

WEBVTT

NOTE duration: "00:04:42.323"

NOTE Confidence: 0.9809329

00:00:04.720 --> 00:00:06.500 The liver has an incredible

NOTE Confidence: 0.9809329

00:00:06.720 --> 00:00:07.779 regenerative ability

NOTE Confidence: 0.9936792

00:00:08.160 --> 00:00:09.519 to allow us to keep

NOTE Confidence: 0.9936792

00:00:09.519 --> 00:00:10.019 living

NOTE Confidence: 0.9559991

00:00:10.400 --> 00:00:12.240 and being able to respond

NOTE Confidence: 0.9559991

00:00:12.240 --> 00:00:13.219 to injuries

NOTE Confidence: 0.98886067

00:00:13.945 --> 00:00:15.865 or to surgeries, which may

NOTE Confidence: 0.98886067

00:00:15.865 --> 00:00:17.065 remove part of it and

NOTE Confidence: 0.98886067

00:00:17.065 --> 00:00:18.925 allow it to reconstitute

NOTE Confidence: 0.9567368

00:00:19.385 --> 00:00:21.485 and perform its incredibly important

NOTE Confidence: 0.9567368

00:00:21.545 --> 00:00:23.145 functions for us. So liver

NOTE Confidence: 0.9567368

00:00:23.145 --> 00:00:24.525 has many functions,

NOTE Confidence: 0.9932986

00:00:25.224 --> 00:00:26.364 such as metabolizing

NOTE Confidence: 0.9011312

00:00:26.825 --> 00:00:28.925 toxins and produce proteins

NOTE Confidence: 0.933367

00:00:29.390 --> 00:00:30.930 and coagulation factors.
NOTE Confidence: 0.90734535

00:00:31.710 --> 00:00:33.090 The liver is a powerhouse
NOTE Confidence: 0.90734535

00:00:33.390 --> 00:00:34.050 of biochemical
NOTE Confidence: 0.9896727

00:00:34.750 --> 00:00:35.970 function in the body.
NOTE Confidence: 0.9938389

00:00:36.750 --> 00:00:38.590 So chronic liver disease is
NOTE Confidence: 0.9938389

00:00:38.590 --> 00:00:39.409 the result
NOTE Confidence: 0.94805044

00:00:39.949 --> 00:00:40.449 of
NOTE Confidence: 0.99497706

00:00:41.150 --> 00:00:41.890 an ongoing
NOTE Confidence: 0.94675297

00:00:43.125 --> 00:00:44.645 damage and inflammation to the
NOTE Confidence: 0.94675297

00:00:44.645 --> 00:00:46.565 liver and an ongoing attempt
NOTE Confidence: 0.94675297

00:00:46.565 --> 00:00:48.345 to repair. This continuous
NOTE Confidence: 0.98095465

00:00:48.965 --> 00:00:50.905 repair rather than resolution
NOTE Confidence: 0.9912008

00:00:51.525 --> 00:00:53.445 ends up in the scarring
NOTE Confidence: 0.9912008

00:00:53.445 --> 00:00:54.300 of the liver
NOTE Confidence: 0.99510163

00:00:55.180 --> 00:00:56.399 and the regeneration
NOTE Confidence: 0.982771

00:00:56.700 --> 00:00:57.760 among the scarring.

NOTE Confidence: 0.89090157
00:00:58.540 --> 00:00:59.440 This ultimately
NOTE Confidence: 0.95864165
00:00:59.820 --> 00:01:00.559 result in
NOTE Confidence: 0.99756783
00:01:00.860 --> 00:01:01.680 liver cirrhosis.
NOTE Confidence: 0.9909268
00:01:02.540 --> 00:01:04.459 We will eventually be able
NOTE Confidence: 0.9909268
00:01:04.459 --> 00:01:05.280 to find
NOTE Confidence: 0.9899786
00:01:05.659 --> 00:01:07.545 other pathways where we can
NOTE Confidence: 0.9899786
00:01:07.685 --> 00:01:09.944 accelerate the mechanisms of repair
NOTE Confidence: 0.97572637
00:01:10.325 --> 00:01:11.765 to remove some of that
NOTE Confidence: 0.97572637
00:01:11.765 --> 00:01:12.825 scar and allow
NOTE Confidence: 0.9987141
00:01:13.205 --> 00:01:14.104 the restitution
NOTE Confidence: 0.9574382
00:01:14.485 --> 00:01:16.104 of function within the liver.
NOTE Confidence: 0.93776226
00:01:16.405 --> 00:01:18.005 But sometimes it crosses a
NOTE Confidence: 0.93776226
00:01:18.005 --> 00:01:18.505 boundary.
NOTE Confidence: 0.8013918
00:01:18.830 --> 00:01:19.730 When is the liver
NOTE Confidence: 0.9406755
00:01:20.350 --> 00:01:22.190 progress to, end stage liver
NOTE Confidence: 0.9406755

00:01:22.190 --> 00:01:24.430 disease, liver transplant is the
NOTE Confidence: 0.9406755

00:01:24.430 --> 00:01:25.490 ultimate treatment
NOTE Confidence: 0.9778857

00:01:26.110 --> 00:01:26.610 options.
NOTE Confidence: 0.93044806

00:01:30.670 --> 00:01:31.650 Liver transplantation
NOTE Confidence: 0.94004965

00:01:32.430 --> 00:01:34.655 has really developed in incredibly
NOTE Confidence: 0.94004965

00:01:34.715 --> 00:01:36.735 from the nineteen seventies on
NOTE Confidence: 0.9335511

00:01:37.115 --> 00:01:39.035 and is now actually part
NOTE Confidence: 0.9335511

00:01:39.035 --> 00:01:40.415 of our standard armamentarium
NOTE Confidence: 0.9729319

00:01:40.795 --> 00:01:42.815 for treating patients either with
NOTE Confidence: 0.9729319

00:01:42.875 --> 00:01:44.875 severe acute liver failure or
NOTE Confidence: 0.9729319

00:01:44.875 --> 00:01:45.615 more commonly
NOTE Confidence: 0.9799402

00:01:46.315 --> 00:01:47.915 for the treatment of patients
NOTE Confidence: 0.9799402

00:01:47.915 --> 00:01:49.455 with chronic liver disease.
NOTE Confidence: 0.92282367

00:01:49.850 --> 00:01:52.329 We remove diseased liver and
NOTE Confidence: 0.92282367

00:01:52.329 --> 00:01:54.509 replacing with either from,
NOTE Confidence: 0.9614338

00:01:55.289 --> 00:01:56.969 deceased donor or or living

NOTE Confidence: 0.9614338
00:01:56.969 --> 00:01:58.649 donor liver. And that liver
NOTE Confidence: 0.9614338
00:01:58.649 --> 00:01:59.469 will regenerate
NOTE Confidence: 0.9996028
00:01:59.929 --> 00:02:00.909 in that individual
NOTE Confidence: 0.9833463
00:02:01.210 --> 00:02:01.785 to its
NOTE Confidence: 0.9843119
00:02:02.265 --> 00:02:04.265 same size. And then that
NOTE Confidence: 0.9843119
00:02:04.265 --> 00:02:06.605 segment that's removed from the,
NOTE Confidence: 0.9871493
00:02:06.985 --> 00:02:08.905 donor can be placed into
NOTE Confidence: 0.9871493
00:02:08.905 --> 00:02:10.985 the recipient and itself will
NOTE Confidence: 0.9871493
00:02:10.985 --> 00:02:12.445 regenerate and restore
NOTE Confidence: 0.9989093
00:02:13.305 --> 00:02:15.305 normal size, normal function of
NOTE Confidence: 0.9989093
00:02:15.305 --> 00:02:15.965 the liver.
NOTE Confidence: 0.9809453
00:02:16.930 --> 00:02:18.530 The goal is the people
NOTE Confidence: 0.9809453
00:02:18.530 --> 00:02:19.650 who doesn't have a good
NOTE Confidence: 0.9809453
00:02:19.650 --> 00:02:21.350 access to a deceased donor
NOTE Confidence: 0.9809453
00:02:21.570 --> 00:02:23.510 to have more transplant opportunity.
NOTE Confidence: 0.9005175

00:02:24.450 --> 00:02:25.889 Somebody who is very sick
NOTE Confidence: 0.9005175

00:02:25.889 --> 00:02:27.889 patient, deceased donor will be
NOTE Confidence: 0.9005175

00:02:27.889 --> 00:02:28.389 appropriate.
NOTE Confidence: 0.9632176

00:02:28.850 --> 00:02:30.790 And somebody who is not
NOTE Confidence: 0.9632176

00:02:30.850 --> 00:02:31.665 sick enough,
NOTE Confidence: 0.99930507

00:02:32.144 --> 00:02:33.584 does not have a good
NOTE Confidence: 0.99930507

00:02:33.584 --> 00:02:34.084 opportunity
NOTE Confidence: 0.9751043

00:02:34.385 --> 00:02:36.004 to have a deceased donor,
NOTE Confidence: 0.9751043

00:02:36.224 --> 00:02:37.584 living donor has a very
NOTE Confidence: 0.9751043

00:02:37.584 --> 00:02:38.564 viable option.
NOTE Confidence: 0.97782874

00:02:39.905 --> 00:02:41.344 We have such a dear
NOTE Confidence: 0.97782874

00:02:41.344 --> 00:02:43.025 organ shortage, and this is
NOTE Confidence: 0.97782874

00:02:43.025 --> 00:02:44.560 being worked on by trying
NOTE Confidence: 0.97782874

00:02:44.560 --> 00:02:46.160 to find ways of using
NOTE Confidence: 0.97782874

00:02:46.160 --> 00:02:47.680 other donor organs that might
NOTE Confidence: 0.97782874

00:02:47.680 --> 00:02:48.720 not have been able to

NOTE Confidence: 0.97782874

00:02:48.720 --> 00:02:49.780 be used before.

NOTE Confidence: 0.9317969

00:02:50.080 --> 00:02:52.000 So we incorporated new technology.

NOTE Confidence: 0.9317969

00:02:52.000 --> 00:02:53.300 It is called normothermic

NOTE Confidence: 0.9791932

00:02:53.760 --> 00:02:54.580 machine perfusion,

NOTE Confidence: 0.96485704

00:02:55.040 --> 00:02:56.740 which keeps our liver warm

NOTE Confidence: 0.96485704

00:02:57.025 --> 00:02:58.945 and also more viable. Using

NOTE Confidence: 0.96485704

00:02:58.945 --> 00:02:59.685 this technology,

NOTE Confidence: 0.99889934

00:03:00.385 --> 00:03:02.245 we can check liver function

NOTE Confidence: 0.9860219

00:03:02.625 --> 00:03:04.805 and also improve donor use.

NOTE Confidence: 0.8804595

00:03:05.425 --> 00:03:07.185 Transfer is physical because of

NOTE Confidence: 0.8804595

00:03:07.185 --> 00:03:09.185 basic research in immunology, because

NOTE Confidence: 0.8804595

00:03:09.185 --> 00:03:10.305 of basic research in how

NOTE Confidence: 0.8804595

00:03:10.305 --> 00:03:11.905 the liver react, because of

NOTE Confidence: 0.8804595

00:03:11.905 --> 00:03:13.080 a lot of research how

NOTE Confidence: 0.8804595

00:03:13.080 --> 00:03:14.519 do we transfer more liver

NOTE Confidence: 0.8804595

00:03:14.519 --> 00:03:15.800 that otherwise they would be
NOTE Confidence: 0.8804595

00:03:15.800 --> 00:03:16.300 discarded.
NOTE Confidence: 0.9304009

00:03:16.840 --> 00:03:18.040 But on the other hand,
NOTE Confidence: 0.9304009

00:03:18.040 --> 00:03:19.239 we learn from,
NOTE Confidence: 0.9983979

00:03:19.639 --> 00:03:20.379 the transplant
NOTE Confidence: 0.7424601

00:03:20.680 --> 00:03:21.660 and we
NOTE Confidence: 0.9640649

00:03:22.200 --> 00:03:23.340 learn from studying
NOTE Confidence: 0.95338047

00:03:23.639 --> 00:03:24.379 the explants.
NOTE Confidence: 0.9810368

00:03:29.194 --> 00:03:30.475 So here at Yale, we
NOTE Confidence: 0.9810368

00:03:30.475 --> 00:03:31.834 have a number of different
NOTE Confidence: 0.9810368

00:03:31.834 --> 00:03:33.675 groups that are involved in
NOTE Confidence: 0.9810368

00:03:33.675 --> 00:03:36.175 very excellent research and translational
NOTE Confidence: 0.9965875

00:03:36.475 --> 00:03:36.975 research.
NOTE Confidence: 0.93113196

00:03:38.475 --> 00:03:39.515 The mission of the liver
NOTE Confidence: 0.93113196

00:03:39.515 --> 00:03:41.150 center is actually to find
NOTE Confidence: 0.93113196

00:03:41.209 --> 00:03:42.970 better treatment for liver disease,

NOTE Confidence: 0.93113196
00:03:42.970 --> 00:03:44.430 and we do that by,
NOTE Confidence: 0.99484
00:03:45.290 --> 00:03:46.349 improving the
NOTE Confidence: 0.9849589
00:03:46.730 --> 00:03:48.030 knowledge of the pathophysiology
NOTE Confidence: 0.98353577
00:03:48.410 --> 00:03:49.150 of the liver.
NOTE Confidence: 0.9776913
00:03:49.770 --> 00:03:51.790 We have three main themes.
NOTE Confidence: 0.9548947
00:03:52.775 --> 00:03:53.835 So one is inflammation,
NOTE Confidence: 0.97487855
00:03:54.135 --> 00:03:55.975 the other is metabolism, and
NOTE Confidence: 0.97487855
00:03:55.975 --> 00:03:57.495 the other is epithelial liver
NOTE Confidence: 0.97487855
00:03:57.495 --> 00:03:58.235 cell biology.
NOTE Confidence: 0.9985806
00:03:58.775 --> 00:03:59.275 But
NOTE Confidence: 0.96758157
00:03:59.575 --> 00:04:01.435 the intersection of these three
NOTE Confidence: 0.94335175
00:04:02.215 --> 00:04:03.435 then is relevant
NOTE Confidence: 0.99924076
00:04:03.975 --> 00:04:04.475 for
NOTE Confidence: 0.84879404
00:04:04.855 --> 00:04:05.355 basically
NOTE Confidence: 0.9753088
00:04:05.655 --> 00:04:07.195 all kind of liver diseases.
NOTE Confidence: 0.960764

00:04:09.030 --> 00:04:10.230 There will be in the
NOTE Confidence: 0.960764

00:04:10.230 --> 00:04:12.630 future therapies that will be
NOTE Confidence: 0.960764

00:04:12.630 --> 00:04:13.130 able
NOTE Confidence: 0.9817328

00:04:14.070 --> 00:04:16.470 to interrupt the natural history
NOTE Confidence: 0.9817328

00:04:16.470 --> 00:04:17.930 of the disease otherwise
NOTE Confidence: 0.9636891

00:04:18.470 --> 00:04:20.310 and prevent the progression of
NOTE Confidence: 0.9636891

00:04:20.310 --> 00:04:21.510 disease, and some of these
NOTE Confidence: 0.9636891

00:04:21.510 --> 00:04:22.790 patients may never need a
NOTE Confidence: 0.9636891

00:04:22.790 --> 00:04:23.290 transplant.
NOTE Confidence: 0.9837778

00:04:24.365 --> 00:04:25.725 And so this is the
NOTE Confidence: 0.9837778

00:04:25.725 --> 00:04:26.225 wonderful
NOTE Confidence: 0.99282616

00:04:26.764 --> 00:04:28.285 nature of being involved in
NOTE Confidence: 0.99282616

00:04:28.285 --> 00:04:30.625 these major advancements and disruptors
NOTE Confidence: 0.99641925

00:04:31.324 --> 00:04:32.925 that have actually changed the
NOTE Confidence: 0.99641925

00:04:32.925 --> 00:04:34.764 natural course of disease. So
NOTE Confidence: 0.99641925

00:04:34.764 --> 00:04:36.125 it's a great time, but

NOTE Confidence: 0.99641925

00:04:36.125 --> 00:04:37.164 we need to do more

NOTE Confidence: 0.99641925

00:04:37.164 --> 00:04:37.664 still.