

WEBVTT Kind: captions Language: en

00:00:11.290 --> 00:00:13.930 - The stroke is a very common disease,
00:00:13.930 --> 00:00:15.550 the brain is not getting enough blood flow
00:00:15.550 --> 00:00:19.040 because either a blood vessel becomes hardened
and narrowed,
00:00:19.040 --> 00:00:22.390 or it's blocked by a blood clot or it ruptures
00:00:22.390 --> 00:00:24.870 or it ruptures because the blood vessel wall be-
comes weak leading
00:00:24.870 --> 00:00:27.320 to bleeding within the brain or around the brain.
00:00:28.880 --> 00:00:31.180 - Time is critical in these situations
00:00:31.180 --> 00:00:34.250 because the longer a blood vessel stays blocked,
00:00:34.250 --> 00:00:37.410 the more brain cells will die.
00:00:37.410 --> 00:00:39.470 - There's few things more devastating
00:00:39.470 --> 00:00:41.070 than a patient having a stroke.
00:00:41.070 --> 00:00:45.133 It affects their identity, their ability to be produc-
tive.
00:00:46.050 --> 00:00:48.630 Decades ago when you see somebody with a stroke
00:00:48.630 --> 00:00:50.060 you would provide your empathy
00:00:50.060 --> 00:00:51.130 and then you'd have to move on
00:00:51.130 --> 00:00:53.210 because there wasn't much to offer.
00:00:53.210 --> 00:00:56.139 Doing stroke research, investing in stroke treat-
ments
00:00:56.139 --> 00:00:59.060 was thought to be a graveyard that's changing.
00:00:59.060 --> 00:01:01.690 This is reinvigorating stroke research
00:01:01.690 --> 00:01:04.010 very broadly speaking.
00:01:04.010 --> 00:01:06.320 - There's an urgency to diagnose
00:01:06.320 --> 00:01:09.260 through clinical evaluations and neuroimaging
00:01:09.260 --> 00:01:10.660 and then offer the best treatments
00:01:10.660 --> 00:01:12.810 that we can for these patients.
00:01:12.810 --> 00:01:15.080 - Getting those therapies earlier,
00:01:15.080 --> 00:01:17.980 results in better outcomes.
00:01:17.980 --> 00:01:22.768 Earlier is important, time matters.

00:01:30.380 --> 00:01:31.780 When you think about stroke,

00:01:31.780 --> 00:01:34.400 one of the fundamental things that you need to do

00:01:34.400 --> 00:01:37.740 is figure out what kind of a stroke patients are having.

00:01:37.740 --> 00:01:40.070 The only way you can figure that out,

00:01:40.070 --> 00:01:42.450 is by taking a look with a brain image

00:01:42.450 --> 00:01:45.470 and MRIs is incredibly safe technology.

00:01:45.470 --> 00:01:46.630 It's very powerful

00:01:46.630 --> 00:01:50.960 but because of high magnetic field and power requirements,

00:01:50.960 --> 00:01:52.640 it's usually in a basement.

00:01:52.640 --> 00:01:55.510 And as a result, even though it's very important,

00:01:55.510 --> 00:01:57.973 very difficult for patients to access.

00:01:59.040 --> 00:02:01.590 Here at Yale, for the first time in the world

00:02:01.590 --> 00:02:06.590 both developed and deploy a portable MRI machine.

00:02:06.590 --> 00:02:08.970 We've taken MRI from that secure bunker,

00:02:08.970 --> 00:02:11.460 and we've brought it to the bedside

00:02:11.460 --> 00:02:14.150 and this has been incredibly exciting as you can imagine.

00:02:14.150 --> 00:02:16.510 The pictures are getting better and better,

00:02:16.510 --> 00:02:19.360 and we're constantly coming up with new ideas

00:02:19.360 --> 00:02:23.063 for what we can do with a very exciting technology.

00:02:27.928 --> 00:02:29.320 - Under normal circumstances,

00:02:29.320 --> 00:02:31.610 the brain has the unique ability to regulate

00:02:31.610 --> 00:02:32.960 its own blood flow.

00:02:32.960 --> 00:02:35.810 Brain tissue is very vulnerable during the first hours

00:02:35.810 --> 00:02:37.030 after stroke.

00:02:37.030 --> 00:02:40.280 How do we manage blood pressure in the very acute phase

00:02:40.280 --> 00:02:42.370 after someone has had a stroke?

00:02:42.370 --> 00:02:45.590 The ideal blood pressure after someone has had a stroke,
00:02:45.590 --> 00:02:47.650 depends on many factors.
00:02:47.650 --> 00:02:50.120 So using a one size fits all approach
00:02:50.120 --> 00:02:52.090 for blood pressure management after stroke,
00:02:52.090 --> 00:02:53.420 it's likely inadequate.
00:02:53.420 --> 00:02:57.280 We're currently using neuromonitoring technology
00:02:57.280 --> 00:03:01.520 that helps us identify the blood pressure that's ideal
00:03:01.520 --> 00:03:03.190 for this individual person,
00:03:03.190 --> 00:03:05.260 so that the brain has the best chances
00:03:05.260 --> 00:03:06.543 to heal from the stroke.
00:03:12.440 --> 00:03:15.240 - When there's injury anywhere in the body,
00:03:15.240 --> 00:03:17.860 the body sets up an inflammatory reaction.
00:03:17.860 --> 00:03:19.890 The same thing happens in the brain.
00:03:19.890 --> 00:03:20.960 And so we're trying to understand
00:03:20.960 --> 00:03:24.560 how can we harness the immune systems knowledge
00:03:24.560 --> 00:03:28.090 about how to repair tissues after they've been injured.
00:03:28.090 --> 00:03:31.200 Once you've dealt with the initial blood vessel problem
00:03:31.200 --> 00:03:32.500 either stopped the bleeding,
00:03:32.500 --> 00:03:35.330 or reopened the blocked blood vessel,
00:03:35.330 --> 00:03:39.040 we now have a lot of injury that's still ongoing over days.
00:03:39.040 --> 00:03:42.270 By understanding what the signals are
00:03:42.270 --> 00:03:43.760 that tell the immune system
00:03:43.760 --> 00:03:46.370 to stop making pro-inflammatory factors,
00:03:46.370 --> 00:03:47.940 and start making growth factors,
00:03:47.940 --> 00:03:49.510 and start healing the brain,
00:03:49.510 --> 00:03:51.690 we can find new therapies, new treatments

00:03:51.690 --> 00:03:54.830 for patients with stroke that minimize that early injury

00:03:54.830 --> 00:03:57.083 and really enhance their ability to recover.

00:03:58.600 --> 00:04:02.430 - Those patients that come back from a severe stroke,

00:04:02.430 --> 00:04:05.370 to go on and live a normal, meaningful life,

00:04:05.370 --> 00:04:06.590 that's really inspiring,

00:04:06.590 --> 00:04:10.020 even though we're up against a terrible disease,

00:04:10.020 --> 00:04:11.480 but we're making progress.

00:04:11.480 --> 00:04:14.210 We're constantly getting better and improving the therapies,

00:04:14.210 --> 00:04:16.999 and that's because of clinical research.

00:04:21.520 --> 00:04:26.210 - What motivates me is that the interventions and treatments

00:04:26.210 --> 00:04:28.920 that we were evaluating and studying 10 years ago,

00:04:28.920 --> 00:04:32.800 are now part of a standard of care, a clinical practice

00:04:32.800 --> 00:04:35.170 which is enabling us to reduce death

00:04:35.170 --> 00:04:37.630 and disability to our patients.

00:04:37.630 --> 00:04:39.890 - What motivates me in the research realm

00:04:39.890 --> 00:04:41.850 is thinking that at some point,

00:04:41.850 --> 00:04:43.950 maybe one of the discoveries that we make in lab,

00:04:43.950 --> 00:04:46.180 can actually translate into a new therapy

00:04:46.180 --> 00:04:47.850 that would allow a patient to walk again

00:04:47.850 --> 00:04:50.630 or speak again, or return to their normal lives.

00:04:50.630 --> 00:04:52.950 - There's always something nice about trying

00:04:52.950 --> 00:04:55.600 to attack something that people say can't be done.

00:04:55.600 --> 00:04:58.410 We're gonna spread towards those areas

00:04:58.410 --> 00:04:59.830 because they're important,

00:04:59.830 --> 00:05:02.260 and because we like to do the unique thing.

00:05:02.260 --> 00:05:05.150 - We want to be able to lead research efforts

00:05:05.150 --> 00:05:08.421 that change the lives of patients around the world.