET imaging,

NOTE Confidence: 0.874919461428571

01:08:28.350 --> 01:08:30.606 longitudinal studies have generally

NOTE Confidence: 0.874919461428571

01:08:30.606 --> 01:08:32.298 demonstrated that continued.

NOTE Confidence: 0.874919461428571

01:08:32.300 --> 01:08:34.056 There's continued amyloid accumulation

NOTE Confidence: 0.874919461428571

01:08:34.056 --> 01:08:36.251 throughout the prodromal or mild

NOTE Confidence: 0.874919461428571

01:08:36.251 --> 01:08:38.088 cognitive impairment stages of

NOTE Confidence: 0.874919461428571

01:08:38.088 --> 01:08:38.978 Alzheimer's disease,

NOTE Confidence: 0.874919461428571

01:08:38.980 --> 01:08:41.507 with minimal change by the time of

NOTE Confidence: 0.874919461428571

01:08:41.507 --> 01:08:44.108 conversion to a dementia next slide.

NOTE Confidence: 0.874919461428571

01:08:44.110 --> 01:08:45.730 And additionally limited postmortem

NOTE Confidence: 0.874919461428571

01:08:45.730 --> 01:08:48.160 work in these prodromal or mild

NOTE Confidence: 0.825297698571428

01:08:48.221 --> 01:08:50.001 Adie stages has demonstrated the

NOTE Confidence: 0.825297698571428

01:08:50.001 --> 01:08:52.572 hippocampus to be the site of the

NOTE Confidence: 0.825297698571428

01:08:52.572 --> 01:08:54.744 earliest and most profound synaptic loss.

NOTE Confidence: 0.825297698571428

01:08:54.750 --> 01:08:56.970 Next slide and so therefore,

NOTE Confidence: 0.825297698571428

01:08:56.970 --> 01:08:59.810 in the prodromal stage of a D when

NOTE Confidence: 0.825297698571428

01:08:59.810 --> 01:09:02.230 amyloid plaques are still accumulating,

NOTE Confidence: 0.825297698571428

01:09:02.230 --> 01:09:04.309 we might expect them to be associated

NOTE Confidence: 0.825297698571428

01:09:04.309 --> 01:09:06.159 with industries of disease severity,

NOTE Confidence: 0.825297698571428

01:09:06.160 --> 01:09:07.716 which includes synaptic loss,

NOTE Confidence: 0.825297698571428

01:09:07.716 --> 01:09:09.661 particularly in those brain regions

NOTE Confidence: 0.825297698571428

01:09:09.661 --> 01:09:11.890 that show marked early synaptic loss,

NOTE Confidence: 0.825297698571428

01:09:11.890 --> 01:09:14.836 such as the hippocampus. Next slide.

NOTE Confidence: 0.825297698571428

01:09:14.840 --> 01:09:17.036 Oh yes, there's the primary hypothesis,

NOTE Confidence: 0.825297698571428

01:09:17.040 --> 01:09:21.920 Yep, so in in this study we have

NOTE Confidence: 0.825297698571428

01:09:21.920 --> 01:09:23.555 recruited participants between the age

NOTE Confidence: 0.825297698571428

01:09:23.555 --> 01:09:26.776 of 55 and 85 years old that either had

NOTE Confidence: 0.825297698571428

01:09:26.776 --> 01:09:28.686 normal cognition or Alzheimer's disease.

NOTE Confidence: 0.825297698571428

01:09:28.690 --> 01:09:30.414 The cognitively normal participants,

NOTE Confidence: 0.825297698571428

01:09:30.414 --> 01:09:32.569 Ramel Lloyd negative NAD participants

NOTE Confidence: 0.825297698571428

01:09:32.569 --> 01:09:34.485 either had mild dementia or

NOTE Confidence: 0.825297698571428

01:09:34.485 --> 01:09:35.556 mild cognitive impairment,

NOTE Confidence: 0.825297698571428

01:09:35.560 --> 01:09:37.310 and all were employed positive.

NOTE Confidence: 0.825297698571428

01:09:37.310 --> 01:09:39.326 We perform pipet for brain amyloid.

NOTE Confidence: 0.825297698571428

01:09:39.330 --> 01:09:41.810 You see BJ to measure the synaptic density

NOTE Confidence: 0.825297698571428

01:09:41.810 --> 01:09:44.744 and we did MRI for volumetric segmentation

NOTE Confidence: 0.825297698571428

01:09:44.744 --> 01:09:47.320 and ROI determination using freesurfer.

NOTE Confidence: 0.825297698571428

01:09:47.320 --> 01:09:49.024 Parameters and the model parameters that

NOTE Confidence: 0.825297698571428

01:09:49.024 --> 01:09:51.258 I'm going to be reporting are distribution

NOTE Confidence: 0.825297698571428

01:09:51.258 --> 01:09:53.701 volume ratios that use a whole cerebellum.

NOTE Confidence: 0.825297698571428

01:09:53.710 --> 01:09:55.430 Reference region for both tracers.

NOTE Confidence: 0.825297698571428

01:09:55.430 --> 01:09:56.276 Next slide.

NOTE Confidence: 0.825297698571428

01:09:56.276 --> 01:09:58.814 So this is some demographic information.

NOTE Confidence: 0.825297698571428

01:09:58.820 --> 01:10:01.130 The sample consisted of 19 cognitively

NOTE Confidence: 0.825297698571428

01:10:01.130 --> 01:10:03.715 normal 14 amnestic mild cognitive impairment

NOTE Confidence: 0.825297698571428

01:10:03.715 --> 01:10:06.155 and 24 mild dementia participants.

NOTE Confidence: 0.825297698571428

01:10:06.160 --> 01:10:08.304 It was well balanced for age and sex

NOTE Confidence: 0.825297698571428

01:10:08.304 --> 01:10:09.526 and demonstrated slightly decreased

NOTE Confidence: 0.825297698571428

01:10:09.526 --> 01:10:11.410 years of education in the dementia

NOTE Confidence: 0.825297698571428

01:10:11.410 --> 01:10:13.357 group as compared to the CN Group.

NOTE Confidence: 0.825297698571428

01:10:13.360 --> 01:10:14.836 I have that highlighted in red,

NOTE Confidence: 0.825297698571428

01:10:14.840 --> 01:10:17.122 but overall we do see expected group

NOTE Confidence: 0.825297698571428

01:10:17.122 --> 01:10:19.511 differences in measures of disease stage as

NOTE Confidence: 0.825297698571428

01:10:19.511 --> 01:10:21.533 indicated by the clinical dementia rating.

NOTE Confidence: 0.825297698571428

01:10:21.540 --> 01:10:22.776 Some boxes score.

NOTE Confidence: 0.825297698571428

01:10:22.776 --> 01:10:25.660 Global cognition is shown with the MSE,

NOTE Confidence: 0.825297698571428

01:10:25.660 --> 01:10:28.068 an episodic memory as shown is an average

NOTE Confidence: 0.825297698571428

01:10:28.068 --> 01:10:31.102 of the logical memory 2IN revolt delay.

NOTE Confidence: 0.825297698571428

01:10:31.102 --> 01:10:34.107 Onoro psychological tests next slide.

NOTE Confidence: 0.825297698571428

01:10:34.110 --> 01:10:36.441 So then looking at our primary analysis

NOTE Confidence: 0.825297698571428

01:10:36.441 --> 01:10:38.312 of the association between global

NOTE Confidence: 0.825297698571428

01:10:38.312 --> 01:10:40.730 amyloid deposition and hippocampal SV 2A,

NOTE Confidence: 0.825297698571428

01:10:40.730 --> 01:10:43.502 we see a marginally significant inverse

NOTE Confidence: 0.825297698571428

01:10:43.502 --> 01:10:45.694 correlation in participants with MCI

NOTE Confidence: 0.825297698571428

01:10:45.694 --> 01:10:47.918 as shown by the green dots in line,

NOTE Confidence: 0.825297698571428

01:10:47.920 --> 01:10:50.384 but not in dementia shown in red,

NOTE Confidence: 0.825297698571428

01:10:50.390 --> 01:10:52.590 and this significant correlation did

NOTE Confidence: 0.825297698571428

01:10:52.590 --> 01:10:54.350 survive partial volume correction,

NOTE Confidence: 0.825297698571428

01:10:54.350 --> 01:10:56.975 although I'm not going to be discussing

NOTE Confidence: 0.825297698571428

01:10:56.975 --> 01:10:58.621 that technique and methodology

NOTE Confidence: 0.825297698571428

01:10:58.621 --> 01:10:59.980 here next slide.

NOTE Confidence: 0.825297698571428

01:10:59.980 --> 01:11:01.820 And we can also see this difference in

NOTE Confidence: 0.825297698571428

01:11:01.820 --> 01:11:02.967 the correlation coefficients between

NOTE Confidence: 0.825297698571428

01:11:02.967 --> 01:11:04.577 the true groups was significant,

NOTE Confidence: 0.825297698571428

01:11:04.580 --> 01:11:06.946 as assessed by the Fisher Z transform

NOTE Confidence: 0.825297698571428

01:11:06.946 --> 01:11:09.450 with a one tailed P value next.

NOTE Confidence: 0.825297698571428

01:11:09.450 --> 01:11:10.590 And so finally,

NOTE Confidence: 0.825297698571428

01:11:10.590 --> 01:11:11.730 surrounding our exploratory

NOTE Confidence: 0.825297698571428

01:11:11.730 --> 01:11:13.763 analysis of the association between

NOTE Confidence: 0.825297698571428

01:11:13.763 --> 01:11:15.128 global amyloid deposition,

NOTE Confidence: 0.825297698571428

01:11:15.130 --> 01:11:17.328 an regional S V2 and the remaining

NOTE Confidence: 0.825297698571428

01:11:17.328 --> 01:11:18.270 medial temporal structures,

NOTE Confidence: 0.825297698571428

01:11:18.270 --> 01:11:20.102 amygdala, and to rhino,

NOTE Confidence: 0.825297698571428

01:11:20.102 --> 01:11:21.476 in parahippocampal cortices,

NOTE Confidence: 0.825297698571428

01:11:21.480 --> 01:11:23.755 as well as cortical composite are wise.

NOTE Confidence: 0.825297698571428

01:11:23.760 --> 01:11:25.480 We do observe many negative

NOTE Confidence: 0.825297698571428

01:11:25.480 --> 01:11:26.512 but nonsignificant correlations

NOTE Confidence: 0.825297698571428

01:11:26.512 --> 01:11:27.930 in both participants,

NOTE Confidence: 0.825297698571428

01:11:27.930 --> 01:11:29.970 with MCI and mild dementia.

NOTE Confidence: 0.825297698571428

01:11:29.970 --> 01:11:32.682 We do have other do see a significant

NOTE Confidence: 0.825297698571428

01:11:32.682 --> 01:11:34.119 inverse correlation between global

NOTE Confidence: 0.825297698571428

01:11:34.119 --> 01:11:35.844 amyloid and lateral parietal SV

NOTE Confidence: 0.825297698571428

01:11:35.844 --> 01:11:38.260 2A and mild dementia participants,

NOTE Confidence: 0.825297698571428

01:11:38.260 --> 01:11:39.403 but this significant.

NOTE Confidence: 0.825297698571428

01:11:39.403 --> 01:11:40.927 Correlation did not survive

NOTE Confidence: 0.825297698571428

01:11:40.927 --> 01:11:42.070 partial volume correction.

NOTE Confidence: 0.825297698571428

01:11:42.070 --> 01:11:42.708 Next slide,

NOTE Confidence: 0.825297698571428

01:11:42.708 --> 01:11:45.260 and so in conclusion we this is the

NOTE Confidence: 0.825297698571428

01:11:45.333 --> 01:11:47.948 first in vivo study investigating

NOTE Confidence: 0.825297698571428

01:11:47.948 --> 01:11:50.040 the relationship between amyloid

NOTE Confidence: 0.825297698571428

01:11:50.040 --> 01:11:52.266 deposition and synaptic alterations

NOTE Confidence: 0.825297698571428

01:11:52.266 --> 01:11:53.895 in Alzheimer's disease.

NOTE Confidence: 0.825297698571428

01:11:53.900 --> 01:11:55.215 We feel our findings lend

NOTE Confidence: 0.825297698571428

01:11:55.215 --> 01:11:56.530 in vivo support to this

NOTE Confidence: 0.813743420526316

01:11:56.590 --> 01:11:58.320 hypothesis that in the earlier

NOTE Confidence: 0.813743420526316

01:11:58.320 --> 01:11:59.704 stages of clinical disease,

NOTE Confidence: 0.813743420526316

01:11:59.710 --> 01:12:01.540 amyloid deposition may still be

NOTE Confidence: 0.813743420526316

01:12:01.540 --> 01:12:03.370 accumulating across the broad range

NOTE Confidence: 0.813743420526316

01:12:03.430 --> 01:12:05.596 of cortical regions having yet to

NOTE Confidence: 0.813743420526316

01:12:05.596 --> 01:12:07.040 reach this hypothesized plateau,

NOTE Confidence: 0.813743420526316

01:12:07.040 --> 01:12:09.007 and we also feel these results are

NOTE Confidence: 0.813743420526316

01:12:09.007 --> 01:12:10.583 consistent with prior evidence that

NOTE Confidence: 0.813743420526316

01:12:10.583 --> 01:12:12.617 amyloid plaques are not well correlated.

NOTE Confidence: 0.813743420526316

01:12:12.620 --> 01:12:14.456 With the indices of disease severity,

NOTE Confidence: 0.813743420526316

01:12:14.460 --> 01:12:16.110 at least in the dementia stage,

NOTE Confidence: 0.813743420526316

01:12:16.110 --> 01:12:17.262 and of course,

NOTE Confidence: 0.813743420526316

01:12:17.262 --> 01:12:18.798 to better characterize this

NOTE Confidence: 0.813743420526316

01:12:18.798 --> 01:12:19.950 relationship moving forward,

NOTE Confidence: 0.813743420526316

01:12:19.950 --> 01:12:21.346 we're recruiting or continuing

NOTE Confidence: 0.813743420526316

01:12:21.346 --> 01:12:23.440 to recruit a larger cohort of

NOTE Confidence: 0.813743420526316

01:12:23.503 --> 01:12:25.945 participants with MCI and mild dementia

NOTE Confidence: 0.813743420526316

01:12:25.945 --> 01:12:27.573 to be followed longitudinally,

NOTE Confidence: 0.813743420526316

01:12:27.580 --> 01:12:30.154 as well as investigating a separate

NOTE Confidence: 0.813743420526316

01:12:30.154 --> 01:12:31.870 cohort with preclinical Alzheimer's

NOTE Confidence: 0.813743420526316

01:12:31.933 --> 01:12:34.123 disease for longitudinal multi tracer

NOTE Confidence: 0.813743420526316

01:12:34.123 --> 01:12:37.580 PET imaging studies. Next slide.

NOTE Confidence: 0.813743420526316

01:12:37.580 --> 01:12:38.917 So that's all I have for today.

NOTE Confidence: 0.813743420526316

01:12:38.920 --> 01:12:40.612 Thank you again for allowing me

NOTE Confidence: 0.813743420526316

01:12:40.612 --> 01:12:42.118 this opportunity to tell everyone

NOTE Confidence: 0.813743420526316

01:12:42.118 --> 01:12:43.406 about our ongoing work.

NOTE Confidence: 0.813743420526316

01:12:43.410 --> 01:12:45.276 I really, really can't give enough

NOTE Confidence: 0.813743420526316

01:12:45.276 --> 01:12:46.520 thanks to my faculty,

NOTE Confidence: 0.813743420526316

01:12:46.520 --> 01:12:48.448 mentors, Doctor Vandyken, Dr.

NOTE Confidence: 0.813743420526316

01:12:48.448 --> 01:12:48.930 Mecca,

NOTE Confidence: 0.813743420526316

01:12:48.930 --> 01:12:50.771 as well as all of the research

NOTE Confidence: 0.813743420526316

01:12:50.771 --> 01:12:52.356 faculty and staff that have

NOTE Confidence: 0.813743420526316

01:12:52.356 --> 01:12:54.196 contributed contributed to this work,

NOTE Confidence: 0.813743420526316

01:12:54.200 --> 01:12:55.748 many of whom are listed here.

NOTE Confidence: 0.813743420526316

01:12:55.750 --> 01:12:56.455 And, of course,

NOTE Confidence: 0.813743420526316

01:12:56.455 --> 01:12:57.865 we can't give enough thanks to

NOTE Confidence: 0.813743420526316

01:12:57.865 --> 01:12:59.134 the research participants who

NOTE Confidence: 0.813743420526316

01:12:59.134 --> 01:13:00.779 generously donated their time and

NOTE Confidence: 0.813743420526316

01:13:00.779 --> 01:13:02.330 efforts to make these studies

NOTE Confidence: 0.914235496666667

01:13:02.340 --> 01:13:03.888 possible. Thank you.

NOTE Confidence: 0.865959557916666

01:13:09.770 --> 01:13:12.398 Thank you Ryan for a great talk and I

NOTE Confidence: 0.865959557916666

01:13:12.398 --> 01:13:15.074 think we've really seen an extraordinary

NOTE Confidence: 0.865959557916666

01:13:15.074 --> 01:13:17.384 breadth of wonderful science here

NOTE Confidence: 0.865959557916666

01:13:17.459 --> 01:13:19.499 across many different domains.

NOTE Confidence: 0.865959557916666

01:13:19.500 --> 01:13:21.600 It just speaks to the the wonderful

NOTE Confidence: 0.865959557916666

01:13:21.600 --> 01:13:23.763 things that are going on among the

NOTE Confidence: 0.865959557916666

01:13:23.763 --> 01:13:25.563 trainees in our department and I

NOTE Confidence: 0.865959557916666

01:13:25.625 --> 01:13:27.510 congratulate all of the winners.

NOTE Confidence: 0.865959557916666

01:13:27.510 --> 01:13:28.246 Since we've had 11:30,

NOTE Confidence: 0.865959557916666

01:13:28.246 --> 01:13:29.838 I think we're not going to have time

NOTE Confidence: 0.865959557916666

01:13:29.838 --> 01:13:31.188 for more questions and discussion now,

NOTE Confidence: 0.865959557916666

01:13:31.190 --> 01:13:33.334 but I invite you if people have questions

NOTE Confidence: 0.865959557916666

01:13:33.334 --> 01:13:35.030 for individual winners and presenters,

NOTE Confidence: 0.865959557916666

01:13:35.030 --> 01:13:37.936 please follow up by email with them.

NOTE Confidence: 0.865959557916666

01:13:37.936 --> 01:13:40.654 Thank you everyone for being here.

NOTE Confidence: 0.865959557916666

01:13:40.660 --> 01:13:42.599 Thanks again to the last man family

NOTE Confidence: 0.865959557916666

01:13:42.599 --> 01:13:44.958 and the last and Family Foundation

NOTE Confidence: 0.865959557916666

01:13:44.958 --> 01:13:46.910 for supporting this wonderful

NOTE Confidence: 0.865959557916666

01:13:46.910 --> 01:13:47.886 departmental transition.

NOTE Confidence: 0.865959557916666

01:13:47.890 --> 01:13:48.996 We'll see you all again next year.