

WEBVTT

NOTE duration:"00:44:26.4160000"

NOTE language:en-us

NOTE Confidence: 0.977384865283966

00:00:00.310 --> 00:00:01.910 Good afternoon everybody.

NOTE Confidence: 0.867144107818604

00:00:03.520 --> 00:00:05.070 We'll get started.

NOTE Confidence: 0.896815717220306

00:00:05.650 --> 00:00:09.770 We'll get started without grand rounds presentation while you're enjoying your lunch.

NOTE Confidence: 0.930064797401428

00:00:10.320 --> 00:00:14.500 Just some updates about upcoming grand rounds, you might be interested in.

NOTE Confidence: 0.918190717697144

00:00:15.040 --> 00:00:46.090 Next week, we have Angela Anderson, coming from Brown University is going to be talking about lessons learned in pediatric palliative care. She's the director of the pediatric quality of care program at Brown and then March 20th. We have the pleasure of having Dave Coleman, who's the chair of Department of Medicine, it at Boston University and was a former faculty member in the Department of internal medicine here for many years as well as an interim chair of the Department.

NOTE Confidence: 0.946974635124207

00:00:46.090 --> 00:00:53.220 He's going to be talking a little bit about academic clinical departments in the future, which should be very interesting for all of us.

NOTE Confidence: 0.917416930198669

00:00:53.810 --> 00:01:14.640 Please remember to put on your calendars Wednesday May 15th or Yale Pediatric Research Forum starting at 11:45 and there will be a visiting speaker. The warshall lecture will be Diana Bianchi, who is the director of the NICHD and she'll be talking about.

NOTE Confidence: 0.900640964508057

00:01:15.250 --> 00:01:39.520 Not about the NICHD or funding, but really talking about her exciting work and discoveries that she's made in studying pregnant women and infants and a little bit about her career trajectory, so I encourage you to come out for that and then they'll be a poster session and presentations from abstracts that many of you have submitted so should be a great day.

NOTE Confidence: 0.893104076385498

00:01:40.350 --> 00:02:06.190 This is a reminder that this is grand rounds is accredited for see me there are no conflicts from our speaker. Please remember to silence your silence those noisy things phones beepers things like that, so you don't disturb. Others will be having coffee and cookies. Afterwards, if you want to stay after to mingle with the Speaker Please do.

NOTE Confidence: 0.925263047218323

00:02:07.290 --> 00:02:27.600 And before we get to our speaker. I just want to let you know that this is the Herbert Golden Ring Memorial Lecture. Many of you may remember herb herb was gifted pediatrician who touched the lives of thousands of patients. He was established the first pediatric practice in Branford in 1954.

NOTE Confidence: 0.878810405731201

00:02:28.160 --> 00:02:44.050 And after 35 years, he retired from private practice and came to be director of well, baby nursery's. At Yale, New Haven Hospital. This lectureship is is really here for his his memory.

NOTE Confidence: 0.859866738319397

00:02:45.080 --> 00:03:03.440 And it was we thank his family. Many of whom are in Madison as well as friends who endowed this lecture and we're really pleased to have Nigel Paneth is this your lecture and I think Mark Mercury is going to come give an introduction of our speakers.

NOTE Confidence: 0.840151250362396

00:03:08.830 --> 00:03:16.280 Good afternoon, it is my honor today to introduce Nigel Paneth Ardahan Round Speaker in our Golden ring speaker for this year.

NOTE Confidence: 0.180469021201134

00:03:16.850 --> 00:03:17.390 Oh.

NOTE Confidence: 0.865891873836517

00:03:17.990 --> 00:03:43.600 Nigel is not a neonatologist, which may sound like good news to many of you. He's he's an epidemiologist an epiphenomenon ologist as he described to me. When were talking before hand and I would read you. Some things about him briefly, but to say that that Nigel is a pediatrician and epidemiologist kind of like LeBron James is a basketball player.

NOTE Confidence: 0.910624265670776

00:03:44.120 --> 00:04:02.000 Nigel Paneth Professor of Pediatrics, an ethic genealogy at Michigan State where he was been University distinguished professors since 2009. He's a graduate of Columbia College received his medical education that Dartmouth and Harvard and also received a degree from Columbia University School of Public Health.

NOTE Confidence: 0.921070456504822

00:04:02.940 --> 00:04:09.000 He did his residency at Albert Einstein College of Madison, where he also did a fellowship in human development biology.

NOTE Confidence: 0.926808714866638

00:04:10.370 --> 00:04:21.840 That's a lot of schooling and he is certainly put it to good use over the past four decades in a truly remarkable career, including faculty at Einstein Columbia and for much of it at Michigan State University.

NOTE Confidence: 0.932831346988678

00:04:22.460 --> 00:04:27.960 He's been a leader in the field of Epidemiology, including serving as chair of Epidemiology at Michigan State.

NOTE Confidence: 0.90558922290802

00:04:28.870 --> 00:05:01.640 His work on Pediatrics, an Epidemiology are colossal and as I was reading the CV this morning. It struck me and someone may have already done this, if not someone answer. This should be. Of course, but at 300. Around 350 publications. It might need to be a 2 semester course. If you'd like to read it all. It is absolutely fascinating and as I was looking at, I realized that I remember this paper in that paper and it's not because I'm so well, read, but you would have to be a pediatrician living on Mars over the past four decades, not to have come across so many of these really important contributions.

NOTE Confidence: 0.888937950134277

00:05:01.640 --> 00:05:28.530 To our understanding about Neo Natal mortality about fetal monitoring about cerebral palsy about resuscitation about ethics issues in neonatology about precision. Madison about outcomes, so many important things so many wonderful contributions and I have it on very good authority that he's also a hell of a nice guy, so we are truly honored that you come here today to speak to us about adult outcomes of very pre term birth welcome Nigel panic.

NOTE Confidence: 0.867644548416138

00:05:38.800 --> 00:05:48.550 Well, first of all thanks so much for this invitation. Can you hear me up in the back row I've I've heard it, I have to project right?

NOTE Confidence: 0.826134026050568

00:05:49.280 --> 00:05:52.400 Can you hear me now?

NOTE Confidence: 0.8762446641922

00:05:53.330 --> 00:06:01.050 People in the back row I can see are the youngest and therefore the most important members of this audience right.

NOTE Confidence: 0.826995491981506

00:06:04.910 --> 00:06:19.460 Oh, I didn't do what you tell me to follow instructions aren't sure everybody is that a little bit better, so it's really a pleasure to be here.

NOTE Confidence: 0.8689124584198

00:06:20.140 --> 00:06:46.940 I I told penina that my memory of being at Yale was coming as an undergraduate soccer player at Columbia to be defeated by the Yale soccer team here, so not an entirely favor of memory. But all my other connections to yell have been really stellar and wonderful to see some of the good friends. I've made over the years who are here so.

NOTE Confidence: 0.895265460014343

00:06:48.000 --> 00:07:04.880 I'm going to talk about adult outcomes of very preach number that I know a lot of people in this audience know a lot about that and I would be happy for people to take up issues that I bring up and maybe contradict me or disagree with me. That's OK. That's not supposed to be there.

NOTE Confidence: 0.909100234508514

00:07:05.690 --> 00:07:15.950 So thanks for inviting me. Uh you know, not every clinical Department will invite an epidemiologist to give a talk here, but you did, which is very good.

NOTE Confidence: 0.901571571826935

00:07:16.520 --> 00:07:48.530 And let me begin by acknowledging someone who is very important to me and it's a many of you my dear friend and colleague Ehrenkrantz who I've already heard much about even in the few conversations. I've had here who we lost last year. Sadly Anrich was involved in the elgan study, which I was involved in and I always thought of him is one of the most innovative and original thinkers in DNA. Teologi an very sad loss, which is more not just in New Haven, but across the country.

NOTE Confidence: 0.901314198970795

00:07:48.530 --> 00:08:20.910 And then I'd like to mention another person, maybe a little less familiar. But some of you will definitely know who he is Jack Sinclair, a founder of neonatology in Canada and establish establish the Hamilton ON program and that Hamilton ON program will cite a great deal because that is the earliest study that began systematically to follow tiny babies into adult life and Jack was here as my back and told me as a visiting professor for 5 years.

NOTE Confidence: 0.879441738128662

00:08:20.910 --> 00:08:30.700 Coming a semester year and had an appointment in the Epidemiology Department was one of the great neonatologists of all time, and truly wonderful man also.

NOTE Confidence: 0.927339255809784

00:08:31.950 --> 00:09:00.210 So the problem that confronted us in the early days of neonatology an on one of those people who was in intensive care units that had been so recently established the residents who had graduated from the program, 3 years before. We had no idea what we were doing it was so knew they'd never ventilated babies. Cpac had not been invented. We would just beginning. In the early to mid 70s to start to introduce this concept of intensive care for babies.

NOTE Confidence: 0.928990840911865

00:09:00.720 --> 00:09:11.740 And until that time tiny babies essentially for all practical purposes did not survive looking at vital data from the United States in 1960, the special study.

NOTE Confidence: 0.922309041023254

00:09:12.270 --> 00:09:18.690 And I was able to determine that there were there probably nationally no more than a couple of 100.

NOTE Confidence: 0.918128132820129

00:09:19.280 --> 00:09:29.150 Kids, who are one-year-old alive who had been less than 1000 grams of birth or that's based on a mortality rate was approximately 99% or higher.

NOTE Confidence: 0.910723030567169

00:09:30.280 --> 00:09:39.880 But already by 1983, we had, we were producing 10,000 survivors a year now, it's closing in 1617 thousand.

NOTE Confidence: 0.91649466753006

00:09:40.560 --> 00:10:03.470 This is a new universe that did not exist before we did not have this population. An we at the early days of intensive care. Everybody was wondering what would it be like 20 years from now. If we save their lives. What will they be. Like his children as adults. And of course. We had to wait until the answers came they were going to come right away just as you know you now cannot know.

NOTE Confidence: 0.93649822473526

00:10:04.170 --> 00:10:10.180 What the impact of intensive care? What the children would be like 30 or 40 years heads of the current practices?

NOTE Confidence: 0.904262781143188

00:10:12.660 --> 00:10:43.730 So the top decile addressed today. I'll go in order more or less of the frequency with which they discussed you might say in the literature. Newer development of course, is always 1st and former some peoples minds, then pulmonary outcomes. I'll address briefly there's been a lot of attention a little lately to cardiovascular risk factors and cardiovascular disease and

then I'll turn to issues in behavior in psychopathology and not to be forgotten. I'll try to emphasize will being how essentially the people just how are they as adults?

NOTE Confidence: 0.910034894943237

00:10:43.730 --> 00:10:47.900 What is that feeling about life? How did they adapt to society?

NOTE Confidence: 0.947306573390961

00:10:48.410 --> 00:10:51.700 Beyond just simple measures of health conditions.

NOTE Confidence: 0.881152510643005

00:10:53.720 --> 00:11:26.720 So some of the sources. I'll use in August 2015, Chancey ride. You have NITHDNI Co convened a conference on adults. Born pre term and 2 papers came out of that one in Pediatrics, want a longer. One inactive pediatric a and another source is the adults. Born pre term. International collaboration, which pulls together cohorts of small previously been followed to adult life and then there have been several interesting large largely not entirely but largely Scandinavian birth cohorts.

NOTE Confidence: 0.889633595943451

00:11:26.720 --> 00:11:57.290 With large databases that are linked to registry data so that you can look at just stational age specific risks of various important outcomes by no means the only sources. But these are rather typical sources and the 11:00 there are probably more than this. But the 11 have been involved in one or another in this collaboration from all over the globe, but largely European and one Australian and some.

NOTE Confidence: 0.880362510681152

00:11:57.290 --> 00:12:23.140 North American cohorts, particularly Maureen hacks, cohort in Cleveland. OH, and the 1:00 I'll drop on most. the Hamilton ON population based cohort set in motion by Jack Sinclair, but followed largely by Saroj Saigal Innate Ologist. I'm sure many of you know about and between amongst all these cores there about 2000 kids that have published data on some aspect of their adult functioning.

NOTE Confidence: 0.905094623565674

00:12:24.000 --> 00:12:33.860 Some some of the people involved in these courts are very interested in behavioral outcomes, particularly Hamilton ON group. Others are quite interested in cardiovascular outcomes blood pressure and such.

NOTE Confidence: 0.934630632400513

00:12:34.670 --> 00:12:36.270 And I'll talk about those results.

NOTE Confidence: 0.913769245147705

00:12:37.610 --> 00:12:42.900 So when it comes to newer developmental disorders. I think it's always very important to have as a background.

NOTE Confidence: 0.889572858810425

00:12:43.410 --> 00:13:16.040 The sometimes too many people surprisingly high prevalence of newer developmental disorders in the general population and I've just written review of this and so these are my best estimates of the range of figures. We have for the major and the less major developmental disorders, so will policy we like to cite about now we used to say 2000 libraries. I think closer to 3 per thousand now based on latest Usdata 1% of the population has diagnosable seizure disorder by age 20.

NOTE Confidence: 0.918319165706635

00:13:16.040 --> 00:13:46.110 Hearing loss of vision loss of a major sort is found in about 1/2. A percent of the population. Severe intellectual disabilities are very similar to CP in its prevalence. That's iqs below 50 or unmeasurable mild intellectual disabilities. I choose between 50 and 70. Now probably around between one and 1, 1/2% of the population. Autism spectrum disorders as you know much has been said about the recent rise in autism whether it's a diagnostic riser and a true rise. I'm not groups.

NOTE Confidence: 0.880082070827484

00:13:46.110 --> 00:13:48.050 Not really sure yet but.

NOTE Confidence: 0.915710151195526

00:13:48.650 --> 00:14:19.290 Now at least 1 to 1, 1/2% of the population carries that diagnostic label for being on the autism spectrum disorder learning disabilities of the largest in frequency about 9:00 to 10% of school age children get diagnosed with a learning disability, either one of the specific learning disabilities and of course, attention deficit hyperactivity disorder is not rare either 5 to 7%. So when you add them, all up allowing for overlap. It looks as though some which in one and 5 and one in 6 children have?

NOTE Confidence: 0.895883798599243

00:14:19.290 --> 00:14:49.660 A Diagnosable developmental disability and if you think about adult life. Many of these do persist into adult life. Some modified change aspects. ADHD and learning disability for example, mild cognitive disability tend to kind of disappear. At least partly the others persist. So the channels with disabilities are to some extent also the adult disabilities as well.

NOTE Confidence: 0.902122139930725

00:14:50.480 --> 00:15:20.720 Now we turn to babies born before the 28th week of gestation, which is not the entire focus of my talk because really many different cohorts are assembled in many different ways, using many different definitions, but from the elegant study, which had a center here which currently Angela is

the leader of rich aircrafts was in the past. We get figures like somewhere around 8:00 to 12% for cerebral palsy tend to 15% for major intellectual disability.

NOTE Confidence: 0.914642989635468

00:15:21.280 --> 00:15:35.890 50% for learning disabilities 20 to 30% with behavioral problems. That's in childhood, so much higher burden of neurological disabilities is not used to any of you, you've seen this before.

NOTE Confidence: 0.898025393486023

00:15:37.170 --> 00:16:07.440 Interestingly enough in the last couple of years we've had some a couple of good studies of autism or autism spectrum disorder in the preemie population. The 2:00 studies. I know if it and actually use formal Eidos ADR, which is the gold standard for assessment of autism are Jennifer Pinter Martins paper out of the neonatal brain hemorrhage study in Pediatrics, and we came up with an estimated 5% prevalence in early adulthood of babies have been born with a birth weight under.

NOTE Confidence: 0.897926867008209

00:16:07.440 --> 00:16:22.940 2 kilograms and Bob Joseph writing in autism research in 2017, rich might have been on this paper. I don't know prevalence estimates by gestation weight in each 10 of which is a spectrum disorders for the entire cohort was 7%.

NOTE Confidence: 0.912556409835815

00:16:23.440 --> 00:16:34.660 And the very smaller gestation weight like 2324 weeks. This prevalence of 15% begins to be at the level you see and siblings of children with autism.

NOTE Confidence: 0.884009838104248

00:16:35.200 --> 00:16:56.250 So these very tiny babies and prematurity is now I think a very well established respect for autism spectrum disorder and oops. Sorry keeps moving ahead of me. That would be careful. But these very tiny micro preemies probably haven't even higher burden of this so it's something to be aware of.

NOTE Confidence: 0.898463606834412

00:16:57.770 --> 00:17:28.760 Now we did a study in the 1990s in which we put together 4 different population based cohorts. In 4 different countries and we kind of tried to work out from school records? What kind of school achievement results. They happen, you get figures like this, they weren't the same in all cohorts. In fact, are our cohorts that was our New Jersey actually had the best results but basically more than 50% of babies under a kilogram.

NOTE Confidence: 0.898733556270599

00:17:28.760 --> 00:17:51.590 Had been held back a grade in all average and also in all 4 countries combined so it was in different schemes of education that this

was appearing and several aspects of school achievement where the performance was considerably lower than the background controls.

NOTE Confidence: 0.911190927028656

00:17:53.620 --> 00:18:23.630 Now, when it comes to pulmonary outcomes. I think there is a consistent finding of an excess risk of asthma in childhood, but fortunately we do think that this risk declines with age. I'll show you some data on that a couple of notable papers with very large sample sizes are finished case control study, which had nearly 3000 cases and more than 40,000 controls found a relative risk of 3.9 for asthma up to age 13.

NOTE Confidence: 0.784535527229309

00:18:23.660 --> 00:18:25.770 And the Danish registry data.

NOTE Confidence: 0.924343943595886

00:18:26.350 --> 00:18:58.600 Which I'll show you slide actually followed it's only been published last year 2,000,000 Danish births and they managed to have actually 10,600 survivors between 28 to 31 weeks and nearly more than 2000 babies born before 27 weeks looking at and then they link this to the Danish registry of prescriptions outpatient prescriptions to any form of asthma medication inhaled or injected and they come up with this very interesting figure.

NOTE Confidence: 0.907385349273682

00:18:58.600 --> 00:19:16.840 Which is shows you that the odds ratios for getting an asthma prescription declined with age and the highest risk was in the first year of life where the odds compared to the babies 23 to 27 weeks, which is the top the top line there, I will use this.

NOTE Confidence: 0.90641176700592

00:19:17.810 --> 00:19:35.730 Here, for a moment this one right up here. The top line is 2327 weeks. They had 3 1/2 times. The risk of receiving a medication and kids in the other group. Then the term born kids, but notice how this risk drops with age.

NOTE Confidence: 0.950685143470764

00:19:36.600 --> 00:19:38.650 From 3.62.

NOTE Confidence: 0.878237545490265

00:19:39.350 --> 00:19:50.840 Cat seems Oh yeah to 2.5 and by the age by the teenagers and adult life. There's a modest very modest excess of receipt of asthma medication, so the asthma problem.

NOTE Confidence: 0.896202325820923

00:19:51.360 --> 00:20:15.910 And Tiny Primas doesn't seem to persist into adult life except in a smaller way. And in a study which included children and

adults ages 5 to 23 is looking at pulmonary function. We find that premature is without BPD had about a 7% reduction on average in a meta analysis across many studies in.

NOTE Confidence: 0.689011931419373

00:20:16.520 --> 00:20:19.360 In there.

NOTE Confidence: 0.825288951396942

00:20:20.350 --> 00:20:36.250 Inox in try remember FVV yeah force. Excretory volume and but if they had a had markers of BPD depending on which oxygen dependency criterion you like the prevalence was higher.

NOTE Confidence: 0.895311534404755

00:20:36.940 --> 00:20:52.550 And there are a number of studies showing reductions in airway resistance exercise tolerance carbon monoxide diffusion capacity. I think again. This may be very age, dependent and I haven't separate out the children from the adults here.

NOTE Confidence: 0.911178469657898

00:20:54.350 --> 00:21:19.110 Now cardiovascular risk factors in cardiovascular has gotten a lot of attention in literature lately. I think because of the emphasis given over the last couple of decades to the Boker or fetal origins hypothesis which focused a lot on low birth weight and effects on cardiovascular comes some of this thinking has been applied to world of premature babies.

NOTE Confidence: 0.911290347576141

00:21:19.940 --> 00:21:44.190 And there is some methodological questions when always has to take when you look at this literature. The first thing is that there may be confounding, especially in cardiovascular's by shared risk factors in the family that applied pre term birth and I'll show you examples of this and also sometimes some of the papers have inappropriate statistical adjustments.

NOTE Confidence: 0.910468220710754

00:21:45.160 --> 00:21:52.400 So the interesting thing is if you find that low birthweight pre term babies have higher risk of cardiovascular disease.

NOTE Confidence: 0.914832293987274

00:21:53.010 --> 00:22:05.460 Is it necessarily because they were low birth weight? Where is it because there was something in the family shared some shared variance that predispose both pre term and low birth weight and to cardiovascular disease.

NOTE Confidence: 0.925321221351624

00:22:06.140 --> 00:22:18.680 Either genetic or environmental and there's a really quite interesting paper that summarizes the results of 5 studies looking at

the likelihood of a mother dying and mother of a premature dying of cardiovascular disease.

NOTE Confidence: 0.889031231403351

00:22:19.410 --> 00:22:49.880 And these studies largely from Europe, one from the US Jenna Cato's from Pitts Burg. The others from Schottland and other parts of Europe and it turns out a very consistent relative risk of two is found for having given birth to a pre term. Baby and having death from cardiovascular disease, doubling the risk so if you find that a baby has a higher risk, you might say well? What is the family constellation that is involved in preterm birth?

NOTE Confidence: 0.905491173267365

00:22:49.880 --> 00:22:56.020 I would also say this gives you some suggestive lines to pursue in terms of the etiology of preterm in birth.

NOTE Confidence: 0.928433895111084

00:22:59.100 --> 00:23:10.860 And one of the problems when you look at blood pressure is that if you look at adult blood pressure and look at birth. Weight people tend to adjust for achieved adult weight.

NOTE Confidence: 0.935116052627563

00:23:11.520 --> 00:23:27.620 And this is a problematic adjustment because it doesn't actually tell you and often when this is done. I want to 2. Millimeter difference per kilogram of body weight is transformed into a 5 to 6 kilogram. It's exaggerated by the adjustment.

NOTE Confidence: 0.916133642196655

00:23:28.120 --> 00:23:37.080 That people make for adult weight if you include that in the model. So, we, we advised not to do that because low birth weight babies are actually consistently smaller.

NOTE Confidence: 0.8828125

00:23:37.800 --> 00:24:09.230 And thinner than higher birthweight baby and if you adjust for birthweight. You're saying This is what the blood pressure ought to have been if this preterm had been only been fatter, which is not a very interesting operative question, we don't adjust for weight. When we prescribe. Oh, you have a systolic of 150. But since you weigh 250 pounds don't worry about it, you have a system of 130, but you're so skinny we better treat. You we don't do that. Doing so, these adjustments are really not correct and in fact, if you look at the literature a few large and Unfortunately.

NOTE Confidence: 0.890755414962769

00:24:09.230 --> 00:24:14.370 This particular form of adjustment is a contaminating factor throughout so.

NOTE Confidence: 0.874336838722229

00:24:15.010 --> 00:24:46.530 Those are 2 now having said that it turns out the best studies. We have of gestation. Elhage and this is cases of ischemic heart disease actually don't show a gestational age effect. The 2:00 studies that come from before the air of intensive care. Of course have more outcomes because the population is older. They don't need to be that large and but even the 2 days in the air of intensive care very large.

NOTE Confidence: 0.915543437004089

00:24:46.530 --> 00:25:06.660 But of course, the number of outcomes is much smaller because these kids are only 30 years old, after death. So you can say that cardiovascular disease up to the 30s in the modern era of newborn intensive care is not shown to be elevated and where it's shown to be elevated. I would definitely try to work on adjustments for the adult cardiovascular status as well.

NOTE Confidence: 0.883079528808594

00:25:09.020 --> 00:25:28.020 On the other hand, fetal growth impairments fetal growth impairment has been shown to be LinkedIn. These studies to risk of ischemic heart disease. This large Swedish studies. All are found that the hazard ratio was actually 2, 1/2, my card and function for.

NOTE Confidence: 0.861510574817657

00:25:29.540 --> 00:25:55.510 Kids but adults who had been between one and 2 standard deviations below the mean and it went up to 2.4 also for my 2 standard deviations below the knee and for all cardiovascular disease also you gotta somewhat less lower relative risk. But there are strong suggestions not have a gestation. Elhage effect on risk of cardiovascular is better for a fetal growth retardation effects.

NOTE Confidence: 0.865728795528412

00:25:56.090 --> 00:26:17.810 And Lawler found a hazard ratio of for each 1 kilogram increase in birth weight 40%. Nearly reduction in risk of CHD again. This is not adjusted for adult rates. But at least, there's a stronger hint of an effect of fetal growth and there is for an effective gestational age.

NOTE Confidence: 0.871387720108032

00:26:18.410 --> 00:26:34.760 On the other hand, and stroke there has been some finding of a stroke relationship to gestation. Elhage the lowest study that below study in Schottland found a 20% reduction in the risk of stroke as you go up the Gestation Elhage.

NOTE Confidence: 0.851555168628693

00:26:35.370 --> 00:26:44.720 Duration and also again a fetal growth effect on stroke, which was a bit stronger than the fetal growth effect on heart attack.

NOTE Confidence: 0.887973546981812

00:26:46.040 --> 00:27:02.450 And again and the Swedish study that looked at a gestational age and heart disease. It didn't find anything founder relatives with one point 9 under 32 weeks for stroke so if your hours to summarize for the disease is not the risk factors.

NOTE Confidence: 0.869718074798584

00:27:02.960 --> 00:27:14.440 Not a strong evidence are impact on cardiovascular ease of gestation. Elhage maybe a bit of an impact on stroke. But, perhaps an impact on both of them of field growth retardation.

NOTE Confidence: 0.885735809803009

00:27:16.570 --> 00:27:47.980 Blood pressure there have been a lot of studies of this lower meant is on one of these studies, which I didn't select us because Laura's in the audience, but but because it really was. I thought the most notable studies summary of many cohorts and we find this interesting finding that there's a slight increase in blood. Pressure noted in very low birth weight babies? Which of course includes a bit of growth retardation in there keep that in mind more notable for girls and this is come up.

NOTE Confidence: 0.868446588516235

00:27:47.980 --> 00:27:54.280 In more than one study that the girl effect on blood pressure bit stronger than that, then boys.

NOTE Confidence: 0.893817245960236

00:27:56.360 --> 00:28:16.780 Insulin resistance has been discussed a lot. Some studies find it. Some find a little a little bit of it. Some do and some don't the largest invest studies. I think are somewhere between a small difference and no difference. I think the smaller babies do have slightly higher insulin resistance or growth retarded.

NOTE Confidence: 0.871573269367218

00:28:18.900 --> 00:28:40.020 And diabetes, we find you know, and again big Scandinavian cohort. Lee you could look at again using prescriptions as the indicator. We find this and modest rather modest increase diabetes prescriptions between 13 and 20% for kids who had been.

NOTE Confidence: 0.885407388210297

00:28:40.530 --> 00:28:49.760 Premature's that's all under 37 weeks and they didn't really didn't divide it up much more strenuously that.

NOTE Confidence: 0.897028148174286

00:28:51.530 --> 00:29:17.970 And there have been other metabolic issues found people have found differences. Some people have found some LDL difference is I think fairly consistent finding is the finding that for the same weight preemies have more body fat less muscle mass and that may be important, especially if it has to do with abdominal fat, so the suggestion that some of these.

NOTE Confidence: 0.841747462749481

00:29:18.510 --> 00:29:23.940 Metabolic cardiovascular metabolic issues may be raised a bit in X preemies.

NOTE Confidence: 0.881245195865631

00:29:26.370 --> 00:29:56.660 Now turn to behavior psychopathology when it comes to the majors. I get soda schizophrenia. Bipolar disease depression. We again have either weak or not very strong or no effects. The major case again a hint of an effect more if there's any effect it might be on the field growth story rather than the prematurity story and but just stational age. We could not find any Association in these big studies for the major.

NOTE Confidence: 0.918035984039307

00:29:59.340 --> 00:30:05.880 Recorded in sufficiently severe to be recorded in public databases diagnosis.

NOTE Confidence: 0.90922075510025

00:30:07.250 --> 00:30:35.590 But when it comes to less severe psychiatric outcomes. I think this is a place where we have to think a little bit. I'll spend a little bit of time talking about that. We do see if we don't see depression diagnosis. We do see somewhat higher risk of depressive symptoms. An anxiety problems are often reported and another feature that gets talked about a lot is an avoidant or a shy personality.

NOTE Confidence: 0.881074845790863

00:30:36.120 --> 00:31:02.550 And there's one study the Ham actually the Hamilton ON say suggest these symptoms are especially noted in kids exposed to steroids in general. This is something we have to. I think needs to be explored a bit more sensory. Of course, are recommending steroid use in labor and yet this. Hamilton ON study has this recognition that anxiety and some other symptoms were found largely in the kids have been exposed to steroids uterus.

NOTE Confidence: 0.922419846057892

00:31:04.430 --> 00:31:17.210 We also people self reported health related quality of life is somewhat lower in survivors of extreme prematurity. Even if they don't have a diagnosis or developmental disability.

NOTE Confidence: 0.900505542755127

00:31:19.090 --> 00:31:49.120 Now, this is study this is another finding from the international study. We did in the 1990s. This is the Alpha and buff child behavior questionnaire and it has some of you may not be familiar with the item, but has 8 dimensions to it, you can see them arrayed down here and for simplicity sake the ones on the left with drawers and somatic or what we call internalizing symptoms and the ones on the right delinquent and aggressive called Externalising Center in other words.

NOTE Confidence: 0.894282042980194

00:31:49.120 --> 00:32:19.130 Internalizing you make yourself unhappy externalize you make your family and everybody else unhappy so it turns out that this has been found over and over again, the the acting out behavior. Delinquent aggressive is not elevated in previous might in fact, even be less common. Informer Premies on the other side with drawing semantic anxious. There are some hints of an elevation, but not as much. But the middle group, which is unclassified set of behaviors.

NOTE Confidence: 0.90972775220871

00:32:19.540 --> 00:32:29.600 Social social means the parents think that child doesn't have as much a good of a social life as the child ought to have these are taken when the kids were 8:00 to 11:00.

NOTE Confidence: 0.919924437999725

00:32:30.700 --> 00:32:36.030 I thought means the parents report that the child expresses really weird thoughts sometimes.

NOTE Confidence: 0.927461266517639

00:32:36.600 --> 00:32:53.640 And attention is basically attention deficit issues. Those are the ones that were elevated now, what you know, those often boxwood given in 3 different languages in Canada, USA, Germany and Holland and in different settings, but you see the pattern is remarkably similar.

NOTE Confidence: 0.895827353000641

00:32:54.200 --> 00:33:07.590 As kind of behavioral profile of the ex Premier this babies under kilogram. Born in these 4 countries and then a Swedish study was published few years later and it showed exactly the same pattern is kind of same.

NOTE Confidence: 0.86849319934845

00:33:09.820 --> 00:33:25.690 Sinus curve you might say with the middle groups being especially distinct. These are all these scores up here. Between 1/2 and one stand deviation different from either population norms or some of the code? What's healthy control controls boarded term unaffected controls.

NOTE Confidence: 0.926887154579163

00:33:27.660 --> 00:33:51.210 And I think these kinds of behavioral features anxiety loneliness translate into what we call well being an well being according to some sociologists. They divided to there are many ways to do it. But for common categories use a social functioning socioeconomic status criminal activity and health health. We've already talked about.

NOTE Confidence: 0.893511831760406

00:33:51.870 --> 00:34:12.000 But the main thing is social functions? How did these kids do when they're adults in terms of this social relations? Did they get married? They have children? Do they go to school today? How do they feel that they have they? Have good self esteem? They feel lonely since economic science do they get educated to they get employed that they have an income?

NOTE Confidence: 0.88340026140213

00:34:12.600 --> 00:34:15.830 And criminal activity also important to keep an eye on.

NOTE Confidence: 0.903429925441742

00:34:16.870 --> 00:34:23.860 Well, in the interesting thing is, they definitely the study seemed to show them more likely to remain single.

NOTE Confidence: 0.917978942394257

00:34:24.400 --> 00:34:32.990 Less likely to be married and to have children, although as time moves on we find some of them getting married at a later age is and having children later ages.

NOTE Confidence: 0.897466361522675

00:34:33.930 --> 00:34:41.020 Their current family functioning as far as we can ascertain with their relatives that parents and so forth is really not different from controls.

NOTE Confidence: 0.941677927970886

00:34:41.810 --> 00:34:48.880 There's definitely a sense that shyness social isolation and loneliness is a distinct feature of a lot of.

NOTE Confidence: 0.766074240207672

00:34:49.460 --> 00:34:50.770 X small previous.

NOTE Confidence: 0.826799690723419

00:34:52.060 --> 00:34:56.410 In social support, we found Hamilton Cohort and the other coast didn't find much.

NOTE Confidence: 0.924332141876221

00:34:57.070 --> 00:35:26.610 An interesting finding and self esteem, which was assessed in the Hamilton Cohort. Every decade is that adolescence in general do not score very highly in self esteem you may be surprised to hear that parents. But in fact that's observation. But it improves in most kids when they become adults, but not so much in these X preemies. They tend to sustain the adolescent levels of not so good self. Esteem now these are not dramatic differences, but they are there?

NOTE Confidence: 0.914359271526337

00:35:28.140 --> 00:35:33.840 And so she can access interesting enough most people have not found a dramatic difference in education.

NOTE Confidence: 0.874668478965759

00:35:34.340 --> 00:35:37.260 Or when they employed at all.

NOTE Confidence: 0.901480317115784

00:35:37.760 --> 00:36:08.070 But incomes are lower incomes a substantially lower in trying to think if I could remember the numbers in the Canadian cohort. But it was a substantial difference in median incomes. We published on this with some economists looking at Canadian economic data. So we can compare to other Canadians but they also have controls in Hamilton ON so at the end of the day. Some things have emerged that are less than ideal in terms of.

NOTE Confidence: 0.895799696445465

00:36:09.300 --> 00:36:10.160 Well, being.

NOTE Confidence: 0.911326348781586

00:36:10.980 --> 00:36:27.980 I should say criminal behavior consistently this is even found in the Cleveland Cohort, which was an African American Co. Urban inner city exposed to much greater risks of exposure to criminality exposure to illicit substances still.

NOTE Confidence: 0.912009716033936

00:36:28.640 --> 00:36:33.670 Less use of drugs less use of Alcohol, Tobacco in general, less likely to engage in risky behaviors.

NOTE Confidence: 0.836783885955811

00:36:34.430 --> 00:36:46.640 I said, and their less contact with the police and fewer convictions then controls so you know that's not to be dismissed either good good news is also good.

NOTE Confidence: 0.891340911388397

00:36:47.240 --> 00:36:48.790 So, in a way there is a.

NOTE Confidence: 0.909655869007111

00:36:49.340 --> 00:37:01.950 A2 sides that we see to this apparent personality issue. We see very pre term. Adults kind of risk aversion. Shyness cautiousness and social relationships on the one side.

NOTE Confidence: 0.899549663066864

00:37:02.690 --> 00:37:14.970 So less likely to have a network of friends that have relationships like to get married. But on the other hand, kind of conscientiousness, not getting into trouble so.

NOTE Confidence: 0.894071340560913

00:37:15.770 --> 00:37:16.390 You know.

NOTE Confidence: 0.836820483207703

00:37:17.000 --> 00:37:21.090 What car gives with one hand he takes over the other or some such like expression?

NOTE Confidence: 0.882778584957123

00:37:22.840 --> 00:37:30.970 So one of the implications for clinical practice, I understand people who are in practice in the community tune into this which is wonderful so.

NOTE Confidence: 0.910952806472778

00:37:31.840 --> 00:37:39.880 Certainly 1st and foremost is I think the implication is keeping on developmental development and developmental screening.

NOTE Confidence: 0.899374186992645

00:37:40.420 --> 00:37:47.770 Now the reason to do early developmental screening, Isba cause. We think we can intervene and do affective things.

NOTE Confidence: 0.928605318069458

00:37:48.290 --> 00:37:54.040 Now, if you really are a strictly speaking epidemiologists like yours, truly and you look at the literature.

NOTE Confidence: 0.878792226314545

00:37:55.520 --> 00:38:13.360 You have to say you know the latest review of for example, applied behavioral analysis and autism. The Cochran, the latest Cochran, which is an updated Cochran use it. A weak evidence weekend things for effect. And yet in my home state of Michigan. You can't stop people from opening up.

NOTE Confidence: 0.845813453197479

00:38:13.880 --> 00:38:17.290 Applied behavioral analysis clinics right and.

NOTE Confidence: 0.881347596645355

00:38:18.860 --> 00:38:27.770 When it comes to Neuromotor again. The randomized trials of new remote interventions to prevent sepiot not do not show effectiveness, but we do know.

NOTE Confidence: 0.906008541584015

00:38:28.350 --> 00:38:35.110 But you can dramatically affect hemiplegic child by disabling the active arm.

NOTE Confidence: 0.883733332157135

00:38:35.970 --> 00:38:39.020 Making tremendous size, even adults.

NOTE Confidence: 0.904315114021301

00:38:39.550 --> 00:38:51.590 With me preachers all their life, improving the function of the affected arm so that suggests there is some motor plasticity, which we have yet to be able to tap in the trials, so my recommendation here is.

NOTE Confidence: 0.902703821659088

00:38:52.160 --> 00:39:23.350 We much a real area and intensely important areas. Rigorous studies of interventions and kids are high risk for nerd about mental disorders of all sorts. It's a tremendous research agenda, young people using a tremendous research agenda to do properly sized trials to see whether applied behavioral analysis works whether we have some kind of physical physical therapy intervention that might impact on kids with I pledge if we can make hemiplegic better. Why can't we make diplegia better. We just haven't figured out how to?

NOTE Confidence: 0.892448604106903

00:39:27.560 --> 00:39:31.810 The second part is not quite the clinical it's these.

NOTE Confidence: 0.917878091335297

00:39:32.760 --> 00:39:50.130 Behavioral issues that we ought to be aware of and be ready for and these conditions occur. Even when the child doesn't have another development disability, but they are clearly exacerbated if they have motor problems cognitive problems or more serious problems with verbal skills.

NOTE Confidence: 0.755584836006165

00:39:52.130 --> 00:39:52.750 And.

NOTE Confidence: 0.907661855220795

00:39:53.730 --> 00:40:11.080 Linked to this is that we've we've learned from some of these studies, particularly Hamilton ON that there are 2 I call. I would think I'm modifiable factors that are related to adult behavior problems and these 2 factors, which are found commonly Unfortunately, the world are premature.

NOTE Confidence: 0.894662916660309

00:40:11.610 --> 00:40:14.900 Over protective parenting and peer victimization.

NOTE Confidence: 0.328172266483307

00:40:15.660 --> 00:40:16.060 If.

NOTE Confidence: 0.910559415817261

00:40:16.740 --> 00:40:23.900 If those 2 features were present. There is an additive effect on risk of anxious and isolated as an adult.

NOTE Confidence: 0.905234396457672

00:40:25.640 --> 00:40:39.460 Over protective parenting, we can talk to parents about this we can think of strategies to minimize every parent is to some extent by instinct. A little bit overprotective right. I certainly was my girls still blame me for this.

NOTE Confidence: 0.893099427223206

00:40:40.700 --> 00:41:05.500 But you know when you have a premium coming back from the hospital. It's over. It's exaggerated manyfold so the instinct is naturally to be protected, so how do we talk to parents about how you could modify that too? Maybe allow a little bit more risk taking a little bit more charity stuff and the other thing is a lot of these kids. The literature is clear on this get peer victimized at school there a little bit awkward.

NOTE Confidence: 0.882423400878906

00:41:06.110 --> 00:41:22.220 You know they you know all of these features you see on the Alcoba played themselves out in the social environment of a child and maybe we can work with schools to try to be alert to this to be a lot of kids who might be especially risk of victimization like our previous survivors.

NOTE Confidence: 0.883041739463806

00:41:22.840 --> 00:41:41.790 And a very good study of this again from Hamilton Cohort Journal Child. Family studies 2018 and as I share in a moment all of this by the way all this is going to be on my web page. You can download it take it use it distributed to what you like with it. I'm a strong believer in science is not for profits just for everybody.

NOTE Confidence: 0.901334643363953

00:41:42.540 --> 00:42:05.980 So when it comes to the whole world of cardiovascular risk my reading the literature is yes. They're going to be slightly. Maybe premies, especially FFG our previous maybe a bit more susceptible to hypertension diabetes, abdominal fat. Some of these risks specially in women on the other hand, premies are thinner and less likely to smoke so that's a good thing.

NOTE Confidence: 0.917326807975769

00:42:07.180 --> 00:42:32.110 Certainly we should be alert families so the slightly increase risk and to emphasize the standard approaches. We would give to anyone in society. I don't believe that there's any subgroup that really needs special distinct screening. I haven't convinced myself that the risk levels are distinct enough. But we certainly shouldn't forget cardiovascular screening issues, especially in young adults.

NOTE Confidence: 0.93314927816391

00:42:34.730 --> 00:42:42.050 I want to add this final slide nearly final slide famous people who are born prematurely just to show that you can.

NOTE Confidence: 0.866423726081848

00:42:42.590 --> 00:42:56.910 Be very good at Charles Darwin Napoleon Bonaparte Isaac Newton, look our own Stevie Wonder went to school in my hometown of Lansing. Now the Winston Churchill story has to have an asterisk Winston Churchill was born.

NOTE Confidence: 0.955500483512878

00:42:57.480 --> 00:43:00.410 32 weeks and 5 days after his parents wedding.

NOTE Confidence: 0.874097406864166

00:43:01.170 --> 00:43:05.140 And was he really a premature was this.

NOTE Confidence: 0.908035099506378

00:43:06.960 --> 00:43:16.290 To invent you know to solve a difficulty you know, we have a problem here. Of course, he was a premature. I have not been able to find his recorded birth weight.

NOTE Confidence: 0.866337180137634

00:43:16.920 --> 00:43:19.640 I wouldn't be surprised it was £8.00 but OK.

NOTE Confidence: 0.900704324245453

00:43:21.160 --> 00:43:40.900 And then when it comes to a description. We've talked about the perspective largely of physicians. There's the perspective of the premiss survivor him or herself and a wonderful effort has been made by servers cycle in Hamilton to pull this together into a wonderful book called Premier Voices.

NOTE Confidence: 0.902055978775024

00:43:41.420 --> 00:43:57.730 Obtainable from her website, slidellpremi-umvoices.com. It also videos on that website of preemies talking about themselves and you will see some surprising things in there in particularly surprising evidence of resilience.

NOTE Confidence: 0.786444008350372

00:43:58.310 --> 00:43:59.020 And.

NOTE Confidence: 0.887352287769318

00:43:59.610 --> 00:44:16.440 Surprising also all I've talked about some of the things we, as clinicians have to be alert to also to remarkable things that these previous I've often who are all under 1000 grams have achieved in their lives and have managed to to make him allies so.

NOTE Confidence: 0.950600564479828

00:44:18.330 --> 00:44:23.200 Thanks very much and I'm happy to take questions and you can download this from this website.