

WEBVTT

NOTE duration:"00:56:59"

NOTE recognizability:0.895

NOTE language:en-us

NOTE Confidence: 0.842065724210526

00:00:00.000 --> 00:00:02.195 To introduce Doctor Deborah Hasan.

NOTE Confidence: 0.842065724210526

00:00:02.195 --> 00:00:05.023 Dr Hasan is professor of epidemiology

NOTE Confidence: 0.842065724210526

00:00:05.023 --> 00:00:07.793 at Columbia University in the

NOTE Confidence: 0.842065724210526

00:00:07.793 --> 00:00:10.360 Department of Psychiatry and in the

NOTE Confidence: 0.842065724210526

00:00:10.360 --> 00:00:11.860 Mailman School of Public Health,

NOTE Confidence: 0.842065724210526

00:00:11.860 --> 00:00:13.940 the Department of Epidemiology.

NOTE Confidence: 0.842065724210526

00:00:13.940 --> 00:00:16.540 Doctor Haasis research has covered

NOTE Confidence: 0.842065724210526

00:00:16.540 --> 00:00:18.796 epidemiological and clinical studies of

NOTE Confidence: 0.842065724210526

00:00:18.796 --> 00:00:21.304 substance use and substance use disorders,

NOTE Confidence: 0.842065724210526

00:00:21.310 --> 00:00:24.614 particularly alcohol and cannabis and on the

NOTE Confidence: 0.842065724210526

00:00:24.614 --> 00:00:27.210 comorbidity associated with these conditions.

NOTE Confidence: 0.842065724210526

00:00:27.210 --> 00:00:28.980 Her studies have had a

NOTE Confidence: 0.842065724210526

00:00:28.980 --> 00:00:30.750 substantial impact on the DSM.

NOTE Confidence: 0.842065724210526

00:00:30.750 --> 00:00:33.606 Five definitions of substance use disorders,  
NOTE Confidence: 0.842065724210526

00:00:33.610 --> 00:00:36.490 and she was recently text editor  
NOTE Confidence: 0.842065724210526

00:00:36.490 --> 00:00:39.269 for the revised version of DSM 5.  
NOTE Confidence: 0.842065724210526

00:00:39.270 --> 00:00:41.058 She's also leveraged epidemiological  
NOTE Confidence: 0.842065724210526

00:00:41.058 --> 00:00:43.293 data to answer important questions  
NOTE Confidence: 0.842065724210526

00:00:43.293 --> 00:00:45.650 for clinical research and practice.  
NOTE Confidence: 0.842065724210526

00:00:45.650 --> 00:00:46.553 In this regard,  
NOTE Confidence: 0.842065724210526

00:00:46.553 --> 00:00:49.095 I've really had the pleasure to to work  
NOTE Confidence: 0.842065724210526

00:00:49.095 --> 00:00:51.333 with her on her research validating  
NOTE Confidence: 0.842065724210526

00:00:51.333 --> 00:00:53.561 non abstinent alcohol reduction as an  
NOTE Confidence: 0.842065724210526

00:00:53.561 --> 00:00:55.649 outcome for use in treatment studies  
NOTE Confidence: 0.842065724210526

00:00:55.650 --> 00:00:58.261 and her work has been pivotal in  
NOTE Confidence: 0.842065724210526

00:00:58.261 --> 00:01:01.390 helping move this agenda forward.  
NOTE Confidence: 0.842065724210526

00:01:01.390 --> 00:01:02.862 By any metric, Dr.  
NOTE Confidence: 0.842065724210526

00:01:02.862 --> 00:01:04.702 Hasan has been extremely productive.  
NOTE Confidence: 0.842065724210526

00:01:04.710 --> 00:01:06.605 She's been a principal investigator

NOTE Confidence: 0.842065724210526

00:01:06.605 --> 00:01:09.369 of naida and anti AAA grants since

NOTE Confidence: 0.842065724210526

00:01:09.370 --> 00:01:12.988 1990 and published over 500 papers.

NOTE Confidence: 0.842065724210526

00:01:12.990 --> 00:01:15.230 24 of her first author papers have

NOTE Confidence: 0.842065724210526

00:01:15.230 --> 00:01:17.429 been cited over 100 times and two

NOTE Confidence: 0.842065724210526

00:01:17.429 --> 00:01:19.501 of them over 1000 times showing

NOTE Confidence: 0.842065724210526

00:01:19.501 --> 00:01:22.556 considerable impact on the field.

NOTE Confidence: 0.842065724210526

00:01:22.560 --> 00:01:24.330 She's also committed to training

NOTE Confidence: 0.842065724210526

00:01:24.330 --> 00:01:25.038 and mentorship.

NOTE Confidence: 0.842065724210526

00:01:25.040 --> 00:01:27.182 She directs the night up funded pre

NOTE Confidence: 0.842065724210526

00:01:27.182 --> 00:01:29.443 and post doctoral training program and

NOTE Confidence: 0.842065724210526

00:01:29.443 --> 00:01:31.573 substance use epidemiology at Columbia

NOTE Confidence: 0.842065724210526

00:01:31.580 --> 00:01:33.396 and many of her mentors have gone on

NOTE Confidence: 0.842065724210526

00:01:33.396 --> 00:01:34.859 to successful careers of their own.

NOTE Confidence: 0.842065724210526

00:01:34.860 --> 00:01:37.806 Receiving NIH and other funding is

NOTE Confidence: 0.842065724210526

00:01:37.806 --> 00:01:40.880 faculty members at numerous universities.

NOTE Confidence: 0.842065724210526

00:01:40.880 --> 00:01:43.040 Now, with respect to today's presentation,  
NOTE Confidence: 0.842065724210526

00:01:43.040 --> 00:01:46.055 her work and the work of her trainees has  
NOTE Confidence: 0.842065724210526

00:01:46.055 --> 00:01:47.905 contributed to a better understanding  
NOTE Confidence: 0.842065724210526

00:01:47.905 --> 00:01:50.525 of cannabis use and the effects of  
NOTE Confidence: 0.842065724210526

00:01:50.525 --> 00:01:52.859 state cannabis laws across the lifespan.  
NOTE Confidence: 0.842065724210526

00:01:52.860 --> 00:01:53.780 This issue, as you know,  
NOTE Confidence: 0.842065724210526

00:01:53.780 --> 00:01:55.240 is very timely for Connecticut,  
NOTE Confidence: 0.842065724210526

00:01:55.240 --> 00:01:57.080 where possession of 1.5 ounces  
NOTE Confidence: 0.842065724210526

00:01:57.080 --> 00:01:58.920 of cannabis is now legal.  
NOTE Confidence: 0.842065724210526

00:01:58.920 --> 00:02:00.232 As of July 1.  
NOTE Confidence: 0.842065724210526

00:02:00.232 --> 00:02:02.809 Today we will learn more about changing  
NOTE Confidence: 0.842065724210526

00:02:02.809 --> 00:02:05.479 trends in cannabis use nationally,  
NOTE Confidence: 0.842065724210526

00:02:05.480 --> 00:02:07.628 and what the impact of medical  
NOTE Confidence: 0.842065724210526

00:02:07.628 --> 00:02:09.060 and recreational cannabis laws  
NOTE Confidence: 0.842065724210526

00:02:09.125 --> 00:02:10.829 are on rates of cannabis use.  
NOTE Confidence: 0.842065724210526

00:02:10.830 --> 00:02:13.350 Cannabis use disorders and the use

NOTE Confidence: 0.842065724210526  
00:02:13.350 --> 00:02:15.730 of highly potent cannabis products.  
NOTE Confidence: 0.842065724210526  
00:02:15.730 --> 00:02:17.310 So with this brief introduction,  
NOTE Confidence: 0.842065724210526  
00:02:17.310 --> 00:02:18.690 let me welcome Dr.  
NOTE Confidence: 0.842065724210526  
00:02:18.690 --> 00:02:20.760 Hasan as today's grand round speaker  
NOTE Confidence: 0.842065724210526  
00:02:20.824 --> 00:02:22.770 and turn the floor over to her.  
NOTE Confidence: 0.842065724210526  
00:02:22.770 --> 00:02:23.240 Thank you.  
NOTE Confidence: 0.930911036521739  
00:02:26.250 --> 00:02:28.404 Well, thank you Stephanie for for  
NOTE Confidence: 0.930911036521739  
00:02:28.404 --> 00:02:30.181 that kind introduction and thank  
NOTE Confidence: 0.930911036521739  
00:02:30.181 --> 00:02:31.867 you all very much for inviting  
NOTE Confidence: 0.930911036521739  
00:02:31.867 --> 00:02:33.850 me to give this grand rounds.  
NOTE Confidence: 0.930911036521739  
00:02:33.850 --> 00:02:35.674 So I guess the next challenge  
NOTE Confidence: 0.930911036521739  
00:02:35.674 --> 00:02:37.340 is correctly sharing the screen.  
NOTE Confidence: 0.9073832575  
00:02:44.830 --> 00:02:47.362 Do people see what looks like  
NOTE Confidence: 0.9073832575  
00:02:47.362 --> 00:02:50.504 the first slide of a grand rounds  
NOTE Confidence: 0.9073832575  
00:02:50.504 --> 00:02:52.470 of a PowerPoint? Put it in  
NOTE Confidence: 0.899764623333333

00:02:52.500 --> 00:02:55.110 slideshow mode for yourself right there.

NOTE Confidence: 0.852933953

00:02:55.930 --> 00:02:57.175 OK great excellent.

NOTE Confidence: 0.852933953

00:02:57.175 --> 00:03:00.715 So so I'm going to talk about several

NOTE Confidence: 0.852933953

00:03:00.715 --> 00:03:03.465 different things related to cannabis

NOTE Confidence: 0.852933953

00:03:03.465 --> 00:03:06.096 use and cannabis use disorder,

NOTE Confidence: 0.852933953

00:03:06.096 --> 00:03:09.078 and I'll talk you through some of

NOTE Confidence: 0.852933953

00:03:09.078 --> 00:03:11.606 the thinking that I do about this.

NOTE Confidence: 0.852933953

00:03:11.610 --> 00:03:13.806 Just focused on cannabis and also

NOTE Confidence: 0.852933953

00:03:13.806 --> 00:03:16.165 in relation to other substances like

NOTE Confidence: 0.852933953

00:03:16.165 --> 00:03:18.643 for example alcohol and opioids that

NOTE Confidence: 0.852933953

00:03:18.643 --> 00:03:21.168 have had such huge ups and downs.

NOTE Confidence: 0.852933953

00:03:21.170 --> 00:03:22.898 Over time I'm going to talk a little

NOTE Confidence: 0.852933953

00:03:22.898 --> 00:03:24.419 bit about cannabis use disorder.

NOTE Confidence: 0.852933953

00:03:24.420 --> 00:03:26.496 I'm going to talk about national

NOTE Confidence: 0.852933953

00:03:26.496 --> 00:03:27.534 time trends and.

NOTE Confidence: 0.852933953

00:03:27.540 --> 00:03:30.306 Teens and adolescents and trends in

NOTE Confidence: 0.852933953

00:03:30.306 --> 00:03:33.016 adults 'cause these are important to

NOTE Confidence: 0.852933953

00:03:33.016 --> 00:03:36.144 know in and of themselves and also to

NOTE Confidence: 0.852933953

00:03:36.224 --> 00:03:39.686 to understand the effects or lack of

NOTE Confidence: 0.852933953

00:03:39.686 --> 00:03:43.200 effects of of the changing cannabis laws.

NOTE Confidence: 0.852933953

00:03:43.200 --> 00:03:44.964 So I will get started with that.

NOTE Confidence: 0.852933953

00:03:44.970 --> 00:03:46.314 Let's see if I can do this.

NOTE Confidence: 0.852933953

00:03:46.320 --> 00:03:47.192 Yes, OK,

NOTE Confidence: 0.852933953

00:03:47.192 --> 00:03:50.680 so I'd like to start out by acknowledging.

NOTE Confidence: 0.852933953

00:03:50.680 --> 00:03:52.620 My grant support that

NOTE Confidence: 0.852933953

00:03:52.620 --> 00:03:54.560 contributed to this talk,

NOTE Confidence: 0.852933953

00:03:54.560 --> 00:03:56.174 and the fact that I have

NOTE Confidence: 0.852933953

00:03:56.174 --> 00:03:57.727 research funding for an unrelated

NOTE Confidence: 0.852933953

00:03:57.727 --> 00:03:59.387 project from Syneos health.

NOTE Confidence: 0.932226401666667

00:04:01.890 --> 00:04:04.274 OK, so cannabis is I think most people

NOTE Confidence: 0.932226401666667

00:04:04.274 --> 00:04:06.688 that are on on you know listening

NOTE Confidence: 0.932226401666667

00:04:06.688 --> 00:04:09.229 today would know that cannabis is one  
NOTE Confidence: 0.932226401666667

00:04:09.229 --> 00:04:11.401 of the most widely used psychoactive  
NOTE Confidence: 0.932226401666667

00:04:11.401 --> 00:04:13.514 substances in the US and worldwide.  
NOTE Confidence: 0.932226401666667

00:04:13.514 --> 00:04:15.590 Of course many people can use  
NOTE Confidence: 0.932226401666667

00:04:15.665 --> 00:04:18.180 cannabis without any particular harm.  
NOTE Confidence: 0.71947086

00:04:20.950 --> 00:04:24.540 Oops. But use is associated with the  
NOTE Confidence: 0.71947086

00:04:24.540 --> 00:04:26.590 risk for numerous health conditions,  
NOTE Confidence: 0.71947086

00:04:26.590 --> 00:04:28.705 including acute, cognitive,  
NOTE Confidence: 0.71947086

00:04:28.705 --> 00:04:30.820 and motor impairments,  
NOTE Confidence: 0.71947086

00:04:30.820 --> 00:04:33.292 withdrawal, withdrawal syndrome,  
NOTE Confidence: 0.71947086

00:04:33.292 --> 00:04:34.940 respiratory problems,  
NOTE Confidence: 0.71947086

00:04:34.940 --> 00:04:37.040 vehicle crashes in people  
NOTE Confidence: 0.71947086

00:04:37.040 --> 00:04:39.140 that start using early,  
NOTE Confidence: 0.71947086

00:04:39.140 --> 00:04:40.620 you know, early in adolescence,  
NOTE Confidence: 0.71947086

00:04:40.620 --> 00:04:43.316 there have been a lot of long term  
NOTE Confidence: 0.71947086

00:04:43.316 --> 00:04:45.239 prospective studies that have suggested



NOTE Confidence: 0.71947086

00:04:45.240 --> 00:04:48.474 that early use does create long term

NOTE Confidence: 0.71947086

00:04:48.474 --> 00:04:51.150 problems and functioning and achievement.

NOTE Confidence: 0.71947086

00:04:51.150 --> 00:04:53.530 It's a cannabis use is a necessary

NOTE Confidence: 0.71947086

00:04:53.530 --> 00:04:54.850 condition for cannabis use.

NOTE Confidence: 0.71947086

00:04:54.850 --> 00:04:56.655 Disorder and cannabis use disorder

NOTE Confidence: 0.71947086

00:04:56.655 --> 00:04:58.460 is also associated with substantial

NOTE Confidence: 0.71947086

00:04:58.516 --> 00:04:59.908 comorbidity and impairment.

NOTE Confidence: 0.71947086

00:04:59.910 --> 00:05:01.765 As we'll see in a few minutes,

NOTE Confidence: 0.71947086

00:05:01.770 --> 00:05:03.426 so due to all these risks,

NOTE Confidence: 0.71947086

00:05:03.430 --> 00:05:05.431 understanding the changing

NOTE Confidence: 0.71947086

00:05:05.431 --> 00:05:08.766 epidemiology of cannabis is important.

NOTE Confidence: 0.71947086

00:05:08.770 --> 00:05:11.914 So shifts in US attitudes and rates of

NOTE Confidence: 0.71947086

00:05:11.914 --> 00:05:15.679 use of different substances are not new.

NOTE Confidence: 0.71947086

00:05:15.680 --> 00:05:18.035 A Yale historian David Musto

NOTE Confidence: 0.71947086

00:05:18.035 --> 00:05:20.877 was writing about this in the

NOTE Confidence: 0.71947086

00:05:20.877 --> 00:05:23.858 early 1990s as shifting attitudes

NOTE Confidence: 0.71947086

00:05:23.858 --> 00:05:27.740 pertained to alcohol and to opioids.

NOTE Confidence: 0.71947086

00:05:27.740 --> 00:05:29.344 And specifically to cannabis,

NOTE Confidence: 0.71947086

00:05:29.344 --> 00:05:32.126 there have been ongoing debates for a

NOTE Confidence: 0.71947086

00:05:32.126 --> 00:05:34.282 long time about the extent to which

NOTE Confidence: 0.71947086

00:05:34.282 --> 00:05:36.148 cannabis use and cannabis policies

NOTE Confidence: 0.71947086

00:05:36.148 --> 00:05:38.594 have harmful effects on users tended

NOTE Confidence: 0.71947086

00:05:38.594 --> 00:05:41.438 to polarize into people who minimize

NOTE Confidence: 0.71947086

00:05:41.438 --> 00:05:43.759 potential harmful effects of cannabis,

NOTE Confidence: 0.71947086

00:05:43.760 --> 00:05:45.925 and argue strongly for more

NOTE Confidence: 0.71947086

00:05:45.925 --> 00:05:47.657 permissive or liberalized laws,

NOTE Confidence: 0.71947086

00:05:47.660 --> 00:05:49.520 and those who continue to view

NOTE Confidence: 0.71947086

00:05:49.520 --> 00:05:51.120 cannabis as a harmful drug,

NOTE Confidence: 0.71947086

00:05:51.120 --> 00:05:52.448 for which continued prohibition

NOTE Confidence: 0.71947086

00:05:52.448 --> 00:05:53.776 is the correct approach,

NOTE Confidence: 0.71947086

00:05:53.780 --> 00:05:56.391 I would say at this point continued

NOTE Confidence: 0.71947086  
00:05:56.391 --> 00:05:58.042 prohibition is not strongly  
NOTE Confidence: 0.71947086  
00:05:58.042 --> 00:05:59.866 endorsed by most people.  
NOTE Confidence: 0.71947086  
00:05:59.870 --> 00:06:02.628 But that does represent the sort of.  
NOTE Confidence: 0.71947086  
00:06:02.630 --> 00:06:04.665 Alternative camp to people that  
NOTE Confidence: 0.71947086  
00:06:04.665 --> 00:06:07.029 think that the law should just  
NOTE Confidence: 0.71947086  
00:06:07.029 --> 00:06:10.630 be changed to be liberalized.  
NOTE Confidence: 0.71947086  
00:06:10.630 --> 00:06:12.398 And I'm going to bring up an example  
NOTE Confidence: 0.71947086  
00:06:12.398 --> 00:06:14.127 from the past that I'm going to come  
NOTE Confidence: 0.71947086  
00:06:14.127 --> 00:06:15.889 back to at the end of this talks.  
NOTE Confidence: 0.71947086  
00:06:15.890 --> 00:06:18.400 So of course everyone knows  
NOTE Confidence: 0.71947086  
00:06:18.400 --> 00:06:20.408 about alcohol and prohibition.  
NOTE Confidence: 0.71947086  
00:06:20.410 --> 00:06:23.368 You know, alcohol wasn't accepted substance,  
NOTE Confidence: 0.71947086  
00:06:23.370 --> 00:06:24.264 then it wasn't.  
NOTE Confidence: 0.71947086  
00:06:24.264 --> 00:06:26.570 Then it was prohibited across the whole US,  
NOTE Confidence: 0.71947086  
00:06:26.570 --> 00:06:28.946 and then it was brought back and we  
NOTE Confidence: 0.71947086

00:06:28.946 --> 00:06:31.896 are living through the tag end of a  
NOTE Confidence: 0.71947086

00:06:31.896 --> 00:06:33.420 process where opioids prescription  
NOTE Confidence: 0.71947086

00:06:33.490 --> 00:06:35.430 opioids were seen as positive,  
NOTE Confidence: 0.71947086

00:06:35.430 --> 00:06:36.783 used incredibly widely,  
NOTE Confidence: 0.71947086

00:06:36.783 --> 00:06:39.489 and then we've seen the terrible  
NOTE Confidence: 0.71947086

00:06:39.489 --> 00:06:41.648 consequences of that through the open.  
NOTE Confidence: 0.71947086

00:06:41.650 --> 00:06:44.958 The opioid overdose epidemic.  
NOTE Confidence: 0.71947086

00:06:44.960 --> 00:06:45.391 Well,  
NOTE Confidence: 0.71947086

00:06:45.391 --> 00:06:47.936 a little bit more recent example  
NOTE Confidence: 0.71947086

00:06:47.936 --> 00:06:50.638 that I think it's useful in thinking  
NOTE Confidence: 0.71947086

00:06:50.638 --> 00:06:52.946 about the cannabis laws is a  
NOTE Confidence: 0.71947086

00:06:52.946 --> 00:06:55.136 debate and policy shift around a  
NOTE Confidence: 0.71947086

00:06:55.208 --> 00:06:57.140 minimum legal drinking age.  
NOTE Confidence: 0.71947086

00:06:57.140 --> 00:06:59.957 So in the late 60s in the early 70s,  
NOTE Confidence: 0.71947086

00:06:59.960 --> 00:07:02.620 this was a state experiment, if you will,  
NOTE Confidence: 0.71947086

00:07:02.620 --> 00:07:04.320 in states lowering their ages,

NOTE Confidence: 0.71947086

00:07:04.320 --> 00:07:06.455 most of them to around age 18

NOTE Confidence: 0.71947086

00:07:06.455 --> 00:07:08.280 on the grounds of fairness,

NOTE Confidence: 0.71947086

00:07:08.280 --> 00:07:09.764 the thinking was well,

NOTE Confidence: 0.71947086

00:07:09.764 --> 00:07:12.300 if people can vote at age 18,

NOTE Confidence: 0.71947086

00:07:12.300 --> 00:07:14.346 it's only fair to let them

NOTE Confidence: 0.71947086

00:07:14.346 --> 00:07:15.369 purchase alcohol legally.

NOTE Confidence: 0.71947086

00:07:15.370 --> 00:07:15.787 Also,

NOTE Confidence: 0.71947086

00:07:15.787 --> 00:07:18.706 but then what happened is many studies

NOTE Confidence: 0.71947086

00:07:18.706 --> 00:07:21.485 were conducted that showed that these

NOTE Confidence: 0.71947086

00:07:21.485 --> 00:07:23.820 lower minimum legal drinking ages

NOTE Confidence: 0.71947086

00:07:23.820 --> 00:07:26.199 predicted many adverse consequences.

NOTE Confidence: 0.71947086

00:07:26.200 --> 00:07:27.121 So in 1984,

NOTE Confidence: 0.71947086

00:07:27.121 --> 00:07:30.054 by the time a lot of this evidence

NOTE Confidence: 0.71947086

00:07:30.054 --> 00:07:31.440 had accumulated,

NOTE Confidence: 0.71947086

00:07:31.440 --> 00:07:33.869 a federal act was passed that required

NOTE Confidence: 0.71947086

00:07:33.869 --> 00:07:36.178 a uniform age across all states,  
NOTE Confidence: 0.71947086

00:07:36.180 --> 00:07:37.604 which was age 21,  
NOTE Confidence: 0.71947086

00:07:37.604 --> 00:07:40.246 and that was put into place by 1986.  
NOTE Confidence: 0.71947086

00:07:40.246 --> 00:07:42.108 So I'll come back to this one  
NOTE Confidence: 0.71947086

00:07:42.108 --> 00:07:43.718 at the end of the talk,  
NOTE Confidence: 0.944427188

00:07:43.720 --> 00:07:46.528 when we look at what's going on with  
NOTE Confidence: 0.944427188

00:07:46.528 --> 00:07:49.226 cannabis state cannabis laws at this point.  
NOTE Confidence: 0.944427188

00:07:49.230 --> 00:07:51.882 So, uh, specifically with respect to  
NOTE Confidence: 0.944427188

00:07:51.882 --> 00:07:53.785 cannabis, I think most people know  
NOTE Confidence: 0.944427188

00:07:53.785 --> 00:07:55.587 there's been there have been huge  
NOTE Confidence: 0.944427188

00:07:55.587 --> 00:07:57.327 changes in how people viewed it.  
NOTE Confidence: 0.944427188

00:07:57.330 --> 00:07:59.836 So in the 1800s marijuana was actually  
NOTE Confidence: 0.944427188

00:07:59.836 --> 00:08:02.149 used for many medical purposes,  
NOTE Confidence: 0.944427188

00:08:02.150 --> 00:08:04.310 but it's used for those reasons  
NOTE Confidence: 0.944427188

00:08:04.310 --> 00:08:06.323 became less important with the  
NOTE Confidence: 0.944427188

00:08:06.323 --> 00:08:08.359 development of synthetic painkillers.

NOTE Confidence: 0.944427188  
00:08:08.360 --> 00:08:09.512 There were there,  
NOTE Confidence: 0.944427188  
00:08:09.512 --> 00:08:11.432 the public view was actually  
NOTE Confidence: 0.944427188  
00:08:11.432 --> 00:08:14.104 transformed in the 1930s after Mexican  
NOTE Confidence: 0.944427188  
00:08:14.104 --> 00:08:15.748 immigrants introduced recreational  
NOTE Confidence: 0.944427188  
00:08:15.748 --> 00:08:18.899 marijuana and anti marijuana and anti  
NOTE Confidence: 0.944427188  
00:08:18.899 --> 00:08:21.114 immigrant views sometimes got blended.  
NOTE Confidence: 0.944427188  
00:08:21.120 --> 00:08:24.620 There was a 1936 article in the  
NOTE Confidence: 0.944427188  
00:08:24.620 --> 00:08:27.010 American Journal of Nursing.  
NOTE Confidence: 0.944427188  
00:08:27.010 --> 00:08:29.785 Voice to very extreme view  
NOTE Confidence: 0.944427188  
00:08:29.785 --> 00:08:31.450 of marijuana users.  
NOTE Confidence: 0.944427188  
00:08:31.450 --> 00:08:35.412 Probably many people have seen on YouTube  
NOTE Confidence: 0.944427188  
00:08:35.412 --> 00:08:39.478 the the the old movie clip video,  
NOTE Confidence: 0.944427188  
00:08:39.478 --> 00:08:42.024 Reefer madness and public opinion  
NOTE Confidence: 0.944427188  
00:08:42.024 --> 00:08:43.696 has really fluctuated markedly  
NOTE Confidence: 0.944427188  
00:08:43.696 --> 00:08:45.719 overtime with respect to cannabis.  
NOTE Confidence: 0.944427188

00:08:45.720 --> 00:08:47.715 I think it's clear that we're going  
NOTE Confidence: 0.944427188

00:08:47.715 --> 00:08:49.679 through an era where the attitudes  
NOTE Confidence: 0.944427188

00:08:49.679 --> 00:08:51.424 are changing to the positive.  
NOTE Confidence: 0.944427188

00:08:51.430 --> 00:08:53.134 If you look across the beginning  
NOTE Confidence: 0.944427188

00:08:53.134 --> 00:08:54.690 and end of this graph,  
NOTE Confidence: 0.944427188

00:08:54.690 --> 00:08:58.650 you'll see that Americans have increasingly  
NOTE Confidence: 0.944427188

00:08:58.650 --> 00:09:00.666 supported legalization of cannabis.  
NOTE Confidence: 0.944427188

00:09:00.666 --> 00:09:03.470 And this is only to 2018,  
NOTE Confidence: 0.944427188

00:09:03.470 --> 00:09:04.870 I think if we did,  
NOTE Confidence: 0.944427188

00:09:04.870 --> 00:09:07.026 if if the study were redone now,  
NOTE Confidence: 0.944427188

00:09:07.030 --> 00:09:09.312 it would probably be an even higher  
NOTE Confidence: 0.944427188

00:09:09.312 --> 00:09:11.984 percent and I'll come back to this this  
NOTE Confidence: 0.944427188

00:09:11.984 --> 00:09:16.250 map a little bit later in in the talk.  
NOTE Confidence: 0.944427188

00:09:16.250 --> 00:09:19.750 But as we see at this point.  
NOTE Confidence: 0.944427188

00:09:19.750 --> 00:09:22.284 Medical cannabis is legal in 37 states,  
NOTE Confidence: 0.944427188

00:09:22.290 --> 00:09:24.138 so states are in the minority at



NOTE Confidence: 0.944427188

00:09:24.138 --> 00:09:25.659 this point that haven't legalized

NOTE Confidence: 0.944427188

00:09:25.659 --> 00:09:27.344 any form of cannabis use,

NOTE Confidence: 0.944427188

00:09:27.350 --> 00:09:30.182 and recreational cannabis is legal for

NOTE Confidence: 0.944427188

00:09:30.182 --> 00:09:33.618 adults in 18 States and Washington DC.

NOTE Confidence: 0.944427188

00:09:33.620 --> 00:09:33.885 OK,

NOTE Confidence: 0.944427188

00:09:33.885 --> 00:09:36.005 so I'm going to talk just a bit

NOTE Confidence: 0.944427188

00:09:36.005 --> 00:09:37.936 about cannabis use disorder criteria

NOTE Confidence: 0.944427188

00:09:37.936 --> 00:09:40.336 because they come into play and

NOTE Confidence: 0.944427188

00:09:40.409 --> 00:09:42.395 thinking about some of what we

NOTE Confidence: 0.944427188

00:09:42.395 --> 00:09:44.161 know about cannabis use disorder.

NOTE Confidence: 0.944427188

00:09:44.161 --> 00:09:47.500 So here you see the DSM 4 criteria.

NOTE Confidence: 0.944427188

00:09:47.500 --> 00:09:49.660 Those were changed in 2013,

NOTE Confidence: 0.944427188

00:09:49.660 --> 00:09:51.516 which is actually getting to be awhile ago.

NOTE Confidence: 0.944427188

00:09:51.520 --> 00:09:53.739 It's eight years ago at this point

NOTE Confidence: 0.944427188

00:09:53.740 --> 00:09:58.116 and here are the criteria for DSM 5

NOTE Confidence: 0.944427188

00:09:58.120 --> 00:10:00.944 and you can see that specifically with  
NOTE Confidence: 0.944427188

00:10:00.944 --> 00:10:03.803 respect to cannabis, there were two.  
NOTE Confidence: 0.944427188

00:10:03.803 --> 00:10:06.689 New criteria that were added withdrawal.  
NOTE Confidence: 0.944427188

00:10:06.690 --> 00:10:09.612 There is a specific cannabis withdrawal  
NOTE Confidence: 0.944427188

00:10:09.612 --> 00:10:11.804 syndrome and craving for cannabis.  
NOTE Confidence: 0.944427188

00:10:11.804 --> 00:10:15.059 Craving was added to all the substance  
NOTE Confidence: 0.944427188

00:10:15.059 --> 00:10:18.149 use disorders including for cannabis.  
NOTE Confidence: 0.944427188

00:10:18.150 --> 00:10:20.320 So cannabis use disorder in  
NOTE Confidence: 0.944427188

00:10:20.320 --> 00:10:22.490 cannabis users is a necessary  
NOTE Confidence: 0.944427188

00:10:22.572 --> 00:10:24.960 but not sufficient cause of CUD.  
NOTE Confidence: 0.944427188

00:10:24.960 --> 00:10:26.940 There is a common assumption or  
NOTE Confidence: 0.944427188

00:10:26.940 --> 00:10:29.483 at this point you might even say a  
NOTE Confidence: 0.944427188

00:10:29.483 --> 00:10:31.960 myth that very few users of cannabis  
NOTE Confidence: 0.944427188

00:10:31.960 --> 00:10:33.808 develop cannabis use disorder,  
NOTE Confidence: 0.944427188

00:10:33.810 --> 00:10:35.672 and that's based on a paper from  
NOTE Confidence: 0.944427188

00:10:35.672 --> 00:10:38.266 the early 1990s that suggested that

NOTE Confidence: 0.944427188

00:10:38.266 --> 00:10:40.836 cannabis use disorder was rare.

NOTE Confidence: 0.944427188

00:10:40.840 --> 00:10:41.623 But think back,

NOTE Confidence: 0.944427188

00:10:41.623 --> 00:10:43.450 this is during a time when the

NOTE Confidence: 0.944427188

00:10:43.516 --> 00:10:45.256 potency of cannabis that was used

NOTE Confidence: 0.944427188

00:10:45.256 --> 00:10:47.331 was very mild and the diagnostic

NOTE Confidence: 0.944427188

00:10:47.331 --> 00:10:49.039 criteria were quite different.

NOTE Confidence: 0.944427188

00:10:49.040 --> 00:10:50.404 At that point also,

NOTE Confidence: 0.944427188

00:10:50.404 --> 00:10:52.450 so with changing norms and more

NOTE Confidence: 0.944427188

00:10:52.525 --> 00:10:54.197 potent forms of cannabis,

NOTE Confidence: 0.944427188

00:10:54.200 --> 00:10:57.380 this this concept is outdated,

NOTE Confidence: 0.944427188

00:10:57.380 --> 00:11:00.418 so there was a meta analysis that

NOTE Confidence: 0.944427188

00:11:00.418 --> 00:11:02.874 was published pretty recently that

NOTE Confidence: 0.944427188

00:11:02.874 --> 00:11:05.562 showed across different studies that

NOTE Confidence: 0.944427188

00:11:05.562 --> 00:11:08.790 the estimates of rates of cannabis

NOTE Confidence: 0.921333847857143

00:11:08.881 --> 00:11:12.006 use disorder amongst users is in

NOTE Confidence: 0.921333847857143

00:11:12.006 --> 00:11:14.990 the range of 2020 or so percent.  
NOTE Confidence: 0.921333847857143

00:11:14.990 --> 00:11:17.360 These numbers get higher if you  
NOTE Confidence: 0.921333847857143

00:11:17.438 --> 00:11:19.838 look among more frequent users.  
NOTE Confidence: 0.921333847857143

00:11:19.840 --> 00:11:22.603 Then I checked them out in some more recent  
NOTE Confidence: 0.921333847857143

00:11:22.603 --> 00:11:25.089 data than what we're available to the.  
NOTE Confidence: 0.921333847857143

00:11:25.090 --> 00:11:27.190 The people that conducted this meta  
NOTE Confidence: 0.921333847857143

00:11:27.190 --> 00:11:29.100 analysis and these numbers hold up,  
NOTE Confidence: 0.921333847857143

00:11:29.100 --> 00:11:32.150 so it's not necessarily the case that  
NOTE Confidence: 0.921333847857143

00:11:32.150 --> 00:11:33.900 it's fine for everybody to use cannabis,  
NOTE Confidence: 0.921333847857143

00:11:33.900 --> 00:11:36.065 because nobody is going to  
NOTE Confidence: 0.921333847857143

00:11:36.065 --> 00:11:37.797 get cannabis use disorder.  
NOTE Confidence: 0.921333847857143

00:11:37.800 --> 00:11:40.516 So just to look at some descriptive  
NOTE Confidence: 0.921333847857143

00:11:40.516 --> 00:11:42.258 epidemiology of the prevalence  
NOTE Confidence: 0.921333847857143

00:11:42.258 --> 00:11:44.290 of cannabis use disorder,  
NOTE Confidence: 0.921333847857143

00:11:44.290 --> 00:11:45.666 this is these these.  
NOTE Confidence: 0.921333847857143

00:11:45.666 --> 00:11:47.386 This information is from the

NOTE Confidence: 0.921333847857143  
00:11:47.386 --> 00:11:49.200 National Epidemiologic Survey on  
NOTE Confidence: 0.921333847857143  
00:11:49.200 --> 00:11:51.068 alcohol and related conditions.  
NOTE Confidence: 0.921333847857143  
00:11:51.070 --> 00:11:53.722 This was a national survey that  
NOTE Confidence: 0.921333847857143  
00:11:53.722 --> 00:11:56.658 was conducted in 2012 and 2013.  
NOTE Confidence: 0.921333847857143  
00:11:56.658 --> 00:11:59.338 It was a probability sample  
NOTE Confidence: 0.921333847857143  
00:11:59.338 --> 00:12:01.730 with over 36,000 Americans.  
NOTE Confidence: 0.921333847857143  
00:12:01.730 --> 00:12:05.690 The measures in this study were  
NOTE Confidence: 0.921333847857143  
00:12:05.690 --> 00:12:06.838 tested extensively and it's  
NOTE Confidence: 0.921333847857143  
00:12:06.838 --> 00:12:08.560 still a good source of data.  
NOTE Confidence: 0.921333847857143  
00:12:08.560 --> 00:12:11.446 On a lot of conditions that aren't  
NOTE Confidence: 0.921333847857143  
00:12:11.446 --> 00:12:13.158 available in other surveys,  
NOTE Confidence: 0.921333847857143  
00:12:13.160 --> 00:12:15.351 So what you see here is at  
NOTE Confidence: 0.921333847857143  
00:12:15.351 --> 00:12:16.940 that time in adults,  
NOTE Confidence: 0.921333847857143  
00:12:16.940 --> 00:12:19.450 the overall prevalence of cannabis  
NOTE Confidence: 0.921333847857143  
00:12:19.450 --> 00:12:22.214 use disorder was about 2.5.  
NOTE Confidence: 0.921333847857143

00:12:22.214 --> 00:12:25.230 And disaggregated by mild,  
NOTE Confidence: 0.921333847857143

00:12:25.230 --> 00:12:26.882 moderate and severe levels  
NOTE Confidence: 0.921333847857143

00:12:26.882 --> 00:12:28.534 according to the DSM,  
NOTE Confidence: 0.921333847857143

00:12:28.540 --> 00:12:30.012 five definitions about half  
NOTE Confidence: 0.921333847857143

00:12:30.012 --> 00:12:32.220 the cases were at the mild  
NOTE Confidence: 0.921333847857143

00:12:32.296 --> 00:12:34.585 level and a quarter each at the  
NOTE Confidence: 0.921333847857143

00:12:34.585 --> 00:12:36.530 moderate and the severe level.  
NOTE Confidence: 0.923074648181818

00:12:38.570 --> 00:12:42.280 This shows the risk for cannabis use  
NOTE Confidence: 0.923074648181818

00:12:42.280 --> 00:12:45.380 disorder by demographic characteristics.  
NOTE Confidence: 0.923074648181818

00:12:45.380 --> 00:12:47.246 We see here that there was  
NOTE Confidence: 0.923074648181818

00:12:47.246 --> 00:12:48.990 a greater risk in males.  
NOTE Confidence: 0.923074648181818

00:12:48.990 --> 00:12:52.158 There's a greater risk in African  
NOTE Confidence: 0.923074648181818

00:12:52.158 --> 00:12:54.259 Americans and Native Americans,  
NOTE Confidence: 0.923074648181818

00:12:54.259 --> 00:12:56.874 especially at the severe end,  
NOTE Confidence: 0.923074648181818

00:12:56.880 --> 00:12:58.890 and if you look at the bottom of this table,  
NOTE Confidence: 0.923074648181818

00:12:58.890 --> 00:13:01.350 you see that younger people were

NOTE Confidence: 0.923074648181818

00:13:01.350 --> 00:13:03.796 more likely to have cannabis

NOTE Confidence: 0.923074648181818

00:13:03.796 --> 00:13:06.836 use disorder than older people.

NOTE Confidence: 0.923074648181818

00:13:06.840 --> 00:13:09.510 The study also shows very clearly

NOTE Confidence: 0.923074648181818

00:13:09.510 --> 00:13:11.854 that cannabis use disorder is

NOTE Confidence: 0.923074648181818

00:13:11.854 --> 00:13:14.299 highly and highly associated with

NOTE Confidence: 0.923074648181818

00:13:14.299 --> 00:13:16.255 other substance use disorders

NOTE Confidence: 0.923074648181818

00:13:16.260 --> 00:13:18.360 and with psychiatric disorders.

NOTE Confidence: 0.913180765333334

00:13:20.570 --> 00:13:22.988 And this shows that impairment and

NOTE Confidence: 0.913180765333334

00:13:22.988 --> 00:13:26.012 functioning which is at least half a

NOTE Confidence: 0.913180765333334

00:13:26.012 --> 00:13:28.237 standard deviation between the below

NOTE Confidence: 0.913180765333334

00:13:28.237 --> 00:13:30.786 the population norm on a standardized

NOTE Confidence: 0.913180765333334

00:13:30.786 --> 00:13:33.726 scale was common among people that had

NOTE Confidence: 0.913180765333334

00:13:33.726 --> 00:13:36.870 cannabis use disorder and increased as

NOTE Confidence: 0.913180765333334

00:13:36.870 --> 00:13:39.750 we went across the the levels from mild,

NOTE Confidence: 0.913180765333334

00:13:39.750 --> 00:13:40.977 moderate to severe.

NOTE Confidence: 0.913180765333334

00:13:40.977 --> 00:13:44.680 So cannabis use disorder is a real condition.

NOTE Confidence: 0.913180765333334

00:13:44.680 --> 00:13:45.988 It does really exist,

NOTE Confidence: 0.913180765333334

00:13:45.988 --> 00:13:47.950 it uses the same criteria as

NOTE Confidence: 0.913180765333334

00:13:48.017 --> 00:13:49.977 other substance use disorders.

NOTE Confidence: 0.913180765333334

00:13:49.980 --> 00:13:52.350 And it's associated with comorbidity

NOTE Confidence: 0.913180765333334

00:13:52.350 --> 00:13:54.860 and impairment and then in a paper that

NOTE Confidence: 0.913180765333334

00:13:54.860 --> 00:13:57.072 came out just recently done by one of

NOTE Confidence: 0.913180765333334

00:13:57.072 --> 00:13:58.734 the fellows in my training program.

NOTE Confidence: 0.913180765333334

00:13:58.740 --> 00:14:00.720 We looked at the relationship

NOTE Confidence: 0.913180765333334

00:14:00.720 --> 00:14:02.700 between having cannabis use disorder

NOTE Confidence: 0.913180765333334

00:14:02.760 --> 00:14:04.812 and not having any substance use

NOTE Confidence: 0.913180765333334

00:14:04.812 --> 00:14:07.251 disorder where the whole set of other

NOTE Confidence: 0.913180765333334

00:14:07.251 --> 00:14:08.936 problems that people could have.

NOTE Confidence: 0.913180765333334

00:14:08.940 --> 00:14:11.180 And this shows the relationship.

NOTE Confidence: 0.913180765333334

00:14:11.180 --> 00:14:13.252 So across a whole raft are of

NOTE Confidence: 0.913180765333334

00:14:13.252 --> 00:14:14.760 different types of problems,



NOTE Confidence: 0.913180765333334  
00:14:14.760 --> 00:14:15.942 interpersonal problems,  
NOTE Confidence: 0.913180765333334  
00:14:15.942 --> 00:14:18.306 financial and legal problems,  
NOTE Confidence: 0.913180765333334  
00:14:18.310 --> 00:14:20.074 and health related conditions.  
NOTE Confidence: 0.913180765333334  
00:14:20.074 --> 00:14:22.279 Those with cannabis use disorder  
NOTE Confidence: 0.913180765333334  
00:14:22.279 --> 00:14:24.604 were significantly more likely and  
NOTE Confidence: 0.913180765333334  
00:14:24.604 --> 00:14:27.328 substantially more likely in many cases.  
NOTE Confidence: 0.913180765333334  
00:14:27.330 --> 00:14:30.025 To have these problems compared to people  
NOTE Confidence: 0.913180765333334  
00:14:30.025 --> 00:14:32.507 without a substance use disorder at all.  
NOTE Confidence: 0.913180765333334  
00:14:32.510 --> 00:14:35.102 So cannabis use disorder is a  
NOTE Confidence: 0.913180765333334  
00:14:35.102 --> 00:14:36.830 condition to take seriously.  
NOTE Confidence: 0.913180765333334  
00:14:36.830 --> 00:14:38.734 So I'm going to shift now to  
NOTE Confidence: 0.913180765333334  
00:14:38.734 --> 00:14:40.050 looking at some trends,  
NOTE Confidence: 0.913180765333334  
00:14:40.050 --> 00:14:41.800 overtime in cannabis, and I'm going to.  
NOTE Confidence: 0.913180765333334  
00:14:41.800 --> 00:14:44.332 I will talk first about adolescents  
NOTE Confidence: 0.913180765333334  
00:14:44.332 --> 00:14:46.020 because adolescents and adults  
NOTE Confidence: 0.913180765333334

00:14:46.088 --> 00:14:48.104 do actually tend to go their own  
NOTE Confidence: 0.913180765333334

00:14:48.104 --> 00:14:50.118 way in terms of substance use,  
NOTE Confidence: 0.913180765333334

00:14:50.120 --> 00:14:50.543 epidemiology.  
NOTE Confidence: 0.913180765333334

00:14:50.543 --> 00:14:53.504 So I'll start out by showing you  
NOTE Confidence: 0.913180765333334

00:14:53.504 --> 00:14:55.438 some information from monitoring  
NOTE Confidence: 0.913180765333334

00:14:55.438 --> 00:14:56.968 the future monitoring.  
NOTE Confidence: 0.913180765333334

00:14:56.970 --> 00:14:59.448 The future is a yearly survey  
NOTE Confidence: 0.913180765333334

00:14:59.448 --> 00:15:01.557 that's been conducted every year  
NOTE Confidence: 0.913180765333334

00:15:01.557 --> 00:15:03.921 and 12th graders and since 1991  
NOTE Confidence: 0.913180765333334

00:15:03.921 --> 00:15:06.770 and 8th and 10th graders and the  
NOTE Confidence: 0.913180765333334

00:15:06.862 --> 00:15:09.547 amazing thing that's very huge.  
NOTE Confidence: 0.913180765333334

00:15:09.550 --> 00:15:11.608 Advantage of this study is that they've  
NOTE Confidence: 0.913180765333334

00:15:11.608 --> 00:15:13.430 kept their questions constant overtime.  
NOTE Confidence: 0.913180765333334

00:15:13.430 --> 00:15:15.205 The basic questions on perceived  
NOTE Confidence: 0.913180765333334

00:15:15.205 --> 00:15:17.810 risk and use of the substances,  
NOTE Confidence: 0.913180765333334

00:15:17.810 --> 00:15:20.234 so it's possible to get very long term

NOTE Confidence: 0.913180765333334  
00:15:20.234 --> 00:15:22.358 perspectives from monitoring the future data.  
NOTE Confidence: 0.913180765333334  
00:15:22.360 --> 00:15:25.480 On what's going on with trends  
NOTE Confidence: 0.913180765333334  
00:15:25.480 --> 00:15:28.871 in in students in 8th, 10th,  
NOTE Confidence: 0.913180765333334  
00:15:28.871 --> 00:15:29.624 and 12th grade.  
NOTE Confidence: 0.913180765333334  
00:15:29.624 --> 00:15:32.044 So what we see here is there's been  
NOTE Confidence: 0.913180765333334  
00:15:32.044 --> 00:15:32.900 some fluctuation.  
NOTE Confidence: 0.913180765333334  
00:15:32.900 --> 00:15:37.248 Overtime in perception of great  
NOTE Confidence: 0.913180765333334  
00:15:37.248 --> 00:15:40.033 risk associated with using cannabis,  
NOTE Confidence: 0.913180765333334  
00:15:40.040 --> 00:15:42.770 but it's got it's pretty much gone  
NOTE Confidence: 0.913180765333334  
00:15:42.770 --> 00:15:45.187 down so consistent with what we'll  
NOTE Confidence: 0.913180765333334  
00:15:45.187 --> 00:15:47.917 discuss a little bit later in adults.  
NOTE Confidence: 0.913180765333334  
00:15:47.920 --> 00:15:48.290 Also,  
NOTE Confidence: 0.913180765333334  
00:15:48.290 --> 00:15:50.510 the perception that it's harmful to  
NOTE Confidence: 0.913180765333334  
00:15:50.510 --> 00:15:52.489 use this substance has declined.  
NOTE Confidence: 0.913180765333334  
00:15:52.490 --> 00:15:54.602 Usually that's associated with  
NOTE Confidence: 0.913180765333334

00:15:54.602 --> 00:15:57.242 increased use of a substance,  
NOTE Confidence: 0.913180765333334

00:15:57.250 --> 00:15:59.728 although it hasn't been so closely  
NOTE Confidence: 0.913180765333334

00:15:59.728 --> 00:16:03.148 entwined to that in teens in recent years.  
NOTE Confidence: 0.913180765333334

00:16:03.150 --> 00:16:05.775 So here's some information on  
NOTE Confidence: 0.913180765333334

00:16:05.775 --> 00:16:09.146 long term time trends in any use  
NOTE Confidence: 0.913180765333334

00:16:09.146 --> 00:16:11.910 of cannabis over the past year,  
NOTE Confidence: 0.913180765333334

00:16:11.910 --> 00:16:12.930 and as you can see,  
NOTE Confidence: 0.913180765333334

00:16:12.930 --> 00:16:15.090 in 12th graders it's been pretty  
NOTE Confidence: 0.913180765333334

00:16:15.090 --> 00:16:17.030 flat for the last several years.  
NOTE Confidence: 0.913180765333334

00:16:17.030 --> 00:16:20.110 There's been some increase in the last  
NOTE Confidence: 0.913180765333334

00:16:20.110 --> 00:16:23.560 couple of years for Ace and 10th graders.  
NOTE Confidence: 0.913180765333334

00:16:23.560 --> 00:16:26.176 But they are not as marked as they  
NOTE Confidence: 0.913180765333334

00:16:26.180 --> 00:16:28.495 as increases that we're seeing  
NOTE Confidence: 0.913180765333334

00:16:28.495 --> 00:16:30.950 in in the beginning of the 1990s.  
NOTE Confidence: 0.9315905375

00:16:32.570 --> 00:16:33.250 And here we see  
NOTE Confidence: 0.90455522875

00:16:33.260 --> 00:16:36.956 daily use and we see pretty similar patterns.

NOTE Confidence: 0.90455522875

00:16:36.960 --> 00:16:40.047 Not too much evidence of increases in

NOTE Confidence: 0.90455522875

00:16:40.047 --> 00:16:42.900 the 12th graders, but some increases

NOTE Confidence: 0.90455522875

00:16:42.900 --> 00:16:46.470 in the 8th and the 10th graders.

NOTE Confidence: 0.90455522875

00:16:46.470 --> 00:16:48.924 And some worrisome trends in a

NOTE Confidence: 0.90455522875

00:16:48.924 --> 00:16:51.380 paper that was published last year.

NOTE Confidence: 0.90455522875

00:16:51.380 --> 00:16:53.870 Frequent use among lifetime users,

NOTE Confidence: 0.90455522875

00:16:53.870 --> 00:16:58.838 so this show this figure shows over the

NOTE Confidence: 0.90455522875

00:16:58.838 --> 00:17:02.642 years male female differences in monitoring

NOTE Confidence: 0.90455522875

00:17:02.642 --> 00:17:06.927 the future participants in frequent use.

NOTE Confidence: 0.90455522875

00:17:06.930 --> 00:17:09.460 You can see that it's

NOTE Confidence: 0.90455522875

00:17:09.460 --> 00:17:11.990 gone up in recent years.

NOTE Confidence: 0.90455522875

00:17:11.990 --> 00:17:14.408 And this is in white participants

NOTE Confidence: 0.90455522875

00:17:14.408 --> 00:17:16.437 and in black participants who

NOTE Confidence: 0.90455522875

00:17:16.437 --> 00:17:18.525 actually have gone up more sharply

NOTE Confidence: 0.90455522875

00:17:18.525 --> 00:17:21.310 and ended up at a somewhat higher

NOTE Confidence: 0.90455522875

00:17:21.310 --> 00:17:23.395 place than the white participants.  
NOTE Confidence: 0.90455522875

00:17:23.400 --> 00:17:25.654 So we don't see huge change overall  
NOTE Confidence: 0.90455522875

00:17:25.654 --> 00:17:28.200 in in any use of cannabis weed,  
NOTE Confidence: 0.90455522875

00:17:28.200 --> 00:17:30.896 but we do see some trends in heavier  
NOTE Confidence: 0.90455522875

00:17:30.896 --> 00:17:33.928 use of cannabis amongst adolescents.  
NOTE Confidence: 0.90455522875

00:17:33.930 --> 00:17:37.298 Well, what about adults?  
NOTE Confidence: 0.90455522875

00:17:37.300 --> 00:17:41.827 So taking a look at two surveys that Nice  
NOTE Confidence: 0.90455522875

00:17:41.827 --> 00:17:44.780 arc survey that was like a predecessor  
NOTE Confidence: 0.90455522875

00:17:44.780 --> 00:17:47.928 of the Nice arc three that I showed you  
NOTE Confidence: 0.90455522875

00:17:47.928 --> 00:17:50.145 earlier that was conducted in 2001,  
NOTE Confidence: 0.90455522875

00:17:50.145 --> 00:17:52.815 2002 and about 10 years later,  
NOTE Confidence: 0.90455522875

00:17:52.820 --> 00:17:54.913 the Nice arc three was conducted and  
NOTE Confidence: 0.90455522875

00:17:54.913 --> 00:17:57.320 pretty much the same questions and sample  
NOTE Confidence: 0.90455522875

00:17:57.320 --> 00:17:59.492 design were utilized in both surveys,  
NOTE Confidence: 0.90455522875

00:17:59.500 --> 00:18:01.400 enabling people to look across  
NOTE Confidence: 0.90455522875

00:18:01.400 --> 00:18:03.866 the the surveys to see about

NOTE Confidence: 0.90455522875

00:18:03.866 --> 00:18:05.818 increases in rates overtime.

NOTE Confidence: 0.90455522875

00:18:05.820 --> 00:18:08.858 So this is past year cannabis use.

NOTE Confidence: 0.90455522875

00:18:08.860 --> 00:18:12.060 In adults at least 1818 years and older,

NOTE Confidence: 0.90455522875

00:18:12.060 --> 00:18:14.424 and you can see that the

NOTE Confidence: 0.90455522875

00:18:14.424 --> 00:18:16.000 rates more than doubled.

NOTE Confidence: 0.90455522875

00:18:16.000 --> 00:18:18.130 And this is cannabis use disorder

NOTE Confidence: 0.90455522875

00:18:18.130 --> 00:18:20.938 where we also see an increase in

NOTE Confidence: 0.90455522875

00:18:20.938 --> 00:18:22.690 rates nearly doubling across.

NOTE Confidence: 0.90455522875

00:18:22.690 --> 00:18:25.636 You know, across the two surveys.

NOTE Confidence: 0.90455522875

00:18:25.640 --> 00:18:26.048 And,

NOTE Confidence: 0.90455522875

00:18:26.048 --> 00:18:28.088 as shown in the paper,

NOTE Confidence: 0.90455522875

00:18:28.090 --> 00:18:30.274 if you're interested in taking a look,

NOTE Confidence: 0.90455522875

00:18:30.280 --> 00:18:32.530 any use in cannabis use disorder

NOTE Confidence: 0.90455522875

00:18:32.530 --> 00:18:34.030 did increase significantly within

NOTE Confidence: 0.90455522875

00:18:34.088 --> 00:18:35.678 major demographic subgroups,

NOTE Confidence: 0.90455522875

00:18:35.680 --> 00:18:38.760 including men and women within age groups,  
NOTE Confidence: 0.90455522875

00:18:38.760 --> 00:18:43.630 income and race ethnicity groups.  
NOTE Confidence: 0.90455522875

00:18:43.630 --> 00:18:46.645 But there were there were data that came out  
NOTE Confidence: 0.90455522875

00:18:46.645 --> 00:18:49.260 of a different series of national surveys.  
NOTE Confidence: 0.90455522875

00:18:49.260 --> 00:18:52.119 The National Survey on Drug Use and Health.  
NOTE Confidence: 0.90455522875

00:18:52.120 --> 00:18:53.335 I'm sorry about the typo  
NOTE Confidence: 0.90455522875

00:18:53.335 --> 00:18:54.940 in the in the title there.  
NOTE Confidence: 0.90455522875

00:18:54.940 --> 00:18:56.095 So Wilson Compton,  
NOTE Confidence: 0.90455522875

00:18:56.095 --> 00:18:58.790 who is now Deputy director of Naida,  
NOTE Confidence: 0.90455522875

00:18:58.790 --> 00:19:01.499 published a paper about five years ago  
NOTE Confidence: 0.90455522875

00:19:01.499 --> 00:19:04.700 showing a lot of changes overtime in  
NOTE Confidence: 0.90455522875

00:19:04.700 --> 00:19:07.155 cannabis use attitudes towards cannabis  
NOTE Confidence: 0.90455522875

00:19:07.155 --> 00:19:09.809 and then cannabis use disorders.  
NOTE Confidence: 0.90455522875

00:19:09.810 --> 00:19:11.896 So the thing that was kind of  
NOTE Confidence: 0.90455522875

00:19:11.896 --> 00:19:13.220 striking about this paper.  
NOTE Confidence: 0.90455522875

00:19:13.220 --> 00:19:15.376 Was that although a lot of other



NOTE Confidence: 0.90455522875

00:19:15.376 --> 00:19:17.058 things were changing in the news?

NOTE Confidence: 0.90455522875

00:19:17.060 --> 00:19:17.974 Do data.

NOTE Confidence: 0.90455522875

00:19:17.974 --> 00:19:19.802 These are nationally representative

NOTE Confidence: 0.90455522875

00:19:19.802 --> 00:19:22.340 surveys that are conducted each year.

NOTE Confidence: 0.90455522875

00:19:22.340 --> 00:19:25.056 Is that the rates of cannabis use

NOTE Confidence: 0.90455522875

00:19:25.056 --> 00:19:26.920 disorder didn't change overtime.

NOTE Confidence: 0.90455522875

00:19:26.920 --> 00:19:28.906 They were about 1.5%.

NOTE Confidence: 0.90455522875

00:19:28.906 --> 00:19:31.608 And that was true across the years

NOTE Confidence: 0.90455522875

00:19:31.608 --> 00:19:34.329 of this survey and an additional

NOTE Confidence: 0.90455522875

00:19:34.329 --> 00:19:37.028 analysis of these data were conducted

NOTE Confidence: 0.90455522875

00:19:37.028 --> 00:19:38.868 and published that showed pretty

NOTE Confidence: 0.90455522875

00:19:38.868 --> 00:19:40.340 much the same thing,

NOTE Confidence: 0.90455522875

00:19:40.340 --> 00:19:43.226 so it wasn't so clear why.

NOTE Confidence: 0.90455522875

00:19:43.230 --> 00:19:46.110 Denise Arc was showing increases,

NOTE Confidence: 0.90455522875

00:19:46.110 --> 00:19:48.259 but the news do was showing that

NOTE Confidence: 0.90455522875

00:19:48.259 --> 00:19:50.076 although use was increasing and  
NOTE Confidence: 0.90455522875

00:19:50.076 --> 00:19:52.566 frequent use was increasing in adults,  
NOTE Confidence: 0.90455522875

00:19:52.570 --> 00:19:54.394 the rates of cannabis use disorder  
NOTE Confidence: 0.90455522875

00:19:54.394 --> 00:19:55.610 were staying the same.  
NOTE Confidence: 0.90455522875

00:19:55.610 --> 00:19:58.010 So this was an epidemiologic  
NOTE Confidence: 0.90455522875

00:19:58.010 --> 00:19:59.930 debate for a while.  
NOTE Confidence: 0.90455522875

00:19:59.930 --> 00:20:01.645 And then there was a new paper  
NOTE Confidence: 0.90455522875

00:20:01.645 --> 00:20:03.629 that came out where the team pulled  
NOTE Confidence: 0.90455522875

00:20:03.629 --> 00:20:05.405 in a couple of additional years  
NOTE Confidence: 0.947498745909091

00:20:05.463 --> 00:20:08.430 of data, and although the DSM five  
NOTE Confidence: 0.947498745909091

00:20:08.430 --> 00:20:11.540 criteria weren't utilized in those years,  
NOTE Confidence: 0.947498745909091

00:20:11.540 --> 00:20:13.430 in the Miss do surveys,  
NOTE Confidence: 0.947498745909091

00:20:13.430 --> 00:20:18.200 they created a proxy of the the DSM 5  
NOTE Confidence: 0.947498745909091

00:20:18.200 --> 00:20:20.518 diagnosis and that when they use that  
NOTE Confidence: 0.947498745909091

00:20:20.518 --> 00:20:22.591 one they did show increases overtime  
NOTE Confidence: 0.947498745909091

00:20:22.591 --> 00:20:25.015 and the increases were largely in

NOTE Confidence: 0.947498745909091

00:20:25.015 --> 00:20:27.198 the mild category and they considered

NOTE Confidence: 0.947498745909091

00:20:27.198 --> 00:20:29.904 the DSM five to be a more sensitive.

NOTE Confidence: 0.947498745909091

00:20:29.904 --> 00:20:32.166 Indicator, but for this paper a

NOTE Confidence: 0.947498745909091

00:20:32.166 --> 00:20:34.705 caveat was that DSM 5 craving and

NOTE Confidence: 0.947498745909091

00:20:34.705 --> 00:20:36.820 withdrawal were missing in the news.

NOTE Confidence: 0.947498745909091

00:20:36.820 --> 00:20:39.430 Do so it was still unclear how the results

NOTE Confidence: 0.947498745909091

00:20:39.430 --> 00:20:41.907 would have looked if these were included.

NOTE Confidence: 0.947498745909091

00:20:41.910 --> 00:20:44.928 Well, very recently than is do

NOTE Confidence: 0.947498745909091

00:20:44.928 --> 00:20:47.490 has published 2020 data where

NOTE Confidence: 0.947498745909091

00:20:47.490 --> 00:20:50.668 they did shift to DSM 5 criteria.

NOTE Confidence: 0.947498745909091

00:20:50.670 --> 00:20:52.908 So I pulled these numbers together

NOTE Confidence: 0.947498745909091

00:20:52.908 --> 00:20:54.027 for this presentation.

NOTE Confidence: 0.947498745909091

00:20:54.030 --> 00:20:57.566 So we see putting 2019 and 2020 data

NOTE Confidence: 0.947498745909091

00:20:57.566 --> 00:21:00.847 together just first looking at cannabis.

NOTE Confidence: 0.947498745909091

00:21:00.850 --> 00:21:03.118 Use any cannabis use in the

NOTE Confidence: 0.947498745909091

00:21:03.118 --> 00:21:05.579 past year across the age groups.  
NOTE Confidence: 0.947498745909091

00:21:05.580 --> 00:21:07.578 We don't see any any evidence  
NOTE Confidence: 0.947498745909091

00:21:07.578 --> 00:21:09.430 of a huge shift there.  
NOTE Confidence: 0.947498745909091

00:21:09.430 --> 00:21:11.410 It doesn't look like the the  
NOTE Confidence: 0.947498745909091

00:21:11.410 --> 00:21:13.160 prevalence of use went up.  
NOTE Confidence: 0.947498745909091

00:21:13.160 --> 00:21:15.554 In the young people or the mid  
NOTE Confidence: 0.947498745909091

00:21:15.554 --> 00:21:18.094 you know the the young adults or  
NOTE Confidence: 0.947498745909091

00:21:18.094 --> 00:21:20.800 or the adults aged 26 and older.  
NOTE Confidence: 0.947498745909091

00:21:20.800 --> 00:21:24.390 However when we look at the  
NOTE Confidence: 0.947498745909091

00:21:24.390 --> 00:21:26.980 shift from DSM 4 to DSM five,  
NOTE Confidence: 0.947498745909091

00:21:26.980 --> 00:21:29.056 we do see quite a difference.  
NOTE Confidence: 0.947498745909091

00:21:29.060 --> 00:21:30.810 We don't see that much of a  
NOTE Confidence: 0.947498745909091

00:21:30.810 --> 00:21:32.677 difference in the 12 to 17 year olds,  
NOTE Confidence: 0.947498745909091

00:21:32.680 --> 00:21:34.836 but in the young adults we see  
NOTE Confidence: 0.947498745909091

00:21:34.836 --> 00:21:37.238 quite a large difference from DSM.  
NOTE Confidence: 0.947498745909091

00:21:37.240 --> 00:21:40.100 Four to DSM five there were a lot of things.

NOTE Confidence: 0.947498745909091  
00:21:40.100 --> 00:21:41.985 Of course that happened in  
NOTE Confidence: 0.947498745909091  
00:21:41.985 --> 00:21:43.116 2020 including the.  
NOTE Confidence: 0.947498745909091  
00:21:43.120 --> 00:21:45.360 The pandemic and a lot of other things.  
NOTE Confidence: 0.947498745909091  
00:21:45.360 --> 00:21:47.920 But if we just think about the shift  
NOTE Confidence: 0.947498745909091  
00:21:47.920 --> 00:21:49.744 from a set of criteria that was used  
NOTE Confidence: 0.947498745909091  
00:21:49.744 --> 00:21:52.208 for a long time and then is due to the  
NOTE Confidence: 0.947498745909091  
00:21:52.208 --> 00:21:54.035 new criteria that were expected from  
NOTE Confidence: 0.947498745909091  
00:21:54.035 --> 00:21:55.955 the beginning to be more sensitive,  
NOTE Confidence: 0.947498745909091  
00:21:55.960 --> 00:21:58.291 we see a big increase that looks  
NOTE Confidence: 0.947498745909091  
00:21:58.291 --> 00:22:00.453 like it could be artifactual in  
NOTE Confidence: 0.947498745909091  
00:22:00.453 --> 00:22:02.987 the young adults and also in the  
NOTE Confidence: 0.947498745909091  
00:22:03.063 --> 00:22:05.310 in the adults age 26 and older.  
NOTE Confidence: 0.947498745909091  
00:22:05.310 --> 00:22:07.956 So as an epidemiologist this just means  
NOTE Confidence: 0.947498745909091  
00:22:07.956 --> 00:22:10.705 that it's hard to use new data over  
NOTE Confidence: 0.947498745909091  
00:22:10.705 --> 00:22:13.369 long periods of time to look at trends.  
NOTE Confidence: 0.947498745909091

00:22:13.370 --> 00:22:16.097 And if we want to have a deeper understanding

NOTE Confidence: 0.947498745909091

00:22:16.097 --> 00:22:18.745 of what trends are going on nationally,

NOTE Confidence: 0.947498745909091

00:22:18.750 --> 00:22:20.946 we need to look for other sources of data.

NOTE Confidence: 0.947498745909091

00:22:20.950 --> 00:22:23.064 And that's important not only to understand

NOTE Confidence: 0.947498745909091

00:22:23.064 --> 00:22:25.272 what's going on in this country with

NOTE Confidence: 0.947498745909091

00:22:25.272 --> 00:22:27.144 cannabis use and cannabis use disorders,

NOTE Confidence: 0.947498745909091

00:22:27.150 --> 00:22:28.738 but also to understanding

NOTE Confidence: 0.947498745909091

00:22:28.738 --> 00:22:30.723 the effects of the laws.

NOTE Confidence: 0.947498745909091

00:22:30.730 --> 00:22:33.226 So one other source of data

NOTE Confidence: 0.947498745909091

00:22:33.230 --> 00:22:35.645 includes cannabis use,

NOTE Confidence: 0.947498745909091

00:22:35.645 --> 00:22:38.060 disorder diagnosis and

NOTE Confidence: 0.947498745909091

00:22:38.060 --> 00:22:39.670 inpatient hospitalizations,

NOTE Confidence: 0.947498745909091

00:22:39.670 --> 00:22:42.386 and we can see that in this

NOTE Confidence: 0.947498745909091

00:22:42.386 --> 00:22:44.508 paper between 2002 and 2000.

NOTE Confidence: 0.947498745909091

00:22:44.508 --> 00:22:47.184 11 There was an increase of

NOTE Confidence: 0.947498745909091

00:22:47.184 --> 00:22:49.280 about over doubling of the rates.

NOTE Confidence: 0.947498745909091  
00:22:49.280 --> 00:22:49.629 Now,  
NOTE Confidence: 0.947498745909091  
00:22:49.629 --> 00:22:52.072 that doesn't mean that the people were  
NOTE Confidence: 0.947498745909091  
00:22:52.072 --> 00:22:54.118 hospitalized for cannabis use disorder,  
NOTE Confidence: 0.947498745909091  
00:22:54.120 --> 00:22:54.664 but they.  
NOTE Confidence: 0.947498745909091  
00:22:54.664 --> 00:22:56.296 These were one of the diagnosis  
NOTE Confidence: 0.947498745909091  
00:22:56.296 --> 00:22:57.160 that were made.  
NOTE Confidence: 0.947498745909091  
00:22:57.160 --> 00:23:01.864 If they were in in inpatient hospitalization.  
NOTE Confidence: 0.947498745909091  
00:23:01.870 --> 00:23:04.705 And in a paper that updated the  
NOTE Confidence: 0.947498745909091  
00:23:04.705 --> 00:23:07.409 findings to somewhat more recent years,  
NOTE Confidence: 0.947498745909091  
00:23:07.410 --> 00:23:09.738 these this paper looked over a  
NOTE Confidence: 0.947498745909091  
00:23:09.738 --> 00:23:12.316 longer span of time and showed  
NOTE Confidence: 0.947498745909091  
00:23:12.316 --> 00:23:14.681 quite a substantial increase using  
NOTE Confidence: 0.947498745909091  
00:23:14.681 --> 00:23:16.100 pretty much the  
NOTE Confidence: 0.912236221818182  
00:23:16.183 --> 00:23:18.314 same variable. Now the authors  
NOTE Confidence: 0.912236221818182  
00:23:18.314 --> 00:23:20.402 of this paper said that they  
NOTE Confidence: 0.912236221818182

00:23:20.402 --> 00:23:22.390 didn't shift to looking at ICD  
NOTE Confidence: 0.912236221818182

00:23:22.390 --> 00:23:25.921 10CM that occurred in 2015,  
NOTE Confidence: 0.912236221818182

00:23:25.921 --> 00:23:28.676 2016 because that presented too  
NOTE Confidence: 0.912236221818182

00:23:28.676 --> 00:23:30.329 many methodological challenges.  
NOTE Confidence: 0.912236221818182

00:23:30.330 --> 00:23:32.634 But I will talk about those in some data.  
NOTE Confidence: 0.912236221818182

00:23:32.640 --> 00:23:33.972 That we have to address that  
NOTE Confidence: 0.912236221818182

00:23:33.972 --> 00:23:35.740 in a in a minute or two.  
NOTE Confidence: 0.8471604675

00:23:37.750 --> 00:23:40.585 One of another fellow from my training  
NOTE Confidence: 0.8471604675

00:23:40.585 --> 00:23:42.253 program, a postdoctoral fellow,  
NOTE Confidence: 0.8471604675

00:23:42.253 --> 00:23:45.200 looked at the prevalence of past non  
NOTE Confidence: 0.8471604675

00:23:45.274 --> 00:23:47.968 cannabis use in pregnant and non  
NOTE Confidence: 0.8471604675

00:23:47.968 --> 00:23:50.130 pregnant women of reproductive age.  
NOTE Confidence: 0.8471604675

00:23:50.130 --> 00:23:52.038 And the overall finding was that  
NOTE Confidence: 0.8471604675

00:23:52.038 --> 00:23:53.992 the rates of cannabis use were  
NOTE Confidence: 0.8471604675

00:23:53.992 --> 00:23:55.547 lower in the pregnant women,  
NOTE Confidence: 0.8471604675

00:23:55.550 --> 00:23:58.142 but the rates have changed over the period



NOTE Confidence: 0.8471604675

00:23:58.142 --> 00:24:00.670 of time addressed with Miss do data,

NOTE Confidence: 0.8471604675

00:24:00.670 --> 00:24:03.660 we're pretty much the same with

NOTE Confidence: 0.8471604675

00:24:03.660 --> 00:24:06.160 increases in pregnant women as

NOTE Confidence: 0.8471604675

00:24:06.160 --> 00:24:08.790 well as non pregnant women.

NOTE Confidence: 0.8471604675

00:24:08.790 --> 00:24:12.822 And this is another take on a similar issue.

NOTE Confidence: 0.8471604675

00:24:12.830 --> 00:24:15.637 This paper just came out very recently.

NOTE Confidence: 0.8471604675

00:24:15.640 --> 00:24:17.410 We weren't involved in this paper,

NOTE Confidence: 0.8471604675

00:24:17.410 --> 00:24:20.882 but you can see that in in women

NOTE Confidence: 0.8471604675

00:24:20.882 --> 00:24:23.235 people that were hospitalized

NOTE Confidence: 0.8471604675

00:24:23.235 --> 00:24:26.690 for pregnancy or pre pregnancy,

NOTE Confidence: 0.8471604675

00:24:26.690 --> 00:24:29.626 the rates of cannabis use disorder went up,

NOTE Confidence: 0.8471604675

00:24:29.630 --> 00:24:31.614 including importantly cannabis use

NOTE Confidence: 0.8471604675

00:24:31.614 --> 00:24:34.094 disorder being the only substance

NOTE Confidence: 0.8471604675

00:24:34.094 --> 00:24:36.405 use disorder diagnosis which is

NOTE Confidence: 0.8471604675

00:24:36.405 --> 00:24:38.585 indicated here by the little.

NOTE Confidence: 0.8471604675

00:24:38.590 --> 00:24:40.579 Gold colored circles.  
NOTE Confidence: 0.825988917222222

00:24:44.350 --> 00:24:46.828 So this was a study that was  
NOTE Confidence: 0.825988917222222

00:24:46.828 --> 00:24:48.238 published actually actually at  
NOTE Confidence: 0.825988917222222

00:24:48.238 --> 00:24:50.226 this point a number of years ago,  
NOTE Confidence: 0.825988917222222

00:24:50.230 --> 00:24:51.922 and this study actually was something  
NOTE Confidence: 0.825988917222222

00:24:51.922 --> 00:24:54.252 that led us to getting a grant from  
NOTE Confidence: 0.825988917222222

00:24:54.252 --> 00:24:56.828 Niger that I'll be talking about in a few  
NOTE Confidence: 0.825988917222222

00:24:56.828 --> 00:24:58.683 minutes to look more closely at cannabis  
NOTE Confidence: 0.825988917222222

00:24:58.690 --> 00:25:01.945 use disorders across time in the VA.  
NOTE Confidence: 0.825988917222222

00:25:01.950 --> 00:25:06.041 But this paper, which went from 2002 to 2009,  
NOTE Confidence: 0.825988917222222

00:25:06.041 --> 00:25:09.324 showed an increase of 59% across  
NOTE Confidence: 0.825988917222222

00:25:09.324 --> 00:25:13.446 this time in cannabis use diagnosis.  
NOTE Confidence: 0.825988917222222

00:25:13.450 --> 00:25:16.327 And working with the VA data across  
NOTE Confidence: 0.825988917222222

00:25:16.327 --> 00:25:18.798 a longer period of time with  
NOTE Confidence: 0.825988917222222

00:25:18.798 --> 00:25:21.108 the grant funding that we got,  
NOTE Confidence: 0.825988917222222

00:25:21.110 --> 00:25:24.614 we looked at this including the

NOTE Confidence: 0.825988917222222

00:25:24.614 --> 00:25:28.268 transition period from ICD 9 to ICD 10.

NOTE Confidence: 0.825988917222222

00:25:28.270 --> 00:25:31.646 So the first several years in this show,

NOTE Confidence: 0.825988917222222

00:25:31.650 --> 00:25:34.754 the changes overtime in ICD 9 CM and

NOTE Confidence: 0.825988917222222

00:25:34.754 --> 00:25:38.162 what we see here is a clear increase

NOTE Confidence: 0.825988917222222

00:25:38.162 --> 00:25:41.684 overtime in all the groups rates were

NOTE Confidence: 0.825988917222222

00:25:41.684 --> 00:25:45.152 highest in the youngest veteran patients.

NOTE Confidence: 0.825988917222222

00:25:45.160 --> 00:25:48.176 This was the point in time when the

NOTE Confidence: 0.825988917222222

00:25:48.176 --> 00:25:50.319 criteria were changed in the VA

NOTE Confidence: 0.825988917222222

00:25:50.320 --> 00:25:52.637 and we see that there's a decrease

NOTE Confidence: 0.825988917222222

00:25:52.637 --> 00:25:54.160 right after that change.

NOTE Confidence: 0.825988917222222

00:25:54.160 --> 00:25:55.094 That was,

NOTE Confidence: 0.825988917222222

00:25:55.094 --> 00:25:57.896 do we think to some administrative

NOTE Confidence: 0.825988917222222

00:25:57.896 --> 00:26:00.876 issues in recording old diagnosis

NOTE Confidence: 0.825988917222222

00:26:00.876 --> 00:26:02.640 versus new diagnosis,

NOTE Confidence: 0.825988917222222

00:26:02.640 --> 00:26:05.009 but we see that once that period

NOTE Confidence: 0.825988917222222

00:26:05.009 --> 00:26:07.172 was passed that we once again see  
NOTE Confidence: 0.825988917222222

00:26:07.172 --> 00:26:09.148 a pretty steady increase overtime  
NOTE Confidence: 0.825988917222222

00:26:09.148 --> 00:26:11.722 in the prevalence of cannabis use  
NOTE Confidence: 0.825988917222222

00:26:11.722 --> 00:26:14.265 disorders across the five and a  
NOTE Confidence: 0.825988917222222

00:26:14.265 --> 00:26:15.949 half million or so.  
NOTE Confidence: 0.825988917222222

00:26:15.950 --> 00:26:17.990 Patients that were treated in  
NOTE Confidence: 0.825988917222222

00:26:17.990 --> 00:26:19.622 the VA each year.  
NOTE Confidence: 0.825988917222222

00:26:19.630 --> 00:26:21.990 This is how the similar findings looked when  
NOTE Confidence: 0.825988917222222

00:26:21.990 --> 00:26:24.426 we broke them apart by males and females.  
NOTE Confidence: 0.825988917222222

00:26:24.430 --> 00:26:27.446 This is the period with ICD 9 CM.  
NOTE Confidence: 0.825988917222222

00:26:27.450 --> 00:26:30.472 This is the transition point and this  
NOTE Confidence: 0.825988917222222

00:26:30.472 --> 00:26:33.058 is the post transition point findings  
NOTE Confidence: 0.825988917222222

00:26:33.058 --> 00:26:36.397 where you see the rates were going up  
NOTE Confidence: 0.825988917222222

00:26:36.397 --> 00:26:39.000 pretty steadily in males and females.  
NOTE Confidence: 0.825988917222222

00:26:39.000 --> 00:26:41.032 And this is what we get what we  
NOTE Confidence: 0.825988917222222

00:26:41.032 --> 00:26:43.257 got when we looked at this by race.

NOTE Confidence: 0.825988917222222

00:26:43.260 --> 00:26:46.195 Ethnic groups once again with

NOTE Confidence: 0.825988917222222

00:26:46.195 --> 00:26:47.956 the two periods.

NOTE Confidence: 0.825988917222222

00:26:47.960 --> 00:26:49.055 This paper is,

NOTE Confidence: 0.825988917222222

00:26:49.055 --> 00:26:51.610 we've got a paper on this that

NOTE Confidence: 0.825988917222222

00:26:51.698 --> 00:26:54.380 we're just about ready to submit.

NOTE Confidence: 0.825988917222222

00:26:54.380 --> 00:26:56.800 That reports on these findings,

NOTE Confidence: 0.825988917222222

00:26:56.800 --> 00:27:00.097 so it seems pretty clear looking across

NOTE Confidence: 0.825988917222222

00:27:00.097 --> 00:27:05.990 survey data and across information from.

NOTE Confidence: 0.825988917222222

00:27:05.990 --> 00:27:08.000 Large electronic medical record data

NOTE Confidence: 0.825988917222222

00:27:08.000 --> 00:27:10.440 that cannabis use disorder has been

NOTE Confidence: 0.825988917222222

00:27:10.440 --> 00:27:12.290 increasing in the United States.

NOTE Confidence: 0.825988917222222

00:27:12.290 --> 00:27:13.946 Use has increased in cannabis use.

NOTE Confidence: 0.825988917222222

00:27:13.950 --> 00:27:16.110 Disorder has increased as well,

NOTE Confidence: 0.825988917222222

00:27:16.110 --> 00:27:19.174 so then it makes some sense to think

NOTE Confidence: 0.825988917222222

00:27:19.174 --> 00:27:21.268 about what are potential factors

NOTE Confidence: 0.825988917222222

00:27:21.268 --> 00:27:24.173 that are going on in in that.  
NOTE Confidence: 0.825988917222222

00:27:24.180 --> 00:27:24.490 So  
NOTE Confidence: 0.937228132

00:27:24.500 --> 00:27:26.730 I'm going to talk about  
NOTE Confidence: 0.841094432

00:27:26.770 --> 00:27:29.160 increases in in cannabis potency.  
NOTE Confidence: 0.841094432

00:27:29.160 --> 00:27:31.421 I'm going to talk about increases in  
NOTE Confidence: 0.841094432

00:27:31.421 --> 00:27:34.321 pain and then I'm going to spend a fair  
NOTE Confidence: 0.841094432

00:27:34.321 --> 00:27:36.711 amount of time talking about increasingly  
NOTE Confidence: 0.841094432

00:27:36.711 --> 00:27:38.867 permissive state cannabis laws.  
NOTE Confidence: 0.841094432

00:27:38.870 --> 00:27:42.218 So this this slide shows the  
NOTE Confidence: 0.841094432

00:27:42.218 --> 00:27:45.204 changing potency of illicit cannabis  
NOTE Confidence: 0.841094432

00:27:45.204 --> 00:27:49.250 samples that were seized by the Drug  
NOTE Confidence: 0.841094432

00:27:49.250 --> 00:27:51.350 Enforcement Administration across time.  
NOTE Confidence: 0.841094432

00:27:51.350 --> 00:27:52.890 And as we can see,  
NOTE Confidence: 0.841094432

00:27:52.890 --> 00:27:55.529 there's been a quite a substantial increase  
NOTE Confidence: 0.841094432

00:27:55.529 --> 00:27:58.100 in the potency of the seized samples  
NOTE Confidence: 0.841094432

00:27:58.100 --> 00:28:04.698 going up to two 2014 in this figure.

NOTE Confidence: 0.841094432

00:28:04.700 --> 00:28:08.084 And then continuing the findings further

NOTE Confidence: 0.841094432

00:28:08.084 --> 00:28:12.120 into a few additional years up to 2019.

NOTE Confidence: 0.841094432

00:28:12.120 --> 00:28:14.780 So there's quite an increase in the

NOTE Confidence: 0.841094432

00:28:14.780 --> 00:28:17.314 potency of the product that's being

NOTE Confidence: 0.841094432

00:28:17.314 --> 00:28:20.596 used and potency is thought to be

NOTE Confidence: 0.841094432

00:28:20.596 --> 00:28:23.094 related to addiction liability of

NOTE Confidence: 0.841094432

00:28:23.094 --> 00:28:25.649 different substances that are used.

NOTE Confidence: 0.841094432

00:28:25.650 --> 00:28:27.478 But now, in addition,

NOTE Confidence: 0.841094432

00:28:27.478 --> 00:28:30.220 we not only have the illicit

NOTE Confidence: 0.841094432

00:28:30.315 --> 00:28:32.545 cannabis products that people have

NOTE Confidence: 0.841094432

00:28:32.545 --> 00:28:34.430 been able to get for a long time,

NOTE Confidence: 0.841094432

00:28:34.430 --> 00:28:37.223 but we have legal cannabis markets and

NOTE Confidence: 0.841094432

00:28:37.223 --> 00:28:40.866 a lot more products that people can use.

NOTE Confidence: 0.841094432

00:28:40.870 --> 00:28:45.294 So we have plant or flower products,

NOTE Confidence: 0.841094432

00:28:45.300 --> 00:28:47.813 and at this point the average potency

NOTE Confidence: 0.841094432

00:28:47.813 --> 00:28:50.130 in those products is from 15 to 20%.  
NOTE Confidence: 0.841094432

00:28:50.130 --> 00:28:52.620 That's including legal ones as well  
NOTE Confidence: 0.841094432

00:28:52.620 --> 00:28:56.150 as illegal ones. We also have.  
NOTE Confidence: 0.841094432

00:28:56.150 --> 00:28:59.324 Changing products in terms of concentrates  
NOTE Confidence: 0.841094432

00:28:59.324 --> 00:29:01.920 concentrates that can be used.  
NOTE Confidence: 0.841094432

00:29:01.920 --> 00:29:04.790 It can be vaped or or dabled,  
NOTE Confidence: 0.841094432

00:29:04.790 --> 00:29:07.625 and those are really quite  
NOTE Confidence: 0.841094432

00:29:07.625 --> 00:29:09.326 concentrated and potent.  
NOTE Confidence: 0.841094432

00:29:09.330 --> 00:29:11.240 And.  
NOTE Confidence: 0.841094432

00:29:11.240 --> 00:29:14.456 And are increasingly preferred  
NOTE Confidence: 0.841094432

00:29:14.456 --> 00:29:18.476 by cannabis users overtime and.  
NOTE Confidence: 0.841094432

00:29:18.480 --> 00:29:20.544 It it appears from some different  
NOTE Confidence: 0.841094432

00:29:20.544 --> 00:29:23.165 surveys that people are seeking out the  
NOTE Confidence: 0.841094432

00:29:23.165 --> 00:29:25.130 more concentrated forms because they  
NOTE Confidence: 0.841094432

00:29:25.130 --> 00:29:28.336 they like various aspects of the effects.  
NOTE Confidence: 0.841094432

00:29:28.340 --> 00:29:29.719 So I'm going to let that sit



NOTE Confidence: 0.841094432

00:29:29.719 --> 00:29:30.699 for a minute or two.

NOTE Confidence: 0.841094432

00:29:30.700 --> 00:29:32.170 I'll come back to potent

NOTE Confidence: 0.841094432

00:29:32.170 --> 00:29:33.346 forms of cannabis later.

NOTE Confidence: 0.93770962875

00:29:36.230 --> 00:29:37.637 What about pain?

NOTE Confidence: 0.93770962875

00:29:37.637 --> 00:29:40.920 So pain could be considered an emerging

NOTE Confidence: 0.93770962875

00:29:41.006 --> 00:29:44.186 risk factor for cannabis use disorder.

NOTE Confidence: 0.93770962875

00:29:44.190 --> 00:29:46.338 There's somewhat mixed evidence on the

NOTE Confidence: 0.93770962875

00:29:46.338 --> 00:29:48.930 efficacy of cannabis to treat chronic pain,

NOTE Confidence: 0.93770962875

00:29:48.930 --> 00:29:53.088 as shown in two large reviews.

NOTE Confidence: 0.93770962875

00:29:53.090 --> 00:29:54.791 And it would be better to have

NOTE Confidence: 0.93770962875

00:29:54.791 --> 00:29:55.949 more rigorous studies of this,

NOTE Confidence: 0.93770962875

00:29:55.950 --> 00:29:58.355 of course, but Americans anyway

NOTE Confidence: 0.93770962875

00:29:58.355 --> 00:30:00.760 are increasingly seeing cannabis as

NOTE Confidence: 0.93770962875

00:30:00.832 --> 00:30:03.127 an effective treatment for pain.

NOTE Confidence: 0.93770962875

00:30:03.130 --> 00:30:05.242 A colleague of mine at the

NOTE Confidence: 0.93770962875

00:30:05.242 --> 00:30:06.650 VA in San Francisco,  
NOTE Confidence: 0.93770962875

00:30:06.650 --> 00:30:09.706 Salma Kahani has a paper showing this and  
NOTE Confidence: 0.93770962875

00:30:09.706 --> 00:30:12.628 with changing US attitudes towards cannabis,  
NOTE Confidence: 0.93770962875

00:30:12.630 --> 00:30:15.395 is pain and emerging risk factor for  
NOTE Confidence: 0.93770962875

00:30:15.395 --> 00:30:18.300 frequent use and cannabis use disorder.  
NOTE Confidence: 0.93770962875

00:30:18.300 --> 00:30:21.786 Well, we know that the prevalence of  
NOTE Confidence: 0.93770962875

00:30:21.786 --> 00:30:25.454 pain is increasing in US adults from a  
NOTE Confidence: 0.93770962875

00:30:25.454 --> 00:30:28.436 paper that was published awhile ago.  
NOTE Confidence: 0.93770962875

00:30:28.440 --> 00:30:31.611 So we undertook to look at the  
NOTE Confidence: 0.93770962875

00:30:31.611 --> 00:30:34.860 relationship of pain to frequent use of  
NOTE Confidence: 0.93770962875

00:30:34.860 --> 00:30:37.200 cannabis and cannabis use disorders.  
NOTE Confidence: 0.93770962875

00:30:37.200 --> 00:30:38.816 In these two surveys,  
NOTE Confidence: 0.93770962875

00:30:38.816 --> 00:30:41.240 the Nice arc that was conducted  
NOTE Confidence: 0.93770962875

00:30:41.322 --> 00:30:43.850 at the beginning of the Odds 2001,  
NOTE Confidence: 0.93770962875

00:30:43.850 --> 00:30:46.580 2002 and the Nice arc three that  
NOTE Confidence: 0.93770962875

00:30:46.580 --> 00:30:49.018 was conducted about 10 years later.

NOTE Confidence: 0.93770962875

00:30:49.020 --> 00:30:52.200 So here the green lines represent

NOTE Confidence: 0.93770962875

00:30:52.200 --> 00:30:55.330 the participants who did have pain.

NOTE Confidence: 0.93770962875

00:30:55.330 --> 00:30:58.479 Is measured with a widely used pain

NOTE Confidence: 0.93770962875

00:30:58.479 --> 00:31:01.832 question and the blue ones are the

NOTE Confidence: 0.93770962875

00:31:01.832 --> 00:31:04.308 participants that didn't have pain.

NOTE Confidence: 0.93770962875

00:31:04.310 --> 00:31:07.145 So if we look at the earlier one first,

NOTE Confidence: 0.93770962875

00:31:07.150 --> 00:31:09.712 we see that there's not much difference

NOTE Confidence: 0.93770962875

00:31:09.712 --> 00:31:11.881 in the prevalence of frequent non

NOTE Confidence: 0.93770962875

00:31:11.881 --> 00:31:13.885 medical cannabis use in the Nice

NOTE Confidence: 0.93770962875

00:31:13.885 --> 00:31:16.011 arc by whether the participants had

NOTE Confidence: 0.93770962875

00:31:16.011 --> 00:31:18.430 pain or not and if we look in the

NOTE Confidence: 0.93770962875

00:31:18.430 --> 00:31:20.301 nice arc three we see that there

NOTE Confidence: 0.93770962875

00:31:20.301 --> 00:31:22.813 is a difference and that difference

NOTE Confidence: 0.93770962875

00:31:22.813 --> 00:31:24.436 was actually significant.

NOTE Confidence: 0.93770962875

00:31:24.440 --> 00:31:27.056 And when we looked at whether the overall

NOTE Confidence: 0.93770962875

00:31:27.056 --> 00:31:29.119 results differed between the two surveys,  
NOTE Confidence: 0.93770962875

00:31:29.120 --> 00:31:31.740 we found that they did.  
NOTE Confidence: 0.93770962875

00:31:31.740 --> 00:31:34.230 So that's frequent use that's  
NOTE Confidence: 0.93770962875

00:31:34.230 --> 00:31:36.720 daily or near daily use.  
NOTE Confidence: 0.93770962875

00:31:36.720 --> 00:31:38.596 And then we did the same thing  
NOTE Confidence: 0.93770962875

00:31:38.596 --> 00:31:39.980 for cannabis use disorder.  
NOTE Confidence: 0.93770962875

00:31:39.980 --> 00:31:42.660 And here we saw that there was a  
NOTE Confidence: 0.93770962875

00:31:42.660 --> 00:31:44.397 significant difference between those with  
NOTE Confidence: 0.93770962875

00:31:44.397 --> 00:31:47.170 pain and without pain in the earlier study.  
NOTE Confidence: 0.883605826

00:31:49.330 --> 00:31:52.580 There was a greater difference  
NOTE Confidence: 0.883605826

00:31:52.580 --> 00:31:55.860 in the more recent survey.  
NOTE Confidence: 0.883605826

00:31:55.860 --> 00:31:58.156 And once again, we found that there  
NOTE Confidence: 0.883605826

00:31:58.156 --> 00:32:00.129 was a significant difference between  
NOTE Confidence: 0.883605826

00:32:00.129 --> 00:32:02.434 the surveys with stronger relationships  
NOTE Confidence: 0.883605826

00:32:02.434 --> 00:32:05.676 shown in in in the more recent study,  
NOTE Confidence: 0.883605826

00:32:05.680 --> 00:32:07.815 which I think a lot more research

NOTE Confidence: 0.883605826

00:32:07.815 --> 00:32:09.678 needs to be done on this.

NOTE Confidence: 0.883605826

00:32:09.680 --> 00:32:11.892 But it does suggest that having pain

NOTE Confidence: 0.883605826

00:32:11.892 --> 00:32:14.614 is a risk factor for non medical

NOTE Confidence: 0.883605826

00:32:14.614 --> 00:32:17.170 cannabis use and cannabis use disorder.

NOTE Confidence: 0.9313318825

00:32:19.250 --> 00:32:21.716 OK, so now I'm going to shift to looking

NOTE Confidence: 0.9313318825

00:32:21.716 --> 00:32:23.967 at various aspects of changing state

NOTE Confidence: 0.9313318825

00:32:23.967 --> 00:32:26.793 cannabis laws and how they may have

NOTE Confidence: 0.9313318825

00:32:26.793 --> 00:32:29.325 affected cannabis use cannabis use disorder,

NOTE Confidence: 0.9313318825

00:32:29.330 --> 00:32:31.340 and maybe some other consequences also.

NOTE Confidence: 0.925806086

00:32:33.480 --> 00:32:36.294 So we've addressed this in the

NOTE Confidence: 0.925806086

00:32:36.294 --> 00:32:39.319 grants that we've had, which we had

NOTE Confidence: 0.925806086

00:32:39.319 --> 00:32:41.617 one to study this in adolescence,

NOTE Confidence: 0.925806086

00:32:41.620 --> 00:32:43.153 and we have now the one to

NOTE Confidence: 0.925806086

00:32:43.153 --> 00:32:44.860 study it in adults in the VA.

NOTE Confidence: 0.925806086

00:32:44.860 --> 00:32:46.840 We've used a multi level framework,

NOTE Confidence: 0.925806086

00:32:46.840 --> 00:32:49.675 so we look at the national picture.  
NOTE Confidence: 0.925806086

00:32:49.680 --> 00:32:51.920 Then we look at state level factors,  
NOTE Confidence: 0.925806086

00:32:51.920 --> 00:32:54.320 and then we're also looking at  
NOTE Confidence: 0.925806086

00:32:54.320 --> 00:32:56.340 individual level factors as well.  
NOTE Confidence: 0.925806086

00:32:56.340 --> 00:32:58.095 So the national picture hasn't  
NOTE Confidence: 0.925806086

00:32:58.095 --> 00:33:00.244 really changed in terms of legality  
NOTE Confidence: 0.925806086

00:33:00.244 --> 00:33:02.585 for a really long time since 1970,  
NOTE Confidence: 0.925806086

00:33:02.585 --> 00:33:05.665 and marijuana is still right up there with  
NOTE Confidence: 0.925806086

00:33:05.665 --> 00:33:08.496 heroin as being a schedule one substance.  
NOTE Confidence: 0.925806086

00:33:08.500 --> 00:33:10.474 Which may not make sense to people,  
NOTE Confidence: 0.925806086

00:33:10.480 --> 00:33:12.560 but that's the way it's been for a long time,  
NOTE Confidence: 0.925806086

00:33:12.560 --> 00:33:15.856 and changing these things is in at the  
NOTE Confidence: 0.925806086

00:33:15.856 --> 00:33:18.907 federal level is really a huge challenge.  
NOTE Confidence: 0.925806086

00:33:18.910 --> 00:33:21.283 But we do know that other national  
NOTE Confidence: 0.925806086

00:33:21.283 --> 00:33:23.286 aspects of cannabis use from the  
NOTE Confidence: 0.925806086

00:33:23.286 --> 00:33:25.282 slides that I've heard you show

NOTE Confidence: 0.925806086

00:33:25.282 --> 00:33:28.054 increasing rates across time of use.

NOTE Confidence: 0.916600198125

00:33:30.090 --> 00:33:32.570 But one factor that has also been changing

NOTE Confidence: 0.916600198125

00:33:32.570 --> 00:33:35.328 that can be addressed are state level laws,

NOTE Confidence: 0.916600198125

00:33:35.330 --> 00:33:37.970 and that's what I'll be talking about more.

NOTE Confidence: 0.916600198125

00:33:37.970 --> 00:33:41.957 So first we can think about how could more

NOTE Confidence: 0.916600198125

00:33:41.957 --> 00:33:45.509 relaxed cannabis laws affect cannabis use?

NOTE Confidence: 0.916600198125

00:33:45.510 --> 00:33:47.892 The medical laws there's there's two

NOTE Confidence: 0.916600198125

00:33:47.892 --> 00:33:50.295 factors that are commonly assumed in

NOTE Confidence: 0.916600198125

00:33:50.295 --> 00:33:52.155 the theoretical literature to increase

NOTE Confidence: 0.916600198125

00:33:52.155 --> 00:33:54.809 use of a psychoactive substance.

NOTE Confidence: 0.916600198125

00:33:54.810 --> 00:33:57.568 One is the desirability of the substance,

NOTE Confidence: 0.916600198125

00:33:57.570 --> 00:33:59.950 and one is its availability.

NOTE Confidence: 0.916600198125

00:33:59.950 --> 00:34:02.755 So medical cannabis laws could

NOTE Confidence: 0.916600198125

00:34:02.755 --> 00:34:04.999 increase desirability by signaling

NOTE Confidence: 0.916600198125

00:34:04.999 --> 00:34:07.329 that cannabis use is safe.

NOTE Confidence: 0.916600198125

00:34:07.330 --> 00:34:10.200 And also could increase availability  
NOTE Confidence: 0.916600198125

00:34:10.200 --> 00:34:13.070 by dispensaries or home cultivation.  
NOTE Confidence: 0.916600198125

00:34:13.070 --> 00:34:15.545 Recreational cannabis laws could also  
NOTE Confidence: 0.916600198125

00:34:15.545 --> 00:34:18.990 convey the idea that cannabis use is safe.  
NOTE Confidence: 0.916600198125

00:34:18.990 --> 00:34:20.710 It's also no longer illegal,  
NOTE Confidence: 0.916600198125

00:34:20.710 --> 00:34:22.467 so if there's some people that are  
NOTE Confidence: 0.916600198125

00:34:22.467 --> 00:34:23.790 refraining from using cannabis because  
NOTE Confidence: 0.916600198125

00:34:23.790 --> 00:34:25.603 of the fact that it's been illegal,  
NOTE Confidence: 0.916600198125

00:34:25.610 --> 00:34:28.011 if the state law changes they they  
NOTE Confidence: 0.916600198125

00:34:28.011 --> 00:34:30.189 may change their mind about that.  
NOTE Confidence: 0.916600198125

00:34:30.190 --> 00:34:31.684 Certainly commercialization and  
NOTE Confidence: 0.916600198125

00:34:31.684 --> 00:34:34.672 advertising would be permitted if the  
NOTE Confidence: 0.916600198125

00:34:34.672 --> 00:34:37.435 state law that was passed allowed that.  
NOTE Confidence: 0.916600198125

00:34:37.440 --> 00:34:38.560 There's there's some variation  
NOTE Confidence: 0.916600198125

00:34:38.560 --> 00:34:39.960 in what could be allowed,  
NOTE Confidence: 0.916600198125

00:34:39.960 --> 00:34:42.168 but generally they do permit advertising



NOTE Confidence: 0.916600198125

00:34:42.168 --> 00:34:45.315 and all of these things could reduce

NOTE Confidence: 0.916600198125

00:34:45.315 --> 00:34:47.455 disapproval and perceived harmfulness,

NOTE Confidence: 0.916600198125

00:34:47.460 --> 00:34:50.390 and obviously increased availability would

NOTE Confidence: 0.916600198125

00:34:50.390 --> 00:34:53.776 be achieved via retail outlets outlets.

NOTE Confidence: 0.916600198125

00:34:53.776 --> 00:34:56.968 The fact that no medical authorization is

NOTE Confidence: 0.916600198125

00:34:56.968 --> 00:35:00.280 needed and people can do home cultivation.

NOTE Confidence: 0.916600198125

00:35:00.280 --> 00:35:02.692 So I'd like you to look at this map.

NOTE Confidence: 0.916600198125

00:35:02.700 --> 00:35:04.670 Once again,

NOTE Confidence: 0.916600198125

00:35:04.670 --> 00:35:07.440 this shows how widespread the

NOTE Confidence: 0.916600198125

00:35:07.440 --> 00:35:09.656 the laws have become.

NOTE Confidence: 0.916600198125

00:35:09.660 --> 00:35:12.789 Cannabis was the very California was the

NOTE Confidence: 0.916600198125

00:35:12.789 --> 00:35:15.424 very first state to legalize medical

NOTE Confidence: 0.916600198125

00:35:15.424 --> 00:35:19.740 use back in 1996 and the West Coast

NOTE Confidence: 0.916600198125

00:35:19.740 --> 00:35:22.840 states all followed pretty quickly.

NOTE Confidence: 0.916600198125

00:35:22.840 --> 00:35:25.560 The first recreational cannabis

NOTE Confidence: 0.916600198125

00:35:25.560 --> 00:35:28.685 law was passed in 2012.  
NOTE Confidence: 0.916600198125

00:35:28.685 --> 00:35:29.900 Those two states,  
NOTE Confidence: 0.916600198125

00:35:29.900 --> 00:35:31.925 the two states that passed  
NOTE Confidence: 0.916600198125

00:35:31.925 --> 00:35:33.844 were Colorado and Washington.  
NOTE Confidence: 0.916600198125

00:35:33.844 --> 00:35:36.798 There are no states that have leaped  
NOTE Confidence: 0.916600198125

00:35:36.798 --> 00:35:38.720 right to recreational cannabis  
NOTE Confidence: 0.916600198125

00:35:38.720 --> 00:35:41.558 use without having a period with  
NOTE Confidence: 0.916600198125

00:35:41.558 --> 00:35:43.789 medical cannabis laws in place.  
NOTE Confidence: 0.937942647857143

00:35:46.480 --> 00:35:48.440 So I'm going to talk just a little  
NOTE Confidence: 0.937942647857143

00:35:48.440 --> 00:35:50.242 bit about some complications to  
NOTE Confidence: 0.937942647857143

00:35:50.242 --> 00:35:53.060 studying state medical cannabis laws  
NOTE Confidence: 0.937942647857143

00:35:53.060 --> 00:35:55.460 and recreational cannabis laws,  
NOTE Confidence: 0.937942647857143

00:35:55.460 --> 00:35:58.134 so of course they're not randomly assigned.  
NOTE Confidence: 0.937942647857143

00:35:58.140 --> 00:36:01.045 There are people that talk about studies  
NOTE Confidence: 0.937942647857143

00:36:01.045 --> 00:36:05.000 of these state laws as natural experiments,  
NOTE Confidence: 0.937942647857143

00:36:05.000 --> 00:36:06.520 but they're really not because

NOTE Confidence: 0.937942647857143  
00:36:06.520 --> 00:36:07.736 they're not randomly assigned,  
NOTE Confidence: 0.937942647857143  
00:36:07.740 --> 00:36:10.260 so that has to get taken into account,  
NOTE Confidence: 0.937942647857143  
00:36:10.260 --> 00:36:11.660 and also states changed their  
NOTE Confidence: 0.937942647857143  
00:36:11.660 --> 00:36:12.780 laws in different years,  
NOTE Confidence: 0.937942647857143  
00:36:12.780 --> 00:36:14.556 so it wasn't like one year we had  
NOTE Confidence: 0.937942647857143  
00:36:14.556 --> 00:36:16.326 states with no laws in the next year  
NOTE Confidence: 0.937942647857143  
00:36:16.326 --> 00:36:17.969 we had states with different laws.  
NOTE Confidence: 0.937942647857143  
00:36:17.970 --> 00:36:20.214 So the rates have been changing  
NOTE Confidence: 0.937942647857143  
00:36:20.214 --> 00:36:22.228 overtime states have been changing  
NOTE Confidence: 0.937942647857143  
00:36:22.228 --> 00:36:24.928 their laws in different years overtime,  
NOTE Confidence: 0.937942647857143  
00:36:24.930 --> 00:36:28.106 and it's also the case that when states  
NOTE Confidence: 0.937942647857143  
00:36:28.106 --> 00:36:30.210 pass the medical or recreational laws,  
NOTE Confidence: 0.937942647857143  
00:36:30.210 --> 00:36:32.094 they may already have higher rates  
NOTE Confidence: 0.937942647857143  
00:36:32.094 --> 00:36:34.721 of cannabis use due to other factors  
NOTE Confidence: 0.937942647857143  
00:36:34.721 --> 00:36:36.465 like socio demographic characteristics  
NOTE Confidence: 0.937942647857143

00:36:36.465 --> 00:36:38.632 of their population or attitudes  
NOTE Confidence: 0.937942647857143

00:36:38.632 --> 00:36:39.820 and their population.  
NOTE Confidence: 0.937942647857143

00:36:39.820 --> 00:36:41.890 So we need study designs that  
NOTE Confidence: 0.937942647857143

00:36:41.890 --> 00:36:43.270 will address these issues.  
NOTE Confidence: 0.937942647857143

00:36:43.270 --> 00:36:46.940 If we can do any better than just  
NOTE Confidence: 0.937942647857143

00:36:46.940 --> 00:36:48.720 looking at association of the.  
NOTE Confidence: 0.937942647857143

00:36:48.720 --> 00:36:52.128 State law with the risk of use which  
NOTE Confidence: 0.937942647857143

00:36:52.128 --> 00:36:54.856 associations are not necessarily don't  
NOTE Confidence: 0.937942647857143

00:36:54.856 --> 00:36:58.444 necessarily tell us anything about causation.  
NOTE Confidence: 0.937942647857143

00:36:58.450 --> 00:37:00.094 So a common analytic strategy that's  
NOTE Confidence: 0.937942647857143

00:37:00.094 --> 00:37:01.917 been used in most of the studies  
NOTE Confidence: 0.937942647857143

00:37:01.917 --> 00:37:03.923 I'm going to show you is it's called  
NOTE Confidence: 0.937942647857143

00:37:03.923 --> 00:37:05.467 difference in difference tests,  
NOTE Confidence: 0.937942647857143

00:37:05.470 --> 00:37:07.470 and So what these tests look at is  
NOTE Confidence: 0.937942647857143

00:37:07.470 --> 00:37:09.329 does the average change in states  
NOTE Confidence: 0.937942647857143

00:37:09.329 --> 00:37:11.279 before and after that change in

NOTE Confidence: 0.937942647857143  
00:37:11.344 --> 00:37:13.504 a law differ from the average  
NOTE Confidence: 0.937942647857143  
00:37:13.504 --> 00:37:14.944 contemporaneous change in states  
NOTE Confidence: 0.937942647857143  
00:37:14.950 --> 00:37:18.110 that don't change their laws?  
NOTE Confidence: 0.937942647857143  
00:37:18.110 --> 00:37:21.550 And so we can see based on the fact  
NOTE Confidence: 0.937942647857143  
00:37:21.550 --> 00:37:23.430 that use has been changing over time.  
NOTE Confidence: 0.937942647857143  
00:37:23.430 --> 00:37:25.542 In adults it if we look at states  
NOTE Confidence: 0.937942647857143  
00:37:25.542 --> 00:37:27.354 that don't change their laws and  
NOTE Confidence: 0.937942647857143  
00:37:27.354 --> 00:37:29.610 consider them a can a control group,  
NOTE Confidence: 0.937942647857143  
00:37:29.610 --> 00:37:31.458 you would see a trend overtime.  
NOTE Confidence: 0.937942647857143  
00:37:31.460 --> 00:37:33.916 But there's no law that changed in those  
NOTE Confidence: 0.937942647857143  
00:37:33.916 --> 00:37:37.026 states. So it's just a solid line.  
NOTE Confidence: 0.937942647857143  
00:37:37.030 --> 00:37:39.398 And on top we have the states that  
NOTE Confidence: 0.937942647857143  
00:37:39.398 --> 00:37:41.379 did change their laws overtime.  
NOTE Confidence: 0.937942647857143  
00:37:41.380 --> 00:37:43.606 So if the laws had no effect,  
NOTE Confidence: 0.937942647857143  
00:37:43.610 --> 00:37:46.650 what you would see is a parallel trend  
NOTE Confidence: 0.937942647857143

00:37:46.650 --> 00:37:49.418 from the left part to the right part.  
NOTE Confidence: 0.937942647857143

00:37:49.420 --> 00:37:52.678 As shown by the extension in the dashed line.  
NOTE Confidence: 0.937942647857143

00:37:52.680 --> 00:37:54.633 But if there is an effect of the laws,  
NOTE Confidence: 0.937942647857143

00:37:54.640 --> 00:37:57.208 you would see that by having a break  
NOTE Confidence: 0.937942647857143

00:37:57.208 --> 00:38:00.002 in that trend on average with with  
NOTE Confidence: 0.937942647857143

00:38:00.002 --> 00:38:02.708 a greater change overtime in the  
NOTE Confidence: 0.937942647857143

00:38:02.708 --> 00:38:05.280 states that changed their laws.  
NOTE Confidence: 0.937942647857143

00:38:05.280 --> 00:38:07.974 So adolescents are a particular concern  
NOTE Confidence: 0.937942647857143

00:38:07.974 --> 00:38:11.198 because we know that cannabis use  
NOTE Confidence: 0.937942647857143

00:38:11.198 --> 00:38:13.894 may permanently impair neurocognitive  
NOTE Confidence: 0.937942647857143

00:38:13.894 --> 00:38:14.568 functioning.  
NOTE Confidence: 0.937942647857143

00:38:14.570 --> 00:38:17.012 Questions about that are being addressed  
NOTE Confidence: 0.937942647857143

00:38:17.012 --> 00:38:19.788 at this point in the ABCD study,  
NOTE Confidence: 0.937942647857143

00:38:19.790 --> 00:38:21.560 but.  
NOTE Confidence: 0.937942647857143

00:38:21.560 --> 00:38:23.280 With Hnyda funded several studies  
NOTE Confidence: 0.937942647857143

00:38:23.280 --> 00:38:25.601 a few years back to specifically

NOTE Confidence: 0.937942647857143

00:38:25.601 --> 00:38:28.236 investigate the relationship of changing

NOTE Confidence: 0.937942647857143

00:38:28.236 --> 00:38:30.670 cannabis laws to adolescent use.

NOTE Confidence: 0.937942647857143

00:38:30.670 --> 00:38:33.698 So we published an early paper Melanie

NOTE Confidence: 0.937942647857143

00:38:33.698 --> 00:38:35.486 Wallace, a statistician in our group,

NOTE Confidence: 0.937942647857143

00:38:35.490 --> 00:38:38.558 and she took the lead on this paper where

NOTE Confidence: 0.937942647857143

00:38:38.558 --> 00:38:41.764 we looked at the relationship of cannabis,

NOTE Confidence: 0.937942647857143

00:38:41.770 --> 00:38:44.290 the differences in prevalence of youth,

NOTE Confidence: 0.937942647857143

00:38:44.290 --> 00:38:47.278 use of cannabis in states with.

NOTE Confidence: 0.937942647857143

00:38:47.280 --> 00:38:49.580 Medical cannabis laws and states

NOTE Confidence: 0.937942647857143

00:38:49.580 --> 00:38:52.065 without them and here are the rates

NOTE Confidence: 0.937942647857143

00:38:52.065 --> 00:38:54.814 in the non non medical cannabis law

NOTE Confidence: 0.937942647857143

00:38:54.814 --> 00:38:57.520 states across several years of data.

NOTE Confidence: 0.938539275666666

00:38:57.520 --> 00:38:59.249 And here are the rates in the

NOTE Confidence: 0.938539275666666

00:38:59.249 --> 00:39:01.020 states that did have them so you

NOTE Confidence: 0.938539275666666

00:39:01.020 --> 00:39:02.803 can see that on average the rates

NOTE Confidence: 0.938539275666666

00:39:02.803 --> 00:39:04.728 are higher in the states that did  
NOTE Confidence: 0.938539275666666

00:39:04.728 --> 00:39:07.148 have these laws and the differences  
NOTE Confidence: 0.938539275666666

00:39:07.148 --> 00:39:09.016 are all statistically significant.  
NOTE Confidence: 0.938539275666666

00:39:09.020 --> 00:39:11.064 But as Melanie wrote in the paper,  
NOTE Confidence: 0.938539275666666

00:39:11.070 --> 00:39:13.878 the cause was unclear because association  
NOTE Confidence: 0.938539275666666

00:39:13.878 --> 00:39:15.750 doesn't necessarily show causality.  
NOTE Confidence: 0.899525911428571

00:39:18.020 --> 00:39:19.819 And then we were funded by NAIDA  
NOTE Confidence: 0.899525911428571

00:39:19.819 --> 00:39:21.605 to use monitoring the future data  
NOTE Confidence: 0.899525911428571

00:39:21.605 --> 00:39:23.200 to examine this using difference  
NOTE Confidence: 0.899525911428571

00:39:23.200 --> 00:39:24.460 in difference approaches.  
NOTE Confidence: 0.899525911428571

00:39:24.460 --> 00:39:27.532 So we started here by just looking at  
NOTE Confidence: 0.899525911428571

00:39:27.532 --> 00:39:30.310 the simple associations once again.  
NOTE Confidence: 0.899525911428571

00:39:30.310 --> 00:39:32.648 We see here that this is the  
NOTE Confidence: 0.899525911428571

00:39:32.648 --> 00:39:34.350 difference between the ever States  
NOTE Confidence: 0.899525911428571

00:39:34.350 --> 00:39:36.548 and the NEVER States and we see  
NOTE Confidence: 0.899525911428571

00:39:36.548 --> 00:39:39.092 that the rates are lower in the net



NOTE Confidence: 0.899525911428571

00:39:39.092 --> 00:39:40.488 than ever states significantly.

NOTE Confidence: 0.899525911428571

00:39:40.488 --> 00:39:42.360 So in most cases.

NOTE Confidence: 0.90673294

00:39:44.630 --> 00:39:46.682 But when we did, the difference

NOTE Confidence: 0.90673294

00:39:46.682 --> 00:39:48.420 in difference look across time.

NOTE Confidence: 0.90673294

00:39:48.420 --> 00:39:51.852 We didn't show that rates were higher after

NOTE Confidence: 0.90673294

00:39:51.852 --> 00:39:54.227 passage of the medical cannabis laws.

NOTE Confidence: 0.90673294

00:39:54.227 --> 00:39:57.490 So you can see here that there's really

NOTE Confidence: 0.90673294

00:39:57.490 --> 00:40:00.626 no evidence of increases in any of these

NOTE Confidence: 0.90673294

00:40:00.626 --> 00:40:03.198 groups combined or separated by age.

NOTE Confidence: 0.90673294

00:40:03.200 --> 00:40:05.256 In fact, there was a decrease in the

NOTE Confidence: 0.90673294

00:40:05.256 --> 00:40:06.929 eighth graders that we didn't expect,

NOTE Confidence: 0.90673294

00:40:06.930 --> 00:40:08.985 but we interrogated that result

NOTE Confidence: 0.90673294

00:40:08.985 --> 00:40:10.629 quite a bit statistically,

NOTE Confidence: 0.90673294

00:40:10.630 --> 00:40:11.904 and we couldn't make it go away.

NOTE Confidence: 0.90673294

00:40:11.910 --> 00:40:15.004 So it seemed to be pretty robust.

NOTE Confidence: 0.90673294

00:40:15.010 --> 00:40:17.383 And this is this is the result  
NOTE Confidence: 0.90673294

00:40:17.383 --> 00:40:20.696 that we got in this very large data  
NOTE Confidence: 0.90673294

00:40:20.696 --> 00:40:22.911 set from monitoring the future.  
NOTE Confidence: 0.90673294

00:40:22.920 --> 00:40:25.928 So we did this study and then many  
NOTE Confidence: 0.90673294

00:40:25.928 --> 00:40:29.054 other people did studies of the same  
NOTE Confidence: 0.90673294

00:40:29.054 --> 00:40:31.820 issue using monitoring the future data.  
NOTE Confidence: 0.90673294

00:40:31.820 --> 00:40:33.008 And other datasets too.  
NOTE Confidence: 0.90673294

00:40:33.008 --> 00:40:34.493 As you can see here,  
NOTE Confidence: 0.90673294

00:40:34.500 --> 00:40:37.220 than is due and and others as well.  
NOTE Confidence: 0.90673294

00:40:37.220 --> 00:40:39.537 So errands are vet who was in  
NOTE Confidence: 0.90673294

00:40:39.537 --> 00:40:41.320 our group at the time,  
NOTE Confidence: 0.90673294

00:40:41.320 --> 00:40:43.990 did a meta analysis of these  
NOTE Confidence: 0.90673294

00:40:43.990 --> 00:40:45.770 different studies and showed  
NOTE Confidence: 0.90673294

00:40:45.770 --> 00:40:47.680 aggregating across all the results.  
NOTE Confidence: 0.90673294

00:40:47.680 --> 00:40:49.900 There was really no post passage  
NOTE Confidence: 0.90673294

00:40:49.900 --> 00:40:52.040 increase in cannabis use in teens.

NOTE Confidence: 0.90673294

00:40:52.040 --> 00:40:52.516 Instead,

NOTE Confidence: 0.90673294

00:40:52.516 --> 00:40:55.848 in studies of them that used appropriate

NOTE Confidence: 0.90673294

00:40:55.848 --> 00:40:58.169 difference in difference tests.

NOTE Confidence: 0.90673294

00:40:58.170 --> 00:41:00.306 And a paper was recently published

NOTE Confidence: 0.90673294

00:41:00.306 --> 00:41:03.042 that extended this by a couple of more

NOTE Confidence: 0.90673294

00:41:03.042 --> 00:41:05.415 years and also looked at whether the

NOTE Confidence: 0.90673294

00:41:05.415 --> 00:41:07.590 states permitted dispensaries or not,

NOTE Confidence: 0.90673294

00:41:07.590 --> 00:41:09.802 and when and whether that made a

NOTE Confidence: 0.90673294

00:41:09.802 --> 00:41:11.548 difference and what we see here.

NOTE Confidence: 0.90673294

00:41:11.550 --> 00:41:12.990 These odds reissues are all

NOTE Confidence: 0.90673294

00:41:12.990 --> 00:41:14.142 very close to one,

NOTE Confidence: 0.90673294

00:41:14.150 --> 00:41:16.628 and none of them are greater than

NOTE Confidence: 0.90673294

00:41:16.628 --> 00:41:18.867 one that indicates once again that

NOTE Confidence: 0.90673294

00:41:18.867 --> 00:41:21.075 the laws didn't were not associated

NOTE Confidence: 0.90673294

00:41:21.075 --> 00:41:23.683 or not predictive of increases in

NOTE Confidence: 0.90673294

00:41:23.683 --> 00:41:26.342 marijuana use across the youth.  
NOTE Confidence: 0.90673294

00:41:26.342 --> 00:41:28.370 In this study.  
NOTE Confidence: 0.90673294

00:41:28.370 --> 00:41:29.519 So in summary,  
NOTE Confidence: 0.90673294

00:41:29.519 --> 00:41:32.200 it doesn't look like the laws have  
NOTE Confidence: 0.90673294

00:41:32.279 --> 00:41:34.389 encouraged greater use of cannabis  
NOTE Confidence: 0.90673294

00:41:34.389 --> 00:41:37.829 in in people in the adolescent ages.  
NOTE Confidence: 0.90673294

00:41:37.830 --> 00:41:39.480 But what about in adults?  
NOTE Confidence: 0.90673294

00:41:39.480 --> 00:41:41.895 So let's take a look at what  
NOTE Confidence: 0.90673294

00:41:41.895 --> 00:41:43.370 that picture looks like.  
NOTE Confidence: 0.90673294

00:41:43.370 --> 00:41:47.604 So this is a study cross sectional  
NOTE Confidence: 0.90673294

00:41:47.604 --> 00:41:50.126 association study that we did when we  
NOTE Confidence: 0.90673294

00:41:50.126 --> 00:41:52.250 first started examining the the picture,  
NOTE Confidence: 0.90673294

00:41:52.250 --> 00:41:55.306 and we see that in non MCL States  
NOTE Confidence: 0.90673294

00:41:55.306 --> 00:41:58.398 and MCL states the rates were higher  
NOTE Confidence: 0.90673294

00:41:58.398 --> 00:42:01.267 in the MCL States and they were  
NOTE Confidence: 0.90673294

00:42:01.267 --> 00:42:03.262 significantly so controlling for a

NOTE Confidence: 0.90673294

00:42:03.262 --> 00:42:05.530 whole bunch of different factors.

NOTE Confidence: 0.90673294

00:42:05.530 --> 00:42:06.834 There was a study,

NOTE Confidence: 0.90673294

00:42:06.834 --> 00:42:09.195 an early study that was done by

NOTE Confidence: 0.90673294

00:42:09.195 --> 00:42:11.193 these authors using Miss Do data

NOTE Confidence: 0.90673294

00:42:11.193 --> 00:42:13.787 that I think is worth pointing out.

NOTE Confidence: 0.90673294

00:42:13.790 --> 00:42:16.886 And this is use of cannabis across time,

NOTE Confidence: 0.90673294

00:42:16.890 --> 00:42:19.928 so the the vertical bar in the

NOTE Confidence: 0.90673294

00:42:19.928 --> 00:42:22.709 middle is the date when the.

NOTE Confidence: 0.90673294

00:42:22.710 --> 00:42:25.780 Law was passed in that state and to

NOTE Confidence: 0.90673294

00:42:25.780 --> 00:42:28.535 the left is looking before passage and

NOTE Confidence: 0.90673294

00:42:28.535 --> 00:42:31.370 to the right is looking after passage.

NOTE Confidence: 0.90673294

00:42:31.370 --> 00:42:34.010 So there were no significant increases

NOTE Confidence: 0.90673294

00:42:34.010 --> 00:42:37.093 in these states on average in adult

NOTE Confidence: 0.90673294

00:42:37.093 --> 00:42:39.565 use before passage of the laws.

NOTE Confidence: 0.90673294

00:42:39.570 --> 00:42:41.874 But there was an increase after

NOTE Confidence: 0.90673294

00:42:41.874 --> 00:42:44.694 passage of the law and that that  
NOTE Confidence: 0.90673294

00:42:44.694 --> 00:42:47.094 increase was maintained and this is  
NOTE Confidence: 0.90673294

00:42:47.094 --> 00:42:50.101 in use past month cannabis use and  
NOTE Confidence: 0.90673294

00:42:50.101 --> 00:42:52.807 then the authors also looked at.  
NOTE Confidence: 0.90673294

00:42:52.810 --> 00:42:55.324 Posed the same question for DSM  
NOTE Confidence: 0.90673294

00:42:55.324 --> 00:42:57.748 four cannabis use disorder and they  
NOTE Confidence: 0.90673294

00:42:57.748 --> 00:43:00.107 did this for using the same year.  
NOTE Confidence: 0.934041450666667

00:43:00.110 --> 00:43:02.675 The law was passed and then using one in  
NOTE Confidence: 0.934041450666667

00:43:02.675 --> 00:43:05.132 two year lagged analysis on the grounds  
NOTE Confidence: 0.934041450666667

00:43:05.132 --> 00:43:08.158 that it could take a year or two for  
NOTE Confidence: 0.934041450666667

00:43:08.158 --> 00:43:10.105 people to develop cannabis use disorder.  
NOTE Confidence: 0.934041450666667

00:43:10.105 --> 00:43:13.185 If if they've started using it and they  
NOTE Confidence: 0.934041450666667

00:43:13.185 --> 00:43:16.090 found that using these lagged analysis  
NOTE Confidence: 0.934041450666667

00:43:16.090 --> 00:43:18.540 that medical cannabis effects medical  
NOTE Confidence: 0.934041450666667

00:43:18.610 --> 00:43:21.088 cannabis law effects were also found  
NOTE Confidence: 0.934041450666667

00:43:21.088 --> 00:43:25.420 in adults for cannabis use. Disorder.

NOTE Confidence: 0.934041450666667  
00:43:25.420 --> 00:43:28.870 So working with Silvia Martins in  
NOTE Confidence: 0.934041450666667  
00:43:28.870 --> 00:43:32.889 our group at Columbia, we looked at.  
NOTE Confidence: 0.934041450666667  
00:43:32.889 --> 00:43:35.754 We used this do data,  
NOTE Confidence: 0.934041450666667  
00:43:35.760 --> 00:43:38.231 updating it by a couple of years  
NOTE Confidence: 0.934041450666667  
00:43:38.231 --> 00:43:40.554 and also looking across age groups  
NOTE Confidence: 0.934041450666667  
00:43:40.554 --> 00:43:42.534 because of the age groups,  
NOTE Confidence: 0.934041450666667  
00:43:42.540 --> 00:43:44.105 the differences that were becoming  
NOTE Confidence: 0.934041450666667  
00:43:44.105 --> 00:43:46.040 pretty well known by that point.  
NOTE Confidence: 0.934041450666667  
00:43:46.040 --> 00:43:49.030 So what we see here is that looking  
NOTE Confidence: 0.934041450666667  
00:43:49.030 --> 00:43:51.900 at the prevalence and non medical law  
NOTE Confidence: 0.934041450666667  
00:43:51.983 --> 00:43:54.725 States and medical law states that  
NOTE Confidence: 0.934041450666667  
00:43:54.725 --> 00:43:57.560 there are no significant differences.  
NOTE Confidence: 0.934041450666667  
00:43:57.560 --> 00:44:00.704 By by the status of the law in  
NOTE Confidence: 0.934041450666667  
00:44:00.704 --> 00:44:03.856 the youth or in the young adults,  
NOTE Confidence: 0.934041450666667  
00:44:03.860 --> 00:44:05.876 but with the difference in difference tests,  
NOTE Confidence: 0.934041450666667

00:44:05.880 --> 00:44:08.400 we see that there were differences  
NOTE Confidence: 0.934041450666667

00:44:08.400 --> 00:44:11.050 in the adults across across the  
NOTE Confidence: 0.934041450666667

00:44:11.050 --> 00:44:13.475 adult ages 26 and older,  
NOTE Confidence: 0.934041450666667

00:44:13.480 --> 00:44:16.016 and breaking it down by specific age groups.  
NOTE Confidence: 0.934041450666667

00:44:16.020 --> 00:44:18.900 We see that this finding holds across all  
NOTE Confidence: 0.934041450666667

00:44:18.900 --> 00:44:22.800 these different age groups in adults.  
NOTE Confidence: 0.934041450666667

00:44:22.800 --> 00:44:25.056 So this was using this new data and  
NOTE Confidence: 0.934041450666667

00:44:25.056 --> 00:44:27.436 that went back as far as 2004 to 2013.  
NOTE Confidence: 0.934041450666667

00:44:27.436 --> 00:44:30.406 One of the things I wanted to do was to  
NOTE Confidence: 0.934041450666667

00:44:30.406 --> 00:44:32.828 be able to look across a greater span  
NOTE Confidence: 0.934041450666667

00:44:32.828 --> 00:44:35.299 of time because I was interested in  
NOTE Confidence: 0.934041450666667

00:44:35.299 --> 00:44:38.320 seeing what would happen if we looked.  
NOTE Confidence: 0.934041450666667

00:44:38.320 --> 00:44:40.712 If we had survey data that could be  
NOTE Confidence: 0.934041450666667

00:44:40.712 --> 00:44:43.180 used that that existed before any of  
NOTE Confidence: 0.934041450666667

00:44:43.180 --> 00:44:45.390 these medical laws had been passed  
NOTE Confidence: 0.934041450666667

00:44:45.390 --> 00:44:47.777 and see what that would look like.



NOTE Confidence: 0.934041450666667  
00:44:47.780 --> 00:44:49.715 So the nice arc and the nice arc three  
NOTE Confidence: 0.934041450666667  
00:44:49.715 --> 00:44:51.386 I've already talked to you about.  
NOTE Confidence: 0.934041450666667  
00:44:51.390 --> 00:44:53.595 There was an earlier study about 10  
NOTE Confidence: 0.934041450666667  
00:44:53.595 --> 00:44:55.999 years earlier that used the same substance,  
NOTE Confidence: 0.934041450666667  
00:44:56.000 --> 00:44:57.875 use and substance use disorder  
NOTE Confidence: 0.934041450666667  
00:44:57.875 --> 00:45:00.270 measures in the same sample design.  
NOTE Confidence: 0.934041450666667  
00:45:00.270 --> 00:45:01.890 Pretty similar sample design,  
NOTE Confidence: 0.934041450666667  
00:45:01.890 --> 00:45:04.952 so the end lays the National longitudinal  
NOTE Confidence: 0.934041450666667  
00:45:04.952 --> 00:45:06.940 alcohol and associated disorders.  
NOTE Confidence: 0.934041450666667  
00:45:06.940 --> 00:45:09.985 I don't even remember the acronym anywhere.  
NOTE Confidence: 0.934041450666667  
00:45:09.990 --> 00:45:12.700 Study was conducted in 1991, nineteen 92,  
NOTE Confidence: 0.934041450666667  
00:45:12.700 --> 00:45:15.115 and that was a point when there  
NOTE Confidence: 0.934041450666667  
00:45:15.115 --> 00:45:17.290 were no medical cannabis laws.  
NOTE Confidence: 0.934041450666667  
00:45:17.290 --> 00:45:18.556 As I mentioned,  
NOTE Confidence: 0.934041450666667  
00:45:18.556 --> 00:45:20.244 cannabis California passed their  
NOTE Confidence: 0.934041450666667

00:45:20.244 --> 00:45:23.244 first law in 1996 and then in the Nice

NOTE Confidence: 0.934041450666667

00:45:23.244 --> 00:45:25.807 ARC at the time that that was done,

NOTE Confidence: 0.934041450666667

00:45:25.810 --> 00:45:27.808 there were several states that had

NOTE Confidence: 0.934041450666667

00:45:27.808 --> 00:45:30.465 passed their laws and in the Nice arc

NOTE Confidence: 0.934041450666667

00:45:30.465 --> 00:45:32.660 three there were several more states.

NOTE Confidence: 0.934041450666667

00:45:32.660 --> 00:45:35.243 So what we did was we looked in the

NOTE Confidence: 0.934041450666667

00:45:35.243 --> 00:45:37.262 earlier period and then we looked

NOTE Confidence: 0.934041450666667

00:45:37.262 --> 00:45:39.776 in the later period and in this and

NOTE Confidence: 0.934041450666667

00:45:39.776 --> 00:45:41.540 a few additional figures I'm going

NOTE Confidence: 0.934041450666667

00:45:41.601 --> 00:45:43.809 to show you the red lines are always

NOTE Confidence: 0.934041450666667

00:45:43.809 --> 00:45:45.766 the states that didn't change their

NOTE Confidence: 0.934041450666667

00:45:45.766 --> 00:45:47.776 laws or pass a medical marijuana

NOTE Confidence: 0.934041450666667

00:45:47.780 --> 00:45:51.086 or medical cannabis law during the

NOTE Confidence: 0.934041450666667

00:45:51.086 --> 00:45:52.739 period under consideration.

NOTE Confidence: 0.934041450666667

00:45:52.740 --> 00:45:55.032 And California we pulled out because

NOTE Confidence: 0.934041450666667

00:45:55.032 --> 00:45:56.943 it always behaved differently from

NOTE Confidence: 0.934041450666667  
00:45:56.943 --> 00:45:57.900 the other states,  
NOTE Confidence: 0.934041450666667  
00:45:57.900 --> 00:46:00.175 so we can see thinking back to  
NOTE Confidence: 0.934041450666667  
00:46:00.175 --> 00:46:02.249 this earlier period that may seem  
NOTE Confidence: 0.934041450666667  
00:46:02.249 --> 00:46:03.959 kind of foreign now because,  
NOTE Confidence: 0.934041450666667  
00:46:03.960 --> 00:46:05.731 but it was a period when cannabis  
NOTE Confidence: 0.934041450666667  
00:46:05.731 --> 00:46:06.820 use was going down.  
NOTE Confidence: 0.934041450666667  
00:46:06.820 --> 00:46:09.252 Actually not going up,  
NOTE Confidence: 0.934041450666667  
00:46:09.252 --> 00:46:12.900 we saw parallel decreases in California  
NOTE Confidence: 0.96220263  
00:46:12.900 --> 00:46:15.836 and the states that didn't change their laws,  
NOTE Confidence: 0.96220263  
00:46:15.840 --> 00:46:18.688 but in the five states that did change  
NOTE Confidence: 0.96220263  
00:46:18.688 --> 00:46:22.162 their laws between 1991 ninety two to 2001,  
NOTE Confidence: 0.96220263  
00:46:22.162 --> 00:46:24.766 2002, there was a significant significant.  
NOTE Confidence: 0.96220263  
00:46:24.770 --> 00:46:28.178 Increase in use and we saw the same  
NOTE Confidence: 0.96220263  
00:46:28.178 --> 00:46:31.218 thing for cannabis use disorder.  
NOTE Confidence: 0.96220263  
00:46:31.220 --> 00:46:32.640 In the more recent period,  
NOTE Confidence: 0.96220263

00:46:32.640 --> 00:46:34.218 there were more things going on,  
NOTE Confidence: 0.96220263

00:46:34.220 --> 00:46:36.260 so this is a little bit  
NOTE Confidence: 0.96220263

00:46:36.260 --> 00:46:37.280 more complicated slide.  
NOTE Confidence: 0.96220263

00:46:37.280 --> 00:46:40.016 But once again, the red bar here shows  
NOTE Confidence: 0.96220263

00:46:40.016 --> 00:46:42.595 you the states that didn't change  
NOTE Confidence: 0.96220263

00:46:42.595 --> 00:46:45.319 their laws during this time period.  
NOTE Confidence: 0.96220263

00:46:45.320 --> 00:46:47.540 The gold bar shows the states  
NOTE Confidence: 0.96220263

00:46:47.540 --> 00:46:49.600 that were late passing states.  
NOTE Confidence: 0.96220263

00:46:49.600 --> 00:46:51.988 Nine states passed medical cannabis laws  
NOTE Confidence: 0.96220263

00:46:51.988 --> 00:46:54.758 between the Nice arc and the Nice arc.  
NOTE Confidence: 0.96220263

00:46:54.760 --> 00:46:56.937 Three this is where they started out.  
NOTE Confidence: 0.96220263

00:46:56.940 --> 00:46:58.956 This is where they ended up and you  
NOTE Confidence: 0.96220263

00:46:58.956 --> 00:47:00.988 can see that the rate of increase  
NOTE Confidence: 0.96220263

00:47:00.990 --> 00:47:03.111 if you will was faster in the  
NOTE Confidence: 0.96220263

00:47:03.111 --> 00:47:05.168 states that did pass those laws.  
NOTE Confidence: 0.96220263

00:47:05.170 --> 00:47:08.386 This is what happened with California.

NOTE Confidence: 0.96220263  
00:47:08.390 --> 00:47:10.350 And this is what happened with Colorado,  
NOTE Confidence: 0.96220263  
00:47:10.350 --> 00:47:12.420 which ended up at the top of the pack.  
NOTE Confidence: 0.96220263  
00:47:12.420 --> 00:47:12.774 Actually,  
NOTE Confidence: 0.96220263  
00:47:12.774 --> 00:47:14.544 even though it started out  
NOTE Confidence: 0.96220263  
00:47:14.544 --> 00:47:15.960 pretty close to the.  
NOTE Confidence: 0.96220263  
00:47:15.960 --> 00:47:18.552 The other states at the beginning  
NOTE Confidence: 0.96220263  
00:47:18.552 --> 00:47:20.280 of the time period.  
NOTE Confidence: 0.96220263  
00:47:20.280 --> 00:47:21.664 And this is what we got when we  
NOTE Confidence: 0.96220263  
00:47:21.664 --> 00:47:23.039 look at cannabis use disorder.  
NOTE Confidence: 0.96220263  
00:47:23.040 --> 00:47:24.930 The number of participants with  
NOTE Confidence: 0.96220263  
00:47:24.930 --> 00:47:26.820 cannabis use disorder was lower,  
NOTE Confidence: 0.96220263  
00:47:26.820 --> 00:47:29.028 so it was harder to achieve  
NOTE Confidence: 0.96220263  
00:47:29.028 --> 00:47:30.132 statistically significant results.  
NOTE Confidence: 0.96220263  
00:47:30.140 --> 00:47:32.384 But we see something pretty similar  
NOTE Confidence: 0.96220263  
00:47:32.384 --> 00:47:34.819 in terms of the patterns for  
NOTE Confidence: 0.96220263

00:47:34.819 --> 00:47:36.979 never changing their laws during  
NOTE Confidence: 0.96220263

00:47:36.979 --> 00:47:39.529 the period to the late states.  
NOTE Confidence: 0.96220263

00:47:39.530 --> 00:47:42.378 The changes for California.  
NOTE Confidence: 0.96220263

00:47:42.380 --> 00:47:44.370 And then changes for Colorado.  
NOTE Confidence: 0.96220263

00:47:44.370 --> 00:47:46.870 So this suggested that something  
NOTE Confidence: 0.96220263

00:47:46.870 --> 00:47:48.370 was going on.  
NOTE Confidence: 0.96220263

00:47:48.370 --> 00:47:50.626 Putting this together with the news  
NOTE Confidence: 0.96220263

00:47:50.626 --> 00:47:52.915 do findings and suggested that the  
NOTE Confidence: 0.96220263

00:47:52.915 --> 00:47:54.705 medical cannabis laws were affecting  
NOTE Confidence: 0.96220263

00:47:54.705 --> 00:47:57.222 the risk for cannabis use and cannabis  
NOTE Confidence: 0.96220263

00:47:57.222 --> 00:47:59.770 use disorders in adults 18 and older.  
NOTE Confidence: 0.948873159

00:48:02.320 --> 00:48:05.216 So I'm going to turn now to recreational  
NOTE Confidence: 0.948873159

00:48:05.216 --> 00:48:07.500 cannabis use and the laws permitting it,  
NOTE Confidence: 0.948873159

00:48:07.500 --> 00:48:11.260 so the benefits of these laws are, you know,  
NOTE Confidence: 0.948873159

00:48:11.260 --> 00:48:13.060 there are people that really genuinely  
NOTE Confidence: 0.948873159

00:48:13.060 --> 00:48:14.586 believe that they're important benefits

NOTE Confidence: 0.948873159

00:48:14.586 --> 00:48:16.870 to be gained and and these these are.

NOTE Confidence: 0.948873159

00:48:16.870 --> 00:48:18.697 You can't really question these too much.

NOTE Confidence: 0.948873159

00:48:18.700 --> 00:48:20.610 OK, to eliminate unfair racially

NOTE Confidence: 0.948873159

00:48:20.610 --> 00:48:22.820 based arrests, that's for sure.

NOTE Confidence: 0.948873159

00:48:22.820 --> 00:48:25.220 And also to generate jobs,

NOTE Confidence: 0.948873159

00:48:25.220 --> 00:48:27.135 business income tax revenues and

NOTE Confidence: 0.948873159

00:48:27.135 --> 00:48:29.859 also to give voters what they want

NOTE Confidence: 0.948873159

00:48:29.859 --> 00:48:32.073 when they're passed by the ballot.

NOTE Confidence: 0.948873159

00:48:32.080 --> 00:48:33.940 Expectations amongst people that have

NOTE Confidence: 0.948873159

00:48:33.940 --> 00:48:36.854 been looking at this area for a long time

NOTE Confidence: 0.948873159

00:48:36.854 --> 00:48:39.228 is that it will expand the pool of users.

NOTE Confidence: 0.948873159

00:48:39.230 --> 00:48:42.605 These laws there where there's

NOTE Confidence: 0.948873159

00:48:42.605 --> 00:48:44.462 commercialization permitted that there

NOTE Confidence: 0.948873159

00:48:44.462 --> 00:48:46.470 will be people in there that will be

NOTE Confidence: 0.948873159

00:48:46.523 --> 00:48:48.365 very interested in expanding the pool

NOTE Confidence: 0.948873159

00:48:48.365 --> 00:48:51.830 of users and the laws if they permit  
NOTE Confidence: 0.948873159

00:48:51.830 --> 00:48:54.000 it will increase commercialization's  
NOTE Confidence: 0.948873159

00:48:54.000 --> 00:48:55.480 more availability,  
NOTE Confidence: 0.948873159

00:48:55.480 --> 00:48:56.960 more advertising,  
NOTE Confidence: 0.948873159

00:48:56.960 --> 00:49:00.300 potentially affecting desirability and  
NOTE Confidence: 0.948873159

00:49:00.300 --> 00:49:03.380 possible kind of sneaky efforts to attract.  
NOTE Confidence: 0.948873159

00:49:03.380 --> 00:49:05.780 Underage users and this could  
NOTE Confidence: 0.948873159

00:49:05.780 --> 00:49:08.790 potentially lead to a number of  
NOTE Confidence: 0.948873159

00:49:08.790 --> 00:49:12.590 adverse outcomes shown here.  
NOTE Confidence: 0.948873159

00:49:12.590 --> 00:49:16.250 So studies on the effects of recreational  
NOTE Confidence: 0.948873159

00:49:16.250 --> 00:49:18.508 cannabis laws are really just getting going.  
NOTE Confidence: 0.948873159

00:49:18.510 --> 00:49:21.948 This is a paper that we did with magnet  
NOTE Confidence: 0.948873159

00:49:21.948 --> 00:49:25.370 Serta who now is at NYU and we looked at.  
NOTE Confidence: 0.948873159

00:49:25.370 --> 00:49:27.245 We use difference in difference  
NOTE Confidence: 0.948873159

00:49:27.245 --> 00:49:30.055 tests to look at the effects of  
NOTE Confidence: 0.948873159

00:49:30.055 --> 00:49:31.637 recreational cannabis laws across



NOTE Confidence: 0.948873159

00:49:31.637 --> 00:49:34.416 the ages and what you see here.

NOTE Confidence: 0.948873159

00:49:34.420 --> 00:49:35.533 The odds ratios,

NOTE Confidence: 0.948873159

00:49:35.533 --> 00:49:38.560 the adjusted odds ratios that are in bold,

NOTE Confidence: 0.948873159

00:49:38.560 --> 00:49:40.348 or the ones that are significant.

NOTE Confidence: 0.948873159

00:49:40.350 --> 00:49:41.946 There's one there for.

NOTE Confidence: 0.948873159

00:49:41.946 --> 00:49:43.542 Cannabis use disorder in

NOTE Confidence: 0.948873159

00:49:43.542 --> 00:49:45.080 the youngest age group,

NOTE Confidence: 0.948873159

00:49:45.080 --> 00:49:48.032 but when we did sensitivity analysis

NOTE Confidence: 0.948873159

00:49:48.032 --> 00:49:51.170 it they suggested that this was

NOTE Confidence: 0.948873159

00:49:51.170 --> 00:49:53.338 due to unmeasured confounding,

NOTE Confidence: 0.948873159

00:49:53.340 --> 00:49:54.860 so we took more seriously.

NOTE Confidence: 0.948873159

00:49:54.860 --> 00:49:58.316 The findings in the 26 plus age group which

NOTE Confidence: 0.948873159

00:49:58.316 --> 00:50:01.576 were robust to this type of confounding,

NOTE Confidence: 0.948873159

00:50:01.580 --> 00:50:04.580 and you see that for any cannabis use

NOTE Confidence: 0.948873159

00:50:04.580 --> 00:50:07.360 frequent use and cannabis use disorder.

NOTE Confidence: 0.948873159

00:50:07.360 --> 00:50:10.288 The risk was increased after passage  
NOTE Confidence: 0.948873159

00:50:10.288 --> 00:50:12.240 of the recreational cannabis.  
NOTE Confidence: 0.948873159

00:50:12.240 --> 00:50:15.278 Laws that were in existence at the  
NOTE Confidence: 0.948873159

00:50:15.280 --> 00:50:17.590 years encompassed by the survey data.  
NOTE Confidence: 0.903899240714286

00:50:19.790 --> 00:50:23.192 OK, so some of the last data that I'm  
NOTE Confidence: 0.903899240714286

00:50:23.192 --> 00:50:26.046 going to show you here pertains to  
NOTE Confidence: 0.903899240714286

00:50:26.046 --> 00:50:29.950 MCLR CL in the use of potent products.  
NOTE Confidence: 0.903899240714286

00:50:29.950 --> 00:50:32.686 So if we wait for a national survey data  
NOTE Confidence: 0.903899240714286

00:50:32.686 --> 00:50:35.410 to give us the information for this,  
NOTE Confidence: 0.903899240714286

00:50:35.410 --> 00:50:38.128 we may have to wait really a long time.  
NOTE Confidence: 0.903899240714286

00:50:38.130 --> 00:50:40.340 And sometimes there's emerging important  
NOTE Confidence: 0.903899240714286

00:50:40.340 --> 00:50:44.127 issues that just need more rapid data to be  
NOTE Confidence: 0.903899240714286

00:50:44.127 --> 00:50:46.383 collected that can answer the questions.  
NOTE Confidence: 0.903899240714286

00:50:46.390 --> 00:50:48.640 So sometimes collection of that data  
NOTE Confidence: 0.903899240714286

00:50:48.640 --> 00:50:50.140 is actually pretty straightforward.  
NOTE Confidence: 0.903899240714286

00:50:50.140 --> 00:50:52.918 Although there can be caveats raised

NOTE Confidence: 0.903899240714286  
00:50:52.920 --> 00:50:56.412 raised about generalizability and one such  
NOTE Confidence: 0.903899240714286  
00:50:56.412 --> 00:51:00.419 method is online social media survey data.  
NOTE Confidence: 0.903899240714286  
00:51:00.420 --> 00:51:04.330 So on on in work for a project that I'm  
NOTE Confidence: 0.903899240714286  
00:51:04.430 --> 00:51:08.539 doing with Alan Budney who's at Dartmouth  
NOTE Confidence: 0.903899240714286  
00:51:08.540 --> 00:51:12.116 we're doing work to try to develop a  
NOTE Confidence: 0.903899240714286  
00:51:12.120 --> 00:51:15.138 more accurate measure of cannabis exposure,  
NOTE Confidence: 0.903899240714286  
00:51:15.140 --> 00:51:17.254 cannabis use and as part of that  
NOTE Confidence: 0.903899240714286  
00:51:17.254 --> 00:51:19.271 we're analyzing a number of different  
NOTE Confidence: 0.903899240714286  
00:51:19.271 --> 00:51:21.721 datasets as well as creating a measure  
NOTE Confidence: 0.903899240714286  
00:51:21.786 --> 00:51:23.900 that we're going to be testing out.  
NOTE Confidence: 0.903899240714286  
00:51:23.900 --> 00:51:26.196 So one of the datasets that we've  
NOTE Confidence: 0.903899240714286  
00:51:26.196 --> 00:51:28.312 analyzed is from a social media  
NOTE Confidence: 0.903899240714286  
00:51:28.312 --> 00:51:30.569 survey that was conducted in 2017.  
NOTE Confidence: 0.903899240714286  
00:51:30.569 --> 00:51:33.503 And this was reaching out to  
NOTE Confidence: 0.903899240714286  
00:51:33.503 --> 00:51:35.321 people via Facebook advertising's.  
NOTE Confidence: 0.903899240714286

00:51:35.321 --> 00:51:37.778 It's a very inexpensive way to get  
NOTE Confidence: 0.903899240714286

00:51:37.778 --> 00:51:40.307 a very large sample pretty quickly,  
NOTE Confidence: 0.903899240714286

00:51:40.310 --> 00:51:43.166 and so this survey included over  
NOTE Confidence: 0.903899240714286

00:51:43.166 --> 00:51:46.410 4000 adults in 50 states in DC,  
NOTE Confidence: 0.903899240714286

00:51:46.410 --> 00:51:48.202 and we use the data from this  
NOTE Confidence: 0.903899240714286

00:51:48.202 --> 00:51:50.306 study to look at the relationship  
NOTE Confidence: 0.903899240714286

00:51:50.306 --> 00:51:52.006 of recreational cannabis laws,  
NOTE Confidence: 0.903899240714286

00:51:52.010 --> 00:51:53.243 medical cannabis laws,  
NOTE Confidence: 0.903899240714286

00:51:53.243 --> 00:51:56.058 two states without these laws in 2017  
NOTE Confidence: 0.903899240714286

00:51:56.058 --> 00:51:58.494 to the use of highly potent cannabis  
NOTE Confidence: 0.903899240714286

00:51:58.494 --> 00:52:01.217 products with concentrates that I showed you.  
NOTE Confidence: 0.903899240714286

00:52:01.220 --> 00:52:03.926 Earlier, so this is association not  
NOTE Confidence: 0.903899240714286

00:52:03.926 --> 00:52:06.520 difference in difference on causality.  
NOTE Confidence: 0.903899240714286

00:52:06.520 --> 00:52:08.560 But there isn't so much information  
NOTE Confidence: 0.903899240714286

00:52:08.560 --> 00:52:09.580 about this topic,  
NOTE Confidence: 0.903899240714286

00:52:09.580 --> 00:52:11.785 so we wanted to add to it.

NOTE Confidence: 0.903899240714286  
00:52:11.790 --> 00:52:14.268 So, descriptively, this is what we got.  
NOTE Confidence: 0.903899240714286  
00:52:14.270 --> 00:52:16.105 We looked across the know  
NOTE Confidence: 0.903899240714286  
00:52:16.105 --> 00:52:17.206 cannabis law states,  
NOTE Confidence: 0.903899240714286  
00:52:17.210 --> 00:52:19.681 MCL States and RCL States and you  
NOTE Confidence: 0.903899240714286  
00:52:19.681 --> 00:52:22.590 see a pretty regular increase in the  
NOTE Confidence: 0.903899240714286  
00:52:22.590 --> 00:52:25.360 the proportion of participants that  
NOTE Confidence: 0.903899240714286  
00:52:25.360 --> 00:52:28.130 use the potent cannabis products.  
NOTE Confidence: 0.903899240714286  
00:52:28.130 --> 00:52:30.265 And when we subjected this to analysis,  
NOTE Confidence: 0.903899240714286  
00:52:30.270 --> 00:52:32.466 controlling for a lot of individual  
NOTE Confidence: 0.903899240714286  
00:52:32.466 --> 00:52:34.640 level and state level variables,  
NOTE Confidence: 0.903899240714286  
00:52:34.640 --> 00:52:37.280 we found that recreational laws compared  
NOTE Confidence: 0.903899240714286  
00:52:37.280 --> 00:52:40.458 to states without such laws was in  
NOTE Confidence: 0.903899240714286  
00:52:40.458 --> 00:52:42.246 significant significantly increase the  
NOTE Confidence: 0.903899240714286  
00:52:42.246 --> 00:52:44.815 risk of using the concentrates and  
NOTE Confidence: 0.903899240714286  
00:52:44.815 --> 00:52:48.025 when we did a three level analysis we  
NOTE Confidence: 0.903899240714286

00:52:48.025 --> 00:52:51.115 saw that both recreational and medical  
NOTE Confidence: 0.903899240714286

00:52:51.115 --> 00:52:53.754 cannabis laws increase the risk and  
NOTE Confidence: 0.903899240714286

00:52:53.754 --> 00:52:55.942 that the the resident difference between  
NOTE Confidence: 0.903899240714286

00:52:55.942 --> 00:52:58.210 the recreational and medical cannabis law.  
NOTE Confidence: 0.903899240714286

00:52:58.210 --> 00:53:00.628 Effects where working with data now  
NOTE Confidence: 0.903899240714286

00:53:00.628 --> 00:53:03.591 to look at this in a survey that  
NOTE Confidence: 0.903899240714286

00:53:03.591 --> 00:53:06.430 was that was just conducted in 2021,  
NOTE Confidence: 0.903899240714286

00:53:06.430 --> 00:53:09.150 but I don't have the data yet in  
NOTE Confidence: 0.903899240714286

00:53:09.150 --> 00:53:11.876 a form that can be presented.  
NOTE Confidence: 0.903899240714286

00:53:11.880 --> 00:53:15.940 So to summarize, teen Cannabis users siudi.  
NOTE Confidence: 0.903899240714286

00:53:15.940 --> 00:53:18.250 We haven't seen any evidence of  
NOTE Confidence: 0.903899240714286

00:53:18.250 --> 00:53:19.405 substantial national increases  
NOTE Confidence: 0.903899240714286

00:53:19.405 --> 00:53:21.220 in the last several years,  
NOTE Confidence: 0.903899240714286

00:53:21.220 --> 00:53:23.280 despite the fact that perceived  
NOTE Confidence: 0.903899240714286

00:53:23.280 --> 00:53:25.900 risk has decreased in young people.  
NOTE Confidence: 0.903899240714286

00:53:25.900 --> 00:53:28.020 And there's been this proliferation

NOTE Confidence: 0.903899240714286

00:53:28.020 --> 00:53:31.122 of states that have legalized use for

NOTE Confidence: 0.903899240714286

00:53:31.122 --> 00:53:32.950 medical and recreational purposes.

NOTE Confidence: 0.903899240714286

00:53:32.950 --> 00:53:34.896 We see that use is higher in

NOTE Confidence: 0.903899240714286

00:53:34.896 --> 00:53:36.779 states that ever pass these laws,

NOTE Confidence: 0.903899240714286

00:53:36.780 --> 00:53:39.468 and the lack of pre post differences in

NOTE Confidence: 0.903899240714286

00:53:39.468 --> 00:53:42.456 when the you know in passage of the laws.

NOTE Confidence: 0.829244584285714

00:53:42.460 --> 00:53:44.628 Suggest that cannabis legalization

NOTE Confidence: 0.829244584285714

00:53:44.628 --> 00:53:46.888 is not encouraging adolescent use,

NOTE Confidence: 0.829244584285714

00:53:46.888 --> 00:53:49.400 but of course for a topic like this.

NOTE Confidence: 0.829244584285714

00:53:49.400 --> 00:53:51.182 Continued research and

NOTE Confidence: 0.829244584285714

00:53:51.182 --> 00:53:53.558 monitoring is very important.

NOTE Confidence: 0.829244584285714

00:53:53.560 --> 00:53:55.112 What about adults? Well,

NOTE Confidence: 0.829244584285714

00:53:55.112 --> 00:53:58.535 I think we've seen that cannabis use is

NOTE Confidence: 0.829244584285714

00:53:58.535 --> 00:54:00.579 associated with considerable problems,

NOTE Confidence: 0.829244584285714

00:54:00.580 --> 00:54:01.801 impairment and comorbidity.

NOTE Confidence: 0.829244584285714

00:54:01.801 --> 00:54:05.122 I'd like to emphasize again that the risk  
NOTE Confidence: 0.829244584285714

00:54:05.122 --> 00:54:07.528 of cannabis use disorder amongst cannabis  
NOTE Confidence: 0.829244584285714

00:54:07.528 --> 00:54:10.199 users is greater than commonly assumed,  
NOTE Confidence: 0.829244584285714

00:54:10.200 --> 00:54:12.000 and there's very abundant evidence  
NOTE Confidence: 0.829244584285714

00:54:12.000 --> 00:54:13.800 that the prevalence of cannabis  
NOTE Confidence: 0.829244584285714

00:54:13.862 --> 00:54:15.764 use and cannabis use disorder have  
NOTE Confidence: 0.829244584285714

00:54:15.764 --> 00:54:17.360 increased in 2000 since 2000.  
NOTE Confidence: 0.829244584285714

00:54:17.360 --> 00:54:20.428 In EU. S. Adults.  
NOTE Confidence: 0.829244584285714

00:54:20.430 --> 00:54:23.688 In terms of the cannabis legalization,  
NOTE Confidence: 0.829244584285714

00:54:23.690 --> 00:54:25.602 I haven't talked about this at all in  
NOTE Confidence: 0.829244584285714

00:54:25.602 --> 00:54:27.705 this talk because it would take too long,  
NOTE Confidence: 0.829244584285714

00:54:27.710 --> 00:54:30.085 but there's been suggestions that  
NOTE Confidence: 0.829244584285714

00:54:30.085 --> 00:54:31.985 legalizing cannabis might solve.  
NOTE Confidence: 0.829244584285714

00:54:31.990 --> 00:54:35.175 The opioid crisis based on ecological levels.  
NOTE Confidence: 0.829244584285714

00:54:35.180 --> 00:54:37.850 Studies that are that are somewhat  
NOTE Confidence: 0.829244584285714

00:54:37.850 --> 00:54:40.627 flawed for addressing the question in



NOTE Confidence: 0.829244584285714

00:54:40.627 --> 00:54:43.854 individual level studies of those with pain,

NOTE Confidence: 0.829244584285714

00:54:43.860 --> 00:54:46.020 cannabis users are actually more

NOTE Confidence: 0.829244584285714

00:54:46.020 --> 00:54:48.852 likely to use opioids, not less.

NOTE Confidence: 0.829244584285714

00:54:48.852 --> 00:54:51.056 Non medical cannabis users.

NOTE Confidence: 0.829244584285714

00:54:51.060 --> 00:54:53.228 But we see from the data that are

NOTE Confidence: 0.829244584285714

00:54:53.228 --> 00:54:54.825 available that the state medical

NOTE Confidence: 0.829244584285714

00:54:54.825 --> 00:54:56.823 cannabis laws increase the risk for

NOTE Confidence: 0.829244584285714

00:54:56.823 --> 00:54:58.702 adult cannabis use and cannabis

NOTE Confidence: 0.829244584285714

00:54:58.702 --> 00:55:00.562 use disorders and the state

NOTE Confidence: 0.829244584285714

00:55:00.562 --> 00:55:02.200 recreational laws do as well.

NOTE Confidence: 0.829244584285714

00:55:02.200 --> 00:55:04.460 We don't have as much data yet,

NOTE Confidence: 0.829244584285714

00:55:04.460 --> 00:55:06.555 so obviously more information is

NOTE Confidence: 0.829244584285714

00:55:06.555 --> 00:55:09.070 needed and we are actually working

NOTE Confidence: 0.829244584285714

00:55:09.070 --> 00:55:11.790 on that with the VA data right now.

NOTE Confidence: 0.829244584285714

00:55:11.790 --> 00:55:14.214 So I'm going to end with

NOTE Confidence: 0.829244584285714

00:55:14.214 --> 00:55:15.830 this slide on implications.  
NOTE Confidence: 0.829244584285714

00:55:15.830 --> 00:55:16.392 You know,  
NOTE Confidence: 0.829244584285714

00:55:16.392 --> 00:55:18.078 I began working in this area  
NOTE Confidence: 0.829244584285714

00:55:18.078 --> 00:55:20.328 with a public health perspective,  
NOTE Confidence: 0.829244584285714

00:55:20.330 --> 00:55:23.263 which is to provide information about the  
NOTE Confidence: 0.829244584285714

00:55:23.263 --> 00:55:26.410 effects of these laws and what they might.  
NOTE Confidence: 0.829244584285714

00:55:26.410 --> 00:55:28.307 You know what they might be doing  
NOTE Confidence: 0.829244584285714

00:55:28.307 --> 00:55:30.569 in terms of public health problems.  
NOTE Confidence: 0.829244584285714

00:55:30.570 --> 00:55:33.386 So we have already the the status that  
NOTE Confidence: 0.829244584285714

00:55:33.386 --> 00:55:35.962 37 states have passed the medical  
NOTE Confidence: 0.829244584285714

00:55:35.962 --> 00:55:38.202 laws 18 have recreational laws.  
NOTE Confidence: 0.829244584285714

00:55:38.210 --> 00:55:39.920 Many more states are considering  
NOTE Confidence: 0.829244584285714

00:55:39.920 --> 00:55:41.630 these laws at this point,  
NOTE Confidence: 0.829244584285714

00:55:41.630 --> 00:55:43.694 and it doesn't seem that considerations  
NOTE Confidence: 0.829244584285714

00:55:43.694 --> 00:55:45.879 such as cannabis use disorder are.  
NOTE Confidence: 0.829244584285714

00:55:45.880 --> 00:55:46.357 Really,

NOTE Confidence: 0.829244584285714  
00:55:46.357 --> 00:55:49.219 a high priority in the debates  
NOTE Confidence: 0.829244584285714  
00:55:49.219 --> 00:55:50.510 about Legalization II.  
NOTE Confidence: 0.829244584285714  
00:55:50.510 --> 00:55:53.150 Don't hear them being discussed much at all.  
NOTE Confidence: 0.829244584285714  
00:55:53.150 --> 00:55:55.702 But I will say coming back to where  
NOTE Confidence: 0.829244584285714  
00:55:55.702 --> 00:55:58.360 we started that there have been other  
NOTE Confidence: 0.829244584285714  
00:55:58.360 --> 00:56:01.070 long term shifts in substance attitudes,  
NOTE Confidence: 0.829244584285714  
00:56:01.070 --> 00:56:02.108 policies and prevalence.  
NOTE Confidence: 0.829244584285714  
00:56:02.108 --> 00:56:03.838 It's part of American life.  
NOTE Confidence: 0.829244584285714  
00:56:03.840 --> 00:56:05.874 Thinking back to what I talked  
NOTE Confidence: 0.829244584285714  
00:56:05.874 --> 00:56:08.206 about at the beginning in terms of  
NOTE Confidence: 0.829244584285714  
00:56:08.206 --> 00:56:10.012 state level shifts from the best  
NOTE Confidence: 0.829244584285714  
00:56:10.012 --> 00:56:12.485 of intentions and the minimum legal  
NOTE Confidence: 0.829244584285714  
00:56:12.485 --> 00:56:13.327 drinking age.  
NOTE Confidence: 0.829244584285714  
00:56:13.330 --> 00:56:17.397 But then the role of evidence in  
NOTE Confidence: 0.829244584285714  
00:56:17.397 --> 00:56:18.559 shifting those,  
NOTE Confidence: 0.829244584285714

00:56:18.560 --> 00:56:21.206 the changes in the drinking age

NOTE Confidence: 0.829244584285714

00:56:21.206 --> 00:56:23.929 back to age 21 to avoid.

NOTE Confidence: 0.829244584285714

00:56:23.930 --> 00:56:25.710 The problems that occurred by

NOTE Confidence: 0.829244584285714

00:56:25.710 --> 00:56:26.778 lowering the age,

NOTE Confidence: 0.829244584285714

00:56:26.780 --> 00:56:29.093 so I sort of see my function at this

NOTE Confidence: 0.829244584285714

00:56:29.093 --> 00:56:31.355 point with this type of research as

NOTE Confidence: 0.829244584285714

00:56:31.355 --> 00:56:33.149 serving a public health function

NOTE Confidence: 0.829244584285714

00:56:33.149 --> 00:56:35.753 to continue to monitor and provide

NOTE Confidence: 0.829244584285714

00:56:35.753 --> 00:56:37.441 information to policymakers to

NOTE Confidence: 0.829244584285714

00:56:37.441 --> 00:56:39.346 provide medical and health providers

NOTE Confidence: 0.829244584285714

00:56:39.346 --> 00:56:40.870 and to the public,

NOTE Confidence: 0.829244584285714

00:56:40.870 --> 00:56:43.820 it can ultimately inform policy

NOTE Confidence: 0.829244584285714

00:56:43.820 --> 00:56:45.590 and protect health.

NOTE Confidence: 0.829244584285714

00:56:45.590 --> 00:56:47.759 And with that I think I'm out of time

NOTE Confidence: 0.829244584285714

00:56:47.759 --> 00:56:50.048 and I'll stop and I thank you very

NOTE Confidence: 0.829244584285714

00:56:50.048 --> 00:56:51.957 much for inviting me to speak here.

NOTE Confidence: 0.76288599

00:56:54.170 --> 00:56:55.790 Thank you so much Debbie.

NOTE Confidence: 0.76288599

00:56:55.790 --> 00:56:58.998 That was terrific. There are some.