WEBVTT

NOTE duration: ”01:09:42.186”

NOTE Confidence: 0.8138237

00:02:52.680 --> 00:02:53.180 Yeah.

NOTE Confidence: 0.97150797

00:05:19.430 --> 00:05:20.970 Alright. Good afternoon, everyone.

NOTE Confidence: 0.9565409

00:05:24.550 --> 00:05:25.830 It's my pleasure to welcome

NOTE Confidence: 0.9565409

00:05:25.830 --> 00:05:26.710 you all here to to

NOTE Confidence: 0.9565409

00:05:26.710 --> 00:05:27.529 Grand Rounds,

NOTE Confidence: 0.9668142

00:05:27.990 --> 00:05:28.870 on behalf of,

NOTE Confidence: 0.9209823

00:05:29.555 --> 00:05:30.914 doctor Clark who's at at

NOTE Confidence: 0.9209823

00:05:30.914 --> 00:05:32.435 SRC and doctor Chung and

NOTE Confidence: 0.9209823

00:05:32.435 --> 00:05:33.335 doctor Mora.

NOTE Confidence: 0.9752625

00:05:34.594 --> 00:05:35.314 As you can see on

NOTE Confidence: 0.9752625

00:05:35.314 --> 00:05:35.974 the screen,

NOTE Confidence: 0.9793426

00:05:36.354 --> 00:05:37.814 there is the CME

NOTE Confidence: 0.99642456

00:05:38.435 --> 00:05:39.555 code that you can text

NOTE Confidence: 0.99642456

00:05:39.555 --> 00:05:40.375 for CME.

NOTE Confidence: 0.9295155

00:05:46.130 --> 00:05:47.110 Here are the upcoming,

NOTE Confidence: 0.7874708

00:05:47.889 --> 00:05:50.069 faculty meet or, grand rounds

NOTE Confidence: 0.7874708

00:05:50.289 --> 00:05:50.789 lectures.

NOTE Confidence: 0.95914286

00:05:51.569 --> 00:05:53.650 Reminder that, next week will

NOTE Confidence: 0.95914286

00:05:53.650 --> 00:05:55.089 be the faculty research meeting

NOTE Confidence: 0.95914286

00:05:55.089 --> 00:05:56.229 and then the required

NOTE Confidence: 0.85514057

00:05:56.529 --> 00:05:57.975 annual building training for,

NOTE Confidence: 0.9622314

00:05:58.935 --> 00:05:59.495 for attendings,

NOTE Confidence: 0.98118114

00:05:59.895 --> 00:06:00.635 Zoom only,

NOTE Confidence: 0.89426845

00:06:01.895 --> 00:06:03.575 before we, take a holiday

NOTE Confidence: 0.89426845

00:06:03.575 --> 00:06:04.075 break.

NOTE Confidence: 0.8594738

00:06:05.175 --> 00:06:07.195 A disclosure and accreditation slide.

NOTE Confidence: 0.99740744

00:06:07.735 --> 00:06:09.015 And now it's really my

NOTE Confidence: 0.99740744

00:06:09.015 --> 00:06:10.955 pleasure to begin the introduction

NOTE Confidence: 0.9582635

00:06:11.335 --> 00:06:13.460 since there's two fellows presenting.

NOTE Confidence: 0.9582635

00:06:13.600 --> 00:06:14.720 There needs two people to

NOTE Confidence: 0.9582635

00:06:14.720 --> 00:06:16.100 be to introduce

NOTE Confidence: 0.9707856

00:06:16.480 --> 00:06:17.360 them to you today. So

NOTE Confidence: 0.9707856

00:06:17.360 --> 00:06:18.400 I'm gonna provide a a

NOTE Confidence: 0.9707856

00:06:18.400 --> 00:06:20.000 brief introduction and then turn

NOTE Confidence: 0.9707856

00:06:20.000 --> 00:06:21.120 it over to doctor Maina

NOTE Confidence: 0.9707856

00:06:21.120 --> 00:06:22.500 for a more formal introduction.

NOTE Confidence: 0.9727713

00:06:22.880 --> 00:06:24.400 You know, as a parent,

NOTE Confidence: 0.9727713

00:06:24.400 --> 00:06:26.100 there's a saying that you

NOTE Confidence: 0.9727713

00:06:26.160 --> 00:06:27.940 love all your children equally,

NOTE Confidence: 0.99515575

00:06:28.354 --> 00:06:29.395 but you like some more

NOTE Confidence: 0.99515575

00:06:29.395 --> 00:06:30.935 than others. And so,

NOTE Confidence: 0.92521155

00:06:31.955 --> 00:06:33.255 just like with fellows,

NOTE Confidence: 0.9329605

00:06:33.714 --> 00:06:34.595 you love all of them

NOTE Confidence: 0.9329605

00:06:34.595 --> 00:06:35.875 equally even you like some

NOTE Confidence: 0.9329605

00:06:35.875 --> 00:06:37.235 more than others. And it's

NOTE Confidence: 0.9329605

00:06:37.235 --> 00:06:39.414 my it's my, real privilege

NOTE Confidence: 0.9329605

00:06:39.475 --> 00:06:39.975 to,

NOTE Confidence: 0.95133007

00:06:40.930 --> 00:06:42.770 introduce you to, to,

NOTE Confidence: 0.9528194

00:06:43.170 --> 00:06:44.610 Lindsay and Jake today to

NOTE Confidence: 0.9528194

00:06:44.610 --> 00:06:45.270 give their,

NOTE Confidence: 0.9868137

00:06:46.050 --> 00:06:47.830 sort of ultimate grand rounds

NOTE Confidence: 0.9868137

00:06:47.890 --> 00:06:50.070 discussing their work that's culminated

NOTE Confidence: 0.9868137

00:06:50.370 --> 00:06:51.810 over their training with us.

NOTE Confidence: 0.9868137

00:06:51.810 --> 00:06:53.830 And what I'd like to

NOTE Confidence: 0.9868137

00:06:54.034 --> 00:06:55.335 just impart is,

NOTE Confidence: 0.9984759

00:06:56.435 --> 00:06:58.534 how we've all watched them

NOTE Confidence: 0.9984759

00:06:58.595 --> 00:07:00.214 grow and develop as

NOTE Confidence: 0.97909343

00:07:00.675 --> 00:07:02.375 investigators and as clinicians,

NOTE Confidence: 0.9947524

00:07:02.835 --> 00:07:04.115 but they've all both taken

NOTE Confidence: 0.9947524

00:07:04.115 --> 00:07:06.115 advantage of tremendous opportunities, made

NOTE Confidence: 0.9947524

00:07:06.115 --> 00:07:07.380 them their own, and been

NOTE Confidence: 0.9947524

00:07:07.380 --> 00:07:09.460 successful across multiple dimensions of

NOTE Confidence: 0.9947524

00:07:09.460 --> 00:07:11.139 their career. We're so excited

NOTE Confidence: 0.9947524

00:07:11.139 --> 00:07:12.020 to hear from you all

NOTE Confidence: 0.9947524

00:07:12.020 --> 00:07:14.020 today about your your work

NOTE Confidence: 0.9947524

00:07:14.020 --> 00:07:15.300 and the future of peripheral

NOTE Confidence: 0.9947524

00:07:15.300 --> 00:07:17.220 vascular interventions. And with that,

NOTE Confidence: 0.9947524

00:07:17.220 --> 00:07:18.180 I'll turn it over to

NOTE Confidence: 0.9947524

00:07:18.180 --> 00:07:19.380 Carlos for a more formal

NOTE Confidence: 0.9947524

00:07:19.380 --> 00:07:20.600 introduction. Thank you.

NOTE Confidence: 0.9924614

00:07:24.285 --> 00:07:25.165 Thanks, Ed.

NOTE Confidence: 0.94945824

00:07:25.565 --> 00:07:26.065 So

NOTE Confidence: 0.96928966

00:07:26.525 --> 00:07:28.125 thank you everybody, for coming

NOTE Confidence: 0.96928966

00:07:28.125 --> 00:07:29.245 and joining us for those

NOTE Confidence: 0.96928966

00:07:29.245 --> 00:07:30.065 that are remote.

NOTE Confidence: 0.9937871

00:07:30.365 --> 00:07:31.505 So I have the privilege

NOTE Confidence: 0.9937871

00:07:31.645 --> 00:07:32.385 to present,

NOTE Confidence: 0.99211144

00:07:33.245 --> 00:07:33.745 two

NOTE Confidence: 0.99990153

00:07:35.090 --> 00:07:35.590 wonderful

NOTE Confidence: 0.89936346

00:07:36.289 --> 00:07:37.889 fellows, but more important, two

NOTE Confidence: 0.89936346

00:07:37.889 --> 00:07:38.389 wonderful

NOTE Confidence: 0.9697489

00:07:38.770 --> 00:07:40.050 human beings that I had

NOTE Confidence: 0.9697489

00:07:40.050 --> 00:07:41.430 the pleasure and privilege

NOTE Confidence: 0.9678448

00:07:42.210 --> 00:07:43.590 to meet since they were

NOTE Confidence: 0.98131776

00:07:44.930 --> 00:07:45.430 real,

NOTE Confidence: 0.8311243

00:07:45.970 --> 00:07:47.430 little kids all almost.

NOTE Confidence: 0.9679947

00:07:48.495 --> 00:07:49.775 And I'm gonna elaborate. I'm

NOTE Confidence: 0.9679947

00:07:49.775 --> 00:07:51.235 gonna start with Lindsay. Lindsay,

NOTE Confidence: 0.9627945

00:07:52.815 --> 00:07:54.415 obviously, is a fellow here.

NOTE Confidence: 0.9627945

00:07:54.415 --> 00:07:55.215 She was a member of

NOTE Confidence: 0.9627945

00:07:55.215 --> 00:07:56.655 the inaugural class at the

NOTE Confidence: 0.9627945

00:07:56.655 --> 00:07:57.535 Frank Nader,

NOTE Confidence: 0.9541275

00:07:57.935 --> 00:07:59.555 School of Medicine at Quinnipiac

NOTE Confidence: 0.9541275

00:07:59.695 --> 00:08:00.195 University,

NOTE Confidence: 0.9478742

00:08:01.229 --> 00:08:02.830 where she earned a master

NOTE Confidence: 0.9478742

00:08:02.830 --> 00:08:04.130 in public health degree,

NOTE Confidence: 0.9581413

00:08:04.669 --> 00:08:06.190 from New York Medical College.

NOTE Confidence: 0.9581413

00:08:06.190 --> 00:08:07.810 She also did her residency

NOTE Confidence: 0.9581413

00:08:07.870 --> 00:08:09.710 here at Yale where she

NOTE Confidence: 0.9581413

00:08:09.710 --> 00:08:10.770 was a chief resident,

NOTE Confidence: 0.9869688

00:08:11.229 --> 00:08:13.090 then became a cardiology fellow,

NOTE Confidence: 0.976759

00:08:14.014 --> 00:08:15.615 clinical cardiology fellow. Then she

NOTE Confidence: 0.976759

00:08:15.615 --> 00:08:16.655 did a t thirty two

NOTE Confidence: 0.976759

00:08:16.655 --> 00:08:17.155 training,

NOTE Confidence: 0.94268715

00:08:18.095 --> 00:08:18.835 with our,

NOTE Confidence: 0.5963408

00:08:19.694 --> 00:08:20.754 Vamos group.

NOTE Confidence: 0.8462053

00:08:21.134 --> 00:08:21.615 And,

NOTE Confidence: 0.9796675

00:08:22.895 --> 00:08:24.514 she is eager,

NOTE Confidence: 0.95485306

00:08:25.775 --> 00:08:26.995 poised to continue,

NOTE Confidence: 0.9378538

00:08:27.660 --> 00:08:29.260 within the Yale cardiovascular medicine

NOTE Confidence: 0.9378538

00:08:29.260 --> 00:08:30.540 as a faculty, which she

NOTE Confidence: 0.9378538

00:08:30.540 --> 00:08:31.660 will join. Thanks to the

NOTE Confidence: 0.9378538

00:08:31.660 --> 00:08:32.960 effort of Eric and the

NOTE Confidence: 0.9133719

00:08:33.340 --> 00:08:34.940 section of the department to

NOTE Confidence: 0.9133719

00:08:34.940 --> 00:08:35.760 retain her.

NOTE Confidence: 0.9746131

00:08:36.460 --> 00:08:37.920 On a personal note, however,

NOTE Confidence: 0.9746131

00:08:37.980 --> 00:08:39.340 I met Lindsay, I don't

NOTE Confidence: 0.9746131

00:08:39.340 --> 00:08:40.059 know, when she was a

NOTE Confidence: 0.9746131

00:08:40.059 --> 00:08:41.420 resident, I think, an intern

NOTE Confidence: 0.9746131

00:08:41.420 --> 00:08:41.920 maybe.

NOTE Confidence: 0.98705

00:08:42.375 --> 00:08:43.655 And in a random occasion,

NOTE Confidence: 0.98705

00:08:43.655 --> 00:08:44.695 she approached me as I

NOTE Confidence: 0.98705

00:08:44.695 --> 00:08:45.515 was charting,

NOTE Confidence: 0.99513316

00:08:46.054 --> 00:08:47.175 on the floor and said,

NOTE Confidence: 0.99513316

00:08:47.335 --> 00:08:48.135 you know, I would like

NOTE Confidence: 0.99513316

00:08:48.135 --> 00:08:49.575 to do some cardiology research,

NOTE Confidence: 0.99513316

00:08:49.575 --> 00:08:50.615 and that's how we started

NOTE Confidence: 0.99513316

00:08:50.615 --> 00:08:51.115 talking.

NOTE Confidence: 0.99928546

00:08:52.375 --> 00:08:53.195 Since then,

NOTE Confidence: 0.9885436

00:08:53.735 --> 00:08:55.995 I became, her mentor. And,

NOTE Confidence: 0.9885436

00:08:56.250 --> 00:08:57.210 to be honest with you,

NOTE Confidence: 0.9885436

00:08:57.210 --> 00:08:58.250 one of the greatest pleasures

NOTE Confidence: 0.9885436

00:08:58.250 --> 00:08:59.450 of being a faculty member

NOTE Confidence: 0.9885436

00:08:59.450 --> 00:09:01.150 is that mentor mentee relationship

NOTE Confidence: 0.9885436

00:09:01.290 --> 00:09:02.890 that you can develop. And

NOTE Confidence: 0.9885436

00:09:02.890 --> 00:09:03.850 for me, these are the

NOTE Confidence: 0.9885436

00:09:03.850 --> 00:09:05.450 two examples of what that

NOTE Confidence: 0.9885436

00:09:05.450 --> 00:09:07.710 relationship means and looks like.

NOTE Confidence: 0.9574066

00:09:08.334 --> 00:09:09.774 Lindsay has done above and

NOTE Confidence: 0.9574066

00:09:09.774 --> 00:09:11.774 beyond my wildest expectations. She's

NOTE Confidence: 0.9574066

00:09:11.774 --> 00:09:12.515 an incredibly

NOTE Confidence: 0.93684196

00:09:13.214 --> 00:09:15.054 talented physician, incredible at the

NOTE Confidence: 0.93684196

00:09:15.054 --> 00:09:16.894 bedside manner. She told me

NOTE Confidence: 0.93684196

00:09:16.894 --> 00:09:18.115 how to use effectively,

NOTE Confidence: 0.9555605

00:09:19.855 --> 00:09:21.714 spreadsheets and Excel. She's incredibly

NOTE Confidence: 0.9555605

00:09:21.855 --> 00:09:22.834 good about it.

NOTE Confidence: 0.9424447

00:09:24.150 --> 00:09:25.429 And she developed an interest

NOTE Confidence: 0.9424447

00:09:25.429 --> 00:09:27.030 and passion on vascular medicine,

NOTE Confidence: 0.9424447

00:09:27.030 --> 00:09:28.870 which she shares with me

NOTE Confidence: 0.9424447

00:09:28.870 --> 00:09:29.750 and the rest of my

NOTE Confidence: 0.9424447

00:09:29.750 --> 00:09:30.250 team.

NOTE Confidence: 0.9920166

00:09:30.630 --> 00:09:31.850 And I look forward,

NOTE Confidence: 0.9913231

00:09:32.390 --> 00:09:33.670 to what she's gonna do

NOTE Confidence: 0.9913231

00:09:33.670 --> 00:09:35.690 as a faculty member, which,

NOTE Confidence: 0.99668616

00:09:36.070 --> 00:09:37.530 is going to be phenomenal.

NOTE Confidence: 0.9356707

00:09:39.105 --> 00:09:40.565 Now going on to Jake.

NOTE Confidence: 0.95258725

00:09:42.145 --> 00:09:44.304 Jake obviously did a fellowship

NOTE Confidence: 0.95258725

00:09:44.304 --> 00:09:45.985 in general cardiology here and

NOTE Confidence: 0.95258725

00:09:45.985 --> 00:09:47.505 in the vascular interventions and

NOTE Confidence: 0.95258725

00:09:47.505 --> 00:09:48.645 interventional cardiology.

NOTE Confidence: 0.9972507

00:09:49.904 --> 00:09:51.105 Jake and I share a

NOTE Confidence: 0.9972507

00:09:51.105 --> 00:09:52.325 lot of different things.

NOTE Confidence: 0.9822613

00:09:53.839 --> 00:09:55.120 Certainly, one of them is

NOTE Confidence: 0.9822613

00:09:55.120 --> 00:09:57.120 we have a similar father

NOTE Confidence: 0.9822613

00:09:57.120 --> 00:09:59.519 figure, slightly different. So her

NOTE Confidence: 0.9822613

00:09:59.519 --> 00:09:59.920 father

NOTE Confidence: 0.9585727

00:10:00.320 --> 00:10:01.839 his father, I'm sorry, doctor

NOTE Confidence: 0.9585727

00:10:01.839 --> 00:10:03.760 Michael Clemen, taught us a

NOTE Confidence: 0.9585727

00:10:03.760 --> 00:10:04.880 lot of different things that

NOTE Confidence: 0.9585727

00:10:04.880 --> 00:10:06.080 we practice and do every

NOTE Confidence: 0.9585727

00:10:06.080 --> 00:10:06.240 day,

NOTE Confidence: 0.9992015

00:10:07.195 --> 00:10:08.575 as we perform procedures.

NOTE Confidence: 0.9714505

00:10:09.355 --> 00:10:10.635 Jay came and spent two

NOTE Confidence: 0.9714505

00:10:10.635 --> 00:10:11.855 years of doing clinical,

NOTE Confidence: 0.94122654

00:10:13.195 --> 00:10:14.714 outcomes research with our group

NOTE Confidence: 0.94122654

00:10:14.714 --> 00:10:16.255 where he where he excel

NOTE Confidence: 0.94122654

00:10:16.554 --> 00:10:18.795 and developed paradigms that have

NOTE Confidence: 0.94122654

00:10:18.795 --> 00:10:20.475 been applied in different case

NOTE Confidence: 0.94122654

00:10:20.475 --> 00:10:21.755 scenarios that we perform in

NOTE Confidence: 0.94122654

00:10:21.755 --> 00:10:22.940 the vascular interventions.

NOTE Confidence: 0.9622668

00:10:23.720 --> 00:10:24.920 We are also lucky and

NOTE Confidence: 0.9622668

00:10:24.920 --> 00:10:25.960 fortunate to keep him as

NOTE Confidence: 0.9622668

00:10:25.960 --> 00:10:27.580 a faculty member when he

NOTE Confidence: 0.9622668

00:10:27.640 --> 00:10:29.640 finishes his endovascular fellowship, and

NOTE Confidence: 0.9622668

00:10:29.640 --> 00:10:31.320 he'll join the vascular medicine

NOTE Confidence: 0.9622668

00:10:31.320 --> 00:10:33.320 group, and we're equally excited

NOTE Confidence: 0.9622668

00:10:33.320 --> 00:10:34.920 about that. Both of them

NOTE Confidence: 0.9622668

00:10:34.920 --> 00:10:35.960 are gonna talk to us

NOTE Confidence: 0.9622668

00:10:35.960 --> 00:10:37.340 about carotid intervention.

NOTE Confidence: 0.9990379

00:10:38.175 --> 00:10:39.635 Another one of my kids.

NOTE Confidence: 0.93685484

00:10:41.054 --> 00:10:42.275 Carotid stenting

NOTE Confidence: 0.9989271

00:10:42.735 --> 00:10:43.554 has undergone

NOTE Confidence: 0.9525032

00:10:47.215 --> 00:10:49.154 multiple challenges over the years.

NOTE Confidence: 0.9800475

00:10:49.615 --> 00:10:51.295 In fact, I suggested a

NOTE Confidence: 0.9800475

00:10:51.295 --> 00:10:52.915 title to the grand rounds,

NOTE Confidence: 0.9800475

00:10:53.054 --> 00:10:53.795 which was

NOTE Confidence: 0.9689021

00:10:54.389 --> 00:10:55.509 how many times can you

NOTE Confidence: 0.9689021

00:10:55.509 --> 00:10:57.029 be taken down before you're

NOTE Confidence: 0.9689021

00:10:57.029 --> 00:10:57.850 left alone?

NOTE Confidence: 0.9758825

00:10:58.550 --> 00:10:59.829 But they felt that it

NOTE Confidence: 0.9758825

00:10:59.829 --> 00:11:00.709 was a little bit too

NOTE Confidence: 0.9758825

00:11:00.709 --> 00:11:02.389 much. So I I said,

NOTE Confidence: 0.9758825

00:11:02.389 --> 00:11:03.589 fine. We can go with

NOTE Confidence: 0.9758825

00:11:03.589 --> 00:11:05.509 something else. So without further

NOTE Confidence: 0.9758825

00:11:05.509 --> 00:11:07.370 ado, I'll let them present,

NOTE Confidence: 0.9960661

00:11:07.875 --> 00:11:08.835 the data about carotid,

NOTE Confidence: 0.9984046

00:11:10.115 --> 00:11:10.615 revascularization.

NOTE Confidence: 0.7220288

00:11:11.155 --> 00:11:11.655 Lindsey?

NOTE Confidence: 0.99138504

00:11:20.260 --> 00:11:21.540 Alright. Thank you very much,

NOTE Confidence: 0.99138504

00:11:21.540 --> 00:11:22.579 doctor Mena and doctor Miller,

NOTE Confidence: 0.99138504

00:11:22.579 --> 00:11:23.860 for the introductions. We are

NOTE Confidence: 0.99138504

00:11:23.860 --> 00:11:24.980 very excited to be here

NOTE Confidence: 0.99138504

00:11:24.980 --> 00:11:26.339 today to do our peripheral

NOTE Confidence: 0.99138504

00:11:26.339 --> 00:11:28.500 vascular case conference. So Jake

NOTE Confidence: 0.99138504

00:11:28.500 --> 00:11:29.220 and I are going to

NOTE Confidence: 0.99138504

00:11:29.220 --> 00:11:30.679 be talking about the contemporary

NOTE Confidence: 0.99138504

00:11:30.820 --> 00:11:32.839 management of carotid artery stenosis.

NOTE Confidence: 0.9962425

00:11:35.695 --> 00:11:36.915 Here are our disclosures.

NOTE Confidence: 0.9988136

00:11:39.455 --> 00:11:40.815 And for our talk today,

NOTE Confidence: 0.9988136

00:11:40.815 --> 00:11:42.015 we're going to start by

NOTE Confidence: 0.9988136

00:11:42.015 --> 00:11:43.875 reviewing the background and historical

NOTE Confidence: 0.9988136

00:11:43.934 --> 00:11:46.035 context of carotid artery stenosis.

NOTE Confidence: 0.9796317

00:11:46.415 --> 00:11:47.855 As doctor Menna mentioned, there's

NOTE Confidence: 0.9796317

00:11:47.855 --> 00:11:49.300 a very robust history there,

NOTE Confidence: 0.9796317

00:11:49.300 --> 00:11:50.819 so we'll break down, not

NOTE Confidence: 0.9796317

00:11:50.819 --> 00:11:52.179 only the practice patterns, but

NOTE Confidence: 0.9796317

00:11:52.179 --> 00:11:53.379 some of the evidence behind

NOTE Confidence: 0.9796317

00:11:53.379 --> 00:11:54.920 the interventions that we do.

NOTE Confidence: 0.9847036

00:11:55.379 --> 00:11:56.660 We'll do this through a

NOTE Confidence: 0.9847036

00:11:56.660 --> 00:11:58.019 case based discussion, which is

NOTE Confidence: 0.9847036

00:11:58.019 --> 00:12:00.500 gonna highlight contemporary management issues

NOTE Confidence: 0.9847036

00:12:00.500 --> 00:12:01.540 and things that we come

NOTE Confidence: 0.9847036

00:12:01.540 --> 00:12:02.500 up with every day in

NOTE Confidence: 0.9847036

00:12:02.500 --> 00:12:03.000 clinic.

NOTE Confidence: 0.986887

00:12:03.584 --> 00:12:05.024 We'll summarize the current state

NOTE Confidence: 0.986887

00:12:05.024 --> 00:12:06.304 of the literature and talk

NOTE Confidence: 0.986887

00:12:06.304 --> 00:12:08.165 about the evolving guideline landscape,

NOTE Confidence: 0.9818635

00:12:08.545 --> 00:12:09.824 and then we'll conclude by

NOTE Confidence: 0.9818635

00:12:09.824 --> 00:12:11.425 discussing the CREST two trial,

NOTE Confidence: 0.9818635

00:12:11.425 --> 00:12:12.704 which was recently published in

NOTE Confidence: 0.9818635

00:12:12.704 --> 00:12:13.665 the New England Journal of

NOTE Confidence: 0.9818635

00:12:13.665 --> 00:12:15.584 Medicine and its implications for

NOTE Confidence: 0.9818635

00:12:15.584 --> 00:12:16.564 clinical practice.

NOTE Confidence: 0.9491889

00:12:19.460 --> 00:12:20.740 So we will start today

NOTE Confidence: 0.9491889

00:12:20.740 --> 00:12:21.559 with the case.

NOTE Confidence: 0.99931717

00:12:24.020 --> 00:12:25.380 So this is a sixty

NOTE Confidence: 0.99931717

00:12:25.380 --> 00:12:26.580 year old man who was

NOTE Confidence: 0.99931717

00:12:26.580 --> 00:12:27.780 referred to our clinic for

NOTE Confidence: 0.99931717

00:12:27.780 --> 00:12:29.240 carotid artery evaluation.

NOTE Confidence: 0.99765396

00:12:29.945 --> 00:12:30.825 So he has a history

NOTE Confidence: 0.99765396

00:12:30.825 --> 00:12:32.745 of Hodgkin's lymphoma with prior

NOTE Confidence: 0.99765396

00:12:32.745 --> 00:12:34.745 neck radiation, and he underwent

NOTE Confidence: 0.99765396

00:12:34.745 --> 00:12:36.745 a routine thyroid ultrasound as

NOTE Confidence: 0.99765396

00:12:36.745 --> 00:12:38.445 part of his malignancy surveillance.

NOTE Confidence: 0.9994839

00:12:39.225 --> 00:12:40.665 During that ultrasound, he was

NOTE Confidence: 0.9994839

00:12:40.665 --> 00:12:42.105 found to have carotid artery

NOTE Confidence: 0.9994839

00:12:42.105 --> 00:12:42.605 calcifications

NOTE Confidence: 0.9889331

00:12:43.225 --> 00:12:43.725 incidentally.

NOTE Confidence: 0.96751446

00:12:44.820 --> 00:12:46.420 This prompted a formal carotid

NOTE Confidence: 0.96751446

00:12:46.420 --> 00:12:48.420 ultrasound, which was mildly abnormal

NOTE Confidence: 0.96751446

00:12:48.420 --> 00:12:49.800 and he was followed annually.

NOTE Confidence: 0.9885184

00:12:50.420 --> 00:12:51.800 He had a repeat ultrasound

NOTE Confidence: 0.9885184

00:12:51.940 --> 00:12:53.220 earlier the month before we

NOTE Confidence: 0.9885184

00:12:53.220 --> 00:12:54.740 saw him that showed worsening

NOTE Confidence: 0.9885184

00:12:54.740 --> 00:12:56.020 of his stenosis and for

NOTE Confidence: 0.9885184

00:12:56.020 --> 00:12:57.059 which he was referred to

NOTE Confidence: 0.9885184

00:12:57.059 --> 00:12:57.720 our clinic.

NOTE Confidence: 0.99802876

00:12:58.625 --> 00:12:59.665 Prior to this, he has

NOTE Confidence: 0.99802876

00:12:59.665 --> 00:13:01.184 no history of stroke or

NOTE Confidence: 0.99802876

00:13:01.184 --> 00:13:01.684 TIA,

NOTE Confidence: 0.99961644

00:13:02.145 --> 00:13:03.605 no significant neurological

NOTE Confidence: 0.9975317

00:13:03.905 --> 00:13:05.365 symptoms, and he was otherwise

NOTE Confidence: 0.9975317

00:13:05.505 --> 00:13:07.605 asymptomatic from a vascular perspective.

NOTE Confidence: 0.99801826

00:13:08.545 --> 00:13:09.985 His other past medical history

NOTE Confidence: 0.99801826

00:13:09.985 --> 00:13:11.345 is shown here. He has

NOTE Confidence: 0.99801826

00:13:11.345 --> 00:13:11.845 hypertension,

NOTE Confidence: 0.99961454

00:13:12.440 --> 00:13:12.940 hyperlipidemia,

NOTE Confidence: 0.99959886

00:13:13.720 --> 00:13:14.220 diabetes,

NOTE Confidence: 0.9977021

00:13:14.600 --> 00:13:16.200 chronic kidney disease, and a

NOTE Confidence: 0.9977021

00:13:16.200 --> 00:13:18.040 remote history of CAD with

NOTE Confidence: 0.9977021

00:13:18.040 --> 00:13:18.620 a PCI.

NOTE Confidence: 0.98321056

00:13:19.240 --> 00:13:20.920 His medications are also shown.

NOTE Confidence: 0.98321056

00:13:20.920 --> 00:13:22.620 He's on pretty standard therapy,

NOTE Confidence: 0.98321056

00:13:22.839 --> 00:13:24.779 including aspirin, rosuvastatin,

NOTE Confidence: 0.9912254

00:13:25.480 --> 00:13:25.980 lisinopril,

NOTE Confidence: 0.98354506

00:13:26.519 --> 00:13:27.019 carvedilol,

NOTE Confidence: 0.9069648

00:13:27.320 --> 00:13:28.565 and and an SGLT two

NOTE Confidence: 0.9069648

00:13:28.565 --> 00:13:29.065 inhibitor.

NOTE Confidence: 0.99699765

00:13:31.765 --> 00:13:33.125 On exam in our office,

NOTE Confidence: 0.99699765

00:13:33.125 --> 00:13:34.005 he had a blood pressure

NOTE Confidence: 0.99699765

00:13:34.005 --> 00:13:35.365 of one thirty over sixty

NOTE Confidence: 0.99699765

00:13:35.365 --> 00:13:36.245 eight and a heart rate

NOTE Confidence: 0.99699765

00:13:36.245 --> 00:13:37.865 of seventy beats per minute.

NOTE Confidence: 0.988321

00:13:38.245 --> 00:13:39.445 Labs were notable for a

NOTE Confidence: 0.988321

00:13:39.445 --> 00:13:40.885 creatinine of one point five,

NOTE Confidence: 0.988321

00:13:40.885 --> 00:13:42.450 which is his baseline, an

NOTE Confidence: 0.988321

00:13:42.450 --> 00:13:44.130 LDL of twenty six on

NOTE Confidence: 0.988321

00:13:44.130 --> 00:13:45.990 statin therapy, and a hemoglobin

NOTE Confidence: 0.988321

00:13:46.130 --> 00:13:47.170 a one c of seven

NOTE Confidence: 0.988321

00:13:47.170 --> 00:13:48.309 point six percent.

NOTE Confidence: 0.9767482

00:13:49.090 --> 00:13:50.210 On exam, he had no

NOTE Confidence: 0.9767482

00:13:50.210 --> 00:13:52.050 appreciable carotid bruit, and his

NOTE Confidence: 0.9767482

00:13:52.050 --> 00:13:52.550 neurological

NOTE Confidence: 0.9928899

00:13:52.929 --> 00:13:53.990 exam was nonfocal.

NOTE Confidence: 0.97666264

00:13:54.705 --> 00:13:55.985 He had an NIH stroke

NOTE Confidence: 0.97666264

00:13:55.985 --> 00:13:57.665 scale and modified ranking score

NOTE Confidence: 0.97666264

00:13:57.665 --> 00:13:58.405 of zero.

NOTE Confidence: 0.87327135

00:14:01.585 --> 00:14:02.085 Oops.

NOTE Confidence: 0.9987181

00:14:03.184 --> 00:14:04.385 So this is his most

NOTE Confidence: 0.9987181

00:14:04.385 --> 00:14:06.304 recent carotid ultrasound prior to

NOTE Confidence: 0.9987181

00:14:06.304 --> 00:14:07.605 presenting to our office.

NOTE Confidence: 0.9985003

00:14:07.980 --> 00:14:08.860 It was noted that he

NOTE Confidence: 0.9985003

00:14:08.860 --> 00:14:10.300 had mild stenosis of the

NOTE Confidence: 0.9985003

00:14:10.300 --> 00:14:11.580 right carotid artery with a

NOTE Confidence: 0.9985003

00:14:11.580 --> 00:14:13.100 peak systolic velocity of eighty

NOTE Confidence: 0.9985003

00:14:13.100 --> 00:14:15.020 seven. On the left, however,

NOTE Confidence: 0.9985003

00:14:15.020 --> 00:14:15.820 you can see in the

NOTE Confidence: 0.9985003

00:14:15.820 --> 00:14:16.880 ultrasound image,

NOTE Confidence: 0.9938323

00:14:17.260 --> 00:14:18.459 there's a mixed plaque in

NOTE Confidence: 0.9938323

00:14:18.459 --> 00:14:20.220 the internal carotid artery with

NOTE Confidence: 0.9938323

00:14:20.220 --> 00:14:21.440 Doppler flow acceleration

NOTE Confidence: 0.99932504

00:14:21.980 --> 00:14:22.880 through the lesion.

NOTE Confidence: 0.9975739

00:14:23.214 --> 00:14:25.135 The peak systolic velocity of

NOTE Confidence: 0.9975739

00:14:25.135 --> 00:14:26.415 that lesion was two hundred

NOTE Confidence: 0.9975739

00:14:26.415 --> 00:14:28.095 and forty six centimeters per

NOTE Confidence: 0.9975739

00:14:28.095 --> 00:14:29.615 second, which correlates with a

NOTE Confidence: 0.9975739

00:14:29.615 --> 00:14:30.915 seventy percent stenosis.

NOTE Confidence: 0.9969108

00:14:31.375 --> 00:14:33.475 This velocity was overall increased

NOTE Confidence: 0.9969108

00:14:33.535 --> 00:14:35.135 from his prior ultrasound two

NOTE Confidence: 0.9969108

00:14:35.135 --> 00:14:36.420 years ago, and it was

NOTE Confidence: 0.9969108

00:14:36.420 --> 00:14:38.660 concerning for severe left carotid

NOTE Confidence: 0.9969108

00:14:38.660 --> 00:14:39.640 artery stenosis.

NOTE Confidence: 0.96898043

00:14:42.020 --> 00:14:43.060 So here we have a

NOTE Confidence: 0.96898043

00:14:43.060 --> 00:14:44.820 well appearing sixty year old

NOTE Confidence: 0.96898043

00:14:44.820 --> 00:14:46.760 man with some risk factors

NOTE Confidence: 0.98879313

00:14:47.140 --> 00:14:48.580 and a progression of carotid

NOTE Confidence: 0.98879313

00:14:48.580 --> 00:14:50.500 disease now with a seventy

NOTE Confidence: 0.98879313

00:14:50.500 --> 00:14:52.185 percent stenosis on on the

NOTE Confidence: 0.98879313

00:14:52.185 --> 00:14:53.645 left. He's asymptomatic

NOTE Confidence: 0.99118906

00:14:54.105 --> 00:14:55.945 and otherwise feeling well. So

NOTE Confidence: 0.99118906

00:14:55.945 --> 00:14:56.985 now we need to ask

NOTE Confidence: 0.99118906

00:14:56.985 --> 00:14:58.685 ourselves, what is the appropriate

NOTE Confidence: 0.99118906

00:14:58.745 --> 00:15:00.125 management of this patient?

NOTE Confidence: 0.9986491

00:15:02.025 --> 00:15:03.565 So to answer this question,

NOTE Confidence: 0.9986491

00:15:03.625 --> 00:15:04.745 we're gonna go through the

NOTE Confidence: 0.9986491

00:15:04.745 --> 00:15:06.650 basics of carotid artery stenosis

NOTE Confidence: 0.9986491

00:15:06.790 --> 00:15:08.470 and review some evidence based

NOTE Confidence: 0.9986491

00:15:08.470 --> 00:15:08.970 management.

NOTE Confidence: 0.986572

00:15:11.750 --> 00:15:13.590 So carotid artery stenosis is

NOTE Confidence: 0.986572

00:15:13.590 --> 00:15:15.030 a narrowing of the carotid

NOTE Confidence: 0.986572

00:15:15.030 --> 00:15:17.690 artery lumen traditionally from atherosclerotic

NOTE Confidence: 0.9990575

00:15:18.310 --> 00:15:19.130 plaque development.

NOTE Confidence: 0.98126554

00:15:19.725 --> 00:15:21.404 There are other entities like

NOTE Confidence: 0.98126554

00:15:21.404 --> 00:15:22.785 vasculitis and fibromuscular

NOTE Confidence: 0.97855824

00:15:23.165 --> 00:15:24.765 dysplasia that can impact the

NOTE Confidence: 0.97855824

00:15:24.765 --> 00:15:26.845 carotid arteries, but, traditionally, we're

NOTE Confidence: 0.97855824

00:15:26.845 --> 00:15:28.385 thinking about plaque and atherosclerotic

NOTE Confidence: 0.99988127

00:15:28.765 --> 00:15:29.265 disease.

NOTE Confidence: 0.9548267

00:15:29.964 --> 00:15:32.045 The most significant risk associated

NOTE Confidence: 0.9548267

00:15:32.045 --> 00:15:33.565 with chronic stenosis is the

NOTE Confidence: 0.9548267

00:15:33.565 --> 00:15:34.545 risk of stroke.

NOTE Confidence: 0.9787672

00:15:35.590 --> 00:15:37.350 It's associated with ten to

NOTE Confidence: 0.9787672

00:15:37.350 --> 00:15:39.370 twenty percent of all ischemic

NOTE Confidence: 0.9787672

00:15:39.430 --> 00:15:39.930 strokes.

NOTE Confidence: 0.9987957

00:15:40.550 --> 00:15:42.070 And strokes in these patients

NOTE Confidence: 0.9987957

00:15:42.070 --> 00:15:43.450 can be due to thromboembolism

NOTE Confidence: 0.936457

00:15:44.070 --> 00:15:45.210 from plaque rupture

NOTE Confidence: 0.97336763

00:15:45.670 --> 00:15:46.650 or from hemodynamic

NOTE Confidence: 0.9978153

00:15:47.030 --> 00:15:48.970 compromise from a significant lesion.

NOTE Confidence: 0.9505667

00:15:49.495 --> 00:15:50.935 Now it goes without saying

NOTE Confidence: 0.9505667

00:15:50.935 --> 00:15:52.535 that stroke's a significant cause

NOTE Confidence: 0.9505667

00:15:52.535 --> 00:15:54.535 of morbidity and mortality, especially

NOTE Confidence: 0.9505667

00:15:54.535 --> 00:15:55.754 as patients age.

NOTE Confidence: 0.9995069

00:15:56.694 --> 00:15:58.214 Our risk factors for carotid

NOTE Confidence: 0.9995069

00:15:58.214 --> 00:15:58.714 stenosis

NOTE Confidence: 0.9963056

00:15:59.095 --> 00:16:00.774 mirror the traditional risk factors

NOTE Confidence: 0.9963056

00:16:00.774 --> 00:16:01.654 that we see for other

NOTE Confidence: 0.9963056

00:16:01.654 --> 00:16:02.555 types of atherosclerosis,

NOTE Confidence: 0.99823636

00:16:03.410 --> 00:16:04.230 and they include,

NOTE Confidence: 0.9996295

00:16:04.770 --> 00:16:06.390 advanced age, hypertension,

NOTE Confidence: 0.9997346

00:16:07.330 --> 00:16:08.630 smoking, dyslipidemia,

NOTE Confidence: 0.9982989

00:16:09.490 --> 00:16:09.990 diabetes,

NOTE Confidence: 0.9698444

00:16:10.290 --> 00:16:11.970 and prior neck radiation like

NOTE Confidence: 0.9698444

00:16:11.970 --> 00:16:12.630 our patient.

NOTE Confidence: 0.9993546

00:16:13.330 --> 00:16:14.770 And in regards to prevalence,

NOTE Confidence: 0.9993546

00:16:14.770 --> 00:16:16.370 it's estimated that about one

NOTE Confidence: 0.9993546

00:16:16.370 --> 00:16:18.385 percent of all adults over

NOTE Confidence: 0.9993546

00:16:18.385 --> 00:16:19.584 the age of sixty five

NOTE Confidence: 0.9993546

00:16:19.584 --> 00:16:20.785 have at least a seventy

NOTE Confidence: 0.9993546

00:16:20.785 --> 00:16:21.685 percent stenosis.

NOTE Confidence: 0.999553

00:16:23.024 --> 00:16:24.404 And in terms of outcomes,

NOTE Confidence: 0.999553

00:16:24.464 --> 00:16:26.005 patients with carotid stenosis

NOTE Confidence: 0.9982553

00:16:26.785 --> 00:16:28.144 potentially have a risk for

NOTE Confidence: 0.9982553

00:16:28.144 --> 00:16:29.524 poor cognitive outcomes.

NOTE Confidence: 0.9994532

00:16:29.825 --> 00:16:31.505 It's not yet known what

NOTE Confidence: 0.9994532

00:16:31.505 --> 00:16:33.390 role carotid stenosis might play

NOTE Confidence: 0.9994532

00:16:33.390 --> 00:16:35.250 in cognitive function and cognitive

NOTE Confidence: 0.9994532

00:16:35.310 --> 00:16:35.810 decline,

NOTE Confidence: 0.99698126

00:16:36.110 --> 00:16:37.870 but emerging evidence suggests that

NOTE Confidence: 0.99698126

00:16:37.870 --> 00:16:39.070 there may be a negative

NOTE Confidence: 0.99698126

00:16:39.070 --> 00:16:39.570 association.

NOTE Confidence: 0.9992058

00:16:42.590 --> 00:16:44.270 The diagnosis of carotid artery

NOTE Confidence: 0.9992058

00:16:44.270 --> 00:16:46.030 stenosis typically starts with duplex

NOTE Confidence: 0.9992058

00:16:46.030 --> 00:16:46.530 ultrasound.

NOTE Confidence: 0.98773146

00:16:47.205 --> 00:16:49.045 There's standardized criteria that we

NOTE Confidence: 0.98773146

00:16:49.045 --> 00:16:50.645 can use to estimate the

NOTE Confidence: 0.98773146

00:16:50.645 --> 00:16:52.405 percent stenosis based on the

NOTE Confidence: 0.98773146

00:16:52.405 --> 00:16:54.005 degree of elevation and the

NOTE Confidence: 0.98773146

00:16:54.005 --> 00:16:54.505 velocities.

NOTE Confidence: 0.99130553

00:16:55.285 --> 00:16:57.225 Ultrasound also provides an anatomic

NOTE Confidence: 0.99130553

00:16:57.285 --> 00:16:58.325 assessment where we can see

NOTE Confidence: 0.99130553

00:16:58.325 --> 00:17:00.585 plaque characteristics and luminal narrowing.

NOTE Confidence: 0.97597593

00:17:01.580 --> 00:17:03.280 There's more advanced imaging options

NOTE Confidence: 0.97597593

00:17:03.420 --> 00:17:05.260 as well, including CTA and

NOTE Confidence: 0.97597593

00:17:05.260 --> 00:17:05.760 MRA,

NOTE Confidence: 0.9838445

00:17:06.060 --> 00:17:07.340 but, typically, these are used

NOTE Confidence: 0.9838445

00:17:07.340 --> 00:17:08.960 more to confirm anatomy,

NOTE Confidence: 0.9986924

00:17:09.980 --> 00:17:12.160 and to evaluate plaque morphology

NOTE Confidence: 0.9986924

00:17:12.380 --> 00:17:14.000 and guide procedural planning.

NOTE Confidence: 0.9910377

00:17:14.465 --> 00:17:16.065 The key is correlating the

NOTE Confidence: 0.9910377

00:17:16.065 --> 00:17:18.005 imaging with the clinical presentation,

NOTE Confidence: 0.9976316

00:17:18.385 --> 00:17:20.465 especially to determine whether someone's

NOTE Confidence: 0.9976316

00:17:20.465 --> 00:17:22.305 symptoms are attributable to the

NOTE Confidence: 0.9976316

00:17:22.305 --> 00:17:23.605 territory in question.

NOTE Confidence: 0.9974096

00:17:26.820 --> 00:17:27.559 Once diagnosed,

NOTE Confidence: 0.9994291

00:17:28.019 --> 00:17:30.279 distinguishing symptomatic from asymptomatic

NOTE Confidence: 0.9976255

00:17:30.659 --> 00:17:32.679 carotid stenosis is essential.

NOTE Confidence: 0.9992017

00:17:33.220 --> 00:17:35.080 A patient is considered symptomatic

NOTE Confidence: 0.9992017

00:17:35.220 --> 00:17:36.340 if they've had a focal

NOTE Confidence: 0.9992017

00:17:36.340 --> 00:17:36.840 neurological

NOTE Confidence: 0.9996505

00:17:37.220 --> 00:17:37.720 event

NOTE Confidence: 0.9931274

00:17:38.100 --> 00:17:39.799 within the last six months

NOTE Confidence: 0.9931274

00:17:39.975 --> 00:17:41.655 on the ipsilateral side of

NOTE Confidence: 0.9931274

00:17:41.655 --> 00:17:43.195 where the carotid disease is.

NOTE Confidence: 0.99742466

00:17:43.655 --> 00:17:45.035 And in terms of neurological

NOTE Confidence: 0.99742466

00:17:45.335 --> 00:17:47.755 deficits, this includes ischemic stroke,

NOTE Confidence: 0.99742466

00:17:47.815 --> 00:17:49.595 TIA, or retinal ischemia,

NOTE Confidence: 0.999704

00:17:49.975 --> 00:17:51.355 but does not include

NOTE Confidence: 0.95542955

00:17:51.655 --> 00:17:53.755 nonspecific symptoms like dizziness,

NOTE Confidence: 0.99913627

00:17:54.100 --> 00:17:54.600 syncope,

NOTE Confidence: 0.997601

00:17:55.059 --> 00:17:56.759 headache, or cognitive changes.

NOTE Confidence: 0.997768

00:17:57.539 --> 00:17:59.220 This definition drives almost all

NOTE Confidence: 0.997768

00:17:59.220 --> 00:18:00.500 of the guideline and trial

NOTE Confidence: 0.997768

00:18:00.500 --> 00:18:02.340 based recommendations, so it's important

NOTE Confidence: 0.997768

00:18:02.340 --> 00:18:03.859 to classify our patients as

NOTE Confidence: 0.997768

00:18:03.859 --> 00:18:05.320 they're presenting with disease.

NOTE Confidence: 0.9995968

00:18:08.154 --> 00:18:09.514 There are three mainstays of

NOTE Confidence: 0.9995968

00:18:09.514 --> 00:18:11.375 treatment for carotid artery stenosis.

NOTE Confidence: 0.9970148

00:18:11.835 --> 00:18:13.434 The first and cornerstone of

NOTE Confidence: 0.9970148

00:18:13.434 --> 00:18:15.534 therapy is optimal medical management,

NOTE Confidence: 0.98651487

00:18:15.835 --> 00:18:17.034 which includes the use of

NOTE Confidence: 0.98651487

00:18:17.034 --> 00:18:18.475 statin therapy for a target

NOTE Confidence: 0.98651487

00:18:18.475 --> 00:18:19.855 LDL less than seventy,

NOTE Confidence: 0.9843329

00:18:20.210 --> 00:18:20.869 an antiplatelet

NOTE Confidence: 0.9734035

00:18:21.250 --> 00:18:23.590 agent, and controlling disease modifiers

NOTE Confidence: 0.9734035

00:18:23.730 --> 00:18:25.190 like hypertension and diabetes.

NOTE Confidence: 0.95916486

00:18:25.970 --> 00:18:28.150 Lifestyle modifications are also recommended

NOTE Confidence: 0.95916486

00:18:28.210 --> 00:18:29.350 like smoking cessation.

NOTE Confidence: 0.998439

00:18:30.210 --> 00:18:32.150 For interventions, there is carotid

NOTE Confidence: 0.998439

00:18:32.210 --> 00:18:32.710 endarterectomy,

NOTE Confidence: 0.9842677

00:18:33.170 --> 00:18:34.710 which is a surgical approach,

NOTE Confidence: 0.9970446

00:18:35.044 --> 00:18:36.804 and carotid stenting, which can

NOTE Confidence: 0.9970446

00:18:36.804 --> 00:18:37.544 be endovascular

NOTE Confidence: 0.99852204

00:18:37.924 --> 00:18:38.664 or surgical.

NOTE Confidence: 0.99674195

00:18:39.365 --> 00:18:41.544 The appropriate choice or combination

NOTE Confidence: 0.99674195

00:18:41.605 --> 00:18:43.125 of treatments for each patient

NOTE Confidence: 0.99674195

00:18:43.125 --> 00:18:44.645 is a nuanced decision, and

NOTE Confidence: 0.99674195

00:18:44.645 --> 00:18:45.845 we'll go into more detail

NOTE Confidence: 0.99674195

00:18:45.845 --> 00:18:46.885 on that in the coming

NOTE Confidence: 0.99674195

00:18:46.885 --> 00:18:47.385 slides.

NOTE Confidence: 0.99820757

00:18:49.559 --> 00:18:50.760 So for our patient, this

NOTE Confidence: 0.99820757

00:18:50.760 --> 00:18:52.059 raises several questions.

NOTE Confidence: 0.9986158

00:18:52.760 --> 00:18:54.440 What role does optimal medical

NOTE Confidence: 0.9986158

00:18:54.440 --> 00:18:56.359 therapy play in preventing or

NOTE Confidence: 0.9986158

00:18:56.359 --> 00:18:58.140 delaying the development of symptoms?

NOTE Confidence: 0.9988111

00:18:58.680 --> 00:19:00.059 And given that he's asymptomatic,

NOTE Confidence: 0.9984257

00:19:00.359 --> 00:19:01.559 would he benefit from an

NOTE Confidence: 0.9984257

00:19:01.559 --> 00:19:02.940 intervention at this time?

NOTE Confidence: 0.99050194

00:19:03.445 --> 00:19:04.725 And if so, how do

NOTE Confidence: 0.99050194

00:19:04.725 --> 00:19:06.105 we choose between endarterectomy

NOTE Confidence: 0.9934249

00:19:06.484 --> 00:19:07.625 and carotid stent?

NOTE Confidence: 0.9615609

00:19:08.005 --> 00:19:09.065 And most importantly,

NOTE Confidence: 0.99893117

00:19:09.445 --> 00:19:11.285 how do these interventions affect

NOTE Confidence: 0.99893117

00:19:11.285 --> 00:19:12.744 his future stroke risk?

NOTE Confidence: 0.9917788

00:19:14.725 --> 00:19:16.085 So to understand the risks

NOTE Confidence: 0.9917788

00:19:16.085 --> 00:19:17.445 and benefit of each treatment

NOTE Confidence: 0.9917788

00:19:17.445 --> 00:19:19.065 modality and for our patient,

NOTE Confidence: 0.9917788

00:19:19.220 --> 00:19:20.260 we're gonna revisit some of

NOTE Confidence: 0.9917788

00:19:20.260 --> 00:19:22.020 the foundational trials that help

NOTE Confidence: 0.9917788

00:19:22.020 --> 00:19:23.880 shape the carotid stenosis landscape.

NOTE Confidence: 0.8956703

00:19:26.420 --> 00:19:27.240 So historically,

NOTE Confidence: 0.99913186

00:19:27.540 --> 00:19:29.460 carotid disease management has gone

NOTE Confidence: 0.99913186

00:19:29.460 --> 00:19:30.680 through several eras.

NOTE Confidence: 0.9545004

00:19:31.155 --> 00:19:32.915 In the nineteen fifties, DeBakey

NOTE Confidence: 0.9545004

00:19:32.915 --> 00:19:35.415 and Eastcott introduced carotid endarterectomy,

NOTE Confidence: 0.9954347

00:19:36.035 --> 00:19:37.395 and for decades, it was

NOTE Confidence: 0.9954347

00:19:37.395 --> 00:19:39.075 the only intervention to treat

NOTE Confidence: 0.9954347

00:19:39.075 --> 00:19:39.815 these patients.

NOTE Confidence: 0.9792302

00:19:40.675 --> 00:19:42.195 In the nineties, trials like

NOTE Confidence: 0.9792302

00:19:42.195 --> 00:19:44.275 NASIT established a clear benefit

NOTE Confidence: 0.9792302

00:19:44.275 --> 00:19:45.015 in endarterectomy

NOTE Confidence: 0.99069554

00:19:45.780 --> 00:19:47.800 in select symptomatic and asymptomatic

NOTE Confidence: 0.99069554

00:19:48.100 --> 00:19:48.600 patients.

NOTE Confidence: 0.9574846

00:19:49.700 --> 00:19:51.380 In the two thousands, carotid

NOTE Confidence: 0.9574846

00:19:51.380 --> 00:19:52.760 artery stenting emerged,

NOTE Confidence: 0.9691255

00:19:53.060 --> 00:19:55.220 prompting debate around equivalence and

NOTE Confidence: 0.9691255

00:19:55.220 --> 00:19:55.720 indications.

NOTE Confidence: 0.9929381

00:19:56.820 --> 00:19:58.100 And today, we're entering a

NOTE Confidence: 0.9929381

00:19:58.100 --> 00:19:58.840 new paradigm

NOTE Confidence: 0.9991435

00:19:59.244 --> 00:20:01.024 where medical therapy is extraordinarily

NOTE Confidence: 0.9629593

00:20:01.484 --> 00:20:03.164 effective, and the benefit of

NOTE Confidence: 0.9629593

00:20:03.164 --> 00:20:03.664 revascularization

NOTE Confidence: 0.99969494

00:20:04.445 --> 00:20:05.885 needs to be determined above

NOTE Confidence: 0.99969494

00:20:05.885 --> 00:20:07.244 and beyond the benefit of

NOTE Confidence: 0.99969494

00:20:07.244 --> 00:20:08.625 medical therapy alone.

NOTE Confidence: 0.98954296

00:20:11.820 --> 00:20:13.419 The initial wave of carotid

NOTE Confidence: 0.98954296

00:20:13.419 --> 00:20:14.940 stenosis trials began with the

NOTE Confidence: 0.98954296

00:20:14.940 --> 00:20:16.780 NASET trial. It was published

NOTE Confidence: 0.98954296

00:20:16.780 --> 00:20:18.220 in nineteen ninety one, and

NOTE Confidence: 0.98954296

00:20:18.220 --> 00:20:19.660 it was the first large

NOTE Confidence: 0.98954296

00:20:19.660 --> 00:20:21.980 scale randomized trial that enrolled

NOTE Confidence: 0.98954296

00:20:21.980 --> 00:20:23.740 over two thousand patients with

NOTE Confidence: 0.98954296

00:20:23.740 --> 00:20:25.980 symptomatic carotid stenosis of greater

NOTE Confidence: 0.98954296

00:20:25.980 --> 00:20:27.075 than seventy percent.

NOTE Confidence: 0.9942472

00:20:27.955 --> 00:20:29.234 In that study, patients were

NOTE Confidence: 0.9942472

00:20:29.234 --> 00:20:30.534 randomized to endarterectomy

NOTE Confidence: 0.99360037

00:20:31.075 --> 00:20:32.215 plus medical therapy

NOTE Confidence: 0.9975251

00:20:32.595 --> 00:20:34.375 versus medical therapy alone.

NOTE Confidence: 0.9991497

00:20:35.075 --> 00:20:36.695 The study found that endarterectomy

NOTE Confidence: 0.9990365

00:20:37.154 --> 00:20:39.635 dramatically reduced ipsilateral stroke in

NOTE Confidence: 0.9990365

00:20:39.635 --> 00:20:40.135 patients

NOTE Confidence: 0.9900395

00:20:40.440 --> 00:20:41.559 that had greater than seventy

NOTE Confidence: 0.9900395

00:20:41.559 --> 00:20:42.539 percent stenosis

NOTE Confidence: 0.9968257

00:20:42.840 --> 00:20:44.440 with an absolute risk reduction

NOTE Confidence: 0.9968257

00:20:44.440 --> 00:20:45.500 of seventeen percent.

NOTE Confidence: 0.9990582

00:20:46.200 --> 00:20:47.880 These findings were further confirmed

NOTE Confidence: 0.9990582

00:20:47.880 --> 00:20:49.320 in the ECST trial with

NOTE Confidence: 0.9990582

00:20:49.320 --> 00:20:50.380 a similar population.

NOTE Confidence: 0.98549896

00:20:51.720 --> 00:20:53.080 A few years later, there

NOTE Confidence: 0.98549896

00:20:53.080 --> 00:20:54.440 were trials that emerged looking

NOTE Confidence: 0.98549896

00:20:54.440 --> 00:20:55.179 at asymptomatic

NOTE Confidence: 0.98685056

00:20:55.559 --> 00:20:57.715 disease. So ACAS and ACST

NOTE Confidence: 0.94942904

00:20:58.415 --> 00:20:59.875 explored the role in asymptomatic

NOTE Confidence: 0.9922775

00:21:00.175 --> 00:21:01.615 patients with greater than sixty

NOTE Confidence: 0.9922775

00:21:01.615 --> 00:21:02.435 percent stenosis,

NOTE Confidence: 0.988245

00:21:02.815 --> 00:21:03.855 but they only showed a

NOTE Confidence: 0.988245

00:21:03.855 --> 00:21:05.395 modest benefit to endarterectomy.

NOTE Confidence: 0.9887443

00:21:06.255 --> 00:21:08.015 Around one percent absolute risk

NOTE Confidence: 0.9887443

00:21:08.015 --> 00:21:10.015 production for stroke per year

NOTE Confidence: 0.9887443

00:21:10.015 --> 00:21:11.715 versus medical therapy alone.

NOTE Confidence: 0.99040896

00:21:14.470 --> 00:21:16.070 And while these early trials

NOTE Confidence: 0.99040896

00:21:16.070 --> 00:21:17.990 establish endarterectomy as the standard

NOTE Confidence: 0.99040896

00:21:17.990 --> 00:21:19.510 of care, especially for patients

NOTE Confidence: 0.99040896

00:21:19.510 --> 00:21:21.530 with symptomatic and severe disease,

NOTE Confidence: 0.99040896

00:21:21.750 --> 00:21:23.190 it's essential to remember that

NOTE Confidence: 0.99040896

00:21:23.190 --> 00:21:24.470 these trials were conducted in

NOTE Confidence: 0.99040896

00:21:24.470 --> 00:21:26.294 a very different time. The

NOTE Confidence: 0.99040896

00:21:26.294 --> 00:21:27.815 medical therapy that we use

NOTE Confidence: 0.99040896

00:21:27.815 --> 00:21:29.734 today was not widely available

NOTE Confidence: 0.99040896

00:21:29.734 --> 00:21:30.875 or routinely used.

NOTE Confidence: 0.9954272

00:21:31.335 --> 00:21:32.855 In these trials, aspirin was

NOTE Confidence: 0.9954272

00:21:32.855 --> 00:21:33.754 the only antiplatelet

NOTE Confidence: 0.9907766

00:21:34.054 --> 00:21:35.095 agent. There were no p

NOTE Confidence: 0.9907766

00:21:35.095 --> 00:21:36.234 two y twelve inhibitors.

NOTE Confidence: 0.98673296

00:21:36.695 --> 00:21:38.369 There was limited statin use,

NOTE Confidence: 0.98673296

00:21:38.450 --> 00:21:40.050 and the average LDL for

NOTE Confidence: 0.98673296

00:21:40.050 --> 00:21:41.410 patients in these studies ranged

NOTE Confidence: 0.98673296

00:21:41.410 --> 00:21:42.609 from one thirty to one

NOTE Confidence: 0.98673296

00:21:42.609 --> 00:21:43.109 fifty.

NOTE Confidence: 0.9733028

00:21:43.730 --> 00:21:45.010 There were also no strict

NOTE Confidence: 0.9733028

00:21:45.010 --> 00:21:46.609 blood pressure targets. Patients were

NOTE Confidence: 0.9733028

00:21:46.609 --> 00:21:48.530 often hypertensive with systolic blood

NOTE Confidence: 0.9733028

00:21:48.530 --> 00:21:49.730 pressures in the one forties

NOTE Confidence: 0.9733028

00:21:49.730 --> 00:21:50.630 to one sixties,

NOTE Confidence: 0.9985412

00:21:51.434 --> 00:21:53.034 and lifestyle counseling was not

NOTE Confidence: 0.9985412

00:21:53.034 --> 00:21:54.654 routine. There was a significantly

NOTE Confidence: 0.9985412

00:21:54.794 --> 00:21:55.835 higher rate of smoking in

NOTE Confidence: 0.9985412

00:21:55.835 --> 00:21:57.034 this population in the eighties

NOTE Confidence: 0.9985412

00:21:57.034 --> 00:21:58.075 and nineties than there is

NOTE Confidence: 0.9985412

00:21:58.075 --> 00:21:58.575 today.

NOTE Confidence: 0.9874416

00:21:59.275 --> 00:22:00.315 With this in mind, it's

NOTE Confidence: 0.9874416

00:22:00.315 --> 00:22:01.755 difficult to know exactly how

NOTE Confidence: 0.9874416

00:22:01.755 --> 00:22:03.534 much benefit the surgical intervention

NOTE Confidence: 0.9874416

00:22:03.595 --> 00:22:05.640 had itself in the absence

NOTE Confidence: 0.9874416

00:22:05.640 --> 00:22:07.100 of optimal medical therapy.

NOTE Confidence: 0.99053174

00:22:09.960 --> 00:22:11.400 So as stenting emerged in

NOTE Confidence: 0.99053174

00:22:11.400 --> 00:22:12.600 the two thousands, there were

NOTE Confidence: 0.99053174

00:22:12.600 --> 00:22:14.920 multiple trials that compared carotid

NOTE Confidence: 0.99053174

00:22:14.920 --> 00:22:16.920 artery stenting directly to carotid

NOTE Confidence: 0.99053174

00:22:16.920 --> 00:22:17.420 endarterectomy.

NOTE Confidence: 0.97421265

00:22:18.274 --> 00:22:20.215 This includes the CABITAS trial,

NOTE Confidence: 0.97421265

00:22:20.274 --> 00:22:22.135 EVA three s, and SPACE,

NOTE Confidence: 0.97421265

00:22:22.195 --> 00:22:23.075 which came out in the

NOTE Confidence: 0.97421265

00:22:23.075 --> 00:22:24.135 early two thousands.

NOTE Confidence: 0.9569515

00:22:24.515 --> 00:22:26.274 These initial studies, however, were

NOTE Confidence: 0.9569515

00:22:26.274 --> 00:22:28.135 very small. They only enrolled

NOTE Confidence: 0.9569515

00:22:28.355 --> 00:22:29.715 around three hundred to five

NOTE Confidence: 0.9569515

00:22:29.715 --> 00:22:30.534 hundred patients,

NOTE Confidence: 0.99856186

00:22:30.835 --> 00:22:32.434 and the results were mixed

NOTE Confidence: 0.99856186

00:22:32.434 --> 00:22:33.174 to poor.

NOTE Confidence: 0.98844886

00:22:33.649 --> 00:22:34.309 The periprocedural

NOTE Confidence: 0.99369985

00:22:34.769 --> 00:22:36.049 stroke or death rates in

NOTE Confidence: 0.99369985

00:22:36.049 --> 00:22:37.570 the carotid stenting arms were

NOTE Confidence: 0.99369985

00:22:37.570 --> 00:22:38.950 as high as ten percent.

NOTE Confidence: 0.985573

00:22:39.730 --> 00:22:41.009 But it's important to note

NOTE Confidence: 0.985573

00:22:41.009 --> 00:22:41.970 that these were the first

NOTE Confidence: 0.985573

00:22:41.970 --> 00:22:43.889 carotid stent trials. These were

NOTE Confidence: 0.985573

00:22:43.889 --> 00:22:45.570 earlier devices. They had high

NOTE Confidence: 0.985573

00:22:45.570 --> 00:22:47.509 embolic protection or potential,

NOTE Confidence: 0.99716824

00:22:48.225 --> 00:22:50.545 limited operator experience, and routine

NOTE Confidence: 0.99716824

00:22:50.545 --> 00:22:52.645 embolic protection during the procedure

NOTE Confidence: 0.99716824

00:22:52.865 --> 00:22:53.765 was not used.

NOTE Confidence: 0.999069

00:22:54.304 --> 00:22:55.845 However, as the technology,

NOTE Confidence: 0.9913887

00:22:56.145 --> 00:22:58.325 the technique, and experience improved,

NOTE Confidence: 0.98631215

00:22:58.785 --> 00:23:00.225 SAFIRE was the first study

NOTE Confidence: 0.98631215

00:23:00.225 --> 00:23:01.684 that showed noninferiority

NOTE Confidence: 0.99961203

00:23:02.225 --> 00:23:03.525 of carotid stenting

NOTE Confidence: 0.9752646

00:23:04.010 --> 00:23:04.910 to carotid endarterectomy

NOTE Confidence: 0.99263304

00:23:05.850 --> 00:23:07.610 in high risk surgical patients,

NOTE Confidence: 0.99263304

00:23:07.610 --> 00:23:09.050 which led to its initial

NOTE Confidence: 0.99263304

00:23:09.050 --> 00:23:10.030 FDA approval.

NOTE Confidence: 0.95245266

00:23:10.810 --> 00:23:12.270 There was a pooled analysis

NOTE Confidence: 0.95245266

00:23:12.330 --> 00:23:13.610 of the early carotid stent

NOTE Confidence: 0.95245266

00:23:13.610 --> 00:23:15.050 studies done by Brott et

NOTE Confidence: 0.95245266

00:23:15.050 --> 00:23:16.330 al. In two thousand and

NOTE Confidence: 0.95245266

00:23:16.330 --> 00:23:17.845 nine. And it showed that

NOTE Confidence: 0.95245266

00:23:17.845 --> 00:23:19.765 while carotid artery stenting had

NOTE Confidence: 0.95245266

00:23:19.765 --> 00:23:21.465 a higher thirty day periprocedural

NOTE Confidence: 0.987935

00:23:22.005 --> 00:23:23.845 stroke risk, once that risk

NOTE Confidence: 0.987935

00:23:23.845 --> 00:23:24.585 was excluded,

NOTE Confidence: 0.9986424

00:23:24.965 --> 00:23:26.965 long term outcomes between carotid

NOTE Confidence: 0.9986424

00:23:26.965 --> 00:23:27.945 stent and endarterectomy

NOTE Confidence: 0.9988338

00:23:28.325 --> 00:23:29.145 were similar.

NOTE Confidence: 0.9840509

00:23:31.700 --> 00:23:32.820 So this led to the

NOTE Confidence: 0.9840509

00:23:32.820 --> 00:23:33.960 CREST one trial.

NOTE Confidence: 0.9905592

00:23:34.420 --> 00:23:35.940 CREST one was the first

NOTE Confidence: 0.9905592

00:23:35.940 --> 00:23:37.940 large scale randomized trial that

NOTE Confidence: 0.9905592

00:23:37.940 --> 00:23:40.020 compared carotid stenting directly to

NOTE Confidence: 0.9905592

00:23:40.020 --> 00:23:40.520 endarterectomy.

NOTE Confidence: 0.9902637

00:23:41.300 --> 00:23:43.060 It enrolled twenty five hundred

NOTE Confidence: 0.9902637

00:23:43.060 --> 00:23:44.920 patients who are both symptomatic

NOTE Confidence: 0.9902637

00:23:44.980 --> 00:23:45.720 and asymptomatic

NOTE Confidence: 0.99909234

00:23:46.455 --> 00:23:47.734 across over a hundred and

NOTE Confidence: 0.99909234

00:23:47.734 --> 00:23:48.934 thirty centers in the US

NOTE Confidence: 0.99909234

00:23:48.934 --> 00:23:49.595 and Canada.

NOTE Confidence: 0.99676895

00:23:50.215 --> 00:23:51.654 Patients were randomized one to

NOTE Confidence: 0.99676895

00:23:51.654 --> 00:23:53.095 one to carotid stenting with

NOTE Confidence: 0.99676895

00:23:53.095 --> 00:23:54.075 embolic protection

NOTE Confidence: 0.9687321

00:23:54.455 --> 00:23:55.914 versus traditional endarterectomy.

NOTE Confidence: 0.99942124

00:23:57.015 --> 00:23:58.715 And all patients were optimized

NOTE Confidence: 0.99942124

00:23:58.775 --> 00:24:00.154 on best medical therapy.

NOTE Confidence: 0.97990847

00:24:00.900 --> 00:24:02.340 The primary endpoint in this

NOTE Confidence: 0.97990847

00:24:02.340 --> 00:24:03.859 trial was a composite of

NOTE Confidence: 0.97990847

00:24:03.859 --> 00:24:05.700 stroke, MI, or death within

NOTE Confidence: 0.97990847

00:24:05.700 --> 00:24:07.960 thirty days combined with ipsilateral

NOTE Confidence: 0.97990847

00:24:08.180 --> 00:24:09.720 stroke up to four years.

NOTE Confidence: 0.99240464

00:24:12.580 --> 00:24:13.780 The study found that there

NOTE Confidence: 0.99240464

00:24:13.780 --> 00:24:15.734 was no significant difference in

NOTE Confidence: 0.99240464

00:24:15.734 --> 00:24:16.395 the composite endpoint

NOTE Confidence: 0.992234

00:24:17.015 --> 00:24:19.015 between patients who underwent carotid

NOTE Confidence: 0.992234

00:24:19.015 --> 00:24:20.715 stenting versus endarterectomy,

NOTE Confidence: 0.9384733

00:24:21.975 --> 00:24:23.815 demonstrating that carotid stenting was

NOTE Confidence: 0.9384733

00:24:23.815 --> 00:24:25.275 non inferior to endarterectomy

NOTE Confidence: 0.95818865

00:24:25.734 --> 00:24:26.234 overall.

NOTE Confidence: 0.9490516

00:24:26.775 --> 00:24:27.895 But it's important to note

NOTE Confidence: 0.9490516

00:24:27.895 --> 00:24:28.820 that that the periprocedural

NOTE Confidence: 0.98838246

00:24:29.279 --> 00:24:30.880 risk profiles in these two

NOTE Confidence: 0.98838246

00:24:30.880 --> 00:24:31.940 cohorts differed.

NOTE Confidence: 0.9981376

00:24:32.559 --> 00:24:34.559 Carotid stenting still tended to

NOTE Confidence: 0.9981376

00:24:34.559 --> 00:24:35.619 have more periprocedural

NOTE Confidence: 0.9892514

00:24:36.080 --> 00:24:36.580 strokes,

NOTE Confidence: 0.99935055

00:24:36.880 --> 00:24:38.100 but carotid endarterectomy

NOTE Confidence: 0.99678165

00:24:38.640 --> 00:24:39.619 had more periprocedural

NOTE Confidence: 0.8946919

00:24:40.000 --> 00:24:40.500 MIs.

NOTE Confidence: 0.9941448

00:24:41.085 --> 00:24:43.244 And age also mattered. Patients

NOTE Confidence: 0.9941448

00:24:43.244 --> 00:24:44.525 over the age of seventy

NOTE Confidence: 0.9941448

00:24:44.525 --> 00:24:45.984 had a higher stroke risk,

NOTE Confidence: 0.9941448

00:24:46.205 --> 00:24:47.484 and they tended to do

NOTE Confidence: 0.9941448

00:24:47.484 --> 00:24:47.984 better,

NOTE Confidence: 0.97587967

00:24:48.525 --> 00:24:49.345 with carotids,

NOTE Confidence: 0.9991711

00:24:49.725 --> 00:24:50.225 endarterectomy

NOTE Confidence: 0.97554386

00:24:50.525 --> 00:24:52.044 as opposed to stenting due

NOTE Confidence: 0.97554386

00:24:52.044 --> 00:24:53.025 to arch anatomy.

NOTE Confidence: 0.9366436

00:24:54.790 --> 00:24:55.750 So one of the reasons

NOTE Confidence: 0.9366436

00:24:55.750 --> 00:24:56.490 that the paraprocedural

NOTE Confidence: 0.9931615

00:24:56.950 --> 00:24:58.230 event rate was so low

NOTE Confidence: 0.9931615

00:24:58.230 --> 00:24:59.590 in this study was that

NOTE Confidence: 0.9931615

00:24:59.590 --> 00:25:01.670 there was significant effort made

NOTE Confidence: 0.9931615

00:25:01.670 --> 00:25:03.530 to have high quality operators

NOTE Confidence: 0.9931615

00:25:03.670 --> 00:25:04.170 enroll.

NOTE Confidence: 0.9977847

00:25:04.869 --> 00:25:06.330 The event rates were lower

NOTE Confidence: 0.9977847

00:25:06.470 --> 00:25:07.830 in earlier trials due to

NOTE Confidence: 0.9977847

00:25:07.830 --> 00:25:09.885 medical therapy and operator experience.

NOTE Confidence: 0.9863364

00:25:10.605 --> 00:25:11.484 In order to be an

NOTE Confidence: 0.9863364

00:25:11.484 --> 00:25:13.244 enrolling operator in this study,

NOTE Confidence: 0.9863364

00:25:13.244 --> 00:25:14.925 clinicians needed to submit case

NOTE Confidence: 0.9863364

00:25:14.925 --> 00:25:15.425 logs,

NOTE Confidence: 0.99800473

00:25:15.805 --> 00:25:18.225 demonstrate low procedural event rates,

NOTE Confidence: 0.99800473

00:25:18.285 --> 00:25:20.445 and perform observed cases in

NOTE Confidence: 0.99800473

00:25:20.445 --> 00:25:21.725 order to be accepted and

NOTE Confidence: 0.99800473

00:25:21.725 --> 00:25:23.085 selected to be an enrolling

NOTE Confidence: 0.99800473

00:25:23.085 --> 00:25:23.580 provider.

NOTE Confidence: 0.9936467

00:25:23.980 --> 00:25:24.700 So this is one of

NOTE Confidence: 0.9936467

00:25:24.700 --> 00:25:26.539 the reasons why CREST one

NOTE Confidence: 0.9936467

00:25:26.539 --> 00:25:28.140 confirmed that both procedures are

NOTE Confidence: 0.9936467

00:25:28.140 --> 00:25:30.240 effective and safe when performed

NOTE Confidence: 0.9936467

00:25:30.299 --> 00:25:31.600 by experienced operators.

NOTE Confidence: 0.9809997

00:25:34.619 --> 00:25:36.140 It's also important to note

NOTE Confidence: 0.9809997

00:25:36.140 --> 00:25:37.419 that in the ten years

NOTE Confidence: 0.9809997

00:25:37.419 --> 00:25:39.019 between our first study, NASET,

NOTE Confidence: 0.9809997

00:25:39.019 --> 00:25:40.835 and CREST one, the overall

NOTE Confidence: 0.9809997

00:25:40.835 --> 00:25:42.215 stroke rate in this population

NOTE Confidence: 0.9809997

00:25:42.275 --> 00:25:43.335 decreased significantly

NOTE Confidence: 0.98467034

00:25:43.795 --> 00:25:45.075 from an annual stroke rate

NOTE Confidence: 0.98467034

00:25:45.075 --> 00:25:46.535 of five to six percent

NOTE Confidence: 0.98467034

00:25:46.595 --> 00:25:47.555 down to one to two

NOTE Confidence: 0.98467034

00:25:47.555 --> 00:25:48.855 percent in this population.

NOTE Confidence: 0.99728686

00:25:49.795 --> 00:25:51.555 The advances in medical therapy

NOTE Confidence: 0.99728686

00:25:51.555 --> 00:25:52.295 and guidelines

NOTE Confidence: 0.99775547

00:25:52.595 --> 00:25:53.095 recommended

NOTE Confidence: 0.9914021

00:25:53.859 --> 00:25:55.299 management of comorbidities, and it

NOTE Confidence: 0.9914021

00:25:55.299 --> 00:25:56.980 was a significant impact for

NOTE Confidence: 0.9914021

00:25:56.980 --> 00:25:57.720 our patients.

NOTE Confidence: 0.98373896

00:25:58.100 --> 00:26:00.100 DAPT became more available, high

NOTE Confidence: 0.98373896

00:26:00.100 --> 00:26:01.859 intensity statins and other lipid

NOTE Confidence: 0.98373896

00:26:01.859 --> 00:26:03.700 agents were being used, and

NOTE Confidence: 0.98373896

00:26:03.700 --> 00:26:05.139 blood pressure guidelines were more

NOTE Confidence: 0.98373896

00:26:05.139 --> 00:26:05.639 strict.

NOTE Confidence: 0.9716872

00:26:06.075 --> 00:26:07.375 There are also more pharmacologic

NOTE Confidence: 0.9716872

00:26:07.595 --> 00:26:09.455 agents available to manage diabetes.

NOTE Confidence: 0.9815599

00:26:10.395 --> 00:26:11.434 So this leads us to

NOTE Confidence: 0.9815599

00:26:11.434 --> 00:26:12.715 question, and I hesitate to

NOTE Confidence: 0.9815599

00:26:12.715 --> 00:26:13.595 do this in a room

NOTE Confidence: 0.9815599

00:26:13.595 --> 00:26:15.215 full of my interventional colleagues.

NOTE Confidence: 0.99979126

00:26:15.674 --> 00:26:16.895 Do we need procedures?

NOTE Confidence: 0.9956854

00:26:18.530 --> 00:26:20.289 Just how much additional benefit

NOTE Confidence: 0.9956854

00:26:20.289 --> 00:26:21.409 are our patients getting from

NOTE Confidence: 0.9956854

00:26:21.409 --> 00:26:23.330 the interventions above and beyond

NOTE Confidence: 0.9956854

00:26:23.330 --> 00:26:24.609 the benefit of the optimal

NOTE Confidence: 0.9956854

00:26:24.609 --> 00:26:25.890 medical therapy that we have

NOTE Confidence: 0.9956854

00:26:25.890 --> 00:26:26.789 for them today?

NOTE Confidence: 0.9998

00:26:29.090 --> 00:26:30.950 So this concept of intervention

NOTE Confidence: 0.9998

00:26:31.090 --> 00:26:32.690 versus medical therapy is the

NOTE Confidence: 0.9998

00:26:32.690 --> 00:26:34.325 newest paradigm that's being studied

NOTE Confidence: 0.9998

00:26:34.325 --> 00:26:35.865 for patients with carotid stenosis.

NOTE Confidence: 0.946629

00:26:36.565 --> 00:26:38.005 There were two recently published

NOTE Confidence: 0.946629

00:26:38.005 --> 00:26:39.925 trials on this topic, space

NOTE Confidence: 0.946629

00:26:39.925 --> 00:26:41.705 two and ECSC two.

NOTE Confidence: 0.9901474

00:26:42.325 --> 00:26:44.165 But both trials enrolled slightly

NOTE Confidence: 0.9901474

00:26:44.165 --> 00:26:45.945 different patients, but they compared

NOTE Confidence: 0.9901474

00:26:46.210 --> 00:26:47.650 any type of intervention. So

NOTE Confidence: 0.9901474

00:26:47.650 --> 00:26:48.150 endarterectomy

NOTE Confidence: 0.9598638

00:26:48.610 --> 00:26:50.630 or stenting plus medical therapy

NOTE Confidence: 0.9854288

00:26:51.170 --> 00:26:52.869 versus medical therapy alone.

NOTE Confidence: 0.9975134

00:26:53.170 --> 00:26:54.530 But these trials were fraught

NOTE Confidence: 0.9975134

00:26:54.530 --> 00:26:55.190 with challenges.

NOTE Confidence: 0.96662086

00:26:55.730 --> 00:26:57.010 Space two was only able

NOTE Confidence: 0.96662086

00:26:57.010 --> 00:26:58.369 to enroll five hundred of

NOTE Confidence: 0.96662086

00:26:58.369 --> 00:26:59.890 their planned thirty six hundred

NOTE Confidence: 0.96662086

00:26:59.890 --> 00:27:01.215 patients, and ECST

NOTE Confidence: 0.9995365

00:27:01.755 --> 00:27:03.135 only enrolled four hundred.

NOTE Confidence: 0.98593825

00:27:03.675 --> 00:27:05.115 And while both studies found

NOTE Confidence: 0.98593825

00:27:05.115 --> 00:27:06.875 no difference in stroke MI

NOTE Confidence: 0.98593825

00:27:06.875 --> 00:27:08.555 or death between the two

NOTE Confidence: 0.98593825

00:27:08.555 --> 00:27:10.575 arms, the studies were significantly

NOTE Confidence: 0.98593825

00:27:10.795 --> 00:27:12.555 underpowered, leading us to continue

NOTE Confidence: 0.98593825

00:27:12.555 --> 00:27:13.835 to question the validity of

NOTE Confidence: 0.98593825

00:27:13.835 --> 00:27:14.494 their results.

NOTE Confidence: 0.97638404

00:27:16.649 --> 00:27:17.690 So the data that we've

NOTE Confidence: 0.97638404

00:27:17.690 --> 00:27:18.970 reviewed so far is largely

NOTE Confidence: 0.97638404

00:27:18.970 --> 00:27:20.169 reflected in the guidelines in

NOTE Confidence: 0.97638404

00:27:20.169 --> 00:27:21.529 the management of carotid artery

NOTE Confidence: 0.97638404

00:27:21.529 --> 00:27:22.029 stenosis.

NOTE Confidence: 0.9996767

00:27:22.649 --> 00:27:23.769 This is a snapshot of

NOTE Confidence: 0.9996767

00:27:23.769 --> 00:27:25.070 the twenty twenty one

NOTE Confidence: 0.98752594

00:27:25.450 --> 00:27:27.630 and American Stroke Association guidelines

NOTE Confidence: 0.9931793

00:27:27.965 --> 00:27:29.405 for the prevention of stroke

NOTE Confidence: 0.9931793

00:27:29.405 --> 00:27:31.325 after stroke or TIA. And

NOTE Confidence: 0.9931793

00:27:31.325 --> 00:27:33.025 this reaffirms that for symptomatic

NOTE Confidence: 0.9931793

00:27:33.165 --> 00:27:34.365 patients with a greater than

NOTE Confidence: 0.9931793

00:27:34.365 --> 00:27:35.645 or equal to seventy percent

NOTE Confidence: 0.9931793

00:27:35.645 --> 00:27:36.145 stenosis

NOTE Confidence: 0.9897957

00:27:36.605 --> 00:27:37.665 and low periprocedural

NOTE Confidence: 0.9912342

00:27:38.125 --> 00:27:38.625 risk,

NOTE Confidence: 0.9763486

00:27:38.925 --> 00:27:39.425 revascularization,

NOTE Confidence: 0.9827176

00:27:40.205 --> 00:27:41.185 typically endarterectomy,

NOTE Confidence: 0.99363345

00:27:41.640 --> 00:27:43.100 is a class one recommendation

NOTE Confidence: 0.99396527

00:27:43.640 --> 00:27:45.000 and should be performed by

NOTE Confidence: 0.99396527

00:27:45.000 --> 00:27:46.140 experienced operators.

NOTE Confidence: 0.9730737

00:27:47.000 --> 00:27:48.680 Optimal medical therapy, as we

NOTE Confidence: 0.9730737

00:27:48.680 --> 00:27:50.119 have discussed as well, is

NOTE Confidence: 0.9730737

00:27:50.119 --> 00:27:51.660 also a class one recommendation.

NOTE Confidence: 0.9604937

00:27:52.520 --> 00:27:54.040 And for patients with moderate

NOTE Confidence: 0.9604937

00:27:54.040 --> 00:27:55.960 symptomatic stenosis in the fifty

NOTE Confidence: 0.9604937

00:27:55.960 --> 00:27:57.525 to sixty nine percent range,

NOTE Confidence: 0.9604937

00:27:57.605 --> 00:27:59.285 and arterectomy is reasonable in

NOTE Confidence: 0.9604937

00:27:59.285 --> 00:28:00.825 carefully selected patients,

NOTE Confidence: 0.99760085

00:28:01.205 --> 00:28:03.365 factoring in age, sex, symptom

NOTE Confidence: 0.99760085

00:28:03.365 --> 00:28:04.905 type, and surgical risk.

NOTE Confidence: 0.9802822

00:28:06.645 --> 00:28:08.085 The data for carotid stenting

NOTE Confidence: 0.9802822

00:28:08.085 --> 00:28:09.525 in symptomatic patients is not

NOTE Confidence: 0.9802822

00:28:09.525 --> 00:28:11.125 quite as strong, but still

NOTE Confidence: 0.9802822

00:28:11.125 --> 00:28:12.270 good. There's a two a

NOTE Confidence: 0.9802822

00:28:12.270 --> 00:28:13.869 and two b recommendation for

NOTE Confidence: 0.9802822

00:28:13.869 --> 00:28:15.150 stenting in patients with greater

NOTE Confidence: 0.9802822

00:28:15.150 --> 00:28:16.530 than seventy percent stenosis,

NOTE Confidence: 0.97752696

00:28:16.990 --> 00:28:18.030 especially if they're at an

NOTE Confidence: 0.97752696

00:28:18.030 --> 00:28:19.230 increased risk or if there

NOTE Confidence: 0.97752696

00:28:19.230 --> 00:28:20.530 are anatomical concerns,

NOTE Confidence: 0.9996262

00:28:20.830 --> 00:28:22.590 but optimal medical management remains

NOTE Confidence: 0.9996262

00:28:22.590 --> 00:28:23.090 foundational.

NOTE Confidence: 0.99636483

00:28:23.865 --> 00:28:26.025 These guidelines also emphasize shared

NOTE Confidence: 0.99636483

00:28:26.025 --> 00:28:28.105 decision making and individual risk

NOTE Confidence: 0.99636483

00:28:28.105 --> 00:28:28.605 assessment.

NOTE Confidence: 0.99961317

00:28:31.465 --> 00:28:33.725 The guideline recommendations for asymptomatic

NOTE Confidence: 0.9998452

00:28:34.025 --> 00:28:35.405 patients are less robust.

NOTE Confidence: 0.9983537

00:28:36.210 --> 00:28:37.890 All guidelines agree that there's

NOTE Confidence: 0.9983537

00:28:37.890 --> 00:28:39.350 no role for asymptomatic

NOTE Confidence: 0.98670477

00:28:39.730 --> 00:28:40.790 screening of patients,

NOTE Confidence: 0.99538755

00:28:41.169 --> 00:28:42.710 but they do support targeting

NOTE Confidence: 0.99538755

00:28:42.770 --> 00:28:44.130 screening of patients who are

NOTE Confidence: 0.99538755

00:28:44.130 --> 00:28:45.890 high risk. So patients who

NOTE Confidence: 0.99538755

00:28:45.890 --> 00:28:48.150 have already other established atherosclerotic

NOTE Confidence: 0.99776345

00:28:48.554 --> 00:28:50.475 disease or symptoms should definitely

NOTE Confidence: 0.99776345

00:28:50.475 --> 00:28:52.495 undergo screening for aortic stenosis.

NOTE Confidence: 0.9825843

00:28:53.274 --> 00:28:54.715 And all the guidelines also

NOTE Confidence: 0.9825843

00:28:54.715 --> 00:28:56.475 agree that optimal medical therapy

NOTE Confidence: 0.9825843

00:28:56.475 --> 00:28:58.174 for everyone with carotid stenosis,

NOTE Confidence: 0.9825843

00:28:58.315 --> 00:29:00.174 symptomatic or not, is indicated.

NOTE Confidence: 0.9819802

00:29:01.000 --> 00:29:02.700 But regarding vascular revascularization,

NOTE Confidence: 0.924503

00:29:03.320 --> 00:29:04.840 the twenty twenty one Society

NOTE Confidence: 0.924503

00:29:04.840 --> 00:29:07.000 of Vascular Surgeons guideline notes

NOTE Confidence: 0.924503

00:29:07.000 --> 00:29:08.539 strong evidence for the recommendation

NOTE Confidence: 0.99760914

00:29:08.840 --> 00:29:09.580 of endarterectomy

NOTE Confidence: 0.9559404

00:29:10.520 --> 00:29:12.280 and moderate evidence for carotid

NOTE Confidence: 0.9559404

00:29:12.280 --> 00:29:12.780 stenting.

NOTE Confidence: 0.994397

00:29:14.174 --> 00:29:16.255 However, in asymptomatic patients with

NOTE Confidence: 0.994397

00:29:16.255 --> 00:29:17.695 low surgical risk, it's still

NOTE Confidence: 0.994397

00:29:17.695 --> 00:29:19.235 unclear what we should do.

NOTE Confidence: 0.994397

00:29:19.294 --> 00:29:21.695 The and ASA guidelines focused

NOTE Confidence: 0.994397

00:29:21.695 --> 00:29:23.534 only on symptomatic disease. And

NOTE Confidence: 0.994397

00:29:23.534 --> 00:29:25.615 for asymptomatic patients, they stated

NOTE Confidence: 0.994397

00:29:25.615 --> 00:29:26.274 that revascularization

NOTE Confidence: 0.9952479

00:29:26.894 --> 00:29:28.014 can be considered, but the

NOTE Confidence: 0.9952479

00:29:28.014 --> 00:29:29.455 level of evidence was not

NOTE Confidence: 0.9952479

00:29:29.455 --> 00:29:30.330 very strong.

NOTE Confidence: 0.9839483

00:29:32.710 --> 00:29:33.830 So this leaves us with

NOTE Confidence: 0.9839483

00:29:33.830 --> 00:29:35.450 our current management pathway,

NOTE Confidence: 0.981626

00:29:35.910 --> 00:29:37.930 optimal medical therapy for all,

NOTE Confidence: 0.981626

00:29:38.070 --> 00:29:40.070 and intervention for symptomatic patients

NOTE Confidence: 0.981626

00:29:40.070 --> 00:29:41.610 with moderate or severe stenosis.

NOTE Confidence: 0.9395506

00:29:42.375 --> 00:29:44.055 But for our asymptomatic patients,

NOTE Confidence: 0.9395506

00:29:44.055 --> 00:29:45.175 our data is limited and

NOTE Confidence: 0.9395506

00:29:45.175 --> 00:29:46.875 the guidelines aren't very clear.

NOTE Confidence: 0.96125036

00:29:48.775 --> 00:29:50.535 So for individuals with carotid

NOTE Confidence: 0.96125036

00:29:50.535 --> 00:29:52.055 artery stenosis like our patient

NOTE Confidence: 0.96125036

00:29:52.055 --> 00:29:53.175 in this case, who are

NOTE Confidence: 0.96125036

00:29:53.175 --> 00:29:53.675 asymptomatic

NOTE Confidence: 0.9950541

00:29:54.135 --> 00:29:55.335 with a greater than seventy

NOTE Confidence: 0.9950541

00:29:55.335 --> 00:29:56.235 percent stenosis,

NOTE Confidence: 0.9932962

00:29:56.700 --> 00:29:58.380 the benefit of intervention above

NOTE Confidence: 0.9932962

00:29:58.380 --> 00:30:00.140 and beyond optimal medical therapy

NOTE Confidence: 0.9932962

00:30:00.140 --> 00:30:01.980 is not clear. Further, the

NOTE Confidence: 0.9932962

00:30:01.980 --> 00:30:03.500 choice of intervention, be it

NOTE Confidence: 0.9932962

00:30:03.500 --> 00:30:04.000 endarterectomy

NOTE Confidence: 0.96794516

00:30:04.460 --> 00:30:06.059 or carotid stent, has had

NOTE Confidence: 0.96794516

00:30:06.059 --> 00:30:06.880 mixed results.

NOTE Confidence: 0.9951085

00:30:07.260 --> 00:30:08.380 So we need more data

NOTE Confidence: 0.9951085

00:30:08.380 --> 00:30:09.740 to help guide this choice

NOTE Confidence: 0.9951085

00:30:09.740 --> 00:30:10.635 and allow us to make

NOTE Confidence: 0.9951085

00:30:10.635 --> 00:30:12.415 the best clinical decision possible

NOTE Confidence: 0.9951085

00:30:12.475 --> 00:30:13.375 for our patient.

NOTE Confidence: 0.9719551

00:30:13.755 --> 00:30:15.115 And with that, I'll turn

NOTE Confidence: 0.9719551

00:30:15.115 --> 00:30:16.575 it over to doctor Clemen.

NOTE Confidence: 0.9157354

00:30:23.669 --> 00:30:24.870 Thank you, Lindsay, and,

NOTE Confidence: 0.97005683

00:30:25.429 --> 00:30:26.630 thank you, doctor Miller and

NOTE Confidence: 0.97005683

00:30:26.630 --> 00:30:28.010 doctor Mena, for the introduction.

NOTE Confidence: 0.9949236

00:30:29.590 --> 00:30:30.630 So I'm gonna be talking

NOTE Confidence: 0.9949236

00:30:30.630 --> 00:30:32.090 about the CREST two trial,

NOTE Confidence: 0.9844247

00:30:32.390 --> 00:30:34.169 which was just, simultaneously

NOTE Confidence: 0.9785247

00:30:34.549 --> 00:30:35.990 presented at Veith and published

NOTE Confidence: 0.9785247

00:30:35.990 --> 00:30:37.029 in the New England Journal

NOTE Confidence: 0.9785247

00:30:37.029 --> 00:30:38.409 of Medicine last month.

NOTE Confidence: 0.91594964

00:30:39.455 --> 00:30:40.915 Our teams here at Yale,

NOTE Confidence: 0.9979437

00:30:41.215 --> 00:30:42.755 neurology, vascular surgery,

NOTE Confidence: 0.96727294

00:30:43.135 --> 00:30:43.635 cardiology,

NOTE Confidence: 0.9648344

00:30:44.095 --> 00:30:46.175 and, research teams worked in

NOTE Confidence: 0.9648344

00:30:46.175 --> 00:30:47.295 concert to make Yale one

NOTE Confidence: 0.9648344

00:30:47.295 --> 00:30:48.415 of the top recruiting sites

NOTE Confidence: 0.9648344

00:30:48.415 --> 00:30:49.795 for this particular trial.

NOTE Confidence: 0.9211744

00:30:52.750 --> 00:30:55.010 As Lindsay has extensively reviewed,

NOTE Confidence: 0.9512525

00:30:55.390 --> 00:30:57.070 there's still some outstanding questions

NOTE Confidence: 0.9512525

00:30:57.070 --> 00:30:58.910 regarding the management asymptomatic crowded

NOTE Confidence: 0.9512525

00:30:58.910 --> 00:30:59.410 stenosis.

NOTE Confidence: 0.97403866

00:31:00.350 --> 00:31:01.950 Systematic reviews of these older

NOTE Confidence: 0.97403866

00:31:01.950 --> 00:31:03.150 studies have shown a reduction

NOTE Confidence: 0.97403866

00:31:03.150 --> 00:31:04.770 in mortality and near twofold,

NOTE Confidence: 0.9600029

00:31:05.235 --> 00:31:07.155 risk reduction in ipsilateral stroke

NOTE Confidence: 0.9600029

00:31:07.155 --> 00:31:08.934 for revascularization of asymptomatic

NOTE Confidence: 0.99395347

00:31:09.235 --> 00:31:09.735 disease.

NOTE Confidence: 0.95910764

00:31:10.995 --> 00:31:11.795 But as we heard from

NOTE Confidence: 0.95910764

00:31:11.795 --> 00:31:13.155 Lindsay, some of the newer

NOTE Confidence: 0.95910764

00:31:13.155 --> 00:31:15.155 or more recent randomized controlled

NOTE Confidence: 0.95910764

00:31:15.155 --> 00:31:15.655 data,

NOTE Confidence: 0.9187879

00:31:17.155 --> 00:31:18.615 has been, flawed,

NOTE Confidence: 0.8734423

00:31:19.240 --> 00:31:21.080 specifically, UCSD two and space

NOTE Confidence: 0.8734423

00:31:21.080 --> 00:31:23.100 two, which were significantly underpowered.

NOTE Confidence: 0.98441684

00:31:25.000 --> 00:31:26.679 These, however, did not show

NOTE Confidence: 0.98441684

00:31:26.679 --> 00:31:27.340 a difference,

NOTE Confidence: 0.99300134

00:31:27.720 --> 00:31:29.900 between revascularization and medical therapy.

NOTE Confidence: 0.9972052

00:31:30.679 --> 00:31:32.039 But given the limitations in

NOTE Confidence: 0.9972052

00:31:32.039 --> 00:31:33.340 these studies and the outstanding

NOTE Confidence: 0.9972052

00:31:33.400 --> 00:31:33.900 questions,

NOTE Confidence: 0.96231663

00:31:34.265 --> 00:31:35.865 CREST two was designed and

NOTE Confidence: 0.96231663

00:31:35.865 --> 00:31:37.485 ongoing, to help answer,

NOTE Confidence: 0.968946

00:31:38.985 --> 00:31:40.265 what were the questions that

NOTE Confidence: 0.968946

00:31:40.265 --> 00:31:40.765 remained.

NOTE Confidence: 0.96610236

00:31:43.545 --> 00:31:44.665 So CREST two is actually

NOTE Confidence: 0.96610236

00:31:44.665 --> 00:31:46.045 designed as two parallel,

NOTE Confidence: 0.9327198

00:31:46.665 --> 00:31:48.285 studies. So an endarterectomy

NOTE Confidence: 0.9250536

00:31:48.745 --> 00:31:50.720 plus intensive medical management arm,

NOTE Confidence: 0.9250536

00:31:50.960 --> 00:31:53.140 versus intentsable medical management alone.

NOTE Confidence: 0.96152127

00:31:53.600 --> 00:31:54.480 And then as a separate

NOTE Confidence: 0.96152127

00:31:54.480 --> 00:31:55.840 study, a carotid stenting and

NOTE Confidence: 0.96152127

00:31:55.840 --> 00:31:57.919 intensive medical management versus intensive

NOTE Confidence: 0.96152127

00:31:57.919 --> 00:31:59.779 intensive medical management alone.

NOTE Confidence: 0.99560016

00:32:00.720 --> 00:32:01.919 To be clear, there's no

NOTE Confidence: 0.99560016

00:32:01.919 --> 00:32:04.000 direct comparison between stenting and

NOTE Confidence: 0.99560016

00:32:04.000 --> 00:32:06.095 endarterectomy in this particular trial.

NOTE Confidence: 0.9565214

00:32:07.355 --> 00:32:09.375 This was a multicenter randomized

NOTE Confidence: 0.9565214

00:32:09.435 --> 00:32:11.515 observer blinded study that was

NOTE Confidence: 0.9565214

00:32:11.515 --> 00:32:12.795 conducted a hundred and fifty

NOTE Confidence: 0.9565214

00:32:12.795 --> 00:32:14.475 five sites worldwide, including here

NOTE Confidence: 0.9565214

00:32:14.475 --> 00:32:15.055 at Yale.

NOTE Confidence: 0.9212255

00:32:16.395 --> 00:32:18.330 I've listed the, inclusion and

NOTE Confidence: 0.9212255

00:32:18.490 --> 00:32:20.809 exclusion criteria below. But briefly

NOTE Confidence: 0.9212255

00:32:20.809 --> 00:32:22.029 for inclusion criteria,

NOTE Confidence: 0.96316296

00:32:22.330 --> 00:32:23.370 patients had to be thirty

NOTE Confidence: 0.96316296

00:32:23.370 --> 00:32:24.809 five years or older and

NOTE Confidence: 0.96316296

00:32:24.809 --> 00:32:25.850 essentially had to,

NOTE Confidence: 0.9772992

00:32:26.809 --> 00:32:28.169 have had no symptoms in

NOTE Confidence: 0.9772992

00:32:28.169 --> 00:32:29.049 the last a hundred and

NOTE Confidence: 0.9772992

00:32:29.049 --> 00:32:30.090 eighty days. So they could

NOTE Confidence: 0.9772992

00:32:30.090 --> 00:32:31.289 have had a prior TIA,

NOTE Confidence: 0.9772992

00:32:31.289 --> 00:32:32.475 for example, before that hundred

NOTE Confidence: 0.9772992

00:32:32.475 --> 00:32:33.655 and eighty day mark.

NOTE Confidence: 0.9466245

00:32:34.355 --> 00:32:35.315 And they had to have

NOTE Confidence: 0.9466245

00:32:35.315 --> 00:32:35.815 proven,

NOTE Confidence: 0.8960745

00:32:36.275 --> 00:32:37.335 severe disease,

NOTE Confidence: 0.9929733

00:32:37.795 --> 00:32:39.175 so either by duplex,

NOTE Confidence: 0.8931167

00:32:40.035 --> 00:32:41.735 with the listed requirements,

NOTE Confidence: 0.9449025

00:32:42.755 --> 00:32:43.875 below here. So a peak

NOTE Confidence: 0.9449025

00:32:43.875 --> 00:32:45.554 systolic that's two hundred and

NOTE Confidence: 0.9449025

00:32:45.554 --> 00:32:46.375 thirty centimeters,

NOTE Confidence: 0.958987

00:32:46.755 --> 00:32:47.895 per second or greater,

NOTE Confidence: 0.98019576

00:32:48.330 --> 00:32:49.850 and then diastolic velocity that

NOTE Confidence: 0.98019576

00:32:49.850 --> 00:32:51.130 was a hundred centimeters per

NOTE Confidence: 0.98019576

00:32:51.130 --> 00:32:51.950 second or greater,

NOTE Confidence: 0.97140694

00:32:52.570 --> 00:32:54.250 and then, a ratio between

NOTE Confidence: 0.97140694

00:32:54.250 --> 00:32:55.950 the internal and common carotid,

NOTE Confidence: 0.96816105

00:32:56.809 --> 00:32:58.090 that was greater than four,

NOTE Confidence: 0.96816105

00:32:58.090 --> 00:32:59.770 and then confirmatory evidence from

NOTE Confidence: 0.96816105

00:32:59.770 --> 00:33:00.909 a CTA or MRI.

NOTE Confidence: 0.9444027

00:33:02.585 --> 00:33:03.785 Or, they could have had

NOTE Confidence: 0.9444027

00:33:03.785 --> 00:33:06.045 an angiogram alone, which documented,

NOTE Confidence: 0.9908229

00:33:06.585 --> 00:33:08.045 seventy percent or more stenosis.

NOTE Confidence: 0.9990166

00:33:08.985 --> 00:33:10.285 For exclusion criteria,

NOTE Confidence: 0.9731458

00:33:11.225 --> 00:33:12.425 anyone who had a previous

NOTE Confidence: 0.9731458

00:33:12.425 --> 00:33:14.365 disabling stroke was, excluded.

NOTE Confidence: 0.85651743

00:33:14.825 --> 00:33:15.325 These,

NOTE Confidence: 0.96206665

00:33:15.865 --> 00:33:17.130 were judged based on a

NOTE Confidence: 0.96206665

00:33:17.130 --> 00:33:18.810 modified ranking score of two

NOTE Confidence: 0.96206665

00:33:18.810 --> 00:33:19.470 or higher.

NOTE Confidence: 0.96328706

00:33:20.250 --> 00:33:22.570 Unstable angina, atrial fibrillation prompting

NOTE Confidence: 0.96328706

00:33:22.570 --> 00:33:23.070 anticoagulation,

NOTE Confidence: 0.985594

00:33:24.090 --> 00:33:25.290 other high risk sources of

NOTE Confidence: 0.985594

00:33:25.290 --> 00:33:25.790 emboli,

NOTE Confidence: 0.93166894

00:33:27.610 --> 00:33:29.210 CKD, so the creatinine greater

NOTE Confidence: 0.93166894

00:33:29.210 --> 00:33:30.010 than two point five or

NOTE Confidence: 0.93166894

00:33:30.010 --> 00:33:31.050 a GFR that's less than

NOTE Confidence: 0.93166894

00:33:31.050 --> 00:33:31.550 fifty,

NOTE Confidence: 0.9443136

00:33:32.105 --> 00:33:33.305 and more advanced heart failure

NOTE Confidence: 0.9443136

00:33:33.305 --> 00:33:34.345 with EFs that were less

NOTE Confidence: 0.9443136

00:33:34.345 --> 00:33:35.725 than thirty percent, and

NOTE Confidence: 0.87260616

00:33:36.025 --> 00:33:37.945 any lateral occlusion of the,

NOTE Confidence: 0.87260616

00:33:38.185 --> 00:33:39.645 internal or common carotid.

NOTE Confidence: 0.8851647

00:33:40.585 --> 00:33:41.805 There are also endarterectomy

NOTE Confidence: 0.9894398

00:33:42.185 --> 00:33:44.185 and stenting specific exclusion criteria,

NOTE Confidence: 0.9894398

00:33:44.185 --> 00:33:45.145 which I did not list

NOTE Confidence: 0.9894398

00:33:45.145 --> 00:33:45.645 here.

NOTE Confidence: 0.97388935

00:33:46.020 --> 00:33:46.680 For endarterectomy,

NOTE Confidence: 0.98360765

00:33:47.060 --> 00:33:47.800 that included,

NOTE Confidence: 0.9650934

00:33:48.260 --> 00:33:49.940 severe at least two vessel

NOTE Confidence: 0.9650934

00:33:49.940 --> 00:33:51.480 proximal coronary disease,

NOTE Confidence: 0.9377328

00:33:52.180 --> 00:33:53.860 unsuitable anatomy. So, like, with

NOTE Confidence: 0.9377328

00:33:53.860 --> 00:33:54.980 our patients, someone who had

NOTE Confidence: 0.9377328

00:33:54.980 --> 00:33:56.980 prior, neck radiation or had

NOTE Confidence: 0.9377328

00:33:56.980 --> 00:33:58.340 a radical neck dissection, for

NOTE Confidence: 0.9377328

00:33:58.340 --> 00:33:58.840 example,

NOTE Confidence: 0.9875846

00:33:59.380 --> 00:34:00.660 or allergies to heparin or

NOTE Confidence: 0.9875846

00:34:00.660 --> 00:34:01.160 bivalirudin.

NOTE Confidence: 0.9994944

00:34:01.934 --> 00:34:03.235 For carotid stenting,

NOTE Confidence: 0.9910061

00:34:03.695 --> 00:34:05.934 the specific exclusion criteria included

NOTE Confidence: 0.9910061

00:34:05.934 --> 00:34:07.695 a documented history of contrast

NOTE Confidence: 0.9910061

00:34:07.695 --> 00:34:08.194 allergy,

NOTE Confidence: 0.98712176

00:34:08.895 --> 00:34:10.335 a type three aortic arch,

NOTE Confidence: 0.98712176

00:34:10.335 --> 00:34:12.755 critical or occlusive ileofemoral disease,

NOTE Confidence: 0.9554023

00:34:13.535 --> 00:34:15.315 or severe angulation or calcification

NOTE Confidence: 0.9554023

00:34:15.455 --> 00:34:16.575 in the common or internal

NOTE Confidence: 0.9554023

00:34:16.575 --> 00:34:17.910 carotid, that would make the

NOTE Confidence: 0.9554023

00:34:17.910 --> 00:34:18.410 procedure,

NOTE Confidence: 0.9845333

00:34:18.710 --> 00:34:19.750 difficult and,

NOTE Confidence: 0.97274244

00:34:20.790 --> 00:34:21.609 higher risk.

NOTE Confidence: 0.97289497

00:34:23.589 --> 00:34:25.430 One of the unique aspects

NOTE Confidence: 0.97289497

00:34:25.430 --> 00:34:26.550 about both of the CREST

NOTE Confidence: 0.97289497

00:34:26.550 --> 00:34:28.309 trials and specifically here, about

NOTE Confidence: 0.97289497

00:34:28.309 --> 00:34:30.069 CREST two, was that,

NOTE Confidence: 0.9331794

00:34:30.755 --> 00:34:32.675 the vetting of high quality

NOTE Confidence: 0.9331794

00:34:32.675 --> 00:34:33.175 operators.

NOTE Confidence: 0.9969539

00:34:33.875 --> 00:34:35.635 So, for each site that

NOTE Confidence: 0.9969539

00:34:35.635 --> 00:34:36.375 was involved,

NOTE Confidence: 0.9848796

00:34:36.835 --> 00:34:37.895 all of the proceduralists,

NOTE Confidence: 0.9333086

00:34:38.594 --> 00:34:40.035 that were included, that were

NOTE Confidence: 0.9333086

00:34:40.035 --> 00:34:41.395 allowed to enroll patients had

NOTE Confidence: 0.9333086

00:34:41.395 --> 00:34:42.675 to, be approved by a

NOTE Confidence: 0.9333086

00:34:42.675 --> 00:34:43.175 committee.

NOTE Confidence: 0.96364737

00:34:43.875 --> 00:34:44.995 In order to do so,

NOTE Confidence: 0.96364737

00:34:45.235 --> 00:34:46.869 they had to submit, patient

NOTE Confidence: 0.96364737

00:34:46.869 --> 00:34:48.650 logs. So for, interventionalist,

NOTE Confidence: 0.9985938

00:34:48.950 --> 00:34:50.469 those that were performing carotid

NOTE Confidence: 0.9985938

00:34:50.469 --> 00:34:50.969 stenting,

NOTE Confidence: 0.98159367

00:34:52.230 --> 00:34:53.270 they had to submit,

NOTE Confidence: 0.93447936

00:34:53.670 --> 00:34:54.790 all case logs from the

NOTE Confidence: 0.93447936

00:34:54.790 --> 00:34:56.550 preceding twelve months and then,

NOTE Confidence: 0.95944303

00:34:57.430 --> 00:34:59.369 submitted procedural reports and angiograms

NOTE Confidence: 0.95944303

00:34:59.430 --> 00:35:00.790 for an additional twenty five

NOTE Confidence: 0.95944303

00:35:00.790 --> 00:35:01.290 patients,

NOTE Confidence: 0.9992332

00:35:01.875 --> 00:35:03.155 depending on their overall case

NOTE Confidence: 0.9992332

00:35:03.155 --> 00:35:03.655 volume.

NOTE Confidence: 0.9599217

00:35:04.275 --> 00:35:06.275 The surgeons submitted their prior

NOTE Confidence: 0.9599217

00:35:06.275 --> 00:35:07.735 fifty consecutive endarterectomies

NOTE Confidence: 0.9592519

00:35:08.515 --> 00:35:10.535 and required documentation of periprocedural

NOTE Confidence: 0.99909306

00:35:10.835 --> 00:35:11.715 stroke and death rates that

NOTE Confidence: 0.99909306

00:35:11.715 --> 00:35:13.015 were less than three percent.

NOTE Confidence: 0.9758566

00:35:14.000 --> 00:35:16.000 Overall, approximately fifty percent of

NOTE Confidence: 0.9758566

00:35:16.000 --> 00:35:16.500 interventionalists

NOTE Confidence: 0.9859418

00:35:16.800 --> 00:35:17.540 that applied,

NOTE Confidence: 0.9717172

00:35:19.040 --> 00:35:20.559 were included or were allowed

NOTE Confidence: 0.9717172

00:35:20.559 --> 00:35:21.520 to enroll patients in the

NOTE Confidence: 0.9717172

00:35:21.520 --> 00:35:22.880 study in the carotid stenting

NOTE Confidence: 0.9717172

00:35:22.880 --> 00:35:23.380 arm.

NOTE Confidence: 0.9955415

00:35:23.680 --> 00:35:24.800 And over ninety percent of

NOTE Confidence: 0.9955415

00:35:24.800 --> 00:35:26.079 the surgeons that applied were

NOTE Confidence: 0.9955415

00:35:26.079 --> 00:35:26.579 approved,

NOTE Confidence: 0.95360523

00:35:26.960 --> 00:35:27.375 to enroll

NOTE Confidence: 0.9671185

00:35:28.735 --> 00:35:30.035 endarterectomy arm.

NOTE Confidence: 0.9713585

00:35:30.575 --> 00:35:31.855 And this is in contrast

NOTE Confidence: 0.9713585

00:35:31.855 --> 00:35:32.655 to many of the other,

NOTE Confidence: 0.9713585

00:35:32.895 --> 00:35:34.895 carotid revascularization studies that Lindsay

NOTE Confidence: 0.9713585

00:35:34.895 --> 00:35:36.275 has already presented on.

NOTE Confidence: 0.9779371

00:35:38.975 --> 00:35:40.594 Regardless of which study,

NOTE Confidence: 0.93988585

00:35:41.580 --> 00:35:42.860 or which arm patients were

NOTE Confidence: 0.93988585

00:35:42.860 --> 00:35:44.140 randomized to each patient was

NOTE Confidence: 0.93988585

00:35:44.140 --> 00:35:45.340 subject to the same intensive

NOTE Confidence: 0.93988585

00:35:45.340 --> 00:35:46.239 medical therapy

NOTE Confidence: 0.9407322

00:35:46.620 --> 00:35:48.080 regimen and target goals,

NOTE Confidence: 0.96770257

00:35:48.460 --> 00:35:49.840 with the exception of antiplatelet

NOTE Confidence: 0.96770257

00:35:49.980 --> 00:35:50.480 regimens,

NOTE Confidence: 0.9284611

00:35:52.219 --> 00:35:53.340 patients who were randomized to

NOTE Confidence: 0.9284611

00:35:53.340 --> 00:35:53.840 endarterectomy

NOTE Confidence: 0.9533822

00:35:54.219 --> 00:35:55.280 received periprocedural

NOTE Confidence: 0.9208941

00:35:55.685 --> 00:35:56.805 aspirin, a full dose three

NOTE Confidence: 0.9208941

00:35:56.805 --> 00:35:58.025 hundred and twenty four milligrams,

NOTE Confidence: 0.9208941

00:35:58.085 --> 00:35:58.565 and those,

NOTE Confidence: 0.9011983

00:35:59.205 --> 00:36:01.685 randomized to, stenting received aspirin

NOTE Confidence: 0.9011983

00:36:01.685 --> 00:36:02.344 and Plavix.

NOTE Confidence: 0.9851504

00:36:03.765 --> 00:36:05.385 Regardless of, randomization,

NOTE Confidence: 0.9354131

00:36:05.844 --> 00:36:08.165 best medical therapy was, managed

NOTE Confidence: 0.9354131

00:36:08.165 --> 00:36:09.145 by site investigators,

NOTE Confidence: 0.9189628

00:36:09.605 --> 00:36:10.320 from neurology

NOTE Confidence: 0.96920943

00:36:14.000 --> 00:36:15.760 primary targets were systolic blood

NOTE Confidence: 0.96920943

00:36:15.760 --> 00:36:17.200 pressures less than one forty,

NOTE Confidence: 0.96920943

00:36:17.520 --> 00:36:18.800 or less than one thirty

NOTE Confidence: 0.96920943

00:36:18.800 --> 00:36:20.160 if patients were diabetic and

NOTE Confidence: 0.96920943

00:36:20.160 --> 00:36:21.600 LDL cholesterol goals that were

NOTE Confidence: 0.96920943

00:36:21.600 --> 00:36:23.040 less than seventy. And these

NOTE Confidence: 0.96920943

00:36:23.040 --> 00:36:24.340 were based on the available

NOTE Confidence: 0.96920943

00:36:24.400 --> 00:36:24.900 guidelines,

NOTE Confidence: 0.9256552

00:36:25.440 --> 00:36:26.265 at that time. And remember,

NOTE Confidence: 0.9256552

00:36:26.265 --> 00:36:27.785 the study first started enrolling

NOTE Confidence: 0.9256552

00:36:27.785 --> 00:36:28.844 in two thousand fourteen.

NOTE Confidence: 0.9414849

00:36:31.145 --> 00:36:32.765 Control of diabetes and lifestyle

NOTE Confidence: 0.9414849

00:36:32.825 --> 00:36:34.424 choices such as tobacco use,

NOTE Confidence: 0.9414849

00:36:34.585 --> 00:36:36.585 were monitored, and telephonic counseling

NOTE Confidence: 0.9414849

00:36:36.585 --> 00:36:37.944 was actually provided to all

NOTE Confidence: 0.9414849

00:36:37.944 --> 00:36:38.344 patients,

NOTE Confidence: 0.8497359

00:36:39.620 --> 00:36:40.760 for these purposes.

NOTE Confidence: 0.9873983

00:36:41.540 --> 00:36:43.140 Medications were provided free of

NOTE Confidence: 0.9873983

00:36:43.140 --> 00:36:45.080 charge, and this included Repatha

NOTE Confidence: 0.9873983

00:36:45.300 --> 00:36:46.820 after I was approved and

NOTE Confidence: 0.9873983

00:36:46.820 --> 00:36:47.940 available in two thousand and

NOTE Confidence: 0.9873983

00:36:47.940 --> 00:36:48.440 eighteen.

NOTE Confidence: 0.99647176

00:36:51.825 --> 00:36:53.265 The primary outcome here was

NOTE Confidence: 0.99647176

00:36:53.265 --> 00:36:54.864 a four year, composite of

NOTE Confidence: 0.99647176

00:36:54.864 --> 00:36:55.984 any stroke or death from

NOTE Confidence: 0.99647176

00:36:55.984 --> 00:36:57.585 randomization to forty four days,

NOTE Confidence: 0.99647176

00:36:57.585 --> 00:36:59.285 which was considered the periprocedural

NOTE Confidence: 0.8934594

00:36:59.665 --> 00:37:00.805 period for the study,

NOTE Confidence: 0.9991685

00:37:01.185 --> 00:37:02.864 as well as ipsilateral ischemic

NOTE Confidence: 0.9991685

00:37:02.864 --> 00:37:04.484 stroke after forty four days.

NOTE Confidence: 0.94928646

00:37:05.820 --> 00:37:07.500 The secondary outcome included the

NOTE Confidence: 0.94928646

00:37:07.500 --> 00:37:09.660 primary composite plus contralateral stroke

NOTE Confidence: 0.94928646

00:37:09.660 --> 00:37:10.700 in the peri in the

NOTE Confidence: 0.94928646

00:37:10.700 --> 00:37:11.200 postprocedural

NOTE Confidence: 0.96981674

00:37:11.580 --> 00:37:12.940 period, so after forty four

NOTE Confidence: 0.96981674

00:37:12.940 --> 00:37:13.440 days.

NOTE Confidence: 0.93632835

00:37:14.140 --> 00:37:15.500 All strokes here were defined

NOTE Confidence: 0.93632835

00:37:15.500 --> 00:37:17.660 using the WHO classification. So,

NOTE Confidence: 0.93632835

00:37:17.900 --> 00:37:19.614 rapidly evolving clinical signs of

NOTE Confidence: 0.93632835

00:37:19.614 --> 00:37:21.775 focal global disturbance, a perfusion

NOTE Confidence: 0.93632835

00:37:21.775 --> 00:37:22.975 lasting more than twenty four

NOTE Confidence: 0.93632835

00:37:22.975 --> 00:37:24.575 hours with no apparent cause

NOTE Confidence: 0.93632835

00:37:24.575 --> 00:37:25.475 other than vascular.

NOTE Confidence: 0.98121184

00:37:26.495 --> 00:37:27.875 There was a stroke adjudication

NOTE Confidence: 0.98121184

00:37:28.094 --> 00:37:28.575 committee,

NOTE Confidence: 0.99194026

00:37:28.895 --> 00:37:30.094 that further determined if these

NOTE Confidence: 0.99194026

00:37:30.094 --> 00:37:31.295 were major strokes based on

NOTE Confidence: 0.99194026

00:37:31.295 --> 00:37:31.795 an

NOTE Confidence: 0.93640286

00:37:32.460 --> 00:37:34.480 NIHSS, SS scale score of

NOTE Confidence: 0.93640286

00:37:34.700 --> 00:37:35.980 six or higher, and if

NOTE Confidence: 0.93640286

00:37:35.980 --> 00:37:37.739 they were disabling strokes based

NOTE Confidence: 0.93640286

00:37:37.739 --> 00:37:38.859 on the modified ranking score

NOTE Confidence: 0.93640286

00:37:38.859 --> 00:37:39.920 of three or higher.

NOTE Confidence: 0.9816652

00:37:41.340 --> 00:37:42.859 There were some additional secondary

NOTE Confidence: 0.9816652

00:37:42.859 --> 00:37:43.995 outcomes that I didn't didn't

NOTE Confidence: 0.9816652

00:37:43.995 --> 00:37:45.035 focus on for the purposes

NOTE Confidence: 0.9816652

00:37:45.035 --> 00:37:46.155 of this talk, and these

NOTE Confidence: 0.9816652

00:37:46.155 --> 00:37:46.655 specifically,

NOTE Confidence: 0.9669904

00:37:48.875 --> 00:37:50.475 looked at differences between medical

NOTE Confidence: 0.9669904

00:37:50.475 --> 00:37:51.455 therapy and revascularization

NOTE Confidence: 0.98847485

00:37:51.915 --> 00:37:52.795 using a different,

NOTE Confidence: 0.94193435

00:37:53.115 --> 00:37:54.715 definition of stroke, specifically a

NOTE Confidence: 0.94193435

00:37:54.715 --> 00:37:55.855 tissue based definition.

NOTE Confidence: 0.9833482

00:37:56.315 --> 00:37:58.140 So strokes that were found,

NOTE Confidence: 0.9833482

00:37:58.299 --> 00:37:59.579 by imaging. So those that

NOTE Confidence: 0.9833482

00:37:59.579 --> 00:38:00.380 may not have been picked

NOTE Confidence: 0.9833482

00:38:00.380 --> 00:38:01.359 up, clinically.

NOTE Confidence: 0.9905976

00:38:02.700 --> 00:38:03.980 It's worth noting that results

NOTE Confidence: 0.9905976

00:38:03.980 --> 00:38:05.180 were the same regardless of

NOTE Confidence: 0.9905976

00:38:05.180 --> 00:38:06.719 which definition were used.

NOTE Confidence: 0.98157805

00:38:07.980 --> 00:38:09.420 The study was analyzed as

NOTE Confidence: 0.98157805

00:38:09.420 --> 00:38:11.385 intention to treat. Kaplan Meier

NOTE Confidence: 0.98157805

00:38:11.385 --> 00:38:12.905 curves were derived to estimate

NOTE Confidence: 0.98157805

00:38:12.905 --> 00:38:14.505 event rates, and treatment differences

NOTE Confidence: 0.98157805

00:38:14.505 --> 00:38:16.045 were tested using a rerandomization

NOTE Confidence: 0.99809635

00:38:16.585 --> 00:38:18.025 test, to account for the

NOTE Confidence: 0.99809635

00:38:18.025 --> 00:38:19.565 low expected event rate.

NOTE Confidence: 0.9620103

00:38:23.210 --> 00:38:24.410 So with regards to the

NOTE Confidence: 0.9620103

00:38:24.410 --> 00:38:26.329 results, here is, the CONSORT

NOTE Confidence: 0.9620103

00:38:26.329 --> 00:38:28.170 diagrams for the carotid stenting

NOTE Confidence: 0.9620103

00:38:28.170 --> 00:38:28.670 study.

NOTE Confidence: 0.977486

00:38:29.369 --> 00:38:29.869 Overall,

NOTE Confidence: 0.9854912

00:38:30.170 --> 00:38:31.289 there were one thousand two

NOTE Confidence: 0.9854912

00:38:31.289 --> 00:38:32.410 hundred and forty five patients

NOTE Confidence: 0.9854912

00:38:32.410 --> 00:38:33.309 that were randomized

NOTE Confidence: 0.9734931

00:38:33.609 --> 00:38:35.069 in this particular study.

NOTE Confidence: 0.97583246

00:38:35.625 --> 00:38:36.425 Six hundred and twenty nine

NOTE Confidence: 0.97583246

00:38:36.425 --> 00:38:37.785 were randomized to medical therapy,

NOTE Confidence: 0.97583246

00:38:37.785 --> 00:38:38.905 and six hundred and sixteen

NOTE Confidence: 0.97583246

00:38:38.905 --> 00:38:39.565 were randomized,

NOTE Confidence: 0.977266

00:38:40.745 --> 00:38:42.105 to carotid stenting, of which

NOTE Confidence: 0.977266

00:38:42.105 --> 00:38:43.305 five hundred and seventy five

NOTE Confidence: 0.977266

00:38:43.305 --> 00:38:44.205 actually received,

NOTE Confidence: 0.9788499

00:38:44.745 --> 00:38:45.725 carotid stent.

NOTE Confidence: 0.9895741

00:38:46.745 --> 00:38:47.945 It's worth noting that there

NOTE Confidence: 0.9895741

00:38:47.945 --> 00:38:49.145 were a hundred and six

NOTE Confidence: 0.9895741

00:38:49.145 --> 00:38:50.745 crossovers from the medical arm,

NOTE Confidence: 0.9895741

00:38:51.300 --> 00:38:51.960 to revascularization.

NOTE Confidence: 0.96725804

00:38:53.700 --> 00:38:55.300 Of note, there were no

NOTE Confidence: 0.96725804

00:38:55.300 --> 00:38:57.219 patients lost to follow-up regardless

NOTE Confidence: 0.96725804

00:38:57.219 --> 00:38:58.100 of what arm they were

NOTE Confidence: 0.96725804

00:38:58.100 --> 00:38:59.780 randomized to. And the median

NOTE Confidence: 0.96725804

00:38:59.780 --> 00:39:01.140 follow-up here in the carotid

NOTE Confidence: 0.96725804

00:39:01.140 --> 00:39:02.020 artery stenting,

NOTE Confidence: 0.9961865

00:39:02.340 --> 00:39:03.880 trial was four years.

NOTE Confidence: 0.99508744

00:39:05.474 --> 00:39:06.934 In the, endarterectomy

NOTE Confidence: 0.98163164

00:39:07.315 --> 00:39:08.914 study, there were, one thousand

NOTE Confidence: 0.98163164

00:39:08.914 --> 00:39:10.114 two hundred and forty patients

NOTE Confidence: 0.98163164

00:39:10.114 --> 00:39:10.934 who were randomized.

NOTE Confidence: 0.97585315

00:39:11.395 --> 00:39:12.355 Six hundred and twenty three

NOTE Confidence: 0.97585315

00:39:12.355 --> 00:39:13.714 were randomized to medical therapy

NOTE Confidence: 0.97585315

00:39:13.714 --> 00:39:14.674 alone, and six hundred and

NOTE Confidence: 0.97585315

00:39:14.674 --> 00:39:16.375 seventeen were randomized to endarterectomy

NOTE Confidence: 0.92940646

00:39:16.994 --> 00:39:18.275 with five hundred ninety three

NOTE Confidence: 0.92940646

00:39:18.275 --> 00:39:20.040 actually undergoing the procedure. And

NOTE Confidence: 0.92940646

00:39:20.040 --> 00:39:21.239 There was a similarly high

NOTE Confidence: 0.92940646

00:39:21.239 --> 00:39:22.219 rate of crossover,

NOTE Confidence: 0.9801966

00:39:23.160 --> 00:39:24.440 here with a hundred and

NOTE Confidence: 0.9801966

00:39:24.440 --> 00:39:25.719 eleven crossing over from the

NOTE Confidence: 0.9801966

00:39:25.719 --> 00:39:27.020 medical arm to intervention.

NOTE Confidence: 0.9706642

00:39:27.880 --> 00:39:28.920 And, again, there were no

NOTE Confidence: 0.9706642

00:39:28.920 --> 00:39:30.360 patients lost to follow-up. And

NOTE Confidence: 0.9706642

00:39:30.360 --> 00:39:31.719 the median follow-up for these,

NOTE Confidence: 0.9706642

00:39:31.960 --> 00:39:32.760 for the patients in the

NOTE Confidence: 0.9706642

00:39:32.760 --> 00:39:34.280 end arterectomy study was three

NOTE Confidence: 0.9706642

00:39:34.280 --> 00:39:35.340 point six years.

NOTE Confidence: 0.9819791

00:39:37.635 --> 00:39:38.995 Given the high crossover rate,

NOTE Confidence: 0.9819791

00:39:38.995 --> 00:39:40.435 and I expect many questions

NOTE Confidence: 0.9819791

00:39:40.435 --> 00:39:41.335 surrounding that,

NOTE Confidence: 0.9969871

00:39:41.715 --> 00:39:43.395 I've included a breakdown here

NOTE Confidence: 0.9969871

00:39:43.395 --> 00:39:44.515 of the reason for,

NOTE Confidence: 0.97756344

00:39:44.915 --> 00:39:46.435 crossover from the medical arm,

NOTE Confidence: 0.97756344

00:39:46.675 --> 00:39:48.355 into the intervention arm for

NOTE Confidence: 0.97756344

00:39:48.355 --> 00:39:49.255 both of the studies.

NOTE Confidence: 0.995498

00:39:49.980 --> 00:39:51.340 The most common reason for

NOTE Confidence: 0.995498

00:39:51.340 --> 00:39:52.700 crossover in each of the,

NOTE Confidence: 0.975834

00:39:53.180 --> 00:39:54.700 studies was either the development

NOTE Confidence: 0.975834

00:39:54.700 --> 00:39:56.140 of symptoms that didn't meet

NOTE Confidence: 0.975834

00:39:56.140 --> 00:39:58.400 the primary composite, so, TIA,

NOTE Confidence: 0.975834

00:39:58.460 --> 00:39:59.119 for example,

NOTE Confidence: 0.99358267

00:40:00.060 --> 00:40:01.340 or progression of the target

NOTE Confidence: 0.99358267

00:40:01.340 --> 00:40:03.305 lesion, which accounted, in both

NOTE Confidence: 0.99358267

00:40:03.305 --> 00:40:04.905 studies for approximately eighty five

NOTE Confidence: 0.99358267

00:40:04.905 --> 00:40:05.964 percent of the crossovers.

NOTE Confidence: 0.9782187

00:40:07.305 --> 00:40:08.905 In other instances, there were,

NOTE Confidence: 0.9782187

00:40:09.385 --> 00:40:10.505 investigator errors,

NOTE Confidence: 0.99973416

00:40:10.825 --> 00:40:11.864 where the wrong procedure

NOTE Confidence: 0.98373514

00:40:12.265 --> 00:40:13.724 the wrong randomization,

NOTE Confidence: 0.9669183

00:40:14.505 --> 00:40:15.724 method was done,

NOTE Confidence: 0.99010086

00:40:16.329 --> 00:40:18.089 or patients were revascularized at

NOTE Confidence: 0.99010086

00:40:18.089 --> 00:40:19.869 an outside institution, for example.

NOTE Confidence: 0.9931172

00:40:23.369 --> 00:40:24.650 Here are the baseline characteristics

NOTE Confidence: 0.9931172

00:40:24.650 --> 00:40:25.849 for the two studies. It

NOTE Confidence: 0.9931172

00:40:25.849 --> 00:40:26.910 was well balanced,

NOTE Confidence: 0.9875185

00:40:27.369 --> 00:40:29.230 overall in all four arms.

NOTE Confidence: 0.9657432

00:40:29.955 --> 00:40:31.955 Patients were around, seventy years

NOTE Confidence: 0.9657432

00:40:31.955 --> 00:40:32.355 of age,

NOTE Confidence: 0.9557406

00:40:32.835 --> 00:40:34.995 predominantly male, predominantly white. Most

NOTE Confidence: 0.9557406

00:40:34.995 --> 00:40:36.535 patients had hypertension and hyperlipidemia,

NOTE Confidence: 0.89127874

00:40:36.915 --> 00:40:38.675 and approximately half had coronary

NOTE Confidence: 0.89127874

00:40:38.675 --> 00:40:40.375 disease and worse current smokers.

NOTE Confidence: 0.96853936

00:40:40.755 --> 00:40:41.795 About one in three had

NOTE Confidence: 0.96853936

00:40:41.795 --> 00:40:43.155 diabetes, and one in three

NOTE Confidence: 0.96853936

00:40:43.155 --> 00:40:44.595 patients had a peak systolic

NOTE Confidence: 0.96853936

00:40:44.595 --> 00:40:45.770 velocities that were greater than

NOTE Confidence: 0.96853936

00:40:45.770 --> 00:40:46.730 three hundred and eighty nine

NOTE Confidence: 0.96853936

00:40:46.730 --> 00:40:48.570 centimeters per second, which roughly

NOTE Confidence: 0.96853936

00:40:48.570 --> 00:40:50.089 corresponds to stenosis of about

NOTE Confidence: 0.96853936

00:40:50.089 --> 00:40:50.829 eighty percent.

NOTE Confidence: 0.91020805

00:40:51.930 --> 00:40:52.329 And,

NOTE Confidence: 0.9652532

00:40:52.730 --> 00:40:54.250 an additional, one in three

NOTE Confidence: 0.9652532

00:40:54.250 --> 00:40:55.869 had at least moderate contralateral

NOTE Confidence: 0.9652532

00:40:56.010 --> 00:40:56.910 carotid disease.

NOTE Confidence: 0.98927116

00:40:57.855 --> 00:40:59.535 It's worth noting, that,

NOTE Confidence: 0.9847835

00:40:59.855 --> 00:41:01.155 with regards to,

NOTE Confidence: 0.97799885

00:41:02.255 --> 00:41:04.255 procedural choices, this was largely

NOTE Confidence: 0.97799885

00:41:04.255 --> 00:41:05.395 left to the operators.

NOTE Confidence: 0.9969342

00:41:05.775 --> 00:41:06.755 The only stipulation,

NOTE Confidence: 0.98638904

00:41:07.455 --> 00:41:08.895 was that for the, anyone

NOTE Confidence: 0.98638904

00:41:08.895 --> 00:41:10.575 that was undergoing carotid stenting,

NOTE Confidence: 0.98638904

00:41:10.575 --> 00:41:11.935 everyone had to receive embolic

NOTE Confidence: 0.98638904

00:41:11.935 --> 00:41:12.435 protection.

NOTE Confidence: 0.97427

00:41:16.280 --> 00:41:17.880 With regards to the primary

NOTE Confidence: 0.97427

00:41:17.880 --> 00:41:18.120 composite out,

NOTE Confidence: 0.9051041

00:41:19.560 --> 00:41:21.000 for your outcome, here are

NOTE Confidence: 0.9051041

00:41:21.000 --> 00:41:22.520 the Kaplan Meier curves, that

NOTE Confidence: 0.9051041

00:41:22.520 --> 00:41:23.500 are, provided.

NOTE Confidence: 0.9745288

00:41:24.440 --> 00:41:25.880 For the carotid stenting trial,

NOTE Confidence: 0.9745288

00:41:25.880 --> 00:41:26.680 the event rate in the

NOTE Confidence: 0.9745288

00:41:26.680 --> 00:41:28.040 medical therapy arm was six

NOTE Confidence: 0.9745288

00:41:28.040 --> 00:41:29.375 percent. It was two point

NOTE Confidence: 0.9745288

00:41:29.375 --> 00:41:30.494 eight percent in the stenting

NOTE Confidence: 0.9745288

00:41:30.494 --> 00:41:32.355 arm, which was statistically significant

NOTE Confidence: 0.9745288

00:41:32.415 --> 00:41:33.214 with a p value of

NOTE Confidence: 0.9745288

00:41:33.214 --> 00:41:34.114 point o two.

NOTE Confidence: 0.99523395

00:41:34.734 --> 00:41:36.094 This amounts to an absolute

NOTE Confidence: 0.99523395

00:41:36.094 --> 00:41:37.855 risk, difference of three point

NOTE Confidence: 0.99523395

00:41:37.855 --> 00:41:38.575 two percent,

NOTE Confidence: 0.999275

00:41:38.895 --> 00:41:40.335 which corresponds to a number

NOTE Confidence: 0.999275

00:41:40.335 --> 00:41:42.015 needed to treat of thirty

NOTE Confidence: 0.999275

00:41:42.015 --> 00:41:42.755 one patients.

NOTE Confidence: 0.9965716

00:41:43.719 --> 00:41:44.840 While there was a numerical

NOTE Confidence: 0.9965716

00:41:44.840 --> 00:41:46.600 trend towards better outcomes, with

NOTE Confidence: 0.9965716

00:41:46.600 --> 00:41:47.100 endarterectomy,

NOTE Confidence: 0.9830899

00:41:47.480 --> 00:41:48.700 this did not meet statistical

NOTE Confidence: 0.9830899

00:41:48.920 --> 00:41:49.420 significance,

NOTE Confidence: 0.99874556

00:41:49.800 --> 00:41:51.160 when compared to intensive medical

NOTE Confidence: 0.99874556

00:41:51.160 --> 00:41:51.980 therapy alone.

NOTE Confidence: 0.9541481

00:41:54.360 --> 00:41:56.440 I've also highlighted the, later

NOTE Confidence: 0.9541481

00:41:56.440 --> 00:41:58.185 portions of the curves here,

NOTE Confidence: 0.9541481

00:41:58.185 --> 00:41:59.305 which showed a relatively late

NOTE Confidence: 0.9541481

00:41:59.305 --> 00:42:00.585 change in event rates between

NOTE Confidence: 0.9541481

00:42:00.585 --> 00:42:01.165 the endarterectomy

NOTE Confidence: 0.9942419

00:42:01.465 --> 00:42:02.605 and stenting arms,

NOTE Confidence: 0.98223716

00:42:02.985 --> 00:42:04.265 which were accounted for by,

NOTE Confidence: 0.98223716

00:42:04.265 --> 00:42:05.545 I think, seven or eight,

NOTE Confidence: 0.88849396

00:42:06.105 --> 00:42:07.945 post procedural ellipso lateral ischemic

NOTE Confidence: 0.88849396

00:42:07.945 --> 00:42:09.005 strokes in the endarterectomy

NOTE Confidence: 0.9982629

00:42:09.305 --> 00:42:09.805 arm.

NOTE Confidence: 0.99794686

00:42:11.540 --> 00:42:12.500 For those who are more

NOTE Confidence: 0.99794686

00:42:12.500 --> 00:42:13.719 numerically inclined,

NOTE Confidence: 0.93046397

00:42:14.100 --> 00:42:15.380 this show this chart shows

NOTE Confidence: 0.93046397

00:42:15.380 --> 00:42:16.340 the event rates for the

NOTE Confidence: 0.93046397

00:42:16.340 --> 00:42:17.460 primary outcome as well as

NOTE Confidence: 0.93046397

00:42:17.460 --> 00:42:19.140 a breakdown of peri and

NOTE Confidence: 0.93046397

00:42:19.140 --> 00:42:20.520 post procedural outcomes.

NOTE Confidence: 0.96161956

00:42:21.540 --> 00:42:23.625 Patients who, received medical therapy

NOTE Confidence: 0.96161956

00:42:23.625 --> 00:42:25.065 alone, were more than twice

NOTE Confidence: 0.96161956

00:42:25.065 --> 00:42:26.105 as likely to have a

NOTE Confidence: 0.96161956

00:42:26.105 --> 00:42:27.465 primary outcome event in four

NOTE Confidence: 0.96161956

00:42:27.465 --> 00:42:29.065 years compared to those, who

NOTE Confidence: 0.96161956

00:42:29.065 --> 00:42:29.965 underwent stenting.

NOTE Confidence: 0.9973777

00:42:30.505 --> 00:42:31.465 On the bottom portion of

NOTE Confidence: 0.9973777

00:42:31.465 --> 00:42:32.265 this chart, you can see

NOTE Confidence: 0.9973777

00:42:32.265 --> 00:42:33.705 this breakdown of periprocedural and

NOTE Confidence: 0.9973777

00:42:33.705 --> 00:42:34.205 postprocedural

NOTE Confidence: 0.9976166

00:42:34.505 --> 00:42:36.580 events. Patients receiving medical therapy

NOTE Confidence: 0.9976166

00:42:36.580 --> 00:42:37.619 were four times more likely

NOTE Confidence: 0.9976166

00:42:37.619 --> 00:42:39.160 to have a postprocedural ipsilateral

NOTE Confidence: 0.9976166

00:42:39.300 --> 00:42:39.800 stroke,

NOTE Confidence: 0.9909166

00:42:40.260 --> 00:42:41.460 than those receiving a carotid

NOTE Confidence: 0.9909166

00:42:41.460 --> 00:42:42.980 stent, and over two times

NOTE Confidence: 0.9909166

00:42:42.980 --> 00:42:44.980 more likely, than patients undergoing,

NOTE Confidence: 0.9808942

00:42:45.300 --> 00:42:46.200 carotid endarterectomy.

NOTE Confidence: 0.9445521

00:42:48.094 --> 00:42:49.135 I didn't include it here

NOTE Confidence: 0.9445521

00:42:49.135 --> 00:42:50.655 as a separate, slide, but

NOTE Confidence: 0.9445521

00:42:50.655 --> 00:42:52.015 the trialist also did,

NOTE Confidence: 0.95980793

00:42:52.655 --> 00:42:54.015 an interesting analysis called a

NOTE Confidence: 0.95980793

00:42:54.015 --> 00:42:55.155 tipping point analysis,

NOTE Confidence: 0.9869144

00:42:55.934 --> 00:42:57.454 which looked at the number

NOTE Confidence: 0.9869144

00:42:57.454 --> 00:42:58.575 of events that would be

NOTE Confidence: 0.9869144

00:42:58.575 --> 00:42:59.075 needed,

NOTE Confidence: 0.98168665

00:43:00.010 --> 00:43:00.890 that would need to happen

NOTE Confidence: 0.98168665

00:43:00.890 --> 00:43:02.010 for the stenting arm to

NOTE Confidence: 0.98168665

00:43:02.010 --> 00:43:03.790 no longer meet statistical significance

NOTE Confidence: 0.98168665

00:43:03.850 --> 00:43:04.910 or for the endarterectomy,

NOTE Confidence: 0.94384664

00:43:06.010 --> 00:43:07.390 arm to be, positive.

NOTE Confidence: 0.97596335

00:43:08.170 --> 00:43:09.690 And tipping point analysis in

NOTE Confidence: 0.97596335

00:43:09.690 --> 00:43:11.290 the carotid stenting trial showed

NOTE Confidence: 0.97596335

00:43:11.290 --> 00:43:11.610 that,

NOTE Confidence: 0.98914695

00:43:12.305 --> 00:43:13.265 three less events in the

NOTE Confidence: 0.98914695

00:43:13.265 --> 00:43:14.545 medical therapy arm or three

NOTE Confidence: 0.98914695

00:43:14.545 --> 00:43:15.665 more events in the carotid

NOTE Confidence: 0.98914695

00:43:15.665 --> 00:43:17.125 stenting arm would be required

NOTE Confidence: 0.98914695

00:43:17.265 --> 00:43:19.185 before significance was lost. And

NOTE Confidence: 0.98914695

00:43:19.185 --> 00:43:20.305 then similar analysis in the

NOTE Confidence: 0.98914695

00:43:20.305 --> 00:43:20.805 endarterectomy

NOTE Confidence: 0.98570853

00:43:21.185 --> 00:43:22.785 trial showed that seven more,

NOTE Confidence: 0.9926233

00:43:23.345 --> 00:43:24.625 events in the medical therapy

NOTE Confidence: 0.9926233

00:43:24.625 --> 00:43:26.005 arm or five less events,

NOTE Confidence: 0.9584306

00:43:26.545 --> 00:43:28.400 in the endarterectomy arm, would

NOTE Confidence: 0.9584306

00:43:28.400 --> 00:43:29.119 be needed to,

NOTE Confidence: 0.9902048

00:43:29.839 --> 00:43:31.779 make, this a positive study.

NOTE Confidence: 0.95686185

00:43:33.680 --> 00:43:34.799 It's a little bit difficult

NOTE Confidence: 0.95686185

00:43:34.799 --> 00:43:35.519 to see here, and I

NOTE Confidence: 0.95686185

00:43:35.519 --> 00:43:37.599 apologize for this. But the

NOTE Confidence: 0.95686185

00:43:37.599 --> 00:43:38.160 trial is,

NOTE Confidence: 0.9725479

00:43:39.375 --> 00:43:41.055 prespecified several groups to be

NOTE Confidence: 0.9725479

00:43:41.055 --> 00:43:43.075 further analyzed in subgroup analysis.

NOTE Confidence: 0.99076873

00:43:43.455 --> 00:43:44.915 This is a forest plot,

NOTE Confidence: 0.9952306

00:43:45.935 --> 00:43:46.755 of those subgroups,

NOTE Confidence: 0.9770741

00:43:47.535 --> 00:43:49.075 which could potentially be hypothesis

NOTE Confidence: 0.9770741

00:43:49.295 --> 00:43:50.515 generating in the future.

NOTE Confidence: 0.85809386

00:43:51.135 --> 00:43:53.075 Specifically in the stenting study,

NOTE Confidence: 0.95004815

00:43:53.780 --> 00:43:54.680 absence of hyperlipidemia,

NOTE Confidence: 0.9657449

00:43:55.219 --> 00:43:57.000 no prior symptoms, lifelong,

NOTE Confidence: 0.7912358

00:43:58.739 --> 00:43:59.239 and,

NOTE Confidence: 0.95587695

00:43:59.540 --> 00:44:01.460 more severe stenosis, which was,

NOTE Confidence: 0.97842294

00:44:02.180 --> 00:44:03.460 denoted here by a peak

NOTE Confidence: 0.97842294

00:44:03.460 --> 00:44:05.700 systolic velocity of, greater than

NOTE Confidence: 0.97842294

00:44:05.700 --> 00:44:06.579 or equal to three hundred

NOTE Confidence: 0.97842294

00:44:06.579 --> 00:44:07.859 and forty two centimeters per

NOTE Confidence: 0.97842294

00:44:07.859 --> 00:44:09.480 second. Remember, that's probably

NOTE Confidence: 0.98247546

00:44:09.835 --> 00:44:11.195 roughly around seventy five to

NOTE Confidence: 0.98247546

00:44:11.195 --> 00:44:12.735 eighty percent on a duplex,

NOTE Confidence: 0.98363733

00:44:13.515 --> 00:44:14.415 maybe subgroups,

NOTE Confidence: 0.99922985

00:44:14.795 --> 00:44:16.555 that benefit more from stenting

NOTE Confidence: 0.99922985

00:44:16.555 --> 00:44:17.295 than others.

NOTE Confidence: 0.98793346

00:44:20.475 --> 00:44:21.275 And at this point, I

NOTE Confidence: 0.98793346

00:44:21.275 --> 00:44:22.395 think one of the questions

NOTE Confidence: 0.98793346

00:44:22.395 --> 00:44:23.900 that's probably crossing your mind

NOTE Confidence: 0.98793346

00:44:23.900 --> 00:44:25.100 is how good was the

NOTE Confidence: 0.98793346

00:44:25.100 --> 00:44:26.480 intensive medical management,

NOTE Confidence: 0.9176051

00:44:27.260 --> 00:44:28.300 in the patients in this

NOTE Confidence: 0.9176051

00:44:28.300 --> 00:44:28.800 study.

NOTE Confidence: 0.975894

00:44:29.580 --> 00:44:30.860 The answer to that is

NOTE Confidence: 0.975894

00:44:30.860 --> 00:44:32.640 better, but not fantastic.

NOTE Confidence: 0.9913697

00:44:33.580 --> 00:44:35.580 Included here are graphs showing

NOTE Confidence: 0.9913697

00:44:35.580 --> 00:44:36.940 the proportion of patients that

NOTE Confidence: 0.9913697

00:44:36.940 --> 00:44:38.985 met prespecified targets for risk

NOTE Confidence: 0.9913697

00:44:39.065 --> 00:44:39.965 factor modification over time.

NOTE Confidence: 0.96790266

00:44:41.545 --> 00:44:42.745 On the y axis in

NOTE Confidence: 0.96790266

00:44:42.745 --> 00:44:43.465 each of these,

NOTE Confidence: 0.983745

00:44:44.585 --> 00:44:45.645 in each of these tiles,

NOTE Confidence: 0.9796968

00:44:46.185 --> 00:44:47.385 is the proportion of patients

NOTE Confidence: 0.9796968

00:44:47.385 --> 00:44:48.265 that are at the target

NOTE Confidence: 0.9796968

00:44:48.265 --> 00:44:49.625 range, and the x axis

NOTE Confidence: 0.9796968

00:44:49.625 --> 00:44:50.285 is time.

NOTE Confidence: 0.95842636

00:44:50.905 --> 00:44:52.025 Tiles a and b show

NOTE Confidence: 0.95842636

00:44:52.025 --> 00:44:53.079 the portion of patients who

NOTE Confidence: 0.95842636

00:44:53.079 --> 00:44:54.920 met systolic blood pressure goals

NOTE Confidence: 0.95842636

00:44:54.920 --> 00:44:56.760 and LDL goals respectively in

NOTE Confidence: 0.95842636

00:44:56.760 --> 00:44:58.440 the stenting trial with the

NOTE Confidence: 0.95842636

00:44:58.440 --> 00:44:59.880 stenting arm represented by the

NOTE Confidence: 0.95842636

00:44:59.880 --> 00:45:01.400 blue line and the medical

NOTE Confidence: 0.95842636

00:45:01.400 --> 00:45:03.079 therapy alone represented by gray.

NOTE Confidence: 0.95842636

00:45:03.079 --> 00:45:04.119 You could see they roughly

NOTE Confidence: 0.95842636

00:45:04.119 --> 00:45:05.420 correspond to each other.

NOTE Confidence: 0.9418959

00:45:06.200 --> 00:45:06.839 You can see,

NOTE Confidence: 0.97787493

00:45:08.175 --> 00:45:09.695 started a little under probably

NOTE Confidence: 0.97787493

00:45:09.695 --> 00:45:11.135 about fifty percent at target

NOTE Confidence: 0.97787493

00:45:11.135 --> 00:45:12.575 range for systolic blood pressure

NOTE Confidence: 0.97787493

00:45:12.575 --> 00:45:14.094 and as well for, LDL

NOTE Confidence: 0.97787493

00:45:14.094 --> 00:45:14.594 cholesterol,

NOTE Confidence: 0.9938345

00:45:15.295 --> 00:45:16.655 which improved to about sixty

NOTE Confidence: 0.9938345

00:45:16.655 --> 00:45:18.094 to seventy percent, by the

NOTE Confidence: 0.9938345

00:45:18.094 --> 00:45:18.995 end of the trial.

NOTE Confidence: 0.90268755

00:45:19.935 --> 00:45:22.175 This was, similar in the

NOTE Confidence: 0.90268755

00:45:22.175 --> 00:45:22.675 endarterectomy

NOTE Confidence: 0.97592485

00:45:23.135 --> 00:45:24.809 trial, which is included,

NOTE Confidence: 0.958642

00:45:25.510 --> 00:45:27.049 in the systolic blood pressure,

NOTE Confidence: 0.9520966

00:45:27.430 --> 00:45:29.190 and LDL graphs included here,

NOTE Confidence: 0.9520966

00:45:29.349 --> 00:45:30.890 in tiles c and d.

NOTE Confidence: 0.9841305

00:45:31.510 --> 00:45:32.549 I did not include the

NOTE Confidence: 0.9841305

00:45:32.549 --> 00:45:34.230 plots, for other risk factors

NOTE Confidence: 0.9841305

00:45:34.230 --> 00:45:35.670 like diabetes and obesity, which

NOTE Confidence: 0.9841305

00:45:35.670 --> 00:45:36.890 are included in the supplemental

NOTE Confidence: 0.9841305

00:45:36.950 --> 00:45:37.450 material

NOTE Confidence: 0.913445

00:45:37.750 --> 00:45:38.950 in the New England Journal,

NOTE Confidence: 0.9269163

00:45:43.765 --> 00:45:44.984 those, risk factors

NOTE Confidence: 0.99100447

00:45:45.364 --> 00:45:46.825 require sort of a multidisciplinary

NOTE Confidence: 0.9230756

00:45:47.364 --> 00:45:48.164 approach and are a little

NOTE Confidence: 0.9230756

00:45:48.164 --> 00:45:49.364 bit more difficult to manage,

NOTE Confidence: 0.9230756

00:45:49.364 --> 00:45:50.645 the changes from baseline, the

NOTE Confidence: 0.9230756

00:45:50.645 --> 00:45:51.924 proportion of patients that met

NOTE Confidence: 0.9230756

00:45:51.924 --> 00:45:53.605 goal were less so than,

NOTE Confidence: 0.97608405

00:45:54.549 --> 00:45:56.230 was experienced in systolic blood

NOTE Confidence: 0.97608405

00:45:56.230 --> 00:45:57.849 pressure goals and LDL cholesterol.

NOTE Confidence: 0.96504354

00:46:00.469 --> 00:46:01.289 And to provide,

NOTE Confidence: 0.99668336

00:46:02.150 --> 00:46:03.130 some perspective,

NOTE Confidence: 0.9815266

00:46:03.670 --> 00:46:05.269 I've included a breakdown of

NOTE Confidence: 0.9815266

00:46:05.269 --> 00:46:06.390 numbers needed to treat to

NOTE Confidence: 0.9815266

00:46:06.390 --> 00:46:07.289 prevent stroke,

NOTE Confidence: 0.90546685

00:46:07.864 --> 00:46:08.984 but been demonstrated in some

NOTE Confidence: 0.90546685

00:46:08.984 --> 00:46:10.105 of the stroke literature to

NOTE Confidence: 0.90546685

00:46:10.105 --> 00:46:10.605 date,

NOTE Confidence: 0.9208963

00:46:11.145 --> 00:46:11.805 to give,

NOTE Confidence: 0.96145785

00:46:12.505 --> 00:46:13.325 some magnitude,

NOTE Confidence: 0.98188746

00:46:14.025 --> 00:46:15.305 for the effect that was

NOTE Confidence: 0.98188746

00:46:15.305 --> 00:46:16.924 shown in this particular trial.

NOTE Confidence: 0.9920987

00:46:17.464 --> 00:46:18.585 You can see here that,

NOTE Confidence: 0.9632843

00:46:19.704 --> 00:46:21.039 closure of PFO to prevent

NOTE Confidence: 0.9632843

00:46:21.039 --> 00:46:22.480 a cryptogenic stroke at five

NOTE Confidence: 0.9632843

00:46:22.480 --> 00:46:23.520 years, for example, had a

NOTE Confidence: 0.9632843

00:46:23.520 --> 00:46:24.559 number needed to treat at

NOTE Confidence: 0.9632843

00:46:24.559 --> 00:46:26.020 twenty nine, whereas our study

NOTE Confidence: 0.9632843

00:46:26.160 --> 00:46:27.039 showed a number needed to

NOTE Confidence: 0.9632843

00:46:27.039 --> 00:46:28.319 treat for stenting of thirty

NOTE Confidence: 0.9632843

00:46:28.319 --> 00:46:29.380 one in asymptomatic

NOTE Confidence: 0.97271645

00:46:29.680 --> 00:46:30.180 patients.

NOTE Confidence: 0.99357444

00:46:30.960 --> 00:46:32.000 And some of the medical

NOTE Confidence: 0.99357444

00:46:32.000 --> 00:46:32.500 management,

NOTE Confidence: 0.7833554

00:46:33.039 --> 00:46:35.440 had much higher numbers needed

NOTE Confidence: 0.7833554

00:46:35.440 --> 00:46:37.114 to treat, so adding semaglutide

NOTE Confidence: 0.7833554

00:46:37.335 --> 00:46:38.155 or aspirin,

NOTE Confidence: 0.9143851

00:46:38.695 --> 00:46:39.355 or statin,

NOTE Confidence: 0.98223644

00:46:40.935 --> 00:46:42.055 took a lot more patients

NOTE Confidence: 0.98223644

00:46:42.055 --> 00:46:42.855 in order to,

NOTE Confidence: 0.99881345

00:46:43.255 --> 00:46:44.075 hit that goal.

NOTE Confidence: 0.99391836

00:46:45.895 --> 00:46:47.195 So, in summary,

NOTE Confidence: 0.9695834

00:46:47.655 --> 00:46:48.930 in patients without out recent

NOTE Confidence: 0.9695834

00:46:48.930 --> 00:46:50.530 symptoms and appropriate anatomy, the

NOTE Confidence: 0.9695834

00:46:50.530 --> 00:46:51.890 addition of stenting to intensive

NOTE Confidence: 0.9695834

00:46:51.890 --> 00:46:53.089 medical management led to a

NOTE Confidence: 0.9695834

00:46:53.089 --> 00:46:54.609 lower risk of a composite

NOTE Confidence: 0.9695834

00:46:54.609 --> 00:46:55.969 of perioperative stroke or death

NOTE Confidence: 0.9695834

00:46:55.969 --> 00:46:57.650 plus ipsilateral stroke at four

NOTE Confidence: 0.9695834

00:46:57.650 --> 00:46:59.410 years in patients with severe

NOTE Confidence: 0.9695834

00:46:59.410 --> 00:47:00.950 asymptomatic carotid stenosis

NOTE Confidence: 0.9922932

00:47:01.329 --> 00:47:02.530 when stenting was performed by

NOTE Confidence: 0.9922932

00:47:02.530 --> 00:47:03.829 an experienced operator.

NOTE Confidence: 0.9774713

00:47:04.455 --> 00:47:05.975 Similar benefits were not observed,

NOTE Confidence: 0.9774713

00:47:06.135 --> 00:47:07.275 for carotid endarterectomy.

NOTE Confidence: 0.98155123

00:47:08.375 --> 00:47:09.335 There's more to come as

NOTE Confidence: 0.98155123

00:47:09.335 --> 00:47:10.614 well. I think, there's a

NOTE Confidence: 0.98155123

00:47:10.614 --> 00:47:12.295 long term post trial follow-up,

NOTE Confidence: 0.98155123

00:47:12.535 --> 00:47:14.135 study that's being conducted to

NOTE Confidence: 0.98155123

00:47:14.135 --> 00:47:15.735 evaluate the longer term effects

NOTE Confidence: 0.98155123

00:47:15.735 --> 00:47:16.855 of further out from four

NOTE Confidence: 0.98155123

00:47:16.855 --> 00:47:18.135 years, which is what they

NOTE Confidence: 0.98155123

00:47:18.135 --> 00:47:19.509 did in CREST the initial

NOTE Confidence: 0.98155123

00:47:19.509 --> 00:47:20.650 CREST trial.

NOTE Confidence: 0.99126387

00:47:21.109 --> 00:47:22.309 And then CREST h,

NOTE Confidence: 0.99516636

00:47:22.630 --> 00:47:23.750 is a trial that was

NOTE Confidence: 0.99516636

00:47:23.750 --> 00:47:24.650 run-in parallel,

NOTE Confidence: 0.8889477

00:47:25.029 --> 00:47:26.410 to CREST two.

NOTE Confidence: 0.8818811

00:47:26.950 --> 00:47:28.710 And this, trial looked at,

NOTE Confidence: 0.8818811

00:47:29.029 --> 00:47:30.009 defect of revascularization,

NOTE Confidence: 0.9167132

00:47:30.390 --> 00:47:31.705 both stenting endarterectomy

NOTE Confidence: 0.76984465

00:47:32.405 --> 00:47:33.145 on hemodynamically

NOTE Confidence: 0.97670984

00:47:34.165 --> 00:47:36.565 significant asymptomatic carotid stenosis on

NOTE Confidence: 0.97670984

00:47:36.565 --> 00:47:38.005 cognitive decline. So was there

NOTE Confidence: 0.97670984

00:47:38.005 --> 00:47:40.085 any, improvement in cognitive function

NOTE Confidence: 0.97670984

00:47:40.085 --> 00:47:40.745 with revascularization?

NOTE Confidence: 0.97814673

00:47:42.325 --> 00:47:43.364 And that will hopefully be

NOTE Confidence: 0.97814673

00:47:43.364 --> 00:47:44.805 publishing results soon in the

NOTE Confidence: 0.97814673

00:47:44.805 --> 00:47:45.945 next couple of months.

NOTE Confidence: 0.97814184

00:47:47.950 --> 00:47:48.910 So to go back to

NOTE Confidence: 0.97814184

00:47:48.910 --> 00:47:49.570 our patient,

NOTE Confidence: 0.96947366

00:47:50.989 --> 00:47:52.510 so after a shared, shared

NOTE Confidence: 0.96947366

00:47:52.510 --> 00:47:54.510 decision making and discussion, patient

NOTE Confidence: 0.96947366

00:47:54.510 --> 00:47:55.710 was enrolled in CREST two

NOTE Confidence: 0.96947366

00:47:55.710 --> 00:47:56.450 and randomized,

NOTE Confidence: 0.92503947

00:47:56.989 --> 00:47:58.830 to the, intensive medical therapy

NOTE Confidence: 0.92503947

00:47:58.830 --> 00:47:59.330 arm,

NOTE Confidence: 0.92579925

00:47:59.994 --> 00:48:00.655 and underwent,

NOTE Confidence: 0.9990762

00:48:01.675 --> 00:48:03.295 optimization of his risk factors.

NOTE Confidence: 0.97176355

00:48:04.075 --> 00:48:05.675 However, four years later, he

NOTE Confidence: 0.97176355

00:48:05.675 --> 00:48:06.895 came back to the emergency

NOTE Confidence: 0.97176355

00:48:06.955 --> 00:48:08.075 department, or he came to

NOTE Confidence: 0.97176355

00:48:08.075 --> 00:48:09.435 the emergency department ten minutes

NOTE Confidence: 0.97176355

00:48:09.435 --> 00:48:11.215 of sudden onset slurred speech.

NOTE Confidence: 0.96954966

00:48:12.395 --> 00:48:12.974 He had,

NOTE Confidence: 0.9886841

00:48:13.950 --> 00:48:14.670 by the time that he

NOTE Confidence: 0.9886841

00:48:14.670 --> 00:48:15.950 had presented to the ED,

NOTE Confidence: 0.9886841

00:48:15.950 --> 00:48:17.550 his symptoms had resolved. But

NOTE Confidence: 0.9886841

00:48:17.550 --> 00:48:18.849 on further history taking,

NOTE Confidence: 0.96386665

00:48:19.230 --> 00:48:20.109 he he noted that he

NOTE Confidence: 0.96386665

00:48:20.109 --> 00:48:21.390 had a similar episode six

NOTE Confidence: 0.96386665

00:48:21.390 --> 00:48:22.130 months prior.

NOTE Confidence: 0.95511943

00:48:23.230 --> 00:48:25.150 His exam had, no focal

NOTE Confidence: 0.95511943

00:48:25.150 --> 00:48:27.055 neurologic deficits. A A stroke

NOTE Confidence: 0.95511943

00:48:27.055 --> 00:48:28.255 code was activated at that

NOTE Confidence: 0.95511943

00:48:28.255 --> 00:48:28.975 point in time,

NOTE Confidence: 0.9605354

00:48:29.375 --> 00:48:30.835 and an MRI brain,

NOTE Confidence: 0.9894074

00:48:32.175 --> 00:48:33.555 showed no acute infarct.

NOTE Confidence: 0.98419875

00:48:33.935 --> 00:48:35.215 CTA head and neck showed

NOTE Confidence: 0.98419875

00:48:35.215 --> 00:48:35.935 that there was an eighty

NOTE Confidence: 0.98419875

00:48:35.935 --> 00:48:37.295 to ninety percent stenosis in

NOTE Confidence: 0.98419875

00:48:37.295 --> 00:48:38.675 his left internal carotid.

NOTE Confidence: 0.9985337

00:48:41.790 --> 00:48:43.710 And given his potential new

NOTE Confidence: 0.9985337

00:48:43.710 --> 00:48:44.210 TIA,

NOTE Confidence: 0.9285153

00:48:44.750 --> 00:48:45.250 after,

NOTE Confidence: 0.98360014

00:48:45.950 --> 00:48:46.450 multidisciplinary

NOTE Confidence: 0.9400196

00:48:46.910 --> 00:48:47.870 discussion and,

NOTE Confidence: 0.9131524

00:48:48.590 --> 00:48:50.030 shared decision making, the patient

NOTE Confidence: 0.9131524

00:48:50.030 --> 00:48:50.530 under

NOTE Confidence: 0.9096577

00:48:50.989 --> 00:48:53.170 elected to undergo transfemoral carotid

NOTE Confidence: 0.9096577

00:48:53.230 --> 00:48:53.730 stenting.

NOTE Confidence: 0.9978932

00:48:54.185 --> 00:48:55.145 So he would be considered

NOTE Confidence: 0.9978932

00:48:55.145 --> 00:48:56.525 one of the crossover patients,

NOTE Confidence: 0.9857508

00:48:56.905 --> 00:48:58.285 for the CREST two trial.

NOTE Confidence: 0.97027147

00:48:58.825 --> 00:49:00.185 We chose to pursue stenting

NOTE Confidence: 0.97027147

00:49:00.185 --> 00:49:02.025 given his relatively young age.

NOTE Confidence: 0.97027147

00:49:02.025 --> 00:49:03.785 Typically, as Lindsay mentioned, patients

NOTE Confidence: 0.97027147

00:49:03.785 --> 00:49:05.145 that are younger have anatomy

NOTE Confidence: 0.97027147

00:49:05.145 --> 00:49:06.605 that's better suited for stenting,

NOTE Confidence: 0.91086054

00:49:06.905 --> 00:49:08.430 specifically their arch and less

NOTE Confidence: 0.91086054

00:49:08.510 --> 00:49:09.010 tortuosity,

NOTE Confidence: 0.96548533

00:49:09.869 --> 00:49:10.910 and his history of prior

NOTE Confidence: 0.96548533

00:49:10.910 --> 00:49:12.030 neck radiation, which made it

NOTE Confidence: 0.96548533

00:49:12.109 --> 00:49:12.910 would have made him a

NOTE Confidence: 0.96548533

00:49:12.910 --> 00:49:14.450 more challenging surgical candidate.

NOTE Confidence: 0.992723

00:49:15.710 --> 00:49:16.670 Given that he just had

NOTE Confidence: 0.992723

00:49:16.670 --> 00:49:18.030 an event, we proceeded we

NOTE Confidence: 0.992723

00:49:18.030 --> 00:49:19.309 opted to proceed with both,

NOTE Confidence: 0.992723

00:49:19.710 --> 00:49:21.730 proximal and distal embolic protection.

NOTE Confidence: 0.99126256

00:49:22.109 --> 00:49:22.905 So for those that are

NOTE Confidence: 0.99126256

00:49:22.905 --> 00:49:23.945 a little less familiar with

NOTE Confidence: 0.99126256

00:49:23.945 --> 00:49:25.705 it, distal embolic protection involves

NOTE Confidence: 0.99126256

00:49:25.705 --> 00:49:27.245 placing a removable filter

NOTE Confidence: 0.9604715

00:49:27.545 --> 00:49:28.685 distal to the lesion,

NOTE Confidence: 0.93213385

00:49:29.305 --> 00:49:30.425 to catch debris that may

NOTE Confidence: 0.93213385

00:49:30.425 --> 00:49:32.205 be dislodged during the procedure.

NOTE Confidence: 0.93213385

00:49:32.344 --> 00:49:34.185 And proximal embolic protection involves

NOTE Confidence: 0.93213385

00:49:34.185 --> 00:49:35.385 inflating balloons in both the

NOTE Confidence: 0.93213385

00:49:35.545 --> 00:49:36.605 Why am I so sad?

NOTE Confidence: 0.19976842

00:49:37.830 --> 00:49:38.330 One.

NOTE Confidence: 0.6250959

00:49:43.110 --> 00:49:43.590 Station. Thank you,

NOTE Confidence: 0.9830595

00:49:44.630 --> 00:49:45.530 included here

NOTE Confidence: 0.85066575

00:49:46.390 --> 00:49:47.190 quickly, I can get it

NOTE Confidence: 0.85066575

00:49:47.190 --> 00:49:48.570 to replay, is a

NOTE Confidence: 0.6756798

00:49:49.270 --> 00:49:49.770 Okay.

NOTE Confidence: 0.93467003

00:49:50.495 --> 00:49:52.575 An aortic arch angiogram, which

NOTE Confidence: 0.93467003

00:49:52.575 --> 00:49:54.015 essentially is used to evaluate

NOTE Confidence: 0.93467003

00:49:54.015 --> 00:49:55.215 the aortic arch whether or

NOTE Confidence: 0.93467003

00:49:55.215 --> 00:49:56.575 not it's suitable for proceeding

NOTE Confidence: 0.93467003

00:49:56.575 --> 00:49:57.235 with stenting,

NOTE Confidence: 0.9460921

00:49:57.535 --> 00:49:58.575 in which case this was.

NOTE Confidence: 0.9460921

00:49:58.575 --> 00:49:59.875 It's a type two arch.

NOTE Confidence: 0.958147

00:50:02.415 --> 00:50:03.475 And here are the selective

NOTE Confidence: 0.958147

00:50:03.535 --> 00:50:05.430 angiograms of the internal carotid,

NOTE Confidence: 0.958147

00:50:05.430 --> 00:50:06.170 which demonstrates

NOTE Confidence: 0.9787308

00:50:06.710 --> 00:50:07.849 severe stenosis,

NOTE Confidence: 0.7064398

00:50:09.190 --> 00:50:10.250 which you guys

NOTE Confidence: 0.7058104

00:50:10.790 --> 00:50:11.450 see here,

NOTE Confidence: 0.93483144

00:50:12.469 --> 00:50:14.070 just after the bifurcation of

NOTE Confidence: 0.93483144

00:50:14.070 --> 00:50:15.050 the common carotid.

NOTE Confidence: 0.82070816

00:50:16.150 --> 00:50:16.650 Awesome.

NOTE Confidence: 0.89196265

00:50:20.234 --> 00:50:21.535 This is a still image

NOTE Confidence: 0.89196265

00:50:21.594 --> 00:50:22.575 of the predilation

NOTE Confidence: 0.9723367

00:50:22.875 --> 00:50:23.994 balloon going up. So I've

NOTE Confidence: 0.9723367

00:50:23.994 --> 00:50:25.114 labeled everything here. It may

NOTE Confidence: 0.9723367

00:50:25.114 --> 00:50:26.155 be a little difficult to

NOTE Confidence: 0.9723367

00:50:26.155 --> 00:50:27.194 see. So at the top

NOTE Confidence: 0.9723367

00:50:27.194 --> 00:50:28.075 of the screen is the

NOTE Confidence: 0.9723367

00:50:28.075 --> 00:50:30.075 distal embolic protection device, which

NOTE Confidence: 0.9723367

00:50:30.075 --> 00:50:31.694 was a a nav six.

NOTE Confidence: 0.96717596

00:50:32.460 --> 00:50:33.840 The predilation balloon,

NOTE Confidence: 0.95382905

00:50:34.300 --> 00:50:34.780 is,

NOTE Confidence: 0.9820707

00:50:35.100 --> 00:50:35.920 below that,

NOTE Confidence: 0.9869455

00:50:36.219 --> 00:50:37.100 to the right. And then

NOTE Confidence: 0.9869455

00:50:37.100 --> 00:50:37.900 to the left, the two

NOTE Confidence: 0.9869455

00:50:37.900 --> 00:50:39.119 balloons that are inflated

NOTE Confidence: 0.9674931

00:50:39.500 --> 00:50:40.460 are the balloons for the

NOTE Confidence: 0.9674931

00:50:40.460 --> 00:50:42.300 proximal embolic protection device. So

NOTE Confidence: 0.9674931

00:50:42.300 --> 00:50:43.260 the top one's in the

NOTE Confidence: 0.9674931

00:50:43.260 --> 00:50:44.700 external carotid and the bottom

NOTE Confidence: 0.9674931

00:50:44.700 --> 00:50:45.840 one is in the common.

NOTE Confidence: 0.9514339

00:50:49.205 --> 00:50:50.885 And then, the stent here's

NOTE Confidence: 0.9514339

00:50:50.885 --> 00:50:52.105 the stent being positioned.

NOTE Confidence: 0.75549144

00:51:00.239 --> 00:51:00.980 And then

NOTE Confidence: 0.9420316

00:51:01.760 --> 00:51:02.500 an angiogram

NOTE Confidence: 0.994733

00:51:02.800 --> 00:51:03.920 of the final result, which

NOTE Confidence: 0.994733

00:51:03.920 --> 00:51:04.660 is excellent.

NOTE Confidence: 0.9901059

00:51:10.719 --> 00:51:12.100 So he had no persistent,

NOTE Confidence: 0.9313346

00:51:12.719 --> 00:51:15.140 focal no persistent neurologic deficits.

NOTE Confidence: 0.9294613

00:51:15.714 --> 00:51:17.234 He presented to clinic on

NOTE Confidence: 0.9294613

00:51:17.234 --> 00:51:18.454 follow-up doing well,

NOTE Confidence: 0.91845375

00:51:19.155 --> 00:51:20.035 and he had a follow-up

NOTE Confidence: 0.91845375

00:51:20.035 --> 00:51:21.395 ultrasound, which showed up Hayden

NOTE Confidence: 0.91845375

00:51:21.395 --> 00:51:22.935 stent with no elevated velocities

NOTE Confidence: 0.91845375

00:51:22.994 --> 00:51:23.974 within the stent.

NOTE Confidence: 0.93988967

00:51:29.940 --> 00:51:31.060 At this point, I think

NOTE Confidence: 0.93988967

00:51:31.060 --> 00:51:31.780 we'd be happy to take

NOTE Confidence: 0.93988967

00:51:31.780 --> 00:51:32.680 any questions,

NOTE Confidence: 0.98966753

00:51:33.300 --> 00:51:34.520 open it up for discussion.

NOTE Confidence: 0.68896276

00:51:39.860 --> 00:51:40.360 Thanks.

NOTE Confidence: 0.9797528

00:51:41.065 --> 00:51:41.864 So before we go into

NOTE Confidence: 0.9797528

00:51:41.864 --> 00:51:42.905 the questions, I just wanna

NOTE Confidence: 0.9797528

00:51:42.905 --> 00:51:44.185 highlight a few things. So

NOTE Confidence: 0.9797528

00:51:44.185 --> 00:51:45.785 this is a prime example

NOTE Confidence: 0.9797528

00:51:45.785 --> 00:51:47.065 of what we can do,

NOTE Confidence: 0.9797528

00:51:47.305 --> 00:51:48.045 Yale cardiovascular

NOTE Confidence: 0.9952759

00:51:49.065 --> 00:51:49.565 section.

NOTE Confidence: 0.95038706

00:51:49.945 --> 00:51:50.985 This is a trial that

NOTE Confidence: 0.95038706

00:51:50.985 --> 00:51:52.425 I got involved since the

NOTE Confidence: 0.95038706

00:51:52.425 --> 00:51:54.045 inception in twenty fourteen,

NOTE Confidence: 0.99874

00:51:54.780 --> 00:51:55.520 and it was

NOTE Confidence: 0.750202

00:51:55.900 --> 00:51:56.560 a herculean

NOTE Confidence: 0.9204704

00:51:56.860 --> 00:51:58.540 effort. We enroll over ninety

NOTE Confidence: 0.9204704

00:51:58.540 --> 00:51:59.040 patients.

NOTE Confidence: 0.99283177

00:51:59.420 --> 00:52:00.540 And if you follow the

NOTE Confidence: 0.99283177

00:52:00.540 --> 00:52:01.040 presentation,

NOTE Confidence: 0.9759843

00:52:01.340 --> 00:52:03.660 there were, zero patients lost

NOTE Confidence: 0.9759843

00:52:03.660 --> 00:52:04.320 to follow-up,

NOTE Confidence: 0.9814905

00:52:05.100 --> 00:52:07.260 over nine thousand visits in

NOTE Confidence: 0.9814905

00:52:07.260 --> 00:52:08.000 the trial,

NOTE Confidence: 0.93733513

00:52:09.025 --> 00:52:10.225 and it's pretty much unheard

NOTE Confidence: 0.93733513

00:52:10.225 --> 00:52:11.905 of. The medical therapy that

NOTE Confidence: 0.93733513

00:52:11.905 --> 00:52:13.505 was offered was as good

NOTE Confidence: 0.93733513

00:52:13.505 --> 00:52:14.545 as you ever see in

NOTE Confidence: 0.93733513

00:52:14.545 --> 00:52:16.085 any crowded revascularization

NOTE Confidence: 0.9977577

00:52:16.785 --> 00:52:17.285 trial.

NOTE Confidence: 0.9878056

00:52:18.065 --> 00:52:19.205 Our research group,

NOTE Confidence: 0.9996397

00:52:19.665 --> 00:52:20.805 did an amazing

NOTE Confidence: 0.9391096

00:52:21.105 --> 00:52:23.045 job supporting it. Our staff,

NOTE Confidence: 0.9320758

00:52:23.810 --> 00:52:25.570 administrative staff, our nursing staff

NOTE Confidence: 0.9320758

00:52:25.570 --> 00:52:27.330 was terrific, allowing us to

NOTE Confidence: 0.9320758

00:52:27.330 --> 00:52:27.989 do that.

NOTE Confidence: 0.92870617

00:52:28.610 --> 00:52:30.869 Chris h that, Jake mentioned,

NOTE Confidence: 0.91652066

00:52:31.170 --> 00:52:32.290 can't really talk too much

NOTE Confidence: 0.91652066

00:52:32.290 --> 00:52:33.410 about it, but is an

NOTE Confidence: 0.91652066

00:52:33.410 --> 00:52:33.910 incredibly

NOTE Confidence: 0.90536857

00:52:34.450 --> 00:52:35.890 important study that we'll present

NOTE Confidence: 0.90536857

00:52:35.890 --> 00:52:36.850 in the next month or

NOTE Confidence: 0.90536857

00:52:36.850 --> 00:52:37.350 so,

NOTE Confidence: 0.958809

00:52:37.785 --> 00:52:38.744 and I will encourage you

NOTE Confidence: 0.958809

00:52:38.744 --> 00:52:39.944 to pay attention to that.

NOTE Confidence: 0.958809

00:52:39.944 --> 00:52:41.085 With that, questions?

NOTE Confidence: 0.9772119

00:52:42.505 --> 00:52:44.204 Arden, I think since parenting

NOTE Confidence: 0.9772119

00:52:44.265 --> 00:52:45.785 was mentioned, I think it's

NOTE Confidence: 0.9772119

00:52:45.785 --> 00:52:46.364 an opportunity,

NOTE Confidence: 0.96380615

00:52:46.984 --> 00:52:48.265 for me to reflect not

NOTE Confidence: 0.96380615

00:52:48.265 --> 00:52:50.025 only on biological parents, but

NOTE Confidence: 0.96380615

00:52:50.025 --> 00:52:51.085 on intellectual

NOTE Confidence: 0.9476191

00:52:51.690 --> 00:52:52.190 parenting,

NOTE Confidence: 0.9879125

00:52:52.969 --> 00:52:54.890 and how proud we are

NOTE Confidence: 0.9879125

00:52:54.890 --> 00:52:55.390 of,

NOTE Confidence: 0.939679

00:52:55.930 --> 00:52:57.290 of both Lindsay and Jake

NOTE Confidence: 0.939679

00:52:57.290 --> 00:52:58.730 and what they've accomplished in

NOTE Confidence: 0.939679

00:52:58.730 --> 00:53:00.170 their many years here. For

NOTE Confidence: 0.939679

00:53:00.170 --> 00:53:00.890 me, it's a little bit

NOTE Confidence: 0.939679

00:53:00.890 --> 00:53:02.250 of a reflection because I

NOTE Confidence: 0.939679

00:53:02.250 --> 00:53:03.210 was in the room when

NOTE Confidence: 0.939679

00:53:03.210 --> 00:53:03.950 we selected

NOTE Confidence: 0.9762227

00:53:04.434 --> 00:53:06.295 these candidates for our fellowship

NOTE Confidence: 0.9762227

00:53:06.434 --> 00:53:08.515 and, probably the first group

NOTE Confidence: 0.9762227

00:53:08.515 --> 00:53:09.714 now that we've been able

NOTE Confidence: 0.9762227

00:53:09.714 --> 00:53:10.535 to take through,

NOTE Confidence: 0.9977005

00:53:11.154 --> 00:53:12.454 not only cardiology

NOTE Confidence: 0.996001

00:53:13.154 --> 00:53:13.654 fellowship,

NOTE Confidence: 0.9923361

00:53:14.755 --> 00:53:16.214 advanced clinical training,

NOTE Confidence: 0.98926485

00:53:16.920 --> 00:53:19.319 advanced research training in our

NOTE Confidence: 0.98926485

00:53:19.319 --> 00:53:20.380 t thirty twos,

NOTE Confidence: 0.9585031

00:53:21.160 --> 00:53:21.559 and,

NOTE Confidence: 0.99226624

00:53:21.960 --> 00:53:23.319 positioning them for what I

NOTE Confidence: 0.99226624

00:53:23.319 --> 00:53:24.119 think is gonna be a

NOTE Confidence: 0.99226624

00:53:24.119 --> 00:53:25.739 fantastic career. So congratulations,

NOTE Confidence: 0.99918926

00:53:26.359 --> 00:53:27.020 to you.

NOTE Confidence: 0.95534086

00:53:27.400 --> 00:53:28.680 Thanks to Jeff,

NOTE Confidence: 0.9739651

00:53:29.765 --> 00:53:31.205 for the the t thirty

NOTE Confidence: 0.9739651

00:53:31.205 --> 00:53:32.645 two program and and for

NOTE Confidence: 0.9739651

00:53:32.645 --> 00:53:33.145 Donna,

NOTE Confidence: 0.95180076

00:53:33.685 --> 00:53:34.805 to help with me to

NOTE Confidence: 0.95180076

00:53:34.805 --> 00:53:35.765 to really be able to

NOTE Confidence: 0.95180076

00:53:35.765 --> 00:53:36.885 build out these t thirty

NOTE Confidence: 0.95180076

00:53:36.885 --> 00:53:38.165 two programs to support folks

NOTE Confidence: 0.95180076

00:53:38.165 --> 00:53:39.305 like you in the future

NOTE Confidence: 0.95180076

00:53:39.525 --> 00:53:40.344 and, of course,

NOTE Confidence: 0.9998785

00:53:40.885 --> 00:53:41.385 tremendous

NOTE Confidence: 0.8986785

00:53:41.685 --> 00:53:44.060 work by both doctors, professors

NOTE Confidence: 0.8986785

00:53:44.060 --> 00:53:46.140 now, Smoldering, and then, in

NOTE Confidence: 0.8986785

00:53:46.140 --> 00:53:47.500 in positioning you for for

NOTE Confidence: 0.8986785

00:53:47.500 --> 00:53:49.180 future success. So congratulations, and

NOTE Confidence: 0.8986785

00:53:49.180 --> 00:53:50.239 let's get one.

NOTE Confidence: 0.8842314

00:53:54.684 --> 00:53:55.805 So my questions, and I'll

NOTE Confidence: 0.8842314

00:53:55.805 --> 00:53:57.085 start. I'm sure there's others.

NOTE Confidence: 0.8842314

00:53:57.085 --> 00:53:57.484 So,

NOTE Confidence: 0.9630855

00:53:57.964 --> 00:53:59.645 I think, appropriately, you presented

NOTE Confidence: 0.9630855

00:53:59.645 --> 00:54:01.005 the intention to treat analyses,

NOTE Confidence: 0.9630855

00:54:01.005 --> 00:54:02.125 but I'm very interested if

NOTE Confidence: 0.9630855

00:54:02.125 --> 00:54:03.105 you could speak to,

NOTE Confidence: 0.9727441

00:54:04.364 --> 00:54:05.885 your interpretation of the as

NOTE Confidence: 0.9727441

00:54:05.885 --> 00:54:07.184 treated or per protocol

NOTE Confidence: 0.8930219

00:54:09.080 --> 00:54:10.440 analyses that may be available,

NOTE Confidence: 0.8930219

00:54:10.440 --> 00:54:11.560 or I can't remember reading

NOTE Confidence: 0.8930219

00:54:11.560 --> 00:54:12.860 through it, myself,

NOTE Confidence: 0.993074

00:54:13.960 --> 00:54:15.020 and, you know,

NOTE Confidence: 0.95908135

00:54:15.560 --> 00:54:16.760 how those might differ and

NOTE Confidence: 0.95908135

00:54:16.760 --> 00:54:17.320 and what,

NOTE Confidence: 0.9336401

00:54:17.960 --> 00:54:19.320 what likely happens when you

NOTE Confidence: 0.9336401

00:54:19.320 --> 00:54:20.700 do those kinds of analyses

NOTE Confidence: 0.9336401

00:54:20.760 --> 00:54:22.040 and how they relate to

NOTE Confidence: 0.9336401

00:54:22.040 --> 00:54:23.265 the intention to treat analysis?

NOTE Confidence: 0.9336401

00:54:23.424 --> 00:54:24.545 That's my first question I

NOTE Confidence: 0.9336401

00:54:24.545 --> 00:54:25.605 have a follow-up to.

NOTE Confidence: 0.93354946

00:54:27.025 --> 00:54:28.864 Yeah. So, unfortunately, there isn't

NOTE Confidence: 0.93354946

00:54:28.864 --> 00:54:30.464 an available protocol that was

NOTE Confidence: 0.93354946

00:54:30.464 --> 00:54:31.344 published with the New England

NOTE Confidence: 0.93354946

00:54:31.344 --> 00:54:32.224 Journal, so I can't speak

NOTE Confidence: 0.93354946

00:54:32.224 --> 00:54:33.424 to that specifically. But I

NOTE Confidence: 0.93354946

00:54:33.424 --> 00:54:34.625 can tell you, I would

NOTE Confidence: 0.93354946

00:54:34.625 --> 00:54:36.385 probably expect this study to

NOTE Confidence: 0.93354946

00:54:36.385 --> 00:54:36.885 be,

NOTE Confidence: 0.91876763

00:54:37.520 --> 00:54:38.880 given that there was an

NOTE Confidence: 0.91876763

00:54:38.880 --> 00:54:40.320 absolute difference that was shown

NOTE Confidence: 0.91876763

00:54:40.320 --> 00:54:41.599 in the stenting arm and

NOTE Confidence: 0.91876763

00:54:41.599 --> 00:54:43.280 a significant amount amount that

NOTE Confidence: 0.91876763

00:54:43.280 --> 00:54:44.800 crossed over from medical management,

NOTE Confidence: 0.91876763

00:54:44.800 --> 00:54:45.839 I may actually expect it

NOTE Confidence: 0.91876763

00:54:45.839 --> 00:54:47.120 to be more positive. And

NOTE Confidence: 0.91876763

00:54:47.120 --> 00:54:48.400 the end, artery acne may

NOTE Confidence: 0.91876763

00:54:48.400 --> 00:54:49.680 wind up being positive as

NOTE Confidence: 0.91876763

00:54:49.680 --> 00:54:50.560 a result of that on

NOTE Confidence: 0.91876763

00:54:50.560 --> 00:54:52.420 a per per protocol basis.

NOTE Confidence: 0.8351798

00:54:53.545 --> 00:54:54.905 I mean, the intention intention

NOTE Confidence: 0.8351798

00:54:54.905 --> 00:54:56.844 to treat, obviously, is standard

NOTE Confidence: 0.75830686

00:54:57.305 --> 00:54:58.125 to do it, but,

NOTE Confidence: 0.8098032

00:54:58.825 --> 00:54:59.625 would be what I would

NOTE Confidence: 0.8098032

00:54:59.625 --> 00:55:00.364 like to do.

NOTE Confidence: 0.8908703

00:55:00.745 --> 00:55:01.785 Yeah. I think if you're

NOTE Confidence: 0.8908703

00:55:01.945 --> 00:55:03.225 if that relates to the

NOTE Confidence: 0.8908703

00:55:03.225 --> 00:55:04.025 fact that when you do

NOTE Confidence: 0.8908703

00:55:04.025 --> 00:55:06.344 these comparative effectiveness strategy trials,

NOTE Confidence: 0.8908703

00:55:06.344 --> 00:55:07.779 you have to, you know,

NOTE Confidence: 0.8908703

00:55:07.779 --> 00:55:09.799 realize that the trial is,

NOTE Confidence: 0.99948263

00:55:10.099 --> 00:55:10.759 you know,

NOTE Confidence: 0.96474755

00:55:12.180 --> 00:55:13.619 unlikely to be replicated in

NOTE Confidence: 0.96474755

00:55:13.619 --> 00:55:14.519 real practice,

NOTE Confidence: 0.9349475

00:55:15.140 --> 00:55:16.579 exactly. So it'll be important

NOTE Confidence: 0.9349475

00:55:16.579 --> 00:55:17.380 to follow that. I'm not

NOTE Confidence: 0.9349475

00:55:17.380 --> 00:55:18.339 surprised they held that for

NOTE Confidence: 0.9349475

00:55:18.339 --> 00:55:19.859 another paper. I'm kinda surprised

NOTE Confidence: 0.9349475

00:55:19.859 --> 00:55:20.819 the New England Journal didn't

NOTE Confidence: 0.9349475

00:55:20.819 --> 00:55:21.460 make and put it in

NOTE Confidence: 0.9349475

00:55:21.460 --> 00:55:22.185 there, but whatever.

NOTE Confidence: 0.9958567

00:55:23.065 --> 00:55:24.825 The next question is and

NOTE Confidence: 0.9958567

00:55:24.825 --> 00:55:26.105 it also just allows me

NOTE Confidence: 0.9958567

00:55:26.105 --> 00:55:26.745 to highlight,

NOTE Confidence: 0.9590498

00:55:27.145 --> 00:55:28.825 what Carlos mentioned about the

NOTE Confidence: 0.9590498

00:55:28.825 --> 00:55:30.585 importance for clinical trials programs

NOTE Confidence: 0.9590498

00:55:30.585 --> 00:55:32.185 and and how everything starts

NOTE Confidence: 0.9590498

00:55:32.185 --> 00:55:33.864 with a fantastic clinical program

NOTE Confidence: 0.9590498

00:55:33.864 --> 00:55:35.065 that allows us to enroll

NOTE Confidence: 0.9590498

00:55:35.065 --> 00:55:37.020 into trials, but also what

NOTE Confidence: 0.9590498

00:55:37.020 --> 00:55:38.140 we bring here at an

NOTE Confidence: 0.9590498

00:55:38.140 --> 00:55:40.000 institution. So that protective,

NOTE Confidence: 0.92603433

00:55:40.300 --> 00:55:41.980 lymphatic protection device is something

NOTE Confidence: 0.92603433

00:55:41.980 --> 00:55:43.180 I know that our groups

NOTE Confidence: 0.92603433

00:55:43.180 --> 00:55:44.940 here and particularly Alexandra and

NOTE Confidence: 0.92603433

00:55:44.940 --> 00:55:46.160 her team over the years

NOTE Confidence: 0.92603433

00:55:46.219 --> 00:55:48.000 in different roles have advanced,

NOTE Confidence: 0.96207064

00:55:48.380 --> 00:55:50.045 as a opportunity. Can you

NOTE Confidence: 0.96207064

00:55:50.045 --> 00:55:51.565 speak, Lindsay, to whether that

NOTE Confidence: 0.96207064

00:55:51.565 --> 00:55:52.845 was available in the prior

NOTE Confidence: 0.96207064

00:55:52.845 --> 00:55:54.765 trials, and what is your

NOTE Confidence: 0.96207064

00:55:54.765 --> 00:55:56.705 interpretation of the impact of,

NOTE Confidence: 0.95118695

00:55:57.085 --> 00:55:58.285 it's hard to that wasn't

NOTE Confidence: 0.95118695

00:55:58.285 --> 00:55:59.965 tested, but, the impact of

NOTE Confidence: 0.95118695

00:55:59.965 --> 00:56:00.705 those devices

NOTE Confidence: 0.95461005

00:56:01.485 --> 00:56:02.605 in the results you you

NOTE Confidence: 0.95461005

00:56:02.605 --> 00:56:04.190 shared? Yeah. I think especially

NOTE Confidence: 0.95461005

00:56:04.250 --> 00:56:05.450 we look back at, CREST

NOTE Confidence: 0.95461005

00:56:05.450 --> 00:56:06.570 one and other earlier studies,

NOTE Confidence: 0.95461005

00:56:06.570 --> 00:56:08.010 embolic protection was not routinely

NOTE Confidence: 0.95461005

00:56:08.010 --> 00:56:09.690 used consistently throughout the earlier

NOTE Confidence: 0.95461005

00:56:09.690 --> 00:56:11.210 trials, which limits some of

NOTE Confidence: 0.95461005

00:56:11.210 --> 00:56:12.890 our ability to judge how

NOTE Confidence: 0.95461005

00:56:12.890 --> 00:56:14.030 significant the periprocedural

NOTE Confidence: 0.9913636

00:56:14.410 --> 00:56:15.614 stroke risk is for

NOTE Confidence: 0.96613455

00:56:16.094 --> 00:56:17.135 stenting. I will say not

NOTE Confidence: 0.96613455

00:56:17.135 --> 00:56:18.575 only has the technology of

NOTE Confidence: 0.96613455

00:56:18.575 --> 00:56:19.695 the stents advanced, but the

NOTE Confidence: 0.96613455

00:56:19.695 --> 00:56:21.375 embolic protection, and also, like,

NOTE Confidence: 0.96613455

00:56:21.375 --> 00:56:22.815 we high highlighted the experience

NOTE Confidence: 0.96613455

00:56:22.815 --> 00:56:23.695 of the operators. And I

NOTE Confidence: 0.96613455

00:56:23.695 --> 00:56:25.055 think those three factors have

NOTE Confidence: 0.96613455

00:56:25.055 --> 00:56:26.494 overall made carotid stenting a

NOTE Confidence: 0.96613455

00:56:26.494 --> 00:56:27.955 significantly safer procedure.

NOTE Confidence: 0.9636223

00:56:29.150 --> 00:56:30.270 I'll expand a little bit

NOTE Confidence: 0.9636223

00:56:30.270 --> 00:56:31.090 on that. So

NOTE Confidence: 0.9261555

00:56:31.790 --> 00:56:32.989 I think that the Achilles

NOTE Confidence: 0.9261555

00:56:32.989 --> 00:56:34.670 tendon of carotid stenting is

NOTE Confidence: 0.9261555

00:56:34.670 --> 00:56:35.950 the use or the ability

NOTE Confidence: 0.9261555

00:56:35.950 --> 00:56:37.550 to use symbolic protection device

NOTE Confidence: 0.9261555

00:56:37.550 --> 00:56:38.989 to the point that if

NOTE Confidence: 0.9261555

00:56:38.989 --> 00:56:40.190 you are unable to do

NOTE Confidence: 0.9261555

00:56:40.190 --> 00:56:41.484 it, you shouldn't do a

NOTE Confidence: 0.9261555

00:56:41.484 --> 00:56:42.385 product stand.

NOTE Confidence: 0.9595943

00:56:42.765 --> 00:56:44.445 Whatever mechanism you wanna use,

NOTE Confidence: 0.9595943

00:56:44.445 --> 00:56:46.364 proximal distal. I tend to

NOTE Confidence: 0.9595943

00:56:46.364 --> 00:56:47.984 believe that the proximal protection

NOTE Confidence: 0.9595943

00:56:48.125 --> 00:56:49.645 give you more ability to

NOTE Confidence: 0.9595943

00:56:49.645 --> 00:56:50.925 protect the brain during these

NOTE Confidence: 0.9595943

00:56:50.925 --> 00:56:52.445 procedures, but there are some

NOTE Confidence: 0.9595943

00:56:52.445 --> 00:56:54.285 other technical challenges with it.

NOTE Confidence: 0.9595943

00:56:54.285 --> 00:56:54.785 Raul,

NOTE Confidence: 0.98006713

00:56:55.310 --> 00:56:56.670 so you're the surgeon, and

NOTE Confidence: 0.98006713

00:56:56.670 --> 00:56:58.290 I purposely invited you.

NOTE Confidence: 0.98413754

00:56:59.790 --> 00:57:00.609 We've been

NOTE Confidence: 0.99125135

00:57:04.190 --> 00:57:04.910 we've been

NOTE Confidence: 0.932908

00:57:05.310 --> 00:57:06.350 no. You and I, but

NOTE Confidence: 0.932908

00:57:06.350 --> 00:57:07.630 our specialties have been at

NOTE Confidence: 0.932908

00:57:07.630 --> 00:57:08.685 war with this issue of

NOTE Confidence: 0.932908

00:57:08.685 --> 00:57:09.965 which one is better, carotid

NOTE Confidence: 0.932908

00:57:09.965 --> 00:57:11.265 stenting versus endarterectomy.

NOTE Confidence: 0.97169656

00:57:12.925 --> 00:57:13.965 And now we have this,

NOTE Confidence: 0.97169656

00:57:13.965 --> 00:57:15.344 and everybody's been waiting.

NOTE Confidence: 0.9905172

00:57:15.725 --> 00:57:17.165 It was purposely presented in

NOTE Confidence: 0.9905172

00:57:17.165 --> 00:57:18.225 a surgical meeting.

NOTE Confidence: 0.99550617

00:57:18.925 --> 00:57:20.045 So I would love to

NOTE Confidence: 0.99550617

00:57:20.045 --> 00:57:21.345 hear your thoughts about

NOTE Confidence: 0.99324244

00:57:21.980 --> 00:57:23.760 how this trial may change

NOTE Confidence: 0.99324244

00:57:23.900 --> 00:57:25.579 the way the surgical community

NOTE Confidence: 0.99324244

00:57:25.579 --> 00:57:26.640 would see their vascularization

NOTE Confidence: 0.95699227

00:57:27.180 --> 00:57:27.680 strategies.

NOTE Confidence: 0.99430406

00:57:28.220 --> 00:57:29.260 Thank you. Thank you, Carlos.

NOTE Confidence: 0.99430406

00:57:29.260 --> 00:57:29.980 First of all, I wanna

NOTE Confidence: 0.99430406

00:57:29.980 --> 00:57:30.940 take a little exception. I

NOTE Confidence: 0.99430406

00:57:30.940 --> 00:57:32.240 don't think at war

NOTE Confidence: 0.93292356

00:57:33.660 --> 00:57:35.165 is well, I I I

NOTE Confidence: 0.93292356

00:57:35.165 --> 00:57:36.285 I do have to say

NOTE Confidence: 0.93292356

00:57:36.285 --> 00:57:37.645 there are vascular surgeons that

NOTE Confidence: 0.93292356

00:57:37.645 --> 00:57:38.925 do carotid stenting as well.

NOTE Confidence: 0.93292356

00:57:38.925 --> 00:57:40.145 Just but,

NOTE Confidence: 0.95538485

00:57:41.325 --> 00:57:42.605 I think first of all,

NOTE Confidence: 0.95538485

00:57:42.605 --> 00:57:44.605 this does establish carotid stenting

NOTE Confidence: 0.95538485

00:57:44.605 --> 00:57:46.445 as a viable and durable

NOTE Confidence: 0.95538485

00:57:46.445 --> 00:57:47.645 option. I think we've always

NOTE Confidence: 0.95538485

00:57:47.645 --> 00:57:49.165 known that once a stent

NOTE Confidence: 0.95538485

00:57:49.165 --> 00:57:49.825 is in,

NOTE Confidence: 0.97213894

00:57:50.250 --> 00:57:51.870 it has long term durability

NOTE Confidence: 0.97213894

00:57:52.010 --> 00:57:53.850 and and stroke protection. It

NOTE Confidence: 0.97213894

00:57:53.850 --> 00:57:55.210 was all about the initial

NOTE Confidence: 0.97213894

00:57:55.210 --> 00:57:57.450 stroke risk. And I think

NOTE Confidence: 0.97213894

00:57:57.450 --> 00:57:58.270 as you,

NOTE Confidence: 0.94718826

00:57:58.810 --> 00:58:00.330 the the specialty has gotten

NOTE Confidence: 0.94718826

00:58:00.330 --> 00:58:02.590 better at that initial procedure,

NOTE Confidence: 0.9831396

00:58:03.015 --> 00:58:04.495 The outcomes have improved, and

NOTE Confidence: 0.9831396

00:58:04.495 --> 00:58:05.815 I think that's really what

NOTE Confidence: 0.9831396

00:58:05.815 --> 00:58:06.474 we find.

NOTE Confidence: 0.9596947

00:58:06.775 --> 00:58:08.375 The the one minor concern

NOTE Confidence: 0.9596947

00:58:08.375 --> 00:58:09.335 I have is it does

NOTE Confidence: 0.9596947

00:58:09.335 --> 00:58:10.855 look like you're talking about

NOTE Confidence: 0.9596947

00:58:10.855 --> 00:58:11.914 two or three events

NOTE Confidence: 0.9809375

00:58:12.295 --> 00:58:14.214 after three years. If you

NOTE Confidence: 0.9809375

00:58:14.214 --> 00:58:15.335 look at all the lines,

NOTE Confidence: 0.9809375

00:58:15.335 --> 00:58:16.694 they all look very similar

NOTE Confidence: 0.9809375

00:58:16.694 --> 00:58:17.895 to what we've seen before.

NOTE Confidence: 0.9809375

00:58:17.895 --> 00:58:18.395 Basically,

NOTE Confidence: 0.9628663

00:58:18.830 --> 00:58:19.710 once you have the stent

NOTE Confidence: 0.9628663

00:58:19.710 --> 00:58:20.750 in, once you get past

NOTE Confidence: 0.9628663

00:58:20.750 --> 00:58:21.410 the periprocedural

NOTE Confidence: 0.9761792

00:58:22.350 --> 00:58:24.110 issues, everything looks about the

NOTE Confidence: 0.9761792

00:58:24.110 --> 00:58:25.490 same, and so they're both

NOTE Confidence: 0.9761792

00:58:25.550 --> 00:58:26.370 very viable,

NOTE Confidence: 0.9997966

00:58:26.910 --> 00:58:27.410 alternatives.

NOTE Confidence: 0.9734417

00:58:28.030 --> 00:58:29.150 My one concern is that

NOTE Confidence: 0.9734417

00:58:29.150 --> 00:58:30.190 that you have three late

NOTE Confidence: 0.9734417

00:58:30.190 --> 00:58:31.805 events in the carotid endarterectomy

NOTE Confidence: 0.95837927

00:58:32.345 --> 00:58:34.585 group that seem to affect

NOTE Confidence: 0.95837927

00:58:34.585 --> 00:58:36.045 the statistics significantly.

NOTE Confidence: 0.98692435

00:58:36.425 --> 00:58:37.224 And so I'd like to

NOTE Confidence: 0.98692435

00:58:37.224 --> 00:58:38.184 learn a little bit more

NOTE Confidence: 0.98692435

00:58:38.184 --> 00:58:39.145 about that. On the other

NOTE Confidence: 0.98692435

00:58:39.145 --> 00:58:40.585 hand, I think the data

NOTE Confidence: 0.98692435

00:58:40.585 --> 00:58:42.045 are solid, and I

NOTE Confidence: 0.921326

00:58:42.744 --> 00:58:43.865 I I think that they

NOTE Confidence: 0.921326

00:58:43.865 --> 00:58:44.605 are practice

NOTE Confidence: 0.9696819

00:58:45.060 --> 00:58:46.100 changing, and I think they

NOTE Confidence: 0.9696819

00:58:46.100 --> 00:58:47.240 are gonna make a big,

NOTE Confidence: 0.9995409

00:58:47.620 --> 00:58:48.920 difference for our patients.

NOTE Confidence: 0.9139831

00:58:49.540 --> 00:58:50.980 Thank you, Raul. Reshma, you

NOTE Confidence: 0.9139831

00:58:50.980 --> 00:58:51.880 are in the back.

NOTE Confidence: 0.9173612

00:58:52.580 --> 00:58:53.780 Doctor Nerula is one of

NOTE Confidence: 0.9173612

00:58:53.780 --> 00:58:54.840 our stroke neurologists.

NOTE Confidence: 0.9511762

00:58:56.100 --> 00:58:57.540 So you've seen this data,

NOTE Confidence: 0.9511762

00:58:57.540 --> 00:58:58.820 and, obviously, you get to

NOTE Confidence: 0.9511762

00:58:58.820 --> 00:59:00.180 see these patients day in

NOTE Confidence: 0.9511762

00:59:00.180 --> 00:59:01.815 and day out. So now

NOTE Confidence: 0.9511762

00:59:01.815 --> 00:59:03.195 a patient who is asymptomatic

NOTE Confidence: 0.9511762

00:59:03.415 --> 00:59:04.075 that traditionally,

NOTE Confidence: 0.9420862

00:59:05.255 --> 00:59:06.155 we've been conservative,

NOTE Confidence: 0.9549553

00:59:07.815 --> 00:59:09.494 in our stroke neurology clinic.

NOTE Confidence: 0.9549553

00:59:09.494 --> 00:59:10.375 I guess I pushed them

NOTE Confidence: 0.9549553

00:59:10.375 --> 00:59:11.255 a little bit more in

NOTE Confidence: 0.9549553

00:59:11.255 --> 00:59:12.775 the aggressive side. So what

NOTE Confidence: 0.9549553

00:59:12.775 --> 00:59:13.815 is your take on this?

NOTE Confidence: 0.9549553

00:59:13.815 --> 00:59:14.775 What do you tell to

NOTE Confidence: 0.9549553

00:59:14.775 --> 00:59:15.435 your patients?

NOTE Confidence: 0.8627514

00:59:27.760 --> 00:59:28.580 So congratulations.

NOTE Confidence: 0.848431

00:59:28.960 --> 00:59:29.280 But,

NOTE Confidence: 0.9917772

00:59:30.225 --> 00:59:31.825 I think scenting is definitely

NOTE Confidence: 0.9917772

00:59:31.825 --> 00:59:33.425 a reasonable option for people

NOTE Confidence: 0.9917772

00:59:33.425 --> 00:59:35.265 with high grade stenosis, and

NOTE Confidence: 0.9917772

00:59:35.265 --> 00:59:36.305 that's something that we have

NOTE Confidence: 0.9917772

00:59:36.305 --> 00:59:37.505 to present to our patients

NOTE Confidence: 0.9917772

00:59:37.505 --> 00:59:39.285 now. I think as you

NOTE Confidence: 0.97463447

00:59:39.585 --> 00:59:41.765 alluded to, the cognitive information

NOTE Confidence: 0.97463447

00:59:41.825 --> 00:59:42.785 is going to be really

NOTE Confidence: 0.97463447

00:59:42.785 --> 00:59:43.925 interesting because

NOTE Confidence: 0.99766487

00:59:44.545 --> 00:59:45.425 if you look at the

NOTE Confidence: 0.99766487

00:59:45.425 --> 00:59:47.400 baseline cognitive assessment of the

NOTE Confidence: 0.99766487

00:59:47.400 --> 00:59:49.000 patients, it was worse than

NOTE Confidence: 0.99766487

00:59:49.000 --> 00:59:50.599 the general population. So I

NOTE Confidence: 0.99766487

00:59:50.599 --> 00:59:51.099 think

NOTE Confidence: 0.9850141

00:59:51.400 --> 00:59:52.680 CREST h, which is being

NOTE Confidence: 0.9850141

00:59:52.680 --> 00:59:54.359 presented at ISC in February,

NOTE Confidence: 0.9850141

00:59:54.359 --> 00:59:55.640 is going to be really

NOTE Confidence: 0.9850141

00:59:55.640 --> 00:59:56.140 interesting.

NOTE Confidence: 0.98199654

00:59:56.520 --> 00:59:57.800 But it's definitely something we

NOTE Confidence: 0.98199654

00:59:57.800 --> 00:59:58.920 have to present to our

NOTE Confidence: 0.98199654

00:59:58.920 --> 01:00:00.195 patients now, and I think

NOTE Confidence: 0.98199654

01:00:00.355 --> 01:00:01.795 people who especially have a

NOTE Confidence: 0.98199654

01:00:01.795 --> 01:00:04.115 rapid progression of stenosis on

NOTE Confidence: 0.98199654

01:00:04.115 --> 01:00:05.015 serial imaging,

NOTE Confidence: 0.9883157

01:00:05.715 --> 01:00:06.835 scenting is going to be

NOTE Confidence: 0.9883157

01:00:06.835 --> 01:00:07.975 an option for them.

NOTE Confidence: 0.976841

01:00:08.915 --> 01:00:10.615 I do wanna highlight the

NOTE Confidence: 0.976841

01:00:10.835 --> 01:00:12.375 limitations of the trial,

NOTE Confidence: 0.993079

01:00:12.940 --> 01:00:14.240 and there are some limitations.

NOTE Confidence: 0.993079

01:00:14.380 --> 01:00:16.060 Jake alluded to them. First

NOTE Confidence: 0.993079

01:00:16.060 --> 01:00:16.560 of

NOTE Confidence: 0.9694134

01:00:16.940 --> 01:00:18.300 all, you know, the medical

NOTE Confidence: 0.9694134

01:00:18.300 --> 01:00:19.580 therapy used and the ability

NOTE Confidence: 0.9694134

01:00:19.580 --> 01:00:20.800 to achieve their targets,

NOTE Confidence: 0.9727754

01:00:21.340 --> 01:00:22.700 is not what we see

NOTE Confidence: 0.9727754

01:00:22.700 --> 01:00:23.900 in real life. So we

NOTE Confidence: 0.9727754

01:00:23.900 --> 01:00:24.780 have to take that with

NOTE Confidence: 0.9727754

01:00:24.780 --> 01:00:25.680 a grain of salt.

NOTE Confidence: 0.9951612

01:00:25.980 --> 01:00:26.480 Second,

NOTE Confidence: 0.9781423

01:00:26.855 --> 01:00:27.654 although I would love to

NOTE Confidence: 0.9781423

01:00:27.654 --> 01:00:28.775 say that everybody should get

NOTE Confidence: 0.9781423

01:00:28.775 --> 01:00:30.295 a stent, I don't necessarily

NOTE Confidence: 0.9781423

01:00:30.295 --> 01:00:31.575 think that that's the case.

NOTE Confidence: 0.9781423

01:00:31.575 --> 01:00:32.134 I think,

NOTE Confidence: 0.9638264

01:00:32.615 --> 01:00:33.734 two things to that,

NOTE Confidence: 0.98297346

01:00:34.135 --> 01:00:35.035 point. One,

NOTE Confidence: 0.9972317

01:00:35.734 --> 01:00:36.474 the operators

NOTE Confidence: 0.9454106

01:00:36.855 --> 01:00:38.214 really were the best centers

NOTE Confidence: 0.9454106

01:00:38.214 --> 01:00:38.954 in the world,

NOTE Confidence: 0.9720119

01:00:40.180 --> 01:00:41.540 that participate in this clinical

NOTE Confidence: 0.9720119

01:00:41.540 --> 01:00:42.260 trial. And I think it

NOTE Confidence: 0.9720119

01:00:42.260 --> 01:00:43.380 makes a difference in terms

NOTE Confidence: 0.9720119

01:00:43.380 --> 01:00:44.900 of the decision making, what

NOTE Confidence: 0.9720119

01:00:44.900 --> 01:00:46.500 lesion to stand, which lesion

NOTE Confidence: 0.9720119

01:00:46.500 --> 01:00:48.260 not to stand, and what

NOTE Confidence: 0.9720119

01:00:48.260 --> 01:00:49.780 technique and equipment to use.

NOTE Confidence: 0.9720119

01:00:49.780 --> 01:00:50.980 It makes a huge deal

NOTE Confidence: 0.9720119

01:00:50.980 --> 01:00:51.640 of difference.

NOTE Confidence: 0.9750481

01:00:52.935 --> 01:00:54.215 And then last but not

NOTE Confidence: 0.9750481

01:00:54.215 --> 01:00:55.415 least, I think that what

NOTE Confidence: 0.9750481

01:00:55.415 --> 01:00:56.795 we did here at Yale,

NOTE Confidence: 0.9358905

01:00:58.135 --> 01:00:59.095 I think it proved to

NOTE Confidence: 0.9358905

01:00:59.095 --> 01:01:00.855 be, a good practice and

NOTE Confidence: 0.9358905

01:01:00.855 --> 01:01:02.235 is that we focus

NOTE Confidence: 0.48348618

01:01:02.535 --> 01:01:03.035 the

NOTE Confidence: 0.6723623

01:01:03.415 --> 01:01:04.795 or credits stem program

NOTE Confidence: 0.87364084

01:01:05.575 --> 01:01:07.195 such that few operators,

NOTE Confidence: 0.9079368

01:01:08.500 --> 01:01:09.700 were able to perform it

NOTE Confidence: 0.9079368

01:01:09.700 --> 01:01:10.740 given the fact that the

NOTE Confidence: 0.9079368

01:01:10.740 --> 01:01:11.800 volume is at.

NOTE Confidence: 0.99897385

01:01:12.420 --> 01:01:12.920 So

NOTE Confidence: 0.9948255

01:01:13.620 --> 01:01:14.280 it definitely

NOTE Confidence: 0.91573465

01:01:14.820 --> 01:01:16.820 highlighted the effort the conscious

NOTE Confidence: 0.91573465

01:01:16.820 --> 01:01:18.020 effort that was made to

NOTE Confidence: 0.91573465

01:01:18.020 --> 01:01:19.960 centralize our product stem program

NOTE Confidence: 0.91573465

01:01:20.180 --> 01:01:21.140 was the right thing to

NOTE Confidence: 0.91573465

01:01:21.140 --> 01:01:22.040 do and, certainly,

NOTE Confidence: 0.8627455

01:01:22.420 --> 01:01:23.160 it's become,

NOTE Confidence: 0.94698864

01:01:23.540 --> 01:01:24.595 if not the best, one

NOTE Confidence: 0.94698864

01:01:24.595 --> 01:01:25.715 of the best STEM programs

NOTE Confidence: 0.94698864

01:01:25.715 --> 01:01:26.455 in the country.

NOTE Confidence: 0.8572823

01:01:26.915 --> 01:01:28.995 Carlos, so John. I wanna

NOTE Confidence: 0.8572823

01:01:28.995 --> 01:01:30.435 ask two things. One, the

NOTE Confidence: 0.8572823

01:01:30.435 --> 01:01:30.935 only,

NOTE Confidence: 0.95812464

01:01:31.795 --> 01:01:33.155 privilege that I've ever given

NOTE Confidence: 0.95812464

01:01:33.155 --> 01:01:34.035 up here at YEAH was

NOTE Confidence: 0.95812464

01:01:34.035 --> 01:01:35.715 my crowd distancing privilege because

NOTE Confidence: 0.95812464

01:01:35.715 --> 01:01:37.360 I strongly agree with your

NOTE Confidence: 0.95812464

01:01:37.360 --> 01:01:39.060 your last statement there that

NOTE Confidence: 0.95812464

01:01:39.200 --> 01:01:40.240 it needs to be done

NOTE Confidence: 0.95812464

01:01:40.240 --> 01:01:41.700 by experts. And I think

NOTE Confidence: 0.95812464

01:01:41.760 --> 01:01:43.040 when, you know, Jake's initial

NOTE Confidence: 0.95812464

01:01:43.040 --> 01:01:44.480 slide showing the number of

NOTE Confidence: 0.95812464

01:01:44.480 --> 01:01:46.000 people who applied to do

NOTE Confidence: 0.95812464

01:01:46.000 --> 01:01:47.280 it and who were rejected,

NOTE Confidence: 0.95812464

01:01:47.280 --> 01:01:48.800 and that is very hard

NOTE Confidence: 0.95812464

01:01:48.800 --> 01:01:50.180 to translate into

NOTE Confidence: 0.9778538

01:01:50.515 --> 01:01:52.035 actual clinical practice when something

NOTE Confidence: 0.9778538

01:01:52.035 --> 01:01:53.155 gets approved, but I think

NOTE Confidence: 0.9778538

01:01:53.155 --> 01:01:55.234 it's critically, critically important. The

NOTE Confidence: 0.9778538

01:01:55.234 --> 01:01:56.275 other thing that I you

NOTE Confidence: 0.9778538

01:01:56.275 --> 01:01:56.775 know,

NOTE Confidence: 0.96803075

01:01:57.475 --> 01:01:58.915 the, you know, industry it's

NOTE Confidence: 0.96803075

01:01:58.915 --> 01:02:00.355 an industry sponsored study, and

NOTE Confidence: 0.96803075

01:02:00.355 --> 01:02:01.555 they tweak it a little

NOTE Confidence: 0.96803075

01:02:01.555 --> 01:02:02.515 bit to make it and

NOTE Confidence: 0.96803075

01:02:02.595 --> 01:02:03.555 to get a few things

NOTE Confidence: 0.96803075

01:02:03.555 --> 01:02:04.275 in their favor. And I

NOTE Confidence: 0.96803075

01:02:04.275 --> 01:02:05.315 think the the thing that

NOTE Confidence: 0.96803075

01:02:05.315 --> 01:02:05.895 I found

NOTE Confidence: 0.98208404

01:02:06.410 --> 01:02:07.610 most interesting is that you're

NOTE Confidence: 0.98208404

01:02:07.610 --> 01:02:09.530 stenting somebody to prevent stroke,

NOTE Confidence: 0.98208404

01:02:09.530 --> 01:02:11.130 period. But this study didn't

NOTE Confidence: 0.98208404

01:02:11.130 --> 01:02:12.170 look at this. This study

NOTE Confidence: 0.98208404

01:02:12.170 --> 01:02:13.790 looked at stenting to present

NOTE Confidence: 0.99388194

01:02:14.410 --> 01:02:15.710 stroke in the

NOTE Confidence: 0.96705997

01:02:16.570 --> 01:02:17.370 right in the on the

NOTE Confidence: 0.96705997

01:02:17.370 --> 01:02:19.210 other side. But everybody's being

NOTE Confidence: 0.96705997

01:02:19.210 --> 01:02:20.445 put on aspirin and Plavix

NOTE Confidence: 0.96705997

01:02:20.685 --> 01:02:21.645 who gets a stent, and

NOTE Confidence: 0.96705997

01:02:21.645 --> 01:02:22.845 we know aspirin and Plavix

NOTE Confidence: 0.96705997

01:02:22.845 --> 01:02:23.965 is gonna increase your risk

NOTE Confidence: 0.96705997

01:02:23.965 --> 01:02:25.965 of potentially having events. And

NOTE Confidence: 0.96705997

01:02:25.965 --> 01:02:27.085 in fact, if you then

NOTE Confidence: 0.96705997

01:02:27.085 --> 01:02:28.925 look at all stroke that

NOTE Confidence: 0.96705997

01:02:28.925 --> 01:02:30.285 occurred and not just on

NOTE Confidence: 0.96705997

01:02:30.285 --> 01:02:31.165 the side that would have

NOTE Confidence: 0.96705997

01:02:31.165 --> 01:02:31.905 been impacted,

NOTE Confidence: 0.949755

01:02:32.365 --> 01:02:34.465 that goes that statistical difference

NOTE Confidence: 0.949755

01:02:34.685 --> 01:02:35.905 goes away.

NOTE Confidence: 0.96957934

01:02:36.660 --> 01:02:38.500 Presumably because there actually tended

NOTE Confidence: 0.96957934

01:02:38.500 --> 01:02:39.220 to be a little bit

NOTE Confidence: 0.96957934

01:02:39.220 --> 01:02:40.980 more strokes on the other

NOTE Confidence: 0.96957934

01:02:40.980 --> 01:02:42.579 side that occurred in the

NOTE Confidence: 0.96957934

01:02:42.579 --> 01:02:44.260 group that got stented or

NOTE Confidence: 0.96957934

01:02:44.260 --> 01:02:44.760 got

NOTE Confidence: 0.96979004

01:02:45.460 --> 01:02:47.140 got, a carotid endartime. And

NOTE Confidence: 0.96979004

01:02:47.140 --> 01:02:48.339 so I'm wondering how you

NOTE Confidence: 0.96979004

01:02:48.339 --> 01:02:50.020 balance that piece because, you

NOTE Confidence: 0.96979004

01:02:50.020 --> 01:02:51.380 know, we we often know,

NOTE Confidence: 0.96979004

01:02:51.380 --> 01:02:52.875 you know, if if carotid

NOTE Confidence: 0.96979004

01:02:52.875 --> 01:02:54.575 stenting didn't have a procedurally

NOTE Confidence: 0.96979004

01:02:54.795 --> 01:02:56.155 related stroke to it, right,

NOTE Confidence: 0.96979004

01:02:56.155 --> 01:02:57.035 the it would be an

NOTE Confidence: 0.96979004

01:02:57.035 --> 01:02:58.235 amazing curve. Right? But there

NOTE Confidence: 0.96979004

01:02:58.235 --> 01:02:59.355 is that one percent there

NOTE Confidence: 0.96979004

01:02:59.355 --> 01:03:01.195 is that procedurally related stroke.

NOTE Confidence: 0.96979004

01:03:01.195 --> 01:03:02.235 And so it really takes

NOTE Confidence: 0.96979004

01:03:02.235 --> 01:03:03.035 a year and a half

NOTE Confidence: 0.96979004

01:03:03.035 --> 01:03:04.475 before your curves cross. So

NOTE Confidence: 0.96979004

01:03:04.475 --> 01:03:05.915 for the first year, the

NOTE Confidence: 0.96979004

01:03:05.915 --> 01:03:07.295 patients who got a stent

NOTE Confidence: 0.96979004

01:03:07.460 --> 01:03:08.740 actually do worse than the

NOTE Confidence: 0.96979004

01:03:08.740 --> 01:03:09.700 patients who didn't get a

NOTE Confidence: 0.96979004

01:03:09.700 --> 01:03:10.740 stent, but then over four

NOTE Confidence: 0.96979004

01:03:10.740 --> 01:03:12.019 years, they benefit. But you

NOTE Confidence: 0.96979004

01:03:12.019 --> 01:03:13.059 have that other part. So

NOTE Confidence: 0.96979004

01:03:13.059 --> 01:03:14.420 I I'm curious sort of

NOTE Confidence: 0.96979004

01:03:14.420 --> 01:03:15.160 how that

NOTE Confidence: 0.9995395

01:03:15.539 --> 01:03:16.039 conversation

NOTE Confidence: 0.9456512

01:03:16.660 --> 01:03:18.680 takes place with patients, both

NOTE Confidence: 0.93499744

01:03:18.980 --> 01:03:20.500 sort of talking overall. Right?

NOTE Confidence: 0.93499744

01:03:20.500 --> 01:03:22.099 Because overall stroke didn't decrease.

NOTE Confidence: 0.93499744

01:03:22.099 --> 01:03:23.595 It was the same side

NOTE Confidence: 0.93499744

01:03:23.595 --> 01:03:25.435 stroke and the procedural rest.

NOTE Confidence: 0.93499744

01:03:25.435 --> 01:03:26.875 Well, just remember, we're testing

NOTE Confidence: 0.93499744

01:03:26.875 --> 01:03:28.955 ipsilateral stroke, no controlateral stroke.

NOTE Confidence: 0.93499744

01:03:28.955 --> 01:03:29.835 Right. And,

NOTE Confidence: 0.98721105

01:03:30.955 --> 01:03:32.155 your point is well taken.

NOTE Confidence: 0.98721105

01:03:32.155 --> 01:03:33.435 I think that one of

NOTE Confidence: 0.98721105

01:03:33.435 --> 01:03:34.635 the hardest things for me

NOTE Confidence: 0.98721105

01:03:34.635 --> 01:03:35.695 to do this trial

NOTE Confidence: 0.98230505

01:03:36.420 --> 01:03:38.020 was to enroll patients. And

NOTE Confidence: 0.98230505

01:03:38.020 --> 01:03:39.220 even though it was so

NOTE Confidence: 0.98230505

01:03:39.220 --> 01:03:40.579 difficult, we were very successful.

NOTE Confidence: 0.98230505

01:03:40.579 --> 01:03:41.700 And it was very difficult

NOTE Confidence: 0.98230505

01:03:41.700 --> 01:03:42.200 because

NOTE Confidence: 0.985702

01:03:43.140 --> 01:03:44.099 of what you just said.

NOTE Confidence: 0.985702

01:03:44.099 --> 01:03:45.220 You're talking to a patient

NOTE Confidence: 0.985702

01:03:45.220 --> 01:03:46.260 who, to begin with, has

NOTE Confidence: 0.985702

01:03:46.260 --> 01:03:47.160 a low risk,

NOTE Confidence: 0.9904429

01:03:48.099 --> 01:03:48.980 to have an event, and

NOTE Confidence: 0.9904429

01:03:48.980 --> 01:03:50.260 now you're offering a procedure

NOTE Confidence: 0.9904429

01:03:50.260 --> 01:03:51.945 that could potentially increase that.

NOTE Confidence: 0.9889236

01:03:53.145 --> 01:03:54.345 This is why the selection

NOTE Confidence: 0.9889236

01:03:54.345 --> 01:03:55.385 criteria to be part of

NOTE Confidence: 0.9889236

01:03:55.385 --> 01:03:56.905 the trial was such that

NOTE Confidence: 0.9889236

01:03:56.905 --> 01:03:57.785 unless you were able to

NOTE Confidence: 0.9889236

01:03:57.785 --> 01:03:58.905 prove that your event rate

NOTE Confidence: 0.9889236

01:03:58.905 --> 01:04:00.265 was very low, you wouldn't

NOTE Confidence: 0.9889236

01:04:00.265 --> 01:04:01.545 be able to participate on

NOTE Confidence: 0.9889236

01:04:01.545 --> 01:04:02.585 that. So your point is

NOTE Confidence: 0.9889236

01:04:02.585 --> 01:04:04.105 well taken. Shared decision making

NOTE Confidence: 0.9889236

01:04:04.105 --> 01:04:05.885 in this particular pathology,

NOTE Confidence: 0.95508903

01:04:06.745 --> 01:04:08.760 is critical. You see, some

NOTE Confidence: 0.95508903

01:04:08.760 --> 01:04:09.980 of the patients that crossover

NOTE Confidence: 0.95508903

01:04:10.200 --> 01:04:11.180 was because they

NOTE Confidence: 0.96784127

01:04:12.040 --> 01:04:13.640 choose to crossover. They just

NOTE Confidence: 0.96784127

01:04:13.640 --> 01:04:14.680 don't wanna deal. And you

NOTE Confidence: 0.96784127

01:04:14.680 --> 01:04:15.480 see with the you see

NOTE Confidence: 0.96784127

01:04:15.480 --> 01:04:16.520 them in clinic, and they

NOTE Confidence: 0.96784127

01:04:16.520 --> 01:04:18.200 say, well, I'm dying. You

NOTE Confidence: 0.96784127

01:04:18.200 --> 01:04:19.720 gotta fix it. And you

NOTE Confidence: 0.96784127

01:04:19.720 --> 01:04:20.840 you try to convince them

NOTE Confidence: 0.96784127

01:04:20.840 --> 01:04:21.980 that that's not the case,

NOTE Confidence: 0.9739824

01:04:22.325 --> 01:04:23.445 which is, you know, you

NOTE Confidence: 0.9739824

01:04:23.445 --> 01:04:24.805 see that this is not

NOTE Confidence: 0.9739824

01:04:24.805 --> 01:04:25.925 a ticking bomb. This patient

NOTE Confidence: 0.9739824

01:04:25.925 --> 01:04:26.725 is not gonna have a

NOTE Confidence: 0.9739824

01:04:26.725 --> 01:04:28.165 stroke right away, that you

NOTE Confidence: 0.9739824

01:04:28.165 --> 01:04:30.005 have time. The medical therapy

NOTE Confidence: 0.9739824

01:04:30.005 --> 01:04:31.145 is incredibly good,

NOTE Confidence: 0.9470132

01:04:31.525 --> 01:04:32.805 and that the event rate

NOTE Confidence: 0.9470132

01:04:32.805 --> 01:04:34.265 is very low. So

NOTE Confidence: 0.99697125

01:04:34.725 --> 01:04:35.785 it's a good point.

NOTE Confidence: 0.8666861

01:04:37.660 --> 01:04:39.260 Erica Can I ask question

NOTE Confidence: 0.8666861

01:04:39.260 --> 01:04:39.760 online?

NOTE Confidence: 0.9516271

01:04:40.060 --> 01:04:41.180 Okay. Great. Because then we

NOTE Confidence: 0.9516271

01:04:41.180 --> 01:04:42.300 get to end on medical

NOTE Confidence: 0.9516271

01:04:42.300 --> 01:04:43.200 therapy. Okay.

NOTE Confidence: 0.9409362

01:04:45.500 --> 01:04:47.020 They're kind of a related

NOTE Confidence: 0.9409362

01:04:47.020 --> 01:04:48.880 point. One is that I,

NOTE Confidence: 0.9979102

01:04:50.904 --> 01:04:51.944 I can't believe that the

NOTE Confidence: 0.9979102

01:04:51.944 --> 01:04:52.444 smoking

NOTE Confidence: 0.99346775

01:04:52.984 --> 01:04:54.585 rates were so high that,

NOTE Confidence: 0.99346775

01:04:54.585 --> 01:04:56.444 like, nearly half the population

NOTE Confidence: 0.99346775

01:04:56.664 --> 01:04:57.565 were smokers,

NOTE Confidence: 0.94938856

01:04:58.265 --> 01:05:00.025 which seems, like, incredible to

NOTE Confidence: 0.94938856

01:05:00.025 --> 01:05:01.384 me. So I do have

NOTE Confidence: 0.94938856

01:05:01.384 --> 01:05:02.525 a question on whether,

NOTE Confidence: 0.97891015

01:05:02.960 --> 01:05:04.480 you know, smoking cessation, which

NOTE Confidence: 0.97891015

01:05:04.480 --> 01:05:05.700 is still part of optimal

NOTE Confidence: 0.97891015

01:05:05.839 --> 01:05:07.680 medical therapy, was instituted and

NOTE Confidence: 0.97891015

01:05:07.680 --> 01:05:09.119 if that differed between the

NOTE Confidence: 0.97891015

01:05:09.119 --> 01:05:10.400 two groups because it seems

NOTE Confidence: 0.97891015

01:05:10.400 --> 01:05:11.519 like such an important risk

NOTE Confidence: 0.97891015

01:05:11.519 --> 01:05:12.019 factor.

NOTE Confidence: 0.9864765

01:05:12.559 --> 01:05:13.759 And it sort of relates

NOTE Confidence: 0.9864765

01:05:13.759 --> 01:05:15.299 to the biology because

NOTE Confidence: 0.9996952

01:05:15.839 --> 01:05:17.299 you either have an unstable

NOTE Confidence: 0.7503153

01:05:18.000 --> 01:05:18.500 plaque,

NOTE Confidence: 0.9904858

01:05:19.035 --> 01:05:19.775 an embolization,

NOTE Confidence: 0.99890614

01:05:20.395 --> 01:05:21.694 or you have a hemodynamically

NOTE Confidence: 0.9540016

01:05:22.155 --> 01:05:23.375 significant lesion.

NOTE Confidence: 0.9975575

01:05:25.355 --> 01:05:27.375 And medical therapy can stabilize

NOTE Confidence: 0.9975575

01:05:27.515 --> 01:05:28.255 those plaques,

NOTE Confidence: 0.9941055

01:05:28.875 --> 01:05:30.575 we think, and maybe even

NOTE Confidence: 0.9993435

01:05:30.875 --> 01:05:32.714 more aggressive medical therapy than

NOTE Confidence: 0.9993435

01:05:32.714 --> 01:05:33.535 what the trial

NOTE Confidence: 0.9788053

01:05:34.020 --> 01:05:36.020 did. Right? Because our targets

NOTE Confidence: 0.9788053

01:05:36.020 --> 01:05:37.300 have gone even lower for

NOTE Confidence: 0.9788053

01:05:37.300 --> 01:05:38.120 those patients.

NOTE Confidence: 0.99037725

01:05:39.860 --> 01:05:41.000 But the hemodynamic

NOTE Confidence: 0.99991

01:05:41.620 --> 01:05:42.120 significance

NOTE Confidence: 0.93526924

01:05:43.060 --> 01:05:44.740 is something that, you know,

NOTE Confidence: 0.93526924

01:05:44.740 --> 01:05:45.780 we don't know. And we

NOTE Confidence: 0.93526924

01:05:45.780 --> 01:05:46.884 kinda think, like, the Circle

NOTE Confidence: 0.93526924

01:05:46.884 --> 01:05:47.805 of Willis is kind of

NOTE Confidence: 0.93526924

01:05:47.805 --> 01:05:49.085 gonna be protective, but it

NOTE Confidence: 0.93526924

01:05:49.085 --> 01:05:50.925 kinda gets to to John's

NOTE Confidence: 0.93526924

01:05:50.925 --> 01:05:52.065 point, which is, like,

NOTE Confidence: 0.9995063

01:05:52.365 --> 01:05:53.585 is there more investigation

NOTE Confidence: 0.97808087

01:05:53.885 --> 01:05:55.645 into the mechanism? Because it

NOTE Confidence: 0.97808087

01:05:55.645 --> 01:05:56.465 seems like,

NOTE Confidence: 0.98187846

01:05:57.085 --> 01:05:58.525 potentially, we could be more

NOTE Confidence: 0.98187846

01:05:58.525 --> 01:06:00.285 personalized in our approach that

NOTE Confidence: 0.98187846

01:06:00.285 --> 01:06:01.450 there's heterogeneity

NOTE Confidence: 0.9997498

01:06:01.829 --> 01:06:02.809 within those

NOTE Confidence: 0.9667342

01:06:03.670 --> 01:06:05.750 two arms and that maybe

NOTE Confidence: 0.9667342

01:06:05.750 --> 01:06:06.950 we could better decide who

NOTE Confidence: 0.9667342

01:06:06.950 --> 01:06:08.230 would need a who would

NOTE Confidence: 0.9667342

01:06:08.230 --> 01:06:09.990 need a stent versus who

NOTE Confidence: 0.9667342

01:06:09.990 --> 01:06:11.430 wouldn't, you know, if we

NOTE Confidence: 0.9667342

01:06:11.430 --> 01:06:12.170 have more

NOTE Confidence: 0.9936118

01:06:12.885 --> 01:06:13.625 plaque characterization,

NOTE Confidence: 0.9954836

01:06:14.645 --> 01:06:16.825 more understanding of hemodynamic significance

NOTE Confidence: 0.98746014

01:06:17.205 --> 01:06:18.645 as it relates to brain

NOTE Confidence: 0.98746014

01:06:18.645 --> 01:06:19.145 perfusion.

NOTE Confidence: 0.960279

01:06:19.445 --> 01:06:20.245 Yeah. I think that's a

NOTE Confidence: 0.960279

01:06:20.245 --> 01:06:21.205 really great point, and that's

NOTE Confidence: 0.960279

01:06:21.205 --> 01:06:22.005 something that they're going to

NOTE Confidence: 0.960279

01:06:22.005 --> 01:06:23.525 look into in secondary outcomes

NOTE Confidence: 0.960279

01:06:23.525 --> 01:06:24.485 as well. Because right now,

NOTE Confidence: 0.960279

01:06:24.485 --> 01:06:26.185 essentially, we're treating percent stenosis.

NOTE Confidence: 0.960279

01:06:26.245 --> 01:06:27.480 We're just treating a number.

NOTE Confidence: 0.960279

01:06:27.480 --> 01:06:28.520 And there's so much more

NOTE Confidence: 0.960279

01:06:28.520 --> 01:06:29.400 that goes into, like, what

NOTE Confidence: 0.960279

01:06:29.400 --> 01:06:30.700 you're saying, plaque characteristics,

NOTE Confidence: 0.9936765

01:06:31.160 --> 01:06:32.200 which of these plaques is

NOTE Confidence: 0.9936765

01:06:32.200 --> 01:06:33.560 likely to rupture. It's really

NOTE Confidence: 0.9936765

01:06:33.560 --> 01:06:35.080 just independent of the, you

NOTE Confidence: 0.9936765

01:06:35.080 --> 01:06:36.840 know, diameter itself. So if

NOTE Confidence: 0.9936765

01:06:36.840 --> 01:06:38.440 we have better mechanisms to

NOTE Confidence: 0.9936765

01:06:38.440 --> 01:06:40.425 enhance our imaging or find

NOTE Confidence: 0.9936765

01:06:40.425 --> 01:06:41.545 some way to determine which

NOTE Confidence: 0.9936765

01:06:41.545 --> 01:06:42.825 plaques are more vulnerable, that

NOTE Confidence: 0.9936765

01:06:42.825 --> 01:06:44.025 would be helpful. They are

NOTE Confidence: 0.9936765

01:06:44.025 --> 01:06:45.625 doing a secondary analysis where

NOTE Confidence: 0.9936765

01:06:45.625 --> 01:06:46.925 they do have angiographic

NOTE Confidence: 0.99855286

01:06:47.305 --> 01:06:48.905 images and CT images at

NOTE Confidence: 0.99855286

01:06:48.905 --> 01:06:49.405 baseline

NOTE Confidence: 0.8886661

01:06:49.865 --> 01:06:51.225 and, for folks who did

NOTE Confidence: 0.8886661

01:06:51.225 --> 01:06:52.345 undergo strokes so they could

NOTE Confidence: 0.8886661

01:06:52.345 --> 01:06:53.305 try to compare and draw

NOTE Confidence: 0.8886661

01:06:53.305 --> 01:06:53.910 some conclusions

NOTE Confidence: 0.936813

01:06:55.910 --> 01:06:56.950 worried about in terms of

NOTE Confidence: 0.936813

01:06:56.950 --> 01:06:58.390 plaque characteristics and who is

NOTE Confidence: 0.936813

01:06:58.390 --> 01:06:59.190 more likely to have a

NOTE Confidence: 0.936813

01:06:59.190 --> 01:07:00.630 stroke versus just looking at

NOTE Confidence: 0.936813

01:07:00.630 --> 01:07:01.770 the number of their stenosis.

NOTE Confidence: 0.936813

01:07:02.069 --> 01:07:03.530 Yeah. So all the asymptomatic

NOTE Confidence: 0.936813

01:07:03.750 --> 01:07:05.030 patients are not the same.

NOTE Confidence: 0.936813

01:07:05.030 --> 01:07:06.490 Yeah. They are very heterogeneous

NOTE Confidence: 0.936813

01:07:06.710 --> 01:07:08.365 in nature. So the imaging

NOTE Confidence: 0.936813

01:07:08.365 --> 01:07:09.905 component that Lindsay just mentioned,

NOTE Confidence: 0.9208106

01:07:10.365 --> 01:07:11.665 will help us to characterize.

NOTE Confidence: 0.9208106

01:07:11.805 --> 01:07:13.185 Moran has done research,

NOTE Confidence: 0.9789748

01:07:14.045 --> 01:07:15.405 to try to define and

NOTE Confidence: 0.9789748

01:07:15.405 --> 01:07:16.765 characterize the nature of the

NOTE Confidence: 0.9789748

01:07:16.765 --> 01:07:17.965 plaque, which one is gonna

NOTE Confidence: 0.9789748

01:07:17.965 --> 01:07:18.925 burst, which one is not,

NOTE Confidence: 0.9789748

01:07:18.925 --> 01:07:20.365 that kind of stuff. Chris

NOTE Confidence: 0.9789748

01:07:20.365 --> 01:07:21.405 h, look at your other

NOTE Confidence: 0.9789748

01:07:21.405 --> 01:07:21.905 question,

NOTE Confidence: 0.951598

01:07:22.569 --> 01:07:24.030 which is from the hemodynamic

NOTE Confidence: 0.951598

01:07:24.329 --> 01:07:24.829 perspective,

NOTE Confidence: 0.9369095

01:07:25.609 --> 01:07:27.369 which seventy percent is almost

NOTE Confidence: 0.9369095

01:07:27.369 --> 01:07:28.829 the equivalent of an FFR?

NOTE Confidence: 0.9655258

01:07:29.609 --> 01:07:30.109 And

NOTE Confidence: 0.94901997

01:07:30.569 --> 01:07:31.849 which one which lesion is

NOTE Confidence: 0.94901997

01:07:31.849 --> 01:07:32.349 hemodynamically

NOTE Confidence: 0.99842864

01:07:32.730 --> 01:07:33.230 significant

NOTE Confidence: 0.94240355

01:07:33.849 --> 01:07:34.750 and the impact

NOTE Confidence: 0.95523655

01:07:35.365 --> 01:07:36.665 in the event rate,

NOTE Confidence: 0.963523

01:07:36.965 --> 01:07:38.165 but also in the cognitive

NOTE Confidence: 0.963523

01:07:38.165 --> 01:07:39.525 function. That to me was

NOTE Confidence: 0.963523

01:07:39.525 --> 01:07:40.965 the most important part of

NOTE Confidence: 0.963523

01:07:40.965 --> 01:07:41.785 this trial,

NOTE Confidence: 0.91732657

01:07:42.885 --> 01:07:44.405 but you'll get the results

NOTE Confidence: 0.91732657

01:07:44.405 --> 01:07:45.065 in pepper.

NOTE Confidence: 0.9988129

01:07:46.005 --> 01:07:47.285 Can I ask a question

NOTE Confidence: 0.9988129

01:07:47.285 --> 01:07:47.785 online?

NOTE Confidence: 0.89227605

01:08:02.424 --> 01:08:02.924 Yes.

NOTE Confidence: 0.79571325

01:08:03.224 --> 01:08:03.724 Yes.

NOTE Confidence: 0.6697871

01:08:05.224 --> 01:08:05.724 Yes.

NOTE Confidence: 0.56870383

01:08:28.245 --> 01:08:29.545 Change that or

NOTE Confidence: 0.7822857

01:08:30.005 --> 01:08:31.145 static, but

NOTE Confidence: 0.78497225

01:08:33.364 --> 01:08:34.505 that's one possible.

NOTE Confidence: 0.95302355

01:08:35.364 --> 01:08:36.405 Yeah. So the question to

NOTE Confidence: 0.95302355

01:08:36.405 --> 01:08:38.025 the imaging, yes, there were,

NOTE Confidence: 0.96492434

01:08:38.485 --> 01:08:40.245 extensive imaging modalities done in

NOTE Confidence: 0.96492434

01:08:40.245 --> 01:08:41.364 this patient. So you'll get

NOTE Confidence: 0.96492434

01:08:41.364 --> 01:08:42.245 the answer to that in

NOTE Confidence: 0.96492434

01:08:42.245 --> 01:08:43.304 the next few months.

NOTE Confidence: 0.981373

01:08:43.780 --> 01:08:45.540 And the cognitive function also,

NOTE Confidence: 0.981373

01:08:45.540 --> 01:08:46.260 you're gonna have to wait

NOTE Confidence: 0.981373

01:08:46.260 --> 01:08:47.080 until February.

NOTE Confidence: 0.9329465

01:08:47.460 --> 01:08:49.140 So with that, we thank

NOTE Confidence: 0.9329465

01:08:49.140 --> 01:08:50.420 you very much for coming.

NOTE Confidence: 0.9329465

01:08:50.420 --> 01:08:51.620 Have a good day. Good

NOTE Confidence: 0.9329465

01:08:51.620 --> 01:08:52.979 job, miss. Thank you. Very

NOTE Confidence: 0.9329465

01:08:52.979 --> 01:08:54.040 good. Very proud.

NOTE Confidence: 0.86683273

01:08:59.265 --> 01:09:00.625 Oh, there somewhere. Hey. How

NOTE Confidence: 0.86683273

01:09:00.625 --> 01:09:01.265 are you? Good. How are

NOTE Confidence: 0.86683273

01:09:01.265 --> 01:09:02.165 you? Hi there.

NOTE Confidence: 0.96851265

01:09:02.545 --> 01:09:03.045 Congratulations.

NOTE Confidence: 0.8451268

01:09:03.505 --> 01:09:04.564 Thanks so much.