WEBVTT

NOTE duration:"00:59:51.5730000"

NOTE language:en-us

NOTE Confidence: 0.859873533248901

00:00:00.000 --> 00:00:01.664 Transfusion medicine, reduce morbidity,

NOTE Confidence: 0.859873533248901

00:00:01.664 --> 00:00:03.328 improve improve efficiency and

NOTE Confidence: 0.859873533248901

00:00:03.328 --> 00:00:05.131 really in some respects understand

NOTE Confidence: 0.859873533248901

00:00:05.131 --> 00:00:06.967 how we can always do better.

NOTE Confidence: 0.859873533248901

00:00:06.970 --> 00:00:09.412 And it's been a phenomenal service

NOTE Confidence: 0.859873533248901

00:00:09.412 --> 00:00:12.479 to our patients and to the mission of

NOTE Confidence: 0.859873533248901

00:00:12.479 --> 00:00:15.261 the Cancer Center and an Ed today is

NOTE Confidence: 0.859873533248901

00:00:15.261 --> 00:00:17.917 going to talk about GV HD and blood

NOTE Confidence: 0.859873533248901

00:00:17.920 --> 00:00:20.110 pathogens and the work he's done.

NOTE Confidence: 0.859873533248901

00:00:20.110 --> 00:00:21.570 So add, thank you.

NOTE Confidence: 0.894347965717316

00:00:22.560 --> 00:00:24.500 Thank you very much Charlie.

NOTE Confidence: 0.894347965717316

00:00:24.500 --> 00:00:27.790 It's a pleasure to be here and

NOTE Confidence: 0.894347965717316

00:00:27.790 --> 00:00:30.668 we can get this. Working right,

NOTE Confidence: 0.894347965717316

00:00:30.668 --> 00:00:33.565 I'll have to screen share, right?

NOTE Confidence: 0.894347965717316

00:00:33.565 --> 00:00:36.336 Yes. Sure there it is.

NOTE Confidence: 0.894347965717316

00:00:36.336 --> 00:00:39.800 OK, that looks like it's it works.

NOTE Confidence: 0.894347965717316

00:00:39.800 --> 00:00:44.148 Work yes, OK, well thank you very much.

NOTE Confidence: 0.894347965717316

00:00:44.150 --> 00:00:47.755 I'm going to talk today on prevention

NOTE Confidence: 0.894347965717316

00:00:47.755 --> 00:00:49.798 of transfusion, associated GVHD,

NOTE Confidence: 0.894347965717316

00:00:49.798 --> 00:00:52.822 and the role of a bladder

NOTE Confidence: 0.894347965717316

00:00:52.822 --> 00:00:55.630 radiation and pathogen reduction.

NOTE Confidence: 0.894347965717316

00:00:55.630 --> 00:00:59.038 If I can get the slides to move,

NOTE Confidence: 0.894347965717316

00:00:59.040 --> 00:01:02.865 there you go for conflict of interest I do.

NOTE Confidence: 0.894347965717316

00:01:02.870 --> 00:01:05.330 I am running three clinical trials

NOTE Confidence: 0.894347965717316

00:01:05.330 --> 00:01:08.361 on platelets and two on red cells

NOTE Confidence: 0.894347965717316

00:01:08.361 --> 00:01:10.109 for the serious Corporation,

NOTE Confidence: 0.894347965717316

00:01:10.110 --> 00:01:13.099 but I get no personal honor area.

NOTE Confidence: 0.894347965717316

00:01:13.100 --> 00:01:15.935 All the money goes to the University

NOTE Confidence: 0.894347965717316

00:01:15.935 --> 00:01:19.060 and support my salary for that effort,

NOTE Confidence: 0.894347965717316

00:01:19.060 --> 00:01:20.338 not for me.

NOTE Confidence: 0.894347965717316

00:01:20.338 --> 00:01:20.764 Personally,

NOTE Confidence: 0.894347965717316

00:01:20.764 --> 00:01:23.320 so I'm going to review the

NOTE Confidence: 0.894347965717316

00:01:23.407 --> 00:01:26.050 pathophysiology of transfusion,

NOTE Confidence: 0.894347965717316

00:01:26.050 --> 00:01:27.466 associated GVHD review,

NOTE Confidence: 0.894347965717316

00:01:27.466 --> 00:01:30.298 the rationale for using pathogen reduction,

NOTE Confidence: 0.894347965717316

00:01:30.300 --> 00:01:33.126 addressed the types of pathogen reduction,

NOTE Confidence: 0.894347965717316

00:01:33.130 --> 00:01:35.956 provide data on the toxicology study,

NOTE Confidence: 0.894347965717316

00:01:35.960 --> 00:01:39.736 talk a little bit about the clinical studies,

NOTE Confidence: 0.894347965717316

00:01:39.740 --> 00:01:42.480 and then compare the pathogen

NOTE Confidence: 0.894347965717316

00:01:42.480 --> 00:01:44.672 reduction versus gamma radiation

NOTE Confidence: 0.894347965717316

00:01:44.672 --> 00:01:47.139 for preventing PA GVHD so.

NOTE Confidence: 0.894347965717316

00:01:47.140 --> 00:01:49.996 Yale New Haven's got about 1600 beds.

NOTE Confidence: 0.894347965717316

00:01:50.000 --> 00:01:51.628 We have one transfuse,

NOTE Confidence: 0.894347965717316

00:01:51.628 --> 00:01:53.663 about 11,000 people a year.

NOTE Confidence: 0.894347965717316

00:01:53.670 --> 00:01:56.519 We transfuse about 54,000 products a year,

NOTE Confidence: 0.894347965717316

00:01:56.520 --> 00:01:58.560 broken down, as you see,

NOTE Confidence: 0.894347965717316

00:01:58.560 --> 00:02:00.600 below red cells, platelets, plasma,

NOTE Confidence: 0.894347965717316

00:02:00.600 --> 00:02:02.640 where first transfusion associated GVHD,

NOTE Confidence: 0.894347965717316

00:02:02.640 --> 00:02:03.048 therefore,

NOTE Confidence: 0.894347965717316

00:02:03.048 --> 00:02:05.904 is potential with many of these transfusions.

NOTE Confidence: 0.894347965717316

00:02:05.910 --> 00:02:06.672 And unfortunately,

NOTE Confidence: 0.894347965717316

00:02:06.672 --> 00:02:10.400 we don't see it for a variety of reasons.

NOTE Confidence: 0.894347965717316

00:02:10.400 --> 00:02:13.451 We will talk about TH GV HD occurs less

NOTE Confidence: 0.894347965717316

00:02:13.451 --> 00:02:16.108 than one per million transfusions.

NOTE Confidence: 0.894347965717316

00:02:16.110 --> 00:02:17.247 It's pretty rare.

NOTE Confidence: 0.894347965717316

00:02:17.247 --> 00:02:19.142 Clinical signs began about 8

NOTE Confidence: 0.894347965717316

00:02:19.142 --> 00:02:21.650 to 10 days after transfusion,

NOTE Confidence: 0.894347965717316

00:02:21.650 --> 00:02:24.667 with somewhere between 3 and 30 days.

NOTE Confidence: 0.894347965717316

00:02:24.670 --> 00:02:26.825 Usually is a rash associated

NOTE Confidence: 0.894347965717316

00:02:26.825 --> 00:02:28.118 with fever enterocolitis,

NOTE Confidence: 0.894347965717316

00:02:28.120 --> 00:02:30.270 watery diarrhea, and elevated LFTS.

NOTE Confidence: 0.894347965717316

00:02:30.270 --> 00:02:32.946 A key sign is pancytopenia with

NOTE Confidence: 0.894347965717316

00:02:32.946 --> 00:02:35.439 a higher risk being in men.

NOTE Confidence: 0.894347965717316

00:02:35.440 --> 00:02:38.480 The reason for the a plasia is that

NOTE Confidence: 0.894347965717316

00:02:38.480 --> 00:02:41.477 in regular graph versus host disease,

NOTE Confidence: 0.894347965717316

00:02:41.480 --> 00:02:43.635 if you will forward regular

NOTE Confidence: 0.894347965717316

00:02:43.635 --> 00:02:45.359 post bone marrow transplant,

NOTE Confidence: 0.894347965717316

00:02:45.360 --> 00:02:48.384 the bone marrow is that of the.

NOTE Confidence: 0.894347965717316

00:02:48.390 --> 00:02:50.220 Of the host of the recipient.

NOTE Confidence: 0.894347965717316

00:02:50.220 --> 00:02:53.328 I'm sorry, the head of the donor.

NOTE Confidence: 0.894347965717316

00:02:53.330 --> 00:02:55.616 So the donors bone marrow is

NOTE Confidence: 0.894347965717316

00:02:55.616 --> 00:02:57.582 basically replaced that of the

NOTE Confidence: 0.894347965717316

00:02:57.582 --> 00:03:00.151 of the recipient and the donors T

NOTE Confidence: 0.894347965717316

00:03:00.151 --> 00:03:02.345 cells therefore do not attack it

NOTE Confidence: 0.894347965717316

00:03:02.345 --> 00:03:04.421 because it's the donors own cells

NOTE Confidence: 0.894347965717316

00:03:04.430 --> 00:03:05.910 in transfusion associated GVHD,

NOTE Confidence: 0.894347965717316

00:03:05.910 --> 00:03:06.650 the host,

NOTE Confidence: 0.894347965717316

00:03:06.650 --> 00:03:09.014 or the recipients of bone marrow

NOTE Confidence: 0.894347965717316

00:03:09.014 --> 00:03:11.856 is there so that the donor cells

NOTE Confidence: 0.894347965717316

00:03:11.856 --> 00:03:14.220 attack the bone marrow as well

NOTE Confidence: 0.894347965717316

00:03:14.220 --> 00:03:16.549 as the liver and the skin.

NOTE Confidence: 0.894347965717316

00:03:16.550 --> 00:03:19.619 So that the a pleasure is due to GVHD

NOTE Confidence: 0.894347965717316

00:03:19.619 --> 00:03:22.440 involving the bone marrow of the recipient,

NOTE Confidence: 0.894347965717316

00:03:22.440 --> 00:03:24.648 and it is almost always fatal,

NOTE Confidence: 0.894347965717316

00:03:24.650 --> 00:03:26.890 and that's why it's that kind of

NOTE Confidence: 0.894347965717316

00:03:26.890 --> 00:03:29.057 fatality is not seen with affecting

NOTE Confidence: 0.894347965717316

00:03:29.057 --> 00:03:31.337 the bone marrow and graph versus

NOTE Confidence: 0.894347965717316

00:03:31.337 --> 00:03:33.848 host after a bone marrow transplant.

NOTE Confidence: 0.894347965717316

00:03:33.850 --> 00:03:35.746 The rash begins on the trunk

NOTE Confidence: 0.894347965717316

00:03:35.746 --> 00:03:37.890 and spreads to the extremities,

NOTE Confidence: 0.894347965717316

00:03:37.890 --> 00:03:40.466 diagnosis with usually a biopsy and death,

NOTE Confidence: 0.894347965717316

00:03:40.470 --> 00:03:43.406 occurs one to three weeks after the symptoms.

NOTE Confidence: 0.894347965717316

00:03:43.410 --> 00:03:46.350 The mechanism is that transfused lymphocytes.

NOTE Confidence: 0.894347965717316

00:03:46.350 --> 00:03:48.590 From an immuno competent donor,

NOTE Confidence: 0.894347965717316

00:03:48.590 --> 00:03:51.158 recognized the host HLA is being

NOTE Confidence: 0.894347965717316

00:03:51.158 --> 00:03:53.401 foreign and former response and

NOTE Confidence: 0.894347965717316

00:03:53.401 --> 00:03:55.696 then the host counterattacks with

NOTE Confidence: 0.894347965717316

00:03:55.696 --> 00:03:57.073 its own lymphocytes.

NOTE Confidence: 0.894347965717316

00:03:57.080 --> 00:04:00.209 However, in cases of TAA GV HD,

NOTE Confidence: 0.816627144813538

00:04:00.210 --> 00:04:02.440 there is no counter attack.

NOTE Confidence: 0.816627144813538

00:04:02.440 --> 00:04:05.608 If you will and you just get in

NOTE Confidence: 0.816627144813538

00:04:05.608 --> 00:04:07.810 continued growth and engraftment.

NOTE Confidence: 0.816627144813538

00:04:07.810 --> 00:04:11.365 If you will, of the donor T cells which

NOTE Confidence: 0.816627144813538

00:04:11.365 --> 00:04:14.507 caused the graft versus host problems,

NOTE Confidence: 0.816627144813538

00:04:14.510 --> 00:04:16.270 the lack of neutralization.

NOTE Confidence: 0.816627144813538

00:04:16.270 --> 00:04:19.335 And what does this do to? Well,

NOTE Confidence: 0.816627144813538

00:04:19.335 --> 00:04:22.310 it's do when the recipient several times,

NOTE Confidence: 0.816627144813538

00:04:22.310 --> 00:04:25.550 even if the recipient is immunocompetence.

NOTE Confidence: 0.816627144813538

00:04:25.550 --> 00:04:27.494 And you have an immuno competent

NOTE Confidence: 0.816627144813538

00:04:27.494 --> 00:04:29.620 donor from a blood transfusion.

NOTE Confidence: 0.816627144813538

00:04:29.620 --> 00:04:31.950 What happens is let's say

NOTE Confidence: 0.816627144813538

00:04:31.950 --> 00:04:33.814 the donor is homozygous?

NOTE Confidence: 0.816627144813538

00:04:33.820 --> 00:04:36.725 For HLA two or HLA B 44,

NOTE Confidence: 0.816627144813538

00:04:36.730 --> 00:04:40.322 the recipient does not see the donor cells

NOTE Confidence: 0.816627144813538

00:04:40.322 --> 00:04:43.111 as being foreign because the recipient

NOTE Confidence: 0.816627144813538

00:04:43.111 --> 00:04:46.869 has a two and in this case be 44.

NOTE Confidence: 0.816627144813538

00:04:46.870 --> 00:04:49.950 Whereas the donor cells are immuno competent,

NOTE Confidence: 0.816627144813538

00:04:49.950 --> 00:04:53.046 it does see the host as being foreign

NOTE Confidence: 0.816627144813538

00:04:53.046 --> 00:04:56.550 and it reacts against the host giving

NOTE Confidence: 0.816627144813538

00:04:56.550 --> 00:05:00.052 the graft versus host disease as opposed

NOTE Confidence: 0.816627144813538

00:05:00.052 --> 00:05:03.590 to like a rejection of a heart or a

NOTE Confidence: 0.816627144813538

00:05:03.590 --> 00:05:06.230 kidney would be host versus graft.

NOTE Confidence: 0.816627144813538

00:05:06.230 --> 00:05:08.430 So it's either can occur.

NOTE Confidence: 0.816627144813538

00:05:08.430 --> 00:05:10.202 Also an immunocompromised hosts

NOTE Confidence: 0.816627144813538

00:05:10.202 --> 00:05:12.417 due to congenital or acquired.

NOTE Confidence: 0.816627144813538

00:05:12.420 --> 00:05:13.800 Aziz, or, or medications,

NOTE Confidence: 0.816627144813538

00:05:13.800 --> 00:05:16.570 can do this, as we'll see in in.

NOTE Confidence: 0.816627144813538

00:05:16.570 --> 00:05:17.830 In a short while.

NOTE Confidence: 0.816627144813538

00:05:17.830 --> 00:05:20.228 So the whole concept here is that

NOTE Confidence: 0.816627144813538

00:05:20.228 --> 00:05:22.820 the host is incapable of eliminating

NOTE Confidence: 0.816627144813538

00:05:22.820 --> 00:05:24.600 the immunocompetent T cells.

NOTE Confidence: 0.816627144813538

00:05:24.600 --> 00:05:26.144 And they in graft.

NOTE Confidence: 0.816627144813538

00:05:26.144 --> 00:05:28.460 And they attacked the bone marrow

NOTE Confidence: 0.816627144813538

00:05:28.535 --> 00:05:31.157 and that causes the ATA associated

NOTE Confidence: 0.816627144813538

00:05:31.157 --> 00:05:32.468 graft versus host.

NOTE Confidence: 0.816627144813538

00:05:32.470 --> 00:05:35.186 So the requirements are to need to

NOTE Confidence: 0.816627144813538

00:05:35.186 --> 00:05:37.849 have a difference in donor recipient.

NOTE Confidence: 0.816627144813538

00:05:37.850 --> 00:05:39.995 HLA immuno competent competent donor

NOTE Confidence: 0.816627144813538

00:05:39.995 --> 00:05:42.938 cells need to be transfused and the

NOTE Confidence: 0.816627144813538

00:05:42.938 --> 00:05:45.110 host must be incapable of rejecting

NOTE Confidence: 0.816627144813538

00:05:45.110 --> 00:05:47.650 the immuno competent cells due to

NOTE Confidence: 0.816627144813538

00:05:47.650 --> 00:05:49.830 either disease or medication or

NOTE Confidence: 0.816627144813538

00:05:49.830 --> 00:05:51.512 congenital disease risk factors.

NOTE Confidence: 0.816627144813538

00:05:51.512 --> 00:05:53.168 The degree of recipient,

NOTE Confidence: 0.816627144813538

00:05:53.170 --> 00:05:55.240 cellular immunodeficiency plays a role.

NOTE Confidence: 0.816627144813538

00:05:55.240 --> 00:05:57.739 The number of viable T cells in

NOTE Confidence: 0.816627144813538

00:05:57.739 --> 00:05:58.810 the transfused product.

NOTE Confidence: 0.816627144813538

00:05:58.810 --> 00:06:00.946 The minimum number is not known.

NOTE Confidence: 0.816627144813538

00:06:00.950 --> 00:06:03.218 It is known some products like

NOTE Confidence: 0.816627144813538

00:06:03.218 --> 00:06:04.730 granulocytes are associated with

NOTE Confidence: 0.816627144813538

00:06:04.797 --> 00:06:06.657 GV HD more than other products.

NOTE Confidence: 0.816627144813538

00:06:06.660 --> 00:06:07.017 Also,

NOTE Confidence: 0.816627144813538

00:06:07.017 --> 00:06:08.802 the genetic diversity of the

NOTE Confidence: 0.816627144813538

00:06:08.802 --> 00:06:09.873 population is important.

NOTE Confidence: 0.816627144813538

00:06:09.880 --> 00:06:12.022 There was a fair amount of

NOTE Confidence: 0.816627144813538

00:06:12.022 --> 00:06:13.450 graft versus host disease.

NOTE Confidence: 0.816627144813538

00:06:13.450 --> 00:06:15.669 TAA GVHD in Japan and they thought

NOTE Confidence: 0.816627144813538

00:06:15.669 --> 00:06:18.458 was that it was more of a closed

NOTE Confidence: 0.816627144813538

00:06:18.458 --> 00:06:20.218 population because of the fact

NOTE Confidence: 0.816627144813538

00:06:20.291 --> 00:06:22.993 that it was an isolated island and

NOTE Confidence: 0.816627144813538

00:06:22.993 --> 00:06:24.525 therefore the genetic diversity

NOTE Confidence: 0.816627144813538

00:06:24.525 --> 00:06:27.445 was not as great as would be in.

NOTE Confidence: 0.816627144813538

00:06:27.450 --> 00:06:29.346 In a larger population.

NOTE Confidence: 0.816627144813538

00:06:29.346 --> 00:06:31.716 Also fresher cellular blood products

NOTE Confidence: 0.816627144813538

00:06:31.716 --> 00:06:34.657 like red cells stored list in a couple

NOTE Confidence: 0.816627144813538

00:06:34.657 --> 00:06:37.437 of weeks have a higher risk of GV HD.

NOTE Confidence: 0.816627144813538

00:06:37.440 --> 00:06:37.805 Also,

NOTE Confidence: 0.816627144813538

00:06:37.805 --> 00:06:40.360 for reasons that I'm not familiar with,

NOTE Confidence: 0.816627144813538

00:06:40.360 --> 00:06:42.550 I'm not sure if they're known

NOTE Confidence: 0.816627144813538

00:06:42.550 --> 00:06:43.645 the differential diagnosis.

NOTE Confidence: 0.816627144813538

00:06:43.650 --> 00:06:46.378 Once you start seeing things are ash you

NOTE Confidence: 0.816627144813538

00:06:46.378 --> 00:06:49.120 wonder about drug reaction or viral illness.

NOTE Confidence: 0.816627144813538

00:06:49.120 --> 00:06:52.040 So skin biopsy is done when it's done.

NOTE Confidence: 0.816627144813538

00:06:52.040 --> 00:06:53.138 It shows superficial

NOTE Confidence: 0.816627144813538

00:06:53.138 --> 00:06:53.870 perivascular infiltrates.

NOTE Confidence: 0.816627144813538

00:06:53.870 --> 00:06:56.060 Here's Grade 123 and then four

NOTE Confidence: 0.816627144813538

00:06:56.060 --> 00:06:57.520 in the lower right.

NOTE Confidence: 0.816627144813538

00:06:57.520 --> 00:06:59.092 You see bullae formation,

NOTE Confidence: 0.816627144813538

00:06:59.092 --> 00:07:01.450 and you can see bullae formation

NOTE Confidence: 0.816627144813538

00:07:01.524 --> 00:07:04.170 starting here with these white circles.

NOTE Confidence: 0.816627144813538

00:07:04.170 --> 00:07:06.620 And then you loss of reedy ridges,

NOTE Confidence: 0.816627144813538

00:07:06.620 --> 00:07:09.070 which are these intrusions into the dermis.

NOTE Confidence: 0.816627144813538

00:07:09.070 --> 00:07:10.820 Here's the epidermis on top,

NOTE Confidence: 0.816627144813538

00:07:10.820 --> 00:07:12.570 and then here's the dermis,

NOTE Confidence: 0.816627144813538

00:07:12.570 --> 00:07:13.620 the Rady Ridges,

NOTE Confidence: 0.816627144813538

00:07:13.620 --> 00:07:16.070 where the blood vessels go are lossed,

NOTE Confidence: 0.816627144813538

00:07:16.070 --> 00:07:18.520 and the dermis of the epidermis separate.

NOTE Confidence: 0.816627144813538

00:07:18.520 --> 00:07:21.670 Here you can see this set of little circles.

NOTE Confidence: 0.762032032012939

00:07:21.670 --> 00:07:23.034 They have a whole.

NOTE Confidence: 0.762032032012939

00:07:23.034 --> 00:07:25.080 This whole line shows the separation

NOTE Confidence: 0.762032032012939

00:07:25.147 --> 00:07:27.576 of the Germans to the epidermis of

NOTE Confidence: 0.762032032012939

00:07:27.576 --> 00:07:29.369 complete sloughing of that issue,

NOTE Confidence: 0.762032032012939

00:07:29.370 --> 00:07:31.904 and that of course leads to infection

NOTE Confidence: 0.762032032012939

00:07:31.904 --> 00:07:33.569 and causes problems as well.

NOTE Confidence: 0.762032032012939

00:07:33.570 --> 00:07:34.794 So that is what?

NOTE Confidence: 0.762032032012939

00:07:34.794 --> 00:07:37.860 The TA GV HD looks like on skin biopsy.

NOTE Confidence: 0.762032032012939

00:07:37.860 --> 00:07:40.272 This is a bone marrow showing

NOTE Confidence: 0.762032032012939

00:07:40.272 --> 00:07:41.478 a hypoplastic marrow.

NOTE Confidence: 0.762032032012939

00:07:41.480 --> 00:07:42.920 As you can see,

NOTE Confidence: 0.762032032012939

00:07:42.920 --> 00:07:45.530 this is patients back showing the rash.

NOTE Confidence: 0.762032032012939

00:07:45.530 --> 00:07:47.980 Here the rash on the extremities and

NOTE Confidence: 0.762032032012939

00:07:47.980 --> 00:07:50.528 this other one in the lower right

NOTE Confidence: 0.762032032012939

00:07:50.528 --> 00:07:52.670 before he seemed so the treatment

NOTE Confidence: 0.762032032012939

00:07:52.739 --> 00:07:54.729 there really is no treatment.

NOTE Confidence: 0.762032032012939

00:07:54.730 --> 00:07:56.570 It's a uniformly fatal condition,

NOTE Confidence: 0.762032032012939

00:07:56.570 --> 00:07:58.520 pretty much because of the marrow

NOTE Confidence: 0.762032032012939

00:07:58.520 --> 00:08:00.620 aplasia and in Allo transplants.

NOTE Confidence: 0.762032032012939

00:08:00.620 --> 00:08:02.750 You know when you give someone

NOTE Confidence: 0.762032032012939

00:08:02.750 --> 00:08:05.030 a unit of blood does this.

NOTE Confidence: 0.762032032012939

00:08:05.030 --> 00:08:07.700 This can cause problems because again

NOTE Confidence: 0.762032032012939

00:08:07.700 --> 00:08:10.120 the transplanted bone marrow is that

NOTE Confidence: 0.762032032012939

00:08:10.120 --> 00:08:12.384 of the of the marrow donor or not.

NOTE Confidence: 0.762032032012939

00:08:12.390 --> 00:08:13.154 If necessary,

NOTE Confidence: 0.762032032012939

00:08:13.154 --> 00:08:14.300 the transfusion donor.

NOTE Confidence: 0.762032032012939

00:08:14.300 --> 00:08:16.796 Which is usually not the same.

NOTE Confidence: 0.762032032012939

00:08:16.800 --> 00:08:18.880 Immuno suppression is rarely helpful.

NOTE Confidence: 0.762032032012939

00:08:18.880 --> 00:08:21.030 The radiation or whatever you're

NOTE Confidence: 0.762032032012939

00:08:21.030 --> 00:08:23.929 using to look to eliminate the T

NOTE Confidence: 0.762032032012939

00:08:23.929 --> 00:08:26.274 cells in this in the donor products

NOTE Confidence: 0.762032032012939

00:08:26.274 --> 00:08:29.024 does not apply to FFP cryoprecipitate

NOTE Confidence: 0.762032032012939

00:08:29.024 --> 00:08:31.775 derivatives and also frozen red cells.

NOTE Confidence: 0.762032032012939

00:08:31.775 --> 00:08:32.190 Interestingly,

NOTE Confidence: 0.762032032012939

00:08:32.190 --> 00:08:34.265 because they're washed multiple times,

NOTE Confidence: 0.762032032012939

00:08:34.270 --> 00:08:36.976 but it's not been reported with

NOTE Confidence: 0.762032032012939

00:08:36.976 --> 00:08:39.211 non cellular products or with

NOTE Confidence: 0.762032032012939

00:08:39.211 --> 00:08:41.979 frozen cells as far as I know it's

NOTE Confidence: 0.762032032012939

00:08:41.979 --> 00:08:44.668 you would need to irradiate the.

NOTE Confidence: 0.762032032012939

00:08:44.670 --> 00:08:47.190 Or in our case passage and reduce the

NOTE Confidence: 0.762032032012939

00:08:47.190 --> 00:08:49.920 product if it comes from a blood relative.

NOTE Confidence: 0.762032032012939

00:08:49.920 --> 00:08:52.816 If it's a directed donation which was more

NOTE Confidence: 0.762032032012939

00:08:52.816 --> 00:08:55.486 common in the age era than it is now,

NOTE Confidence: 0.762032032012939

00:08:55.490 --> 00:08:57.674 'cause people were donating for family

NOTE Confidence: 0.762032032012939

00:08:57.674 --> 00:08:59.845 members in the hope of preventing

NOTE Confidence: 0.762032032012939

00:08:59.845 --> 00:09:02.127 them from getting HIV at the time

NOTE Confidence: 0.762032032012939

00:09:02.127 --> 00:09:04.776 from unknown members of the blood supply.

NOTE Confidence: 0.762032032012939

00:09:04.780 --> 00:09:06.630 And that lets other problems

NOTE Confidence: 0.762032032012939

00:09:06.630 --> 00:09:09.060 as well because of the KGB HD.

NOTE Confidence: 0.762032032012939

00:09:09.060 --> 00:09:10.484 If it wasn't irradiated,

NOTE Confidence: 0.762032032012939

00:09:10.484 --> 00:09:13.350 and if the blood component is HLA match,

NOTE Confidence: 0.762032032012939

00:09:13.350 --> 00:09:15.849 that should be also treated as well.

NOTE Confidence: 0.762032032012939

00:09:15.850 --> 00:09:17.986 Look, our reduction is not protective.

NOTE Confidence: 0.762032032012939

00:09:17.990 --> 00:09:19.254 You're not removing enough.

NOTE Confidence: 0.762032032012939

00:09:19.254 --> 00:09:22.022 White cells are still four to five logs

NOTE Confidence: 0.762032032012939

00:09:22.022 --> 00:09:23.642 left after Leukoreduction standard

NOTE Confidence: 0.762032032012939

00:09:23.642 --> 00:09:25.490 blood washing doesn't remove it.

NOTE Confidence: 0.762032032012939

00:09:25.490 --> 00:09:28.031 You either need to gamma irradiate it

NOTE Confidence: 0.762032032012939

00:09:28.031 --> 00:09:30.128 with 2500 Centigrade or X radiation.

NOTE Confidence: 0.762032032012939

00:09:30.130 --> 00:09:32.284 The federal government wants to get

NOTE Confidence: 0.762032032012939

00:09:32.284 --> 00:09:34.479 rid of gamma radiation because of

NOTE Confidence: 0.762032032012939

00:09:34.479 --> 00:09:36.567 the potential to form dirty bombs.

NOTE Confidence: 0.762032032012939

00:09:36.570 --> 00:09:39.130 And we'll talk about that in a couple

NOTE Confidence: 0.762032032012939

00:09:39.130 --> 00:09:40.956 seconds and then pathogen reduction

NOTE Confidence: 0.762032032012939

00:09:40.956 --> 00:09:43.383 as you will see, is also protective.

NOTE Confidence: 0.762032032012939

00:09:43.383 --> 00:09:45.560 And what if you give a pathogen

NOTE Confidence: 0.762032032012939

00:09:45.624 --> 00:09:46.600 reduced product?

NOTE Confidence: 0.762032032012939

00:09:46.600 --> 00:09:47.629 You do not.

NOTE Confidence: 0.762032032012939

00:09:47.629 --> 00:09:50.410 We do not irradiate the product at all,

NOTE Confidence: 0.762032032012939

00:09:50.410 --> 00:09:53.515 so this is what a bloody radiator looks like.

NOTE Confidence: 0.762032032012939

00:09:53.520 --> 00:09:55.949 The blood red cells and or platelets,

NOTE Confidence: 0.762032032012939

00:09:55.950 --> 00:09:58.020 whatever is put into this canister.

NOTE Confidence: 0.762032032012939

00:09:58.020 --> 00:10:00.358 The canister is here where the rent

NOTE Confidence: 0.762032032012939

00:10:00.358 --> 00:10:03.163 is is rotating in a circle and then

NOTE Confidence: 0.762032032012939

00:10:03.163 --> 00:10:05.318 that whole thing rotates around to

NOTE Confidence: 0.762032032012939

00:10:05.318 --> 00:10:08.110 where the source of the cesium sources here.

NOTE Confidence: 0.762032032012939

00:10:08.110 --> 00:10:09.402 There are two pencils.

NOTE Confidence: 0.762032032012939

00:10:09.402 --> 00:10:10.694 As I said this,

NOTE Confidence: 0.762032032012939

00:10:10.700 --> 00:10:12.320 the great material is led.

NOTE Confidence: 0.762032032012939

00:10:12.320 --> 00:10:13.940 The person is standing over

NOTE Confidence: 0.762032032012939

00:10:13.940 --> 00:10:15.560 here watching the red cells

NOTE Confidence: 0.762032032012939

00:10:15.623 --> 00:10:17.507 swivel around like a lazy suzan.

NOTE Confidence: 0.762032032012939

00:10:17.510 --> 00:10:19.436 It's exposed for 456 minutes depending

NOTE Confidence: 0.762032032012939

00:10:19.436 --> 00:10:21.741 on the strength of the radiation source

NOTE Confidence: 0.762032032012939

00:10:21.741 --> 00:10:23.988 that last years and years and years,

NOTE Confidence: 0.847607553005219

00:10:23.990 --> 00:10:26.244 and then when the time is up,

NOTE Confidence: 0.847607553005219

00:10:26.250 --> 00:10:27.785 it automatically comes back to

NOTE Confidence: 0.847607553005219

00:10:27.785 --> 00:10:29.820 the opening and then it's removed.

NOTE Confidence: 0.847607553005219

00:10:29.820 --> 00:10:32.088 So that's what the gamma cell is.

NOTE Confidence: 0.847607553005219

00:10:32.090 --> 00:10:34.142 The concern is that that terrorists

NOTE Confidence: 0.847607553005219

00:10:34.142 --> 00:10:36.490 will break in and rip open several

NOTE Confidence: 0.847607553005219

00:10:36.490 --> 00:10:38.611 tons of lead and take out the.

NOTE Confidence: 0.847607553005219

00:10:38.620 --> 00:10:40.290 Pencil source can be done,

NOTE Confidence: 0.847607553005219

00:10:40.290 --> 00:10:42.670 but the government would like to get

NOTE Confidence: 0.847607553005219

00:10:42.670 --> 00:10:45.608 rid of this and move to X Ray devices.

NOTE Confidence: 0.847607553005219

00:10:45.610 --> 00:10:48.046 And if with gamma rate with pathogen

NOTE Confidence: 0.847607553005219

00:10:48.046 --> 00:10:49.773 reduction you won't need any

NOTE Confidence: 0.847607553005219

00:10:49.773 --> 00:10:51.633 kind of device at all actually.

NOTE Confidence: 0.847607553005219

00:10:51.640 --> 00:10:54.808 All the indications for radiated components,

NOTE Confidence: 0.847607553005219

00:10:54.810 --> 00:10:57.990 who are those that are immunosuppressed.

NOTE Confidence: 0.847607553005219

00:10:57.990 --> 00:11:00.640 Intrauterine transfusions, low birth weight.

NOTE Confidence: 0.847607553005219

00:11:00.640 --> 00:11:03.250 Exchange transfusions in newborns and you

NOTE Confidence: 0.847607553005219

00:11:03.250 --> 00:11:06.039 should've radiate the red cells for that.

NOTE Confidence: 0.847607553005219

00:11:06.040 --> 00:11:07.656 Patients with Digeorge syndrome,

NOTE Confidence: 0.847607553005219

00:11:07.656 --> 00:11:09.676 where does he sell immunodeficiency

NOTE Confidence: 0.847607553005219

00:11:09.676 --> 00:11:10.600 Hodgkin's lymphoma?

NOTE Confidence: 0.847607553005219

00:11:10.600 --> 00:11:12.705 Patients need to have irradiated

NOTE Confidence: 0.847607553005219

00:11:12.705 --> 00:11:15.280 blood products with for life not

NOTE Confidence: 0.847607553005219

00:11:15.280 --> 00:11:17.240 even after they've been cured.

NOTE Confidence: 0.847607553005219

00:11:17.240 --> 00:11:19.730 But for life, lors, auto transplants,

NOTE Confidence: 0.847607553005219

00:11:19.730 --> 00:11:21.390 not irradiating the transplant.

NOTE Confidence: 0.847607553005219

00:11:21.390 --> 00:11:22.220 Of course,

NOTE Confidence: 0.847607553005219

00:11:22.220 --> 00:11:24.404 just any red cells that they

NOTE Confidence: 0.847607553005219

00:11:24.404 --> 00:11:26.790 get outside of the transplant.

NOTE Confidence: 0.847607553005219

00:11:26.790 --> 00:11:29.688 If it's Rachel Emacs single donor platelets,

NOTE Confidence: 0.847607553005219

00:11:29.690 --> 00:11:30.950 or from relatives.

NOTE Confidence: 0.847607553005219

00:11:30.950 --> 00:11:33.890 Or someone's got various illnesses and are

NOTE Confidence: 0.847607553005219

00:11:33.965 --> 00:11:36.929 getting a purine analogue like fludarabine,

NOTE Confidence: 0.847607553005219

00:11:36.930 --> 00:11:37.846 cladribine, bendamustine,

NOTE Confidence: 0.847607553005219

00:11:37.846 --> 00:11:41.510 and other drugs as they come along patients.

NOTE Confidence: 0.847607553005219

00:11:41.510 --> 00:11:43.800 Getting Cam path anti CD.

NOTE Confidence: 0.847607553005219

00:11:43.800 --> 00:11:45.572 52 antithymocyte globulin granulocytes?

NOTE Confidence: 0.847607553005219

00:11:45.572 --> 00:11:48.768 If those products are used to treat

NOTE Confidence: 0.847607553005219

00:11:48.768 --> 00:11:51.582 illnesses they should get irradiated blood

NOTE Confidence: 0.847607553005219

00:11:51.582 --> 00:11:54.339 products not necessarily for aplastic anemia.

NOTE Confidence: 0.847607553005219

00:11:54.340 --> 00:11:56.172 MD S Hodgkin's lymphoma.

NOTE Confidence: 0.847607553005219

00:11:56.172 --> 00:11:57.088 I'm sorry,

NOTE Confidence: 0.847607553005219

00:11:57.090 --> 00:11:59.380 non Hodgkin's lymphoma and non

NOTE Confidence: 0.847607553005219

00:11:59.380 --> 00:12:01.670 Hodgkin's leukemia is solid organs.

NOTE Confidence: 0.847607553005219

00:12:01.670 --> 00:12:02.906 Unless they're being treated

NOTE Confidence: 0.847607553005219

00:12:02.906 --> 00:12:04.760 with one of these purine analogs

NOTE Confidence: 0.847607553005219

00:12:04.811 --> 00:12:06.226 or other types of therapies,

NOTE Confidence: 0.847607553005219

00:12:06.230 --> 00:12:07.750 so aplastic anemia getting ATG

NOTE Confidence: 0.847607553005219

00:12:07.750 --> 00:12:09.270 therapy would be a candidate.

NOTE Confidence: 0.847607553005219

00:12:09.270 --> 00:12:09.878 AA would.

NOTE Confidence: 0.847607553005219

00:12:09.878 --> 00:12:12.006 If you don't know what it is,

NOTE Confidence: 0.847607553005219

00:12:12.010 --> 00:12:14.346 I'm not going to give you a laundry

NOTE Confidence: 0.847607553005219

00:12:14.346 --> 00:12:16.795 list called The Blood Bank and ask the

NOTE Confidence: 0.847607553005219

00:12:16.795 --> 00:12:19.298 Blood Bank what their policy is right now.

NOTE Confidence: 0.847607553005219

00:12:19.300 --> 00:12:21.130 What happens if someone requests it?

NOTE Confidence: 0.847607553005219

00:12:21.130 --> 00:12:22.915 We've provided irradiated blood and

NOTE Confidence: 0.847607553005219

00:12:22.915 --> 00:12:24.995 then we review the indication and

NOTE Confidence: 0.847607553005219

00:12:24.995 --> 00:12:26.899 see if it needs to continue or not.

NOTE Confidence: 0.847607553005219

00:12:26.900 --> 00:12:28.951 So please call the Blood Bank for

NOTE Confidence: 0.847607553005219

00:12:28.951 --> 00:12:30.550 specific information on your patient.

NOTE Confidence: 0.847607553005219

00:12:30.550 --> 00:12:32.038 Interesting, Lee, when they.

NOTE Confidence: 0.847607553005219

00:12:32.038 --> 00:12:34.270 Reviewed the use of these products.

NOTE Confidence: 0.847607553005219

00:12:34.270 --> 00:12:36.568 They found that not all institutions

NOTE Confidence: 0.847607553005219

00:12:36.568 --> 00:12:38.100 follow the same criteria.

NOTE Confidence: 0.847607553005219

00:12:38.100 --> 00:12:39.632 Here are three institutions

NOTE Confidence: 0.847607553005219

00:12:39.632 --> 00:12:41.930 from Canada and one from Boston,

NOTE Confidence: 0.847607553005219

00:12:41.930 --> 00:12:43.850 and as you can see,

NOTE Confidence: 0.847607553005219

00:12:43.850 --> 00:12:45.378 not everybody irradiates for

NOTE Confidence: 0.847607553005219

00:12:45.378 --> 00:12:46.906 the same thing term.

NOTE Confidence: 0.847607553005219

00:12:46.910 --> 00:12:49.584 Infants MGH does not places in Canada.

NOTE Confidence: 0.847607553005219

00:12:49.590 --> 00:12:51.786 Don't do it for acute leukemias

NOTE Confidence: 0.847607553005219

00:12:51.786 --> 00:12:53.720 or chronic leukemias or stem

NOTE Confidence: 0.847607553005219

00:12:53.720 --> 00:12:55.715 cell donors during the harvest.

NOTE Confidence: 0.847607553005219

00:12:55.720 --> 00:12:57.252 Children with solid tumors,

NOTE Confidence: 0.847607553005219

00:12:57.252 --> 00:12:58.018 it varies,

NOTE Confidence: 0.847607553005219

00:12:58.020 --> 00:13:00.694 and it's an amazing amount of variability.

NOTE Confidence: 0.847607553005219

00:13:00.700 --> 00:13:01.038 Again,

NOTE Confidence: 0.847607553005219

00:13:01.038 --> 00:13:01.714 at Yale,

NOTE Confidence: 0.847607553005219

00:13:01.714 --> 00:13:04.080 give us a call and we'll be

NOTE Confidence: 0.847607553005219

00:13:04.168 --> 00:13:06.484 happy to talk about your patient

NOTE Confidence: 0.847607553005219

00:13:06.484 --> 00:13:08.740 if there's a new patient.

NOTE Confidence: 0.847607553005219

00:13:08.740 --> 00:13:10.052 And you have questions.

NOTE Confidence: 0.847607553005219

00:13:10.052 --> 00:13:12.689 So now that we know about TTA GVHD,

NOTE Confidence: 0.847607553005219

00:13:12.690 --> 00:13:14.330 what is the pathogen reduction?

NOTE Confidence: 0.847607553005219

00:13:14.330 --> 00:13:15.650 What is that about?

NOTE Confidence: 0.847607553005219

00:13:15.650 --> 00:13:15.980 Well,

NOTE Confidence: 0.847607553005219

00:13:15.980 --> 00:13:18.128 that is a technology that attempts

NOTE Confidence: 0.847607553005219

00:13:18.128 --> 00:13:19.560 to eliminate pathogens contained

NOTE Confidence: 0.847607553005219

00:13:19.617 --> 00:13:20.577 in units of blood.

NOTE Confidence: 0.847607553005219

00:13:20.580 --> 00:13:23.220 The only thing in it what it does,

NOTE Confidence: 0.847607553005219

00:13:23.220 --> 00:13:25.844 it does it by binding DNA or RNA,

NOTE Confidence: 0.847607553005219

00:13:25.850 --> 00:13:27.162 single or double stranded,

NOTE Confidence: 0.847607553005219

00:13:27.162 --> 00:13:28.802 whether it's viral or bacterial,

NOTE Confidence: 0.847607553005219

00:13:28.810 --> 00:13:30.778 and it prevents it from replicating.

NOTE Confidence: 0.849700152873993

00:13:30.780 --> 00:13:32.305 There's nothing in blood that

NOTE Confidence: 0.849700152873993

00:13:32.305 --> 00:13:34.400 should have DNA except a pathogen.

NOTE Confidence: 0.849700152873993

00:13:34.400 --> 00:13:36.380 Well, it shouldn't be in there,

NOTE Confidence: 0.849700152873993

00:13:36.380 --> 00:13:37.965 but there's nothing in blood

NOTE Confidence: 0.849700152873993

00:13:37.965 --> 00:13:40.080 that has DNA or RNA except.

NOTE Confidence: 0.849700152873993

00:13:40.080 --> 00:13:41.484 A pathogen there is.

NOTE Confidence: 0.849700152873993

00:13:41.484 --> 00:13:43.239 I know there's mitochondrial DNA,

NOTE Confidence: 0.849700152873993

00:13:43.240 --> 00:13:44.503 but that's not.

NOTE Confidence: 0.849700152873993

00:13:44.503 --> 00:13:47.029 What we're discussing in platelets here,

NOTE Confidence: 0.849700152873993

00:13:47.030 --> 00:13:49.158 and there's a little RNA left in

NOTE Confidence: 0.849700152873993

00:13:49.158 --> 00:13:51.439 red cells from the ridiculous site,

NOTE Confidence: 0.849700152873993

00:13:51.440 --> 00:13:53.140 but we're not discussing that.

NOTE Confidence: 0.849700152873993

00:13:53.140 --> 00:13:54.424 We're talking about pathogens,

NOTE Confidence: 0.849700152873993

00:13:54.424 --> 00:13:56.870 and that's where the material is attacked.

NOTE Confidence: 0.849700152873993

00:13:56.870 --> 00:13:57.884 Emerging pathogens just

NOTE Confidence: 0.849700152873993

00:13:57.884 --> 00:13:59.574 showed you as a concern.

NOTE Confidence: 0.849700152873993

00:13:59.580 --> 00:14:01.270 If COVID-19 was Bloodborne and

NOTE Confidence: 0.849700152873993

00:14:01.270 --> 00:14:02.622 was transmissible by blood,

NOTE Confidence: 0.849700152873993

00:14:02.630 --> 00:14:04.320 things would be even worse.

NOTE Confidence: 0.849700152873993

00:14:04.320 --> 00:14:07.016 If you can imagine that they are now

NOTE Confidence: 0.849700152873993

00:14:07.016 --> 00:14:09.749 and maybe covid 29 if it comes along.

NOTE Confidence: 0.849700152873993

00:14:09.750 --> 00:14:10.398 Hopefully not.

NOTE Confidence: 0.849700152873993

00:14:10.398 --> 00:14:11.046 Maybe Bloodborne,

NOTE Confidence: 0.849700152873993

00:14:11.046 --> 00:14:13.406 and we need to have pathogen reduction

NOTE Confidence: 0.849700152873993

00:14:13.406 --> 00:14:15.548 technology in place to mitigate that.

NOTE Confidence: 0.849700152873993

00:14:15.550 --> 00:14:18.301 So the therapies are two one for

NOTE Confidence: 0.849700152873993

00:14:18.301 --> 00:14:21.128 platelets and plasma and one for red

NOTE Confidence: 0.849700152873993

00:14:21.128 --> 00:14:23.093 cells with the service technology

NOTE Confidence: 0.849700152873993

00:14:23.093 --> 00:14:25.639 the active agent is called S 59.

NOTE Confidence: 0.849700152873993

00:14:25.640 --> 00:14:28.296 Is is a sorrel in call dammit oslin

NOTE Confidence: 0.849700152873993

00:14:28.296 --> 00:14:31.213 is added to the playlist at the time

NOTE Confidence: 0.849700152873993

00:14:31.213 --> 00:14:33.651 of collection by the Blood Center

NOTE Confidence: 0.849700152873993

00:14:33.651 --> 00:14:36.369 and the mcauslan goes through the

NOTE Confidence: 0.849700152873993

00:14:36.369 --> 00:14:39.045 cell membrane and binds to the DNA

NOTE Confidence: 0.849700152873993

00:14:39.045 --> 00:14:41.320 or RNA double or single stranded

NOTE Confidence: 0.849700152873993

00:14:41.320 --> 00:14:43.864 and then it's exposed to UV.

NOTE Confidence: 0.849700152873993

00:14:43.870 --> 00:14:45.820 A light in an illuminator.

NOTE Confidence: 0.849700152873993

00:14:45.820 --> 00:14:47.780 And it crosslinks preventing replication.

NOTE Confidence: 0.849700152873993

00:14:47.780 --> 00:14:50.510 That's how it inactivates pathogens S 303.

NOTE Confidence: 0.849700152873993

00:14:50.510 --> 00:14:53.638 It has to be used for red cells,

NOTE Confidence: 0.849700152873993

00:14:53.640 --> 00:14:55.480 because hemoglobin A will absorb

NOTE Confidence: 0.849700152873993

00:14:55.480 --> 00:14:58.920 the UV A and it will not provide

NOTE Confidence: 0.849700152873993

00:14:58.920 --> 00:15:00.940 an appropriate and effective.

NOTE Confidence: 0.849700152873993

00:15:00.940 --> 00:15:03.060 Mitigation technology so this material,

NOTE Confidence: 0.849700152873993

00:15:03.060 --> 00:15:05.598 which is a an alkylating agent,

NOTE Confidence: 0.849700152873993

00:15:05.600 --> 00:15:08.816 goes into the blood into the red cells

NOTE Confidence: 0.849700152873993

00:15:08.816 --> 00:15:11.008 and intercalates quickly and cross

NOTE Confidence: 0.849700152873993

00:15:11.008 --> 00:15:14.074 links without any any illumination at all,

NOTE Confidence: 0.849700152873993

00:15:14.080 --> 00:15:16.720 and then it degrades very rapidly

NOTE Confidence: 0.849700152873993

00:15:16.720 --> 00:15:19.766 into a non reactive material is 300

NOTE Confidence: 0.849700152873993

00:15:19.766 --> 00:15:23.058 so and this has been approved by the

NOTE Confidence: 0.849700152873993

00:15:23.058 --> 00:15:25.548 FDA since 2014 the the platelets

NOTE Confidence: 0.849700152873993

00:15:25.548 --> 00:15:28.925 or plasma and the red cell one is

NOTE Confidence: 0.849700152873993

00:15:28.925 --> 00:15:31.050 in phase three clinical trials.

NOTE Confidence: 0.849700152873993

00:15:31.050 --> 00:15:32.946 Which is what we're doing here at Yale,

NOTE Confidence: 0.849700152873993

00:15:32.950 --> 00:15:35.010 and I'll talk about that.

NOTE Confidence: 0.849700152873993

00:15:35.010 --> 00:15:38.770 So what types of pathogens is it and

NOTE Confidence: 0.849700152873993

00:15:38.770 --> 00:15:42.301 activate both the red cell and the

NOTE Confidence: 0.849700152873993

00:15:42.301 --> 00:15:44.791 platelet forms those two agents?

NOTE Confidence: 0.849700152873993

00:15:44.800 --> 00:15:47.740 59 and S 303 and activate the

NOTE Confidence: 0.849700152873993

00:15:47.740 --> 00:15:49.580 envelope viruses that we do.

NOTE Confidence: 0.849700152873993

00:15:49.580 --> 00:15:51.962 Blood tests for lots of other

NOTE Confidence: 0.849700152873993

00:15:51.962 --> 00:15:52.756 envelope viruses.

NOTE Confidence: 0.849700152873993

00:15:52.760 --> 00:15:54.750 Chikungunya dengue, influenza A gram.

NOTE Confidence: 0.849700152873993

00:15:54.750 --> 00:15:56.338 All the gram negatives.

NOTE Confidence: 0.849700152873993

00:15:56.338 --> 00:15:57.926 Most of the gram.

NOTE Confidence: 0.849700152873993

00:15:57.930 --> 00:15:59.920 Almost all the grammar negatives

NOTE Confidence: 0.849700152873993

00:15:59.920 --> 00:16:01.131 and positives, spirochetes,

NOTE Confidence: 0.849700152873993

00:16:01.131 --> 00:16:02.364 protozoa, and leukocytes.

NOTE Confidence: 0.849700152873993

00:16:02.364 --> 00:16:04.830 And this is where pathogen reduction

NOTE Confidence: 0.849700152873993

00:16:04.893 --> 00:16:07.089 eliminates the need for gamma radiation.

NOTE Confidence: 0.849700152873993

00:16:07.090 --> 00:16:09.235 Cousin and activates leukocytes by

NOTE Confidence: 0.849700152873993

00:16:09.235 --> 00:16:12.544 binding to the DNA of the T cells

NOTE Confidence: 0.849700152873993

00:16:12.544 --> 00:16:15.064 of the donor T cells and therefore.

NOTE Confidence: 0.849700152873993

00:16:15.070 --> 00:16:17.737 Does the same thing as radiation would.

NOTE Confidence: 0.849700152873993

00:16:17.740 --> 00:16:19.264 In fact it doesn't,

NOTE Confidence: 0.849700152873993

00:16:19.264 --> 00:16:21.550 as you'll see much more efficiently.

NOTE Confidence: 0.849700152873993

00:16:21.550 --> 00:16:23.572 There are some non envelope virus

NOTE Confidence: 0.849700152873993

00:16:23.572 --> 00:16:26.682 is that it also has affected as it

NOTE Confidence: 0.849700152873993

00:16:26.682 --> 00:16:28.787 doesn't affect parvovirus very well.

NOTE Confidence: 0.849700152873993

00:16:28.790 --> 00:16:30.226 Does it affect spores,

NOTE Confidence: 0.849700152873993

00:16:30.226 --> 00:16:32.380 hepatitis A or hepatitis E which

NOTE Confidence: 0.849700152873993

00:16:32.446 --> 00:16:34.480 are are not lipid envelope but

NOTE Confidence: 0.849700152873993

00:16:34.480 --> 00:16:36.412 don't cause a chronic problems

NOTE Confidence: 0.849700152873993

00:16:36.412 --> 00:16:37.930 generally in patients.

NOTE Confidence: 0.849700152873993

00:16:37.930 --> 00:16:40.778 So it is quite robust and all the

NOTE Confidence: 0.849700152873993

00:16:40.778 --> 00:16:42.774 other technologies to remove bacteria

NOTE Confidence: 0.849700152873993

00:16:42.774 --> 00:16:45.192 don't have any effect on removing.

NOTE Confidence: 0.82047164440155

00:16:45.200 --> 00:16:47.944 Viruses, which is why I felt that

NOTE Confidence: 0.82047164440155

00:16:47.944 --> 00:16:50.178 pathogen reduction was the way to go,

NOTE Confidence: 0.82047164440155

00:16:50.180 --> 00:16:52.175 rather than using other bacterial

NOTE Confidence: 0.82047164440155

00:16:52.175 --> 00:16:53.771 technologies to prevent bacterial

NOTE Confidence: 0.82047164440155

00:16:53.771 --> 00:16:55.426 contamination that did nothing for

NOTE Confidence: 0.82047164440155

00:16:55.426 --> 00:16:56.926 viruses and certainly didn't do

NOTE Confidence: 0.82047164440155

00:16:56.926 --> 00:16:58.368 anything for leukocytes either.

NOTE Confidence: 0.82047164440155

00:16:58.370 --> 00:16:59.985 There other technologies we don't

NOTE Confidence: 0.82047164440155

00:16:59.985 --> 00:17:02.290 have time to talk about riboflavin,

NOTE Confidence: 0.82047164440155

00:17:02.290 --> 00:17:04.558 which is also a photosensitizing agent

NOTE Confidence: 0.82047164440155

00:17:04.558 --> 00:17:06.560 intercalates into nucleic acids as well,

NOTE Confidence: 0.82047164440155

00:17:06.560 --> 00:17:09.089 and UV B light is used rather than UV

NOTE Confidence: 0.82047164440155

00:17:09.089 --> 00:17:11.896 A and that promotes oxygen radicals.

NOTE Confidence: 0.82047164440155

00:17:11.900 --> 00:17:13.324 UVC is another technology

NOTE Confidence: 0.82047164440155

00:17:13.324 --> 00:17:14.748 that's used in Europe.

NOTE Confidence: 0.82047164440155

00:17:14.750 --> 00:17:16.022 Make a pharma.

NOTE Confidence: 0.82047164440155

00:17:16.022 --> 00:17:17.718 There is no photoactive

NOTE Confidence: 0.82047164440155

00:17:17.718 --> 00:17:18.566 photosensitizing agent.

NOTE Confidence: 0.82047164440155

00:17:18.570 --> 00:17:21.699 The UVC itself acts to induce peering,

NOTE Confidence: 0.82047164440155

00:17:21.700 --> 00:17:22.594 permitting dimers,

NOTE Confidence: 0.82047164440155

00:17:22.594 --> 00:17:26.170 and that was discussed by Jake Owen Delaney,

NOTE Confidence: 0.82047164440155

00:17:26.170 --> 00:17:27.064 transfusion recently.

NOTE Confidence: 0.82047164440155

00:17:27.064 --> 00:17:30.640 This is a manuscript that we wrote for

NOTE Confidence: 0.82047164440155

00:17:30.715 --> 00:17:33.767 New England Journal of several years ago,

NOTE Confidence: 0.82047164440155

00:17:33.770 --> 00:17:35.174 but still accurate.

NOTE Confidence: 0.82047164440155

00:17:35.174 --> 00:17:37.982 I hope the sorlin works by

NOTE Confidence: 0.82047164440155

00:17:37.982 --> 00:17:40.026 forming DNA and RNA, adults,

NOTE Confidence: 0.82047164440155

00:17:40.026 --> 00:17:42.256 and cross linking the riboflavin.

NOTE Confidence: 0.82047164440155

00:17:42.260 --> 00:17:45.836 I mentioned cause direct DNA and RNA damage,

NOTE Confidence: 0.82047164440155

00:17:45.840 --> 00:17:46.568 guanine modification.

NOTE Confidence: 0.82047164440155

00:17:46.568 --> 00:17:49.480 And the UV C causes finding dimer formation.

NOTE Confidence: 0.82047164440155

00:17:49.480 --> 00:17:50.856 That's for the platelets.

NOTE Confidence: 0.82047164440155

00:17:50.856 --> 00:17:51.200 Similarly,

NOTE Confidence: 0.82047164440155

00:17:51.200 --> 00:17:53.258 and there are other types of

NOTE Confidence: 0.82047164440155

00:17:53.258 --> 00:17:54.287 pathogen reducing agents.

NOTE Confidence: 0.82047164440155

00:17:54.290 --> 00:17:56.336 We don't have time to discuss,

NOTE Confidence: 0.82047164440155

00:17:56.340 --> 00:17:58.630 but it's in this manuscript.

NOTE Confidence: 0.82047164440155

00:17:58.630 --> 00:18:01.498 If you give us Orland people,

NOTE Confidence: 0.82047164440155

00:18:01.500 --> 00:18:04.524 this was studied by serious .4

NOTE Confidence: 0.82047164440155

00:18:04.524 --> 00:18:07.609 micrograms per kig you wind up

NOTE Confidence: 0.82047164440155

00:18:07.609 --> 00:18:10.034 with 1100 picograms and after

NOTE Confidence: 0.82047164440155

00:18:10.034 --> 00:18:13.728 about 6 hours or so it's down to

NOTE Confidence: 0.82047164440155

00:18:13.728 --> 00:18:16.742 about 100 to 200 picograms per mil

NOTE Confidence: 0.82047164440155

00:18:16.742 --> 00:18:19.794 so it gets quite gets reduced to

NOTE Confidence: 0.82047164440155

00:18:19.794 --> 00:18:22.888 quite rapidly and studies on HPLC

NOTE Confidence: 0.82047164440155

00:18:22.888 --> 00:18:25.448 show as far as toxicology.

NOTE Confidence: 0.82047164440155

00:18:25.450 --> 00:18:27.850 This is before you VA.

NOTE Confidence: 0.82047164440155

00:18:27.850 --> 00:18:29.590 This is the HPLC.

NOTE Confidence: 0.82047164440155

00:18:29.590 --> 00:18:30.460 You see,

NOTE Confidence: 0.82047164440155

00:18:30.460 --> 00:18:32.165 after you via the photo

NOTE Confidence: 0.82047164440155

00:18:32.165 --> 00:18:33.870 products have formed over here.

NOTE Confidence: 0.82047164440155

00:18:33.870 --> 00:18:35.700 This is a standard and these

NOTE Confidence: 0.82047164440155

00:18:35.700 --> 00:18:38.147 sort of products are removed by a

NOTE Confidence: 0.82047164440155

00:18:38.147 --> 00:18:40.077 filtration technique that is used

NOTE Confidence: 0.82047164440155

00:18:40.077 --> 00:18:42.191 called compound or compound and sort

NOTE Confidence: 0.82047164440155

00:18:42.191 --> 00:18:44.441 of device which is really call us

NOTE Confidence: 0.82047164440155

00:18:44.441 --> 00:18:46.487 tyramine that absorbs the photo products.

NOTE Confidence: 0.82047164440155

00:18:46.490 --> 00:18:49.154 So the amount of of the S 59 that's

NOTE Confidence: 0.82047164440155

00:18:49.154 --> 00:18:51.596 goes into a recipient is minimal.

NOTE Confidence: 0.82047164440155

00:18:51.600 --> 00:18:53.574 It's in the in the picogram

NOTE Confidence: 0.82047164440155

00:18:53.574 --> 00:18:55.699 quantities the same thing with plasma.

NOTE Confidence: 0.82047164440155

00:18:55.700 --> 00:18:57.788 Here's plasma after you VA with

NOTE Confidence: 0.82047164440155

00:18:57.788 --> 00:18:59.909 multiple photo products and hear the

NOTE Confidence: 0.82047164440155

00:18:59.909 --> 00:19:02.247 photo products are pretty much gone after.

NOTE Confidence: 0.82047164440155

00:19:02.250 --> 00:19:05.590 Compound resource if device absorption.

NOTE Confidence: 0.82047164440155

00:19:05.590 --> 00:19:08.033 We've been using this product the platelet

NOTE Confidence: 0.82047164440155

00:19:08.033 --> 00:19:10.567 one at Yale since 2017 we started.

NOTE Confidence: 0.82047164440155

00:19:10.570 --> 00:19:13.090 We were among the first and we've been

NOTE Confidence: 0.82047164440155

00:19:13.090 --> 00:19:15.559 the leaders nationally for this product.

NOTE Confidence: 0.82047164440155

00:19:15.560 --> 00:19:16.820 This is the average.

NOTE Confidence: 0.82047164440155

00:19:16.820 --> 00:19:19.470 These are in the units of platelets.

NOTE Confidence: 0.82047164440155

00:19:19.470 --> 00:19:22.318 This is per year the average per year.

NOTE Confidence: 0.82047164440155

00:19:22.320 --> 00:19:24.100 Green is all the platelets.

NOTE Confidence: 0.82047164440155

00:19:24.100 --> 00:19:26.716 Red is pathogen reduced and blue is the

NOTE Confidence: 0.82047164440155

00:19:26.716 --> 00:19:29.437 play list that are not pathogen reduced.

NOTE Confidence: 0.82047164440155

00:19:29.440 --> 00:19:31.576 And as you can see there's

NOTE Confidence: 0.82047164440155

00:19:31.576 --> 00:19:33.000 been a steady decline.

NOTE Confidence: 0.82047164440155

00:19:33.000 --> 00:19:36.258 This is average for fiscal year 1718 and 19.

NOTE Confidence: 0.82047164440155

00:19:36.260 --> 00:19:39.084 Reminders going up and it has now them.

NOTE Confidence: 0.82047164440155

00:19:39.090 --> 00:19:40.530 Starting here, it's monthly,

NOTE Confidence: 0.82047164440155

00:19:40.530 --> 00:19:42.690 so this goes all the way

NOTE Confidence: 0.82047164440155

00:19:42.766 --> 00:19:44.396 out to fiscal year 2020.

NOTE Confidence: 0.82047164440155

00:19:44.400 --> 00:19:46.530 Now we're in fiscal year 2021.

NOTE Confidence: 0.82047164440155

00:19:46.530 --> 00:19:48.708 We are probably going to have

NOTE Confidence: 0.82047164440155

00:19:48.708 --> 00:19:50.945 about 100 non pathogen reduced a

NOTE Confidence: 0.82047164440155

00:19:50.945 --> 00:19:53.437 month and about 8 to 900 pathogen

NOTE Confidence: 0.82047164440155

00:19:53.437 --> 00:19:55.178 reduced non pathogen reduced about

NOTE Confidence: 0.82047164440155

00:19:55.178 --> 00:19:58.251 100 to 150 or so 900 or so pathogen

NOTE Confidence: 0.82047164440155

00:19:58.251 --> 00:20:00.820 reduced and that's the kind of the

NOTE Confidence: 0.837122082710266

00:20:00.897 --> 00:20:03.513 way it's been for a long long time.

NOTE Confidence: 0.837122082710266

00:20:03.520 --> 00:20:05.697 So we have a lot of data

NOTE Confidence: 0.837122082710266

00:20:05.697 --> 00:20:07.830 and a lot of patience.

NOTE Confidence: 0.837122082710266

00:20:07.830 --> 00:20:09.720 This is what the am Apostle.

NOTE Confidence: 0.837122082710266

00:20:09.720 --> 00:20:12.240 It looks like this is the regular shorland.

NOTE Confidence: 0.837122082710266

00:20:12.240 --> 00:20:14.196 This is the eight mop that's

NOTE Confidence: 0.837122082710266

00:20:14.196 --> 00:20:16.690 used for T cell lymphoma's and.

NOTE Confidence: 0.837122082710266

00:20:16.690 --> 00:20:18.410 Psoriasis this is the

NOTE Confidence: 0.837122082710266

00:20:18.410 --> 00:20:20.560 sort of content of food,

NOTE Confidence: 0.837122082710266

00:20:20.560 --> 00:20:22.710 not exactly the same sorlin,

NOTE Confidence: 0.837122082710266

00:20:22.710 --> 00:20:24.860 but in celery and celeriac

NOTE Confidence: 0.837122082710266

00:20:24.860 --> 00:20:26.580 which is celery root,

NOTE Confidence: 0.837122082710266

00:20:26.580 --> 00:20:28.448 milligram quantities and we're

NOTE Confidence: 0.837122082710266

00:20:28.448 --> 00:20:30.783 talking picogram so you have

NOTE Confidence: 0.837122082710266

00:20:30.783 --> 00:20:33.250 milligram and then you go to

NOTE Confidence: 0.837122082710266

00:20:33.250 --> 00:20:35.180 nanograms in micrograms that picogram.

NOTE Confidence: 0.837122082710266

00:20:35.180 --> 00:20:37.628 So it's quite a low amount

NOTE Confidence: 0.837122082710266

00:20:37.628 --> 00:20:40.240 that's infused as far as the

NOTE Confidence: 0.837122082710266

00:20:40.240 --> 00:20:42.916 toxicology is concerned on the FDA,

NOTE Confidence: 0.837122082710266

00:20:42.920 --> 00:20:45.770 therefore had no problem in allowing

NOTE Confidence: 0.837122082710266

00:20:45.770 --> 00:20:47.670 the psoralen treated platelets

NOTE Confidence: 0.837122082710266

00:20:47.743 --> 00:20:49.795 to be used for every patient.

NOTE Confidence: 0.837122082710266

00:20:49.800 --> 00:20:50.934 In the hospital,

NOTE Confidence: 0.837122082710266

00:20:50.934 --> 00:20:52.446 including neonates and preemies,

NOTE Confidence: 0.837122082710266

00:20:52.450 --> 00:20:54.010 including those receiving for

NOTE Confidence: 0.837122082710266

00:20:54.010 --> 00:20:55.960 the therapy which for reasons

NOTE Confidence: 0.837122082710266

00:20:55.960 --> 00:20:58.119 we don't have time to discuss,

NOTE Confidence: 0.837122082710266

00:20:58.120 --> 00:20:59.254 pregnancy, nursing mothers.

NOTE Confidence: 0.837122082710266

00:20:59.254 --> 00:21:01.900 It's been used in jail since 2017.

NOTE Confidence: 0.837122082710266

00:21:01.900 --> 00:21:04.539 We have a 3 1/2 year experience.

NOTE Confidence: 0.837122082710266

00:21:04.540 --> 00:21:06.525 We've transfused 10s of thousands

NOTE Confidence: 0.837122082710266

00:21:06.525 --> 00:21:08.510 of hundreds of thousands of

NOTE Confidence: 0.837122082710266

00:21:08.575 --> 00:21:10.759 patients of of units and we haven't

NOTE Confidence: 0.837122082710266

00:21:10.759 --> 00:21:12.480 had knock on pressboard,

NOTE Confidence: 0.837122082710266

00:21:12.480 --> 00:21:15.126 but any problems it's used for everyone.

NOTE Confidence: 0.837122082710266

00:21:15.130 --> 00:21:15.884 Jehovah's Witnesses,

NOTE Confidence: 0.837122082710266

00:21:15.884 --> 00:21:18.146 obviously because of their religious beliefs,

NOTE Confidence: 0.837122082710266

00:21:18.150 --> 00:21:20.824 it it's not acceptable to them generally.

NOTE Confidence: 0.837122082710266

00:21:20.830 --> 00:21:22.360 Before we brought it in,

NOTE Confidence: 0.837122082710266

00:21:22.360 --> 00:21:24.196 we went to all the C-Suite

NOTE Confidence: 0.837122082710266

00:21:24.196 --> 00:21:25.420 folks in the Department.

NOTE Confidence: 0.837122082710266

00:21:25.420 --> 00:21:26.950 Chairs have got their approval.

NOTE Confidence: 0.837122082710266

00:21:26.950 --> 00:21:28.170 Also the business office,

NOTE Confidence: 0.837122082710266

00:21:28.170 --> 00:21:29.695 'cause it is more expensive.

NOTE Confidence: 0.837122082710266

00:21:29.700 --> 00:21:31.849 We went all the clinical group Center,

NOTE Confidence: 0.837122082710266

00:21:31.850 --> 00:21:32.168 and.

NOTE Confidence: 0.837122082710266

00:21:32.168 --> 00:21:34.076 Train them on the new product

NOTE Confidence: 0.837122082710266

00:21:34.076 --> 00:21:36.049 'cause the bags look different.

NOTE Confidence: 0.837122082710266

00:21:36.050 --> 00:21:37.820 The plasma will look different color.

NOTE Confidence: 0.837122082710266

00:21:37.820 --> 00:21:39.488 We got all the service lines

NOTE Confidence: 0.837122082710266

00:21:39.488 --> 00:21:41.801 involved so it was it was a very

NOTE Confidence: 0.837122082710266

00:21:41.801 --> 00:21:43.221 large effort which we described

NOTE Confidence: 0.837122082710266

00:21:43.221 --> 00:21:45.170 in a manuscript that we wrote.

NOTE Confidence: 0.837122082710266

00:21:45.170 --> 00:21:47.228 This is what we're trying to prevent.

NOTE Confidence: 0.837122082710266

00:21:47.230 --> 00:21:48.988 This is what we call classical.

NOTE Confidence: 0.837122082710266

00:21:48.990 --> 00:21:51.246 EDS stands for egg drop soup if you

NOTE Confidence: 0.837122082710266

00:21:51.246 --> 00:21:53.396 will because that's what it looks like.

NOTE Confidence: 0.837122082710266

00:21:53.400 --> 00:21:55.236 It's a bacteria growing in this

NOTE Confidence: 0.837122082710266

00:21:55.236 --> 00:21:57.066 case staff orias in a unit

NOTE Confidence: 0.837122082710266

00:21:57.066 --> 00:21:58.686 of platelets in the pH drops,

NOTE Confidence: 0.837122082710266

00:21:58.690 --> 00:22:00.713 the acid causes the platelets to clump

NOTE Confidence: 0.837122082710266

00:22:00.713 --> 00:22:02.812 and you get this, which is obvious.

NOTE Confidence: 0.837122082710266

00:22:02.812 --> 00:22:03.988 What we're worried about,

NOTE Confidence: 0.837122082710266

00:22:03.990 --> 00:22:05.445 or those that are contaminated

NOTE Confidence: 0.837122082710266

00:22:05.445 --> 00:22:06.318 and look normal.

NOTE Confidence: 0.837122082710266

00:22:06.320 --> 00:22:07.112 That's the problem,

NOTE Confidence: 0.837122082710266

00:22:07.112 --> 00:22:08.696 and that's why we've had six

NOTE Confidence: 0.837122082710266

00:22:08.696 --> 00:22:09.810 near misses recently,

NOTE Confidence: 0.837122082710266

00:22:09.810 --> 00:22:12.008 and we've had two deaths at this

NOTE Confidence: 0.837122082710266

00:22:12.008 --> 00:22:12.950 institution from contaminated

NOTE Confidence: 0.837122082710266

00:22:13.008 --> 00:22:14.622 platelets or what actually one plate

NOTE Confidence: 0.837122082710266

00:22:14.622 --> 00:22:16.508 and one red cell over the years,

NOTE Confidence: 0.837122082710266

00:22:16.510 --> 00:22:18.838 and we've had a lot of near misses.

NOTE Confidence: 0.837122082710266

00:22:18.840 --> 00:22:19.130 Fortunately,

NOTE Confidence: 0.837122082710266

00:22:19.130 --> 00:22:20.870 our blood bank staff could pick

NOTE Confidence: 0.837122082710266

00:22:20.870 --> 00:22:22.618 up something if it looks strange.

NOTE Confidence: 0.837122082710266

00:22:22.620 --> 00:22:24.657 If there's a lack of platelets world,

NOTE Confidence: 0.837122082710266

00:22:24.660 --> 00:22:26.565 which is something we could

NOTE Confidence: 0.837122082710266

00:22:26.565 --> 00:22:28.470 talk about it another time.

NOTE Confidence: 0.837122082710266

00:22:28.470 --> 00:22:30.768 Probably never will talk about it,

NOTE Confidence: 0.837122082710266

00:22:30.770 --> 00:22:32.690 but I just say that,

NOTE Confidence: 0.837122082710266

00:22:32.690 --> 00:22:35.594 but this is what we're trying to prevent

NOTE Confidence: 0.837122082710266

00:22:35.594 --> 00:22:38.070 data from Europe because you say,

NOTE Confidence: 0.837122082710266

00:22:38.070 --> 00:22:39.990 well, three years of data.

NOTE Confidence: 0.837122082710266

00:22:39.990 --> 00:22:42.288 Why did you go on that?

NOTE Confidence: 0.837122082710266

00:22:42.290 --> 00:22:44.588 They've been using it in Europe

NOTE Confidence: 0.837122082710266

00:22:44.588 --> 00:22:47.667 for the past 15 years or 20 years,

NOTE Confidence: 0.837122082710266

00:22:47.670 --> 00:22:48.726 2006 and earlier.

NOTE Confidence: 0.837122082710266

00:22:48.726 --> 00:22:51.190 They've used a total of 3.3 million

NOTE Confidence: 0.837122082710266

00:22:51.257 --> 00:22:53.049 trailer units of platelets.

NOTE Confidence: 0.837122082710266

00:22:53.050 --> 00:22:54.965 Transfused in these three countries

NOTE Confidence: 0.837122082710266

00:22:54.965 --> 00:22:56.497 between 2006 and 2017.

NOTE Confidence: 0.861809194087982

00:22:56.500 --> 00:22:58.040 There was 76 contaminated

NOTE Confidence: 0.861809194087982

00:22:58.040 --> 00:22:59.580 products in 12 deaths.

NOTE Confidence: 0.861809194087982

00:22:59.580 --> 00:23:01.344 There were 700 and 5000 intercept

NOTE Confidence: 0.861809194087982

00:23:01.344 --> 00:23:02.790 platelets transfused during that time.

NOTE Confidence: 0.861809194087982

00:23:02.790 --> 00:23:04.536 Admittedly, it's a fourth of it,

NOTE Confidence: 0.861809194087982

00:23:04.540 --> 00:23:06.000 but there were no deaths

NOTE Confidence: 0.861809194087982

00:23:06.000 --> 00:23:07.460 and no infections at all.

NOTE Confidence: 0.861809194087982

00:23:07.460 --> 00:23:09.940 And now that we have more data that

NOTE Confidence: 0.861809194087982

00:23:09.940 --> 00:23:12.334 Europe doesn't give the data out as as

NOTE Confidence: 0.861809194087982

00:23:12.334 --> 00:23:14.467 frequently as we would like to see it,

NOTE Confidence: 0.861809194087982

00:23:14.470 --> 00:23:16.478 but there's been no reports that I know

NOTE Confidence: 0.861809194087982

00:23:16.478 --> 00:23:18.407 of any problems with the exception of

NOTE Confidence: 0.861809194087982

00:23:18.407 --> 00:23:20.600 one or two cases of Acinetobacter,

NOTE Confidence: 0.861809194087982

00:23:20.600 --> 00:23:22.651 which is a separate a separate issue

NOTE Confidence: 0.861809194087982

00:23:22.651 --> 00:23:24.977 which we don't have time to talk about.

NOTE Confidence: 0.861809194087982

00:23:24.980 --> 00:23:26.961 Today we published our results in the

NOTE Confidence: 0.861809194087982

00:23:26.961 --> 00:23:28.773 British Journal of Hematology are Yale

NOTE Confidence: 0.861809194087982

00:23:28.773 --> 00:23:30.894 results with the weight Schultz and and.

NOTE Confidence: 0.861809194087982

00:23:30.900 --> 00:23:31.352 Others.

NOTE Confidence: 0.861809194087982

00:23:31.352 --> 00:23:34.064 And these were we had five

NOTE Confidence: 0.861809194087982

00:23:34.064 --> 00:23:35.970 near misses and Yale.

NOTE Confidence: 0.861809194087982

00:23:35.970 --> 00:23:38.015 There were septic reactions with

NOTE Confidence: 0.861809194087982

00:23:38.015 --> 00:23:40.060 conventional products about 9000 and

NOTE Confidence: 0.861809194087982

00:23:40.129 --> 00:23:42.029 they were about 12,000 pathogen.

NOTE Confidence: 0.861809194087982

00:23:42.030 --> 00:23:43.642 Reduced products had none.

NOTE Confidence: 0.861809194087982

00:23:43.642 --> 00:23:45.254 This was statistically significant.

NOTE Confidence: 0.861809194087982

00:23:45.260 --> 00:23:47.522 There were no other differences in

NOTE Confidence: 0.861809194087982

00:23:47.522 --> 00:23:50.509 any of the other types of reactions,

NOTE Confidence: 0.861809194087982

00:23:50.510 --> 00:23:50.846 basically.

NOTE Confidence: 0.861809194087982

00:23:50.846 --> 00:23:53.534 Then we did data who did studies which

NOTE Confidence: 0.861809194087982

00:23:53.534 --> 00:23:56.198 we don't have much time to talk about.

NOTE Confidence: 0.861809194087982

00:23:56.200 --> 00:23:58.538 Looking at the the number of subsequent

NOTE Confidence: 0.861809194087982

00:23:58.538 --> 00:24:00.234 platelet transfusions of platelets were

NOTE Confidence: 0.861809194087982

00:24:00.234 --> 00:24:02.467 damaged by the material and didn't work.

NOTE Confidence: 0.861809194087982

00:24:02.470 --> 00:24:04.843 Did they need to give another play

NOTE Confidence: 0.861809194087982

00:24:04.843 --> 00:24:07.185 live very quickly and with PR there

NOTE Confidence: 0.861809194087982

00:24:07.185 --> 00:24:09.063 was a slight amount of damage.

NOTE Confidence: 0.861809194087982

00:24:09.070 --> 00:24:12.370 We will list it 1/2 of 1/4 of a unit.

NOTE Confidence: 0.861809194087982

00:24:12.370 --> 00:24:13.360 More was needed.

NOTE Confidence: 0.861809194087982

00:24:13.360 --> 00:24:14.350 Cafe unit here.

NOTE Confidence: 0.861809194087982

00:24:14.350 --> 00:24:16.694 24 hours later maybe .6 of unit here

NOTE Confidence: 0.861809194087982

00:24:16.694 --> 00:24:19.544 was 1.2 of a unit versus 1 blue is

NOTE Confidence: 0.861809194087982

00:24:19.544 --> 00:24:21.690 the conventional non pathogen reduced?

NOTE Confidence: 0.861809194087982

00:24:21.690 --> 00:24:23.170 This is the pathogen reduced,

NOTE Confidence: 0.861809194087982

00:24:23.170 --> 00:24:24.940 and none of these were irradiated,

NOTE Confidence: 0.861809194087982

00:24:24.940 --> 00:24:25.400 obviously.

NOTE Confidence: 0.861809194087982

00:24:25.400 --> 00:24:27.700 Well, obvious to me anyway,

NOTE Confidence: 0.861809194087982

00:24:27.700 --> 00:24:30.796 and as you got out 96 hours there was,

NOTE Confidence: 0.861809194087982

00:24:30.800 --> 00:24:31.398 you know,

NOTE Confidence: 0.861809194087982

00:24:31.398 --> 00:24:34.919 a little more so the PR does a little damage,

NOTE Confidence: 0.861809194087982

00:24:34.920 --> 00:24:36.468 but the tradeoff is you've got

NOTE Confidence: 0.861809194087982

00:24:36.468 --> 00:24:38.564 a product that is not pathogen

NOTE Confidence: 0.861809194087982

00:24:38.564 --> 00:24:40.079 potentially pathogen contaminated.

NOTE Confidence: 0.861809194087982

00:24:40.080 --> 00:24:42.144 And this was the time between

NOTE Confidence: 0.861809194087982

00:24:42.144 --> 00:24:43.520 the next platelet transfusion.

NOTE Confidence: 0.861809194087982

00:24:43.520 --> 00:24:45.240 Again, if it didn't work,

NOTE Confidence: 0.861809194087982

00:24:45.240 --> 00:24:47.196 they would give play that sooner

NOTE Confidence: 0.861809194087982

00:24:47.196 --> 00:24:49.090 and there was no significant

NOTE Confidence: 0.861809194087982

00:24:49.090 --> 00:24:51.166 difference between the two.

NOTE Confidence: 0.861809194087982

00:24:51.170 --> 00:24:53.120 And as far as rental utilization

NOTE Confidence: 0.861809194087982

00:24:53.120 --> 00:24:55.418 actually 2448 up to 96 hours later,

NOTE Confidence: 0.861809194087982

00:24:55.420 --> 00:24:56.728 subsequent red cell transfusions.

NOTE Confidence: 0.861809194087982

00:24:56.728 --> 00:24:58.036 The platelets didn't work.

NOTE Confidence: 0.861809194087982

00:24:58.040 --> 00:24:59.945 They would probably transfuse more

NOTE Confidence: 0.861809194087982

00:24:59.945 --> 00:25:02.232 red cells that the patient would

NOTE Confidence: 0.861809194087982

00:25:02.232 --> 00:25:04.458 still be bleeding and there was a

NOTE Confidence: 0.861809194087982

00:25:04.458 --> 00:25:06.235 little more less again point units

NOTE Confidence: 0.861809194087982

00:25:06.235 --> 00:25:08.396 .2 more of a unit in the conventional

NOTE Confidence: 0.861809194087982

00:25:08.396 --> 00:25:10.580 group than all the way out that it

NOTE Confidence: 0.861809194087982

00:25:10.638 --> 00:25:12.513 wasn't the pathogen reduction group

NOTE Confidence: 0.861809194087982

00:25:12.513 --> 00:25:14.388 showing that the platelets worked.

NOTE Confidence: 0.861809194087982

00:25:14.390 --> 00:25:16.847 There may have been a little more

NOTE Confidence: 0.861809194087982

00:25:16.847 --> 00:25:18.970 platelets used port part of a unit,

NOTE Confidence: 0.861809194087982

00:25:18.970 --> 00:25:20.635 but nothing substantial and was

NOTE Confidence: 0.861809194087982

00:25:20.635 --> 00:25:21.634 in my approach.

NOTE Confidence: 0.861809194087982

00:25:21.640 --> 00:25:23.090 Expression of that of most,

NOTE Confidence: 0.861809194087982

00:25:23.090 --> 00:25:24.830 the reviewer says that it was

NOTE Confidence: 0.861809194087982

00:25:24.830 --> 00:25:25.700 worth the tradeoff.

NOTE Confidence: 0.861809194087982

00:25:25.700 --> 00:25:28.297 We also looked at our data for.

NOTE Confidence: 0.861809194087982

00:25:28.300 --> 00:25:29.768 Pediatric patients as well,

NOTE Confidence: 0.861809194087982

00:25:29.768 --> 00:25:32.366 'cause it's very little and we showed

NOTE Confidence: 0.861809194087982

00:25:32.366 --> 00:25:34.340 almost exactly the same results as

NOTE Confidence: 0.861809194087982

00:25:34.340 --> 00:25:37.229 far as the efficacy and the utilization.

NOTE Confidence: 0.861809194087982

00:25:37.230 --> 00:25:39.348 And there was really no difference

NOTE Confidence: 0.861809194087982

00:25:39.348 --> 00:25:41.320 between the conventional for neonates,

NOTE Confidence: 0.861809194087982

00:25:41.320 --> 00:25:41.670 infants,

NOTE Confidence: 0.861809194087982

00:25:41.670 --> 00:25:44.120 or pediatric up to 18 years for

NOTE Confidence: 0.861809194087982

00:25:44.120 --> 00:25:45.665 both conventional versus pathogen

NOTE Confidence: 0.861809194087982

00:25:45.665 --> 00:25:48.017 reduced in pediatric groups as well.

NOTE Confidence: 0.852834582328796

00:25:48.020 --> 00:25:50.480 So what we have is.

NOTE Confidence: 0.852834582328796

00:25:50.480 --> 00:25:52.898 A product that appears to be

NOTE Confidence: 0.852834582328796

00:25:52.898 --> 00:25:54.466 beneficial that it prevents

NOTE Confidence: 0.852834582328796

00:25:54.466 --> 00:25:56.830 the loss of removes pathogens,

NOTE Confidence: 0.852834582328796

00:25:56.830 --> 00:25:59.420 but it also allows platelets to function

NOTE Confidence: 0.852834582328796

00:25:59.420 --> 00:26:02.319 properly and be even statically effective.

NOTE Confidence: 0.852834582328796

00:26:02.320 --> 00:26:04.672 We finished a phase four trial

NOTE Confidence: 0.852834582328796

00:26:04.672 --> 00:26:06.980 called Piper with 3000 patients,

NOTE Confidence: 0.852834582328796

00:26:06.980 --> 00:26:08.369 comparing patients getting

NOTE Confidence: 0.852834582328796

00:26:08.369 --> 00:26:10.221 conventional versus intercept treated

NOTE Confidence: 0.852834582328796

00:26:10.221 --> 00:26:12.899 in the mock group and we trance.

NOTE Confidence: 0.852834582328796

00:26:12.900 --> 00:26:14.592 We contributed about 50.

NOTE Confidence: 0.852834582328796

00:26:14.592 --> 00:26:17.130 About 530 patients of the 3000.

NOTE Confidence: 0.852834582328796

00:26:17.130 --> 00:26:19.881 They would let us do more because

NOTE Confidence: 0.852834582328796

00:26:19.881 --> 00:26:22.249 they didn't want to overweight.

NOTE Confidence: 0.852834582328796

00:26:22.250 --> 00:26:24.422 This is being analyzed and will

NOTE Confidence: 0.852834582328796

00:26:24.422 --> 00:26:27.172 hopefully be in a New England Journal

NOTE Confidence: 0.852834582328796

00:26:27.172 --> 00:26:30.021 article near you at sometime in the

NOTE Confidence: 0.852834582328796

00:26:30.096 --> 00:26:32.338 future or another Journal, perhaps,

NOTE Confidence: 0.852834582328796

00:26:32.338 --> 00:26:34.882 but is the largest study looking at a

NOTE Confidence: 0.852834582328796

00:26:34.882 --> 00:26:37.323 group of patients getting conventional

NOTE Confidence: 0.852834582328796

00:26:37.323 --> 00:26:39.375 versus pathogen reduced platelets?

NOTE Confidence: 0.852834582328796

00:26:39.380 --> 00:26:40.676 The second part,

NOTE Confidence: 0.852834582328796

00:26:40.676 --> 00:26:42.404 just to close up,

NOTE Confidence: 0.852834582328796

00:26:42.410 --> 00:26:45.008 is with the red cell pathogens.

NOTE Confidence: 0.852834582328796

00:26:45.010 --> 00:26:48.490 Again, you want to have a pathogen material.

NOTE Confidence: 0.852834582328796

00:26:48.490 --> 00:26:50.737 Reduced by for red cells as well.

NOTE Confidence: 0.852834582328796

00:26:50.740 --> 00:26:53.308 This study is in phase three clinical trials,

NOTE Confidence: 0.852834582328796

00:26:53.310 --> 00:26:55.230 which we're doing now at Yale.

NOTE Confidence: 0.852834582328796

00:26:55.230 --> 00:26:57.156 We have two groups of patients

NOTE Confidence: 0.852834582328796

00:26:57.156 --> 00:26:58.119 were studying again,

NOTE Confidence: 0.852834582328796

00:26:58.120 --> 00:27:00.937 the benefit if you don't have a red cell

NOTE Confidence: 0.852834582328796

00:27:00.937 --> 00:27:03.277 product that you're not going to be able

NOTE Confidence: 0.852834582328796

00:27:03.277 --> 00:27:05.817 to get rid of the gamma irradiators,

NOTE Confidence: 0.852834582328796

00:27:05.820 --> 00:27:08.067 but you need to provide the radiation.

NOTE Confidence: 0.852834582328796

00:27:08.070 --> 00:27:09.675 Also eliminate not only the

NOTE Confidence: 0.852834582328796

00:27:09.675 --> 00:27:10.638 viruses and bacteria,

NOTE Confidence: 0.852834582328796

00:27:10.640 --> 00:27:12.470 but also beesia and also will

NOTE Confidence: 0.852834582328796

00:27:12.470 --> 00:27:14.414 eliminate the need to irradiate the

NOTE Confidence: 0.852834582328796

00:27:14.414 --> 00:27:16.738 the white cells for the same reason.

NOTE Confidence: 0.852834582328796

00:27:16.740 --> 00:27:18.395 This technology the S 303

NOTE Confidence: 0.852834582328796

00:27:18.395 --> 00:27:19.719 intercalates into the DNA.

NOTE Confidence: 0.852834582328796

00:27:19.720 --> 00:27:23.208 Or RNA the cross links by chemical reaction.

NOTE Confidence: 0.852834582328796

00:27:23.210 --> 00:27:25.390 It doesn't require light incurs

NOTE Confidence: 0.852834582328796

00:27:25.390 --> 00:27:27.570 faster than the linker degrades,

NOTE Confidence: 0.852834582328796

00:27:27.570 --> 00:27:29.590 allowing a blockage of replication

NOTE Confidence: 0.852834582328796

00:27:29.590 --> 00:27:32.360 so it does inactivate the pathogens.

NOTE Confidence: 0.852834582328796

00:27:32.360 --> 00:27:36.399 And then at the grades to Anon.

NOTE Confidence: 0.852834582328796

00:27:36.400 --> 00:27:38.554 A non toxic product it is

NOTE Confidence: 0.852834582328796

00:27:38.554 --> 00:27:40.320 a quitter in which is,

NOTE Confidence: 0.852834582328796

00:27:40.320 --> 00:27:42.880 uh those of you know there are some

NOTE Confidence: 0.852834582328796

00:27:42.880 --> 00:27:45.271 concerns but it inactivates quite rapidly

NOTE Confidence: 0.852834582328796

00:27:45.271 --> 00:27:47.791 and is washed and it's essentially

NOTE Confidence: 0.852834582328796

00:27:47.863 --> 00:27:50.054 removed and the data which I don't

NOTE Confidence: 0.852834582328796

00:27:50.054 --> 00:27:51.702 have time to share unfortunately

NOTE Confidence: 0.852834582328796

00:27:51.702 --> 00:27:54.510 shows that there is not a risk of

NOTE Confidence: 0.852834582328796

00:27:54.580 --> 00:27:56.635 toxicology associated with this and

NOTE Confidence: 0.852834582328796

00:27:56.635 --> 00:27:59.419 this is not used routinely in Europe.

NOTE Confidence: 0.852834582328796

00:27:59.420 --> 00:28:02.493 And is now being in phase three

NOTE Confidence: 0.852834582328796

00:28:02.493 --> 00:28:04.579 clinical trials here at Yale.

NOTE Confidence: 0.852834582328796

00:28:04.580 --> 00:28:07.892 It's again for up to 42 days of storage

NOTE Confidence: 0.852834582328796

00:28:07.892 --> 00:28:11.029 were studying two groups of patients,

NOTE Confidence: 0.852834582328796

00:28:11.030 --> 00:28:13.718 the which I'll talk about in a

NOTE Confidence: 0.852834582328796

00:28:13.718 --> 00:28:16.190 second of the log reduction.

NOTE Confidence: 0.852834582328796

00:28:16.190 --> 00:28:18.770 Dissimilar to what the psoralen is.

NOTE Confidence: 0.852834582328796

00:28:18.770 --> 00:28:20.060 5 log reductions,

NOTE Confidence: 0.852834582328796

00:28:20.060 --> 00:28:22.640 and 99.9 is 3 log reduction,

NOTE Confidence: 0.852834582328796

00:28:22.640 --> 00:28:25.580 so these are 56 logs with

NOTE Confidence: 0.852834582328796

00:28:25.580 --> 00:28:27.540 various viruses and bacteria.

NOTE Confidence: 0.852834582328796

00:28:27.540 --> 00:28:29.190 The studies were doing the acute

NOTE Confidence: 0.852834582328796

00:28:29.190 --> 00:28:31.026 study in the cardiac surgery and

NOTE Confidence: 0.852834582328796

00:28:31.026 --> 00:28:32.736 we're doing one in chronically

NOTE Confidence: 0.852834582328796

00:28:32.736 --> 00:28:34.246 anemic patients getting simple

NOTE Confidence: 0.852834582328796

00:28:34.246 --> 00:28:35.530 transfusions called Redis,

NOTE Confidence: 0.852834582328796

00:28:35.530 --> 00:28:37.698 which is what we're going to be doing

NOTE Confidence: 0.852834582328796

00:28:37.698 --> 00:28:40.411 on the 7th floor and in the outpatient

NOTE Confidence: 0.852834582328796

00:28:40.411 --> 00:28:42.971 clinics where we patients who need a

NOTE Confidence: 0.852834582328796

00:28:42.971 --> 00:28:44.786 blood transfusion will get randomized

NOTE Confidence: 0.852834582328796

00:28:44.786 --> 00:28:46.498 after they signed written informed

NOTE Confidence: 0.852834582328796

00:28:46.498 --> 00:28:48.128 consent obviously went through the

NOTE Confidence: 0.852834582328796

00:28:48.128 --> 00:28:50.172 IRB to whether they get pathogen

NOTE Confidence: 0.852834582328796

00:28:50.172 --> 00:28:51.842 reduced or conventional red cells,

NOTE Confidence: 0.852834582328796

00:28:51.850 --> 00:28:53.788 and they're not transfused for this

NOTE Confidence: 0.852834582328796

00:28:53.788 --> 00:28:56.164 study if their doctor says they need

NOTE Confidence: 0.852834582328796

00:28:56.164 --> 00:28:57.864 a transfusion and they've agreed.

NOTE Confidence: 0.852834582328796

00:28:57.870 --> 00:29:00.470 We will give them one or the other,

NOTE Confidence: 0.830222129821777

00:29:00.470 --> 00:29:02.934 but we're not going to radiate the

NOTE Confidence: 0.830222129821777

00:29:02.934 --> 00:29:04.722 pathogen reduced product because that

NOTE Confidence: 0.830222129821777

00:29:04.722 --> 00:29:07.060 would cause a double damage to the

NOTE Confidence: 0.830222129821777

00:29:07.060 --> 00:29:09.250 platelet or the OR the red cell rather.

NOTE Confidence: 0.830222129821777

00:29:09.250 --> 00:29:11.091 So the purpose of this talk was

NOTE Confidence: 0.830222129821777

00:29:11.091 --> 00:29:13.060 also to reassure everyone that the

NOTE Confidence: 0.830222129821777

00:29:13.060 --> 00:29:14.925 data show clearly that pathogen

NOTE Confidence: 0.830222129821777

00:29:14.925 --> 00:29:16.718 reduction prevents graft versus host.

NOTE Confidence: 0.830222129821777

00:29:16.720 --> 00:29:18.995 So for those of your chemotherapy patients,

NOTE Confidence: 0.830222129821777

00:29:19.000 --> 00:29:20.656 that may need it.

NOTE Confidence: 0.830222129821777

00:29:20.656 --> 00:29:22.726 Pathogen reduction would be acceptable.

NOTE Confidence: 0.830222129821777

00:29:22.730 --> 00:29:25.298 And here's the major data showing the number

NOTE Confidence: 0.830222129821777

00:29:25.298 --> 00:29:27.848 of adduct formation with gamma radiation,

NOTE Confidence: 0.830222129821777

00:29:27.850 --> 00:29:30.412 one in every 37 thousand base pairs

NOTE Confidence: 0.830222129821777

00:29:30.412 --> 00:29:32.855 forms an adult which is enough

NOTE Confidence: 0.830222129821777

00:29:32.855 --> 00:29:34.975 to block references host 'cause

NOTE Confidence: 0.830222129821777

00:29:34.975 --> 00:29:37.362 that's the standard with S 59 plus

NOTE Confidence: 0.830222129821777

00:29:37.362 --> 00:29:39.928 UV A it's one in every 80 three

NOTE Confidence: 0.830222129821777

00:29:39.928 --> 00:29:42.124 base pairs shown in this cartoon.

NOTE Confidence: 0.830222129821777

00:29:42.130 --> 00:29:45.320 The data is in blood 1998 and for S 303

NOTE Confidence: 0.830222129821777

00:29:45.404 --> 00:29:48.344 the data is have been published yet,

NOTE Confidence: 0.830222129821777

00:29:48.350 --> 00:29:50.807 but you get an even more robust

NOTE Confidence: 0.830222129821777

00:29:50.807 --> 00:29:53.178 and up formation with whole blood.

NOTE Confidence: 0.830222129821777

00:29:53.180 --> 00:29:54.600 Or with red cells,

NOTE Confidence: 0.830222129821777

00:29:54.600 --> 00:29:57.472 it's an average of water every 38 to

NOTE Confidence: 0.830222129821777

00:29:57.472 --> 00:29:59.803 one in every 53 orders of magnitude

NOTE Confidence: 0.830222129821777

00:29:59.803 --> 00:30:02.118 more than the adult formation

NOTE Confidence: 0.830222129821777

00:30:02.118 --> 00:30:03.546 with gamma radiation.

NOTE Confidence: 0.830222129821777

00:30:03.550 --> 00:30:05.998 So there's no reason to believe

NOTE Confidence: 0.830222129821777

00:30:05.998 --> 00:30:08.065 that using pathogen reduced product

NOTE Confidence: 0.830222129821777

00:30:08.065 --> 00:30:10.225 in lieu of gamma radiated product

NOTE Confidence: 0.830222129821777

00:30:10.225 --> 00:30:12.759 will be as safe or not showing.

NOTE Confidence: 0.830222129821777

00:30:12.760 --> 00:30:13.861 It's obviously better,

NOTE Confidence: 0.830222129821777

00:30:13.861 --> 00:30:16.430 but as safe and then other studies

NOTE Confidence: 0.830222129821777

00:30:16.501 --> 00:30:18.846 coming out of Europe showed no reported

NOTE Confidence: 0.830222129821777

00:30:18.846 --> 00:30:21.210 PA GVHD with irradiated products.

NOTE Confidence: 0.830222129821777

00:30:21.210 --> 00:30:23.130 Conventional amat asselyn 186 thousand.

NOTE Confidence: 0.830222129821777

00:30:23.130 --> 00:30:24.794 Again, no reported cases.

NOTE Confidence: 0.830222129821777

00:30:24.794 --> 00:30:27.246 Again, orders of magnitude less,

NOTE Confidence: 0.830222129821777

00:30:27.246 --> 00:30:29.791 but in that Switzerland similarly

NOTE Confidence: 0.830222129821777

00:30:29.791 --> 00:30:32.852 no reports with the. With the.

NOTE Confidence: 0.830222129821777

00:30:32.852 --> 00:30:36.068 With the use of the Sourland

NOTE Confidence: 0.830222129821777

00:30:36.068 --> 00:30:39.879 TAA GV HD in summary is rare,

NOTE Confidence: 0.830222129821777

00:30:39.880 --> 00:30:41.640 but fatal treatment is unsuccessful.

NOTE Confidence: 0.830222129821777

00:30:41.640 --> 00:30:43.410 Prevention is best in attention.

NOTE Confidence: 0.830222129821777

00:30:43.410 --> 00:30:45.874 The only approach death due to marrow,

NOTE Confidence: 0.830222129821777

00:30:45.880 --> 00:30:46.726 a pleasure,

NOTE Confidence: 0.830222129821777

00:30:46.726 --> 00:30:49.264 gamma radiation or pathogen reduction are

NOTE Confidence: 0.830222129821777

00:30:49.264 --> 00:30:51.529 both acceptable to the FDA to the IRB.

NOTE Confidence: 0.830222129821777

00:30:51.530 --> 00:30:52.234 In Europe,

NOTE Confidence: 0.830222129821777

00:30:52.234 --> 00:30:54.346 the data are there PR playlist,

NOTE Confidence: 0.830222129821777

00:30:54.350 --> 00:30:55.706 usamma, TASSELL and UV.

NOTE Confidence: 0.830222129821777

00:30:55.706 --> 00:30:58.938 A red cells use a muscle in nucleic acid.

NOTE Confidence: 0.830222129821777

00:30:58.940 --> 00:31:00.914 After formation is more robust and

NOTE Confidence: 0.830222129821777

00:31:00.914 --> 00:31:03.819 there's no need to do both and this

NOTE Confidence: 0.830222129821777

00:31:03.819 --> 00:31:05.719 will produce unwanted cellular damage.

NOTE Confidence: 0.830222129821777

00:31:05.720 --> 00:31:07.864 And there are a couple of references here.

NOTE Confidence: 0.830222129821777

00:31:07.870 --> 00:31:09.928 An I will end there and thank

NOTE Confidence: 0.830222129821777

00:31:09.928 --> 00:31:11.580 you for your attention.

NOTE Confidence: 0.830222129821777

00:31:11.580 --> 00:31:11.960 Go

NOTE Confidence: 0.832246720790863

00:31:11.960 --> 00:31:12.875 ahead, thank you.

NOTE Confidence: 0.832246720790863

00:31:12.875 --> 00:31:15.010 It's a terrific work and really in

NOTE Confidence: 0.832246720790863

00:31:15.075 --> 00:31:17.570 advance and transfusion medicine that

NOTE Confidence: 0.832246720790863

00:31:17.570 --> 00:31:19.566 obviously addresses multiple complications

NOTE Confidence: 0.832246720790863

00:31:19.566 --> 00:31:21.805 just because we're running a little

NOTE Confidence: 0.832246720790863

00:31:21.805 --> 00:31:24.264 late I think will probably not will,

NOTE Confidence: 0.832246720790863

00:31:24.264 --> 00:31:27.008 will ask people to send you questions

NOTE Confidence: 0.832246720790863

00:31:27.008 --> 00:31:29.490 directly and turn to our next speaker

NOTE Confidence: 0.832246720790863

00:31:29.490 --> 00:31:32.143 so our next lecture is Doctor Suchitra

NOTE Confidence: 0.832246720790863

00:31:32.143 --> 00:31:34.615 Krishnan Sarin and Suchitra is is,

NOTE Confidence: 0.832246720790863

00:31:34.620 --> 00:31:36.594 you know, is a professor of

NOTE Confidence: 0.832246720790863

00:31:36.594 --> 00:31:38.937 psychiatry and the chair of the

NOTE Confidence: 0.832246720790863

00:31:38.937 --> 00:31:40.380 Human Investigations Committee.

NOTE Confidence: 0.832246720790863

00:31:40.380 --> 00:31:42.690 Yeah, and her work over the

NOTE Confidence: 0.832246720790863

00:31:42.690 --> 00:31:44.230 years has really been.

NOTE Confidence: 0.832246720790863

00:31:44.230 --> 00:31:46.750 As a leader in understanding tobacco

NOTE Confidence: 0.832246720790863

00:31:46.750 --> 00:31:48.990 treatment control and the interventions

NOTE Confidence: 0.832246720790863

00:31:48.990 --> 00:31:51.894 and risk factors associated with it,

NOTE Confidence: 0.832246720790863

00:31:51.900 --> 00:31:54.420 her work was instrumental in the

NOTE Confidence: 0.832246720790863

00:31:54.420 --> 00:31:56.660 Surgeon General's report of preventing

NOTE Confidence: 0.832246720790863

00:31:56.660 --> 00:31:59.110 tobacco use among young people.

NOTE Confidence: 0.832246720790863

00:31:59.110 --> 00:32:02.038 She served on the FDA's tobacco

NOTE Confidence: 0.832246720790863

00:32:02.038 --> 00:32:03.990 product Scientific Advisory Committee

NOTE Confidence: 0.832246720790863

00:32:04.069 --> 00:32:06.871 and currently serves serves on the

NOTE Confidence: 0.832246720790863

00:32:06.871 --> 00:32:08.739 CDC's Interagency Commission on

NOTE Confidence: 0.832246720790863

00:32:08.815 --> 00:32:11.871 Smoking and Health and her work on E

NOTE Confidence: 0.832246720790863

00:32:11.871 --> 00:32:14.020 cigarettes really has been critical,

NOTE Confidence: 0.832246720790863

00:32:14.020 --> 00:32:15.400 particularly as these.

NOTE Confidence: 0.832246720790863

00:32:15.400 --> 00:32:17.318 Have become far more trendy, sadly,

NOTE Confidence: 0.832246720790863

00:32:17.318 --> 00:32:18.590 particularly among young people,

NOTE Confidence: 0.832246720790863

00:32:18.590 --> 00:32:20.504 so Skeeter thank you for sharing

NOTE Confidence: 0.832246720790863

00:32:20.504 --> 00:32:21.780 your work with us.

NOTE Confidence: 0.832200527191162

00:32:26.430 --> 00:32:28.500 You run, I think your video

NOTE Confidence: 0.832200527191162

00:32:28.500 --> 00:32:30.470 and sound and audio is off.

NOTE Confidence: 0.835335731506348

00:32:36.500 --> 00:32:39.150 Let me fix this. Sorry about that, OK.

NOTE Confidence: 0.788169682025909

00:32:41.940 --> 00:32:43.940 Start again.

NOTE Confidence: 0.871386110782623

00:32:48.000 --> 00:32:49.810 Can you see the screen?

NOTE Confidence: 0.871386110782623

00:32:49.810 --> 00:32:51.997 OK yes, OK great wonderful again.

NOTE Confidence: 0.871386110782623

00:32:51.997 --> 00:32:54.211 Thank you for inviting me to

NOTE Confidence: 0.871386110782623

00:32:54.211 --> 00:32:55.937 speak to this group today,

NOTE Confidence: 0.871386110782623

00:32:55.940 --> 00:32:58.156 so I'm going to give you a tell

NOTE Confidence: 0.871386110782623

00:32:58.156 --> 00:33:00.155 you about something which is

NOTE Confidence: 0.871386110782623

00:33:00.155 --> 00:33:01.991 completely different than what

NOTE Confidence: 0.871386110782623

00:33:01.991 --> 00:33:04.249 you've heard about from Ed and.

NOTE Confidence: 0.871386110782623

00:33:04.250 --> 00:33:06.122 This relates to this public health

NOTE Confidence: 0.871386110782623

00:33:06.122 --> 00:33:07.749 problem of E cigarettes and I.

NOTE Confidence: 0.871386110782623

00:33:07.750 --> 00:33:09.990 I'm going to kind of give you an

NOTE Confidence: 0.871386110782623

00:33:09.990 --> 00:33:11.665 overview because I figured that many

NOTE Confidence: 0.871386110782623

00:33:11.665 --> 00:33:13.944 of you may not have really heard about

NOTE Confidence: 0.871386110782623

00:33:13.944 --> 00:33:15.864 this debate or about these products

NOTE Confidence: 0.871386110782623

00:33:15.864 --> 00:33:18.268 and what the concern is relating to these.

NOTE Confidence: 0.871386110782623

00:33:18.270 --> 00:33:21.204 So I'm just going to give you a little

NOTE Confidence: 0.871386110782623

00:33:21.204 --> 00:33:23.706 basic overview and give you an update

NOTE Confidence: 0.871386110782623

00:33:23.706 --> 00:33:26.959 of where we are as a field in this area.

NOTE Confidence: 0.871386110782623

00:33:26.960 --> 00:33:33.626 Oh OK, there we go.

NOTE Confidence: 0.871386110782623

00:33:33.626 --> 00:33:36.231 So I have no conflicts of disclosures

NOTE Confidence: 0.871386110782623

00:33:36.231 --> 00:33:38.816 to report as was mentioned,

NOTE Confidence: 0.871386110782623

00:33:38.820 --> 00:33:41.268 I have served as a member

NOTE Confidence: 0.871386110782623

00:33:41.268 --> 00:33:42.900 of FDA's tobacco products.

NOTE Confidence: 0.871386110782623

00:33:42.900 --> 00:33:44.680 Scientific Scientific Advisory Committee,

NOTE Confidence: 0.871386110782623

00:33:44.680 --> 00:33:47.812 which is a committee which reviews tobacco

NOTE Confidence: 0.871386110782623

00:33:47.812 --> 00:33:50.200 products and approves them for marketing

NOTE Confidence: 0.871386110782623

00:33:50.200 --> 00:33:52.278 and presentation in the US market.

NOTE Confidence: 0.871386110782623

00:33:52.280 --> 00:33:55.136 And I'm also a current member of CDC's

NOTE Confidence: 0.871386110782623

00:33:55.136 --> 00:33:58.696 Icy SH and I also called the Tobacco

NOTE Confidence: 0.871386110782623

00:33:58.696 --> 00:34:01.260 Center of Regulatory Science at Yale.

NOTE Confidence: 0.897755324840546

00:34:03.350 --> 00:34:05.130 So just a brief presentation

NOTE Confidence: 0.897755324840546

00:34:05.130 --> 00:34:06.910 of what the problem is.

NOTE Confidence: 0.897755324840546

00:34:06.910 --> 00:34:10.230 So this is something I'm going to be

NOTE Confidence: 0.897755324840546

00:34:10.230 --> 00:34:13.136 coming back to later in my talk to.

NOTE Confidence: 0.897755324840546

00:34:13.140 --> 00:34:15.548 With E cigarettes there are two parts

NOTE Confidence: 0.897755324840546

00:34:15.548 --> 00:34:18.116 to the public health problem in question

NOTE Confidence: 0.897755324840546

00:34:18.116 --> 00:34:21.225 that is being debated a lot today one

NOTE Confidence: 0.897755324840546

00:34:21.225 --> 00:34:23.350 is potentially they pose benefits.

NOTE Confidence: 0.897755324840546

00:34:23.350 --> 00:34:25.642 They could help reduce disease risk

NOTE Confidence: 0.897755324840546

00:34:25.642 --> 00:34:28.070 for current smokers if they switched

NOTE Confidence: 0.897755324840546

00:34:28.070 --> 00:34:30.560 to using these products they could

NOTE Confidence: 0.897755324840546

00:34:30.560 --> 00:34:32.428 reduce disease morbidity for smokers

NOTE Confidence: 0.897755324840546

00:34:32.428 --> 00:34:35.450 and I'm sure this is a huge concern for

NOTE Confidence: 0.897755324840546

00:34:35.450 --> 00:34:37.730 this community because of the known

NOTE Confidence: 0.897755324840546

00:34:37.730 --> 00:34:39.219 relationship between tobacco use,

NOTE Confidence: 0.897755324840546

00:34:39.220 --> 00:34:40.860 smoking and cancer risks.

NOTE Confidence: 0.897755324840546

00:34:40.860 --> 00:34:43.830 So this is very very beneficial if it.

NOTE Confidence: 0.897755324840546

00:34:43.830 --> 00:34:45.846 If it works out that way,

NOTE Confidence: 0.897755324840546

00:34:45.850 --> 00:34:48.546 on the other hand, you have the harms,

NOTE Confidence: 0.897755324840546

00:34:48.550 --> 00:34:51.574 which is in the right hand side panel an.

NOTE Confidence: 0.897755324840546

00:34:51.580 --> 00:34:54.276 Unfortunately, as we have seen in the US,

NOTE Confidence: 0.897755324840546

00:34:54.280 --> 00:34:56.296 increased rates of use of these

NOTE Confidence: 0.897755324840546

00:34:56.296 --> 00:34:57.304 products amongst youth.

NOTE Confidence: 0.897755324840546

00:34:57.310 --> 00:34:58.990 So there's an increased risk

NOTE Confidence: 0.897755324840546

00:34:58.990 --> 00:35:00.334 of exposure to nicotine,

NOTE Confidence: 0.897755324840546

00:35:00.340 --> 00:35:02.030 nicotine addiction, future disease risks,

NOTE Confidence: 0.897755324840546

00:35:02.030 --> 00:35:03.710 Anna hold real knee renormalization

NOTE Confidence: 0.897755324840546

00:35:03.710 --> 00:35:05.054 of tobacco use behaviors,

NOTE Confidence: 0.897755324840546

00:35:05.060 --> 00:35:06.745 and even amongst adults who

NOTE Confidence: 0.897755324840546

00:35:06.745 --> 00:35:08.430 switched to using this product,

NOTE Confidence: 0.897755324840546

00:35:08.430 --> 00:35:10.242 there is a great deal of

NOTE Confidence: 0.897755324840546

00:35:10.242 --> 00:35:12.140 concern of dual use behavior.

NOTE Confidence: 0.897755324840546

00:35:12.140 --> 00:35:15.220 So what a lot of adults are doing.

NOTE Confidence: 0.897755324840546

00:35:15.220 --> 00:35:16.564 Is not necessarily switching

NOTE Confidence: 0.897755324840546

00:35:16.564 --> 00:35:18.580 completely to use of these products,

NOTE Confidence: 0.897755324840546

00:35:18.580 --> 00:35:20.890 but are choosing to use both cigarettes

NOTE Confidence: 0.897755324840546

00:35:20.890 --> 00:35:22.678 and E cigarettes depending on

NOTE Confidence: 0.897755324840546

00:35:22.678 --> 00:35:25.240 convenience and where they can use these

NOTE Confidence: 0.897755324840546

00:35:25.240 --> 00:35:27.316 products and that is not good either.

NOTE Confidence: 0.897755324840546

00:35:27.320 --> 00:35:28.328 And of course,

NOTE Confidence: 0.897755324840546

00:35:28.328 --> 00:35:29.672 then there's a secondhand

NOTE Confidence: 0.897755324840546

00:35:29.672 --> 00:35:30.680 aerosol exposure issue,

NOTE Confidence: 0.897755324840546

00:35:30.680 --> 00:35:33.025 which again we know very little about,

NOTE Confidence: 0.897755324840546

00:35:33.030 --> 00:35:36.654 so these products are Sony on the market.

NOTE Confidence: 0.897755324840546

00:35:36.660 --> 00:35:39.236 So just to take a step back,

NOTE Confidence: 0.897755324840546

00:35:39.240 --> 00:35:40.218 as I said,

NOTE Confidence: 0.897755324840546

00:35:40.218 --> 00:35:42.174 this is the top public health

NOTE Confidence: 0.897755324840546

00:35:42.174 --> 00:35:44.207 concern which is cigarette smoking

NOTE Confidence: 0.897755324840546

00:35:44.207 --> 00:35:46.247 or tobacco smoking a cigar.

NOTE Confidence: 0.897755324840546

00:35:46.250 --> 00:35:48.494 Use all these combustible products that

NOTE Confidence: 0.897755324840546

00:35:48.494 --> 00:35:50.767 create havoc on multiple organ systems

NOTE Confidence: 0.897755324840546

00:35:50.767 --> 00:35:53.266 and also have contribute to cancer risks.

NOTE Confidence: 0.897755324840546

00:35:53.270 --> 00:35:56.033 So over the years in the US we've done

NOTE Confidence: 0.897755324840546

00:35:56.033 --> 00:35:58.239 multiple we put into place multiple

NOTE Confidence: 0.897755324840546

00:35:58.239 --> 00:36:00.606 public health policies to try and

NOTE Confidence: 0.897755324840546

00:36:00.606 --> 00:36:02.486 address cigarette use behaviors.

NOTE Confidence: 0.897755324840546

00:36:02.490 --> 00:36:04.340 As many of you know,

NOTE Confidence: 0.897755324840546

00:36:04.340 --> 00:36:06.916 and most recently the one that has.

NOTE Confidence: 0.897755324840546

00:36:06.920 --> 00:36:08.256 I've been quite influential.

NOTE Confidence: 0.897755324840546

00:36:08.256 --> 00:36:10.260 Is this FDA allowing FDA to

NOTE Confidence: 0.897755324840546

00:36:10.327 --> 00:36:12.239 regulate these tobacco products?

NOTE Confidence: 0.897755324840546

00:36:12.240 --> 00:36:14.900 If for those who know this area,

NOTE Confidence: 0.897755324840546

00:36:14.900 --> 00:36:17.266 you know the FDA had been trying

NOTE Confidence: 0.897755324840546

00:36:17.266 --> 00:36:20.435 for a long time to to get this role

NOTE Confidence: 0.897755324840546

00:36:20.435 --> 00:36:22.777 to have the ability to regulate

NOTE Confidence: 0.897755324840546

00:36:22.777 --> 00:36:25.417 these products and that only went

NOTE Confidence: 0.897755324840546

00:36:25.417 --> 00:36:27.860 into place when this family smoking

NOTE Confidence: 0.897755324840546

00:36:27.860 --> 00:36:29.810 prevention and Tobacco Control Act

NOTE Confidence: 0.897755324840546

00:36:29.810 --> 00:36:32.377 was signed in 2009 by President Obama.

NOTE Confidence: 0.897755324840546

00:36:32.380 --> 00:36:33.475 So since then,

NOTE Confidence: 0.897755324840546

00:36:33.475 --> 00:36:37.010 the FDA has been trying to put into place.

NOTE Confidence: 0.897755324840546

00:36:37.010 --> 00:36:38.682 Regulations on the manufacture,

NOTE Confidence: 0.897755324840546

00:36:38.682 --> 00:36:39.100 distribution,

NOTE Confidence: 0.897755324840546

00:36:39.100 --> 00:36:41.515 and marketing of these products

NOTE Confidence: 0.897755324840546

00:36:41.515 --> 00:36:43.447 to protect public health.

NOTE Confidence: 0.897755324840546

00:36:43.450 --> 00:36:45.365 And that's where the cigarettes

NOTE Confidence: 0.897755324840546

00:36:45.365 --> 00:36:47.812 kind of come into the picture

NOTE Confidence: 0.897755324840546

00:36:47.812 --> 00:36:50.542 they were actually invented by a

NOTE Confidence: 0.897755324840546

00:36:50.542 --> 00:36:52.740 Chinese pharmacist who wanted to

NOTE Confidence: 0.897755324840546

00:36:52.740 --> 00:36:54.996 develop a cleaner form of nicotine

NOTE Confidence: 0.897755324840546

00:36:54.996 --> 00:36:56.980 to help smokers quit smoking.

NOTE Confidence: 0.897755324840546

00:36:56.980 --> 00:36:59.030 It was created in 2003,

NOTE Confidence: 0.897755324840546

00:36:59.030 --> 00:37:02.310 started appearing in the US in about 2009,

NOTE Confidence: 0.897755324840546

00:37:02.310 --> 00:37:06.000 and two that today. There are over 400 E.

NOTE Confidence: 0.897755324840546

00:37:06.000 --> 00:37:08.050 Cigarette brands are basically cigarette

NOTE Confidence: 0.897755324840546

00:37:08.050 --> 00:37:10.352 is a very simple, really simple.

NOTE Confidence: 0.897755324840546

00:37:10.352 --> 00:37:13.000 I should say I don't know if you

NOTE Confidence: 0.839361997211681

00:37:13.072 --> 00:37:15.816 even college and equipment or a device.

NOTE Confidence: 0.839361997211681

00:37:15.820 --> 00:37:18.242 There is a. There's a power component

NOTE Confidence: 0.839361997211681

00:37:18.242 --> 00:37:20.398 here which charges the E cigarettes.

NOTE Confidence: 0.839361997211681

00:37:20.400 --> 00:37:22.878 Not all of them look like this.

NOTE Confidence: 0.839361997211681

00:37:22.880 --> 00:37:24.986 Obviously. I'll show you some pictures.

NOTE Confidence: 0.839361997211681

00:37:24.990 --> 00:37:27.126 There is a control element where

NOTE Confidence: 0.839361997211681

00:37:27.126 --> 00:37:29.654 the user can push a button to

NOTE Confidence: 0.839361997211681

00:37:29.654 --> 00:37:31.700 activate it and heat the juice,

NOTE Confidence: 0.839361997211681

00:37:31.700 --> 00:37:33.980 which is located in this compartment

NOTE Confidence: 0.839361997211681

00:37:33.980 --> 00:37:36.614 here and at the other end there

NOTE Confidence: 0.839361997211681

00:37:36.614 --> 00:37:38.678 is a there is a mouthpiece

NOTE Confidence: 0.839361997211681

00:37:38.678 --> 00:37:40.929 that the user can then use to.

NOTE Confidence: 0.839361997211681

00:37:40.930 --> 00:37:44.066 Get taken the papers that are created.

NOTE Confidence: 0.839361997211681

00:37:44.070 --> 00:37:45.102 Um be started.

NOTE Confidence: 0.839361997211681

00:37:45.102 --> 00:37:47.510 Address entering the US market in about

NOTE Confidence: 0.839361997211681

00:37:47.576 --> 00:37:50.184 2009 and when they first entered the FDA,

NOTE Confidence: 0.839361997211681

00:37:50.190 --> 00:37:52.020 really tried to prevent them from

NOTE Confidence: 0.839361997211681

00:37:52.020 --> 00:37:54.029 entering the market by directing the

NOTE Confidence: 0.839361997211681

00:37:54.029 --> 00:37:55.854 Bottom Border Protection agencies to

NOTE Confidence: 0.839361997211681

00:37:55.854 --> 00:37:58.022 reject the entry of these products

NOTE Confidence: 0.839361997211681

00:37:58.022 --> 00:38:00.050 into the market because they were

NOTE Confidence: 0.839361997211681

00:38:00.050 --> 00:38:01.341 unapproved drug delivery devices.

NOTE Confidence: 0.839361997211681

00:38:01.341 --> 00:38:02.926 They wanted to classify them

NOTE Confidence: 0.839361997211681

00:38:02.926 --> 00:38:04.808 as a drug delivery device,

NOTE Confidence: 0.839361997211681

00:38:04.810 --> 00:38:07.365 but there was a lawsuit that was

NOTE Confidence: 0.839361997211681

00:38:07.365 --> 00:38:09.802 brought against the FDA by a E

NOTE Confidence: 0.839361997211681

00:38:09.802 --> 00:38:11.382 cigarette company at that time

NOTE Confidence: 0.839361997211681

00:38:11.382 --> 00:38:13.712 and they said that the FDA had

NOTE Confidence: 0.839361997211681

00:38:13.712 --> 00:38:15.362 no authority over E cigarettes

NOTE Confidence: 0.839361997211681

00:38:15.362 --> 00:38:17.474 because they were a tobacco product.

NOTE Confidence: 0.839361997211681

00:38:17.480 --> 00:38:20.072 And that they were not a drug delivery

NOTE Confidence: 0.839361997211681

00:38:20.072 --> 00:38:22.353 device or a drug device combination

NOTE Confidence: 0.839361997211681

00:38:22.353 --> 00:38:25.140 because they were not being sold for

NOTE Confidence: 0.839361997211681

00:38:25.140 --> 00:38:27.336 any therapeutic purpose in the US.

NOTE Confidence: 0.839361997211681

00:38:27.340 --> 00:38:29.398 One would think that that would

NOTE Confidence: 0.839361997211681

00:38:29.398 --> 00:38:30.770 have been turned down,

NOTE Confidence: 0.839361997211681

00:38:30.770 --> 00:38:32.380 but they actually were successful

NOTE Confidence: 0.839361997211681

00:38:32.380 --> 00:38:34.743 in the US District Court and US

NOTE Confidence: 0.839361997211681

00:38:34.743 --> 00:38:36.139 District Court basically prohibited

NOTE Confidence: 0.839361997211681

00:38:36.139 --> 00:38:38.320 the FDA from seizing the services,

NOTE Confidence: 0.839361997211681

00:38:38.320 --> 00:38:39.516 devices or drug devices,

NOTE Confidence: 0.839361997211681

00:38:39.516 --> 00:38:41.757 so they also ruled that the FDA

NOTE Confidence: 0.839361997211681

00:38:41.757 --> 00:38:43.677 could only regulate these signatures

NOTE Confidence: 0.839361997211681

00:38:43.677 --> 00:38:44.829 of tobacco product.

NOTE Confidence: 0.839361997211681

00:38:44.830 --> 00:38:46.550 Unless therapeutic claims are made.

NOTE Confidence: 0.839361997211681

00:38:46.550 --> 00:38:49.178 So any product you see on the market can

NOTE Confidence: 0.839361997211681

00:38:49.178 --> 00:38:51.688 only be regulated as tobacco products.

NOTE Confidence: 0.839361997211681

00:38:51.690 --> 00:38:53.062 They're not regulated yet,

NOTE Confidence: 0.839361997211681

00:38:53.062 --> 00:38:55.120 but they can only be regulated,

NOTE Confidence: 0.839361997211681

00:38:55.120 --> 00:38:57.514 and they cannot make any therapeutic claims.

NOTE Confidence: 0.839361997211681

00:38:57.520 --> 00:38:59.476 So the FDA is actually come

NOTE Confidence: 0.839361997211681

00:38:59.476 --> 00:39:01.360 up with the whole series.

NOTE Confidence: 0.839361997211681

00:39:01.360 --> 00:39:03.803 Of a whole another way that these

NOTE Confidence: 0.839361997211681

00:39:03.803 --> 00:39:06.160 products can be regulated and they

NOTE Confidence: 0.839361997211681

00:39:06.160 --> 00:39:08.225 give them marketing claims and

NOTE Confidence: 0.839361997211681

00:39:08.225 --> 00:39:10.660 they can make certain claims about

NOTE Confidence: 0.839361997211681

00:39:10.660 --> 00:39:13.372 what the product can be used for.

NOTE Confidence: 0.839361997211681

00:39:13.372 --> 00:39:16.186 But it cannot be a direct therapeutic

NOTE Confidence: 0.839361997211681

00:39:16.186 --> 00:39:17.999 claim because they are not.

NOTE Confidence: 0.839361997211681

00:39:18.000 --> 00:39:20.688 None of these companies are actually

NOTE Confidence: 0.839361997211681

00:39:20.688 --> 00:39:22.480 proceeding along the therapeutic

NOTE Confidence: 0.839361997211681

00:39:22.553 --> 00:39:24.688 side of FDA to get them approved

NOTE Confidence: 0.839361997211681

00:39:24.688 --> 00:39:26.130 as a cessation device.

NOTE Confidence: 0.839361997211681

00:39:26.130 --> 00:39:28.440 They're just getting them regulated

NOTE Confidence: 0.839361997211681

00:39:28.440 --> 00:39:31.450 or approved as a tobacco product.

NOTE Confidence: 0.839361997211681

00:39:31.450 --> 00:39:33.436 So essentially what I said here

NOTE Confidence: 0.839361997211681

00:39:33.436 --> 00:39:36.297 is that you know they can only be

NOTE Confidence: 0.839361997211681

00:39:36.297 --> 00:39:38.132 regulated as a tobacco product.

NOTE Confidence: 0.839361997211681

00:39:38.140 --> 00:39:39.252 They the FSB TC,

NOTE Confidence: 0.839361997211681

00:39:39.252 --> 00:39:41.401 it did not cover them till almost

NOTE Confidence: 0.839361997211681

00:39:41.401 --> 00:39:43.471 2016 because the original law

NOTE Confidence: 0.839361997211681

00:39:43.471 --> 00:39:45.542 that President Obama signed did

NOTE Confidence: 0.839361997211681

00:39:45.542 --> 00:39:46.938 not cover E cigarettes,

NOTE Confidence: 0.839361997211681

00:39:46.940 --> 00:39:48.328 so they actually incorporated

NOTE Confidence: 0.839361997211681

00:39:48.328 --> 00:39:50.810 it into the law only in 2016.

NOTE Confidence: 0.839361997211681

00:39:50.810 --> 00:39:53.022 So therefore from 2010 to 2016 these

NOTE Confidence: 0.839361997211681

00:39:53.022 --> 00:39:54.877 products have been unregulated and

NOTE Confidence: 0.839361997211681

00:39:54.877 --> 00:39:57.002 they will probably remain unregulated

NOTE Confidence: 0.839361997211681

00:39:57.002 --> 00:39:58.909 through 2022 because as I said,

NOTE Confidence: 0.839361997211681

00:39:58.910 --> 00:40:01.022 the FDA has a different way

NOTE Confidence: 0.839361997211681

00:40:01.022 --> 00:40:02.430 of regulating them in.

NOTE Confidence: 0.839361997211681

00:40:02.430 --> 00:40:04.488 All these companies are now submitting

NOTE Confidence: 0.839361997211681

00:40:04.488 --> 00:40:07.211 their safety data to the FDA through

NOTE Confidence: 0.839361997211681

00:40:07.211 --> 00:40:09.356 this premarket tobacco product application,

NOTE Confidence: 0.839361997211681

00:40:09.360 --> 00:40:11.670 which were all due September 9th,

NOTE Confidence: 0.839361997211681

00:40:11.670 --> 00:40:12.034 2020.

NOTE Confidence: 0.839361997211681

00:40:12.034 --> 00:40:14.218 So the FDA is just reviewing

NOTE Confidence: 0.839361997211681

00:40:14.218 --> 00:40:15.310 products from thousands

NOTE Confidence: 0.879437804222107

00:40:15.379 --> 00:40:17.827 and thousands of companies or products.

NOTE Confidence: 0.879437804222107

00:40:17.830 --> 00:40:18.985 As I understand.

NOTE Confidence: 0.879437804222107

00:40:18.985 --> 00:40:21.680 To really see if they should be

NOTE Confidence: 0.879437804222107

00:40:21.761 --> 00:40:24.725 allowed to have any marketing claims.

NOTE Confidence: 0.879437804222107

00:40:24.730 --> 00:40:26.963 In the meantime, there has just been

NOTE Confidence: 0.879437804222107

00:40:26.963 --> 00:40:28.815 an evolution of or an explosion

NOTE Confidence: 0.879437804222107

00:40:28.815 --> 00:40:30.747 I should say in the market in

NOTE Confidence: 0.879437804222107

00:40:30.814 --> 00:40:32.779 terms of the products available,

NOTE Confidence: 0.879437804222107

00:40:32.780 --> 00:40:34.706 you get product switch look like

NOTE Confidence: 0.879437804222107

00:40:34.706 --> 00:40:36.639 cigarettes on the left hand side,

NOTE Confidence: 0.879437804222107

00:40:36.640 --> 00:40:38.894 going all the way to these pens,

NOTE Confidence: 0.879437804222107

00:40:38.900 --> 00:40:40.826 which you can replace eliquids in.

NOTE Confidence: 0.879437804222107

00:40:40.830 --> 00:40:42.564 You have these box mods which

NOTE Confidence: 0.879437804222107

00:40:42.564 --> 00:40:44.370 look nothing like a cigarette,

NOTE Confidence: 0.879437804222107

00:40:44.370 --> 00:40:46.296 but which allow you to change,

NOTE Confidence: 0.879437804222107

00:40:46.300 --> 00:40:48.142 you know, produce huge vapor clouds

NOTE Confidence: 0.879437804222107

00:40:48.142 --> 00:40:50.488 and all these other kinds of behaviors.

NOTE Confidence: 0.879437804222107

00:40:50.490 --> 00:40:52.709 And then you have the most recent

NOTE Confidence: 0.879437804222107

00:40:52.709 --> 00:40:55.026 entrance which is the jewel which is

NOTE Confidence: 0.879437804222107

00:40:55.026 --> 00:40:56.970 that little black device you see.

NOTE Confidence: 0.879437804222107

00:40:56.970 --> 00:40:58.811 I'm a third from the right hand

NOTE Confidence: 0.879437804222107

00:40:58.811 --> 00:41:00.748 side and some other devices which

NOTE Confidence: 0.879437804222107

00:41:00.748 --> 00:41:02.188 are called pod devices,

NOTE Confidence: 0.879437804222107

00:41:02.190 --> 00:41:03.865 which essentially the way all

NOTE Confidence: 0.879437804222107

00:41:03.865 --> 00:41:05.892 these differs in terms of whether

NOTE Confidence: 0.879437804222107

00:41:05.892 --> 00:41:08.180 it is a closed system in the sense

NOTE Confidence: 0.879437804222107

00:41:08.180 --> 00:41:09.963 that the nicotine is contained in

NOTE Confidence: 0.879437804222107

00:41:09.963 --> 00:41:12.030 it and you and you vape it.

NOTE Confidence: 0.879437804222107

00:41:12.030 --> 00:41:14.235 Whether you can fill in new illiquid's

NOTE Confidence: 0.879437804222107

00:41:14.235 --> 00:41:16.305 like the weapons allow you to do,

NOTE Confidence: 0.879437804222107

00:41:16.310 --> 00:41:18.368 or these pod devices which are

NOTE Confidence: 0.879437804222107

00:41:18.368 --> 00:41:19.740 completely closed systems that

NOTE Confidence: 0.879437804222107

00:41:19.798 --> 00:41:21.723 come with these parts that are pre

NOTE Confidence: 0.879437804222107

00:41:21.723 --> 00:41:23.679 filled and you just slide them in.

NOTE Confidence: 0.879437804222107

00:41:23.680 --> 00:41:25.829 Now this is also left you a

NOTE Confidence: 0.879437804222107

00:41:25.829 --> 00:41:26.750 huge black market,

NOTE Confidence: 0.879437804222107

00:41:26.750 --> 00:41:29.880 so even with the pod devices now you can buy.

NOTE Confidence: 0.879437804222107

00:41:29.880 --> 00:41:31.998 Unfilled parts that you can then

NOTE Confidence: 0.879437804222107

00:41:31.998 --> 00:41:33.800 fill with whatever you want,

NOTE Confidence: 0.879437804222107

00:41:33.800 --> 00:41:36.192 and this has led to a huge increase

NOTE Confidence: 0.879437804222107

00:41:36.192 --> 00:41:38.979 in rates of marijuana use and use a

NOTE Confidence: 0.879437804222107

00:41:38.979 --> 00:41:40.867 variety of other products because

NOTE Confidence: 0.879437804222107

00:41:40.867 --> 00:41:43.674 people are filling pods with all kinds

NOTE Confidence: 0.879437804222107

00:41:43.674 --> 00:41:46.260 of different things and making them so.

NOTE Confidence: 0.879437804222107

00:41:46.260 --> 00:41:48.246 This is basically just to give

NOTE Confidence: 0.879437804222107

00:41:48.246 --> 00:41:50.529 you an idea of what exists,

NOTE Confidence: 0.879437804222107

00:41:50.530 --> 00:41:53.275 and this shows you the sales that has in

NOTE Confidence: 0.879437804222107

00:41:53.275 --> 00:41:55.870 Nielsen tracked retail channels by Brandon.

NOTE Confidence: 0.879437804222107

00:41:55.870 --> 00:41:58.187 You can see the amount of sales

NOTE Confidence: 0.879437804222107

00:41:58.187 --> 00:42:00.170 that go towards E cigarettes.

NOTE Confidence: 0.879437804222107

00:42:00.170 --> 00:42:01.298 And obviously a very,

NOTE Confidence: 0.879437804222107

00:42:01.298 --> 00:42:02.144 very profitable market,

NOTE Confidence: 0.879437804222107

00:42:02.150 --> 00:42:04.376 which is why a lot of people

NOTE Confidence: 0.879437804222107

00:42:04.376 --> 00:42:06.460 are investing in these products.

NOTE Confidence: 0.879437804222107

00:42:06.460 --> 00:42:08.483 So I bring you back now to

NOTE Confidence: 0.879437804222107

00:42:08.483 --> 00:42:10.409 what I started the talk with,

NOTE Confidence: 0.879437804222107

00:42:10.410 --> 00:42:12.168 which is let's not talk about

NOTE Confidence: 0.879437804222107

00:42:12.168 --> 00:42:13.760 the benefits of the harms.

NOTE Confidence: 0.879437804222107

00:42:13.760 --> 00:42:15.275 So let's proceed to talking

NOTE Confidence: 0.879437804222107

00:42:15.275 --> 00:42:16.487 about times or toxicity.

NOTE Confidence: 0.879437804222107

00:42:16.490 --> 00:42:16.794 First,

NOTE Confidence: 0.879437804222107

00:42:16.794 --> 00:42:19.530 I'm just going to show you snippets of data.

NOTE Confidence: 0.879437804222107

00:42:19.530 --> 00:42:21.360 There's a huge literature out there,

NOTE Confidence: 0.879437804222107

00:42:21.360 --> 00:42:23.178 but in the interest of time,

NOTE Confidence: 0.879437804222107

00:42:23.180 --> 00:42:24.700 let's ask the first question.

NOTE Confidence: 0.879437804222107

00:42:24.700 --> 00:42:26.518 When you look at E cigarettes,

NOTE Confidence: 0.879437804222107

00:42:26.520 --> 00:42:28.344 when you compare them to E

NOTE Confidence: 0.879437804222107

00:42:28.344 --> 00:42:29.560 cigarettes or combustible products,

NOTE Confidence: 0.879437804222107

00:42:29.560 --> 00:42:31.390 do they actually have reduced form?

NOTE Confidence: 0.879437804222107

00:42:31.390 --> 00:42:33.654 So if you do an apples to apples

NOTE Confidence: 0.879437804222107

00:42:33.654 --> 00:42:35.917 comparison and you look at things like

NOTE Confidence: 0.879437804222107

00:42:35.917 --> 00:42:38.089 like some of the nitrosamine's the NNN.

NOTE Confidence: 0.879437804222107

00:42:38.090 --> 00:42:41.058 And in case and some of these compounds,

NOTE Confidence: 0.879437804222107

00:42:41.060 --> 00:42:42.092 tobacco specific nitrosamine's

NOTE Confidence: 0.879437804222107

00:42:42.092 --> 00:42:44.500 that have been shown to be toxic

NOTE Confidence: 0.879437804222107

00:42:44.556 --> 00:42:46.248 enough significant cancer risk.

NOTE Confidence: 0.879437804222107

00:42:46.250 --> 00:42:48.609 When you look at the current content

NOTE Confidence: 0.879437804222107

00:42:48.609 --> 00:42:50.513 of these nitrosamine's in combustible

NOTE Confidence: 0.879437804222107

00:42:50.513 --> 00:42:52.185 products versus E cigarettes,

NOTE Confidence: 0.879437804222107

00:42:52.190 --> 00:42:54.110 you definitely see that E cigarette

NOTE Confidence: 0.879437804222107

00:42:54.110 --> 00:42:55.862 exposure results in less exposure

NOTE Confidence: 0.879437804222107

00:42:55.862 --> 00:42:57.526 to tobacco specific nitrosamine's

NOTE Confidence: 0.879437804222107

00:42:57.526 --> 00:42:59.606 does not completely eliminate them,

NOTE Confidence: 0.879437804222107

00:42:59.610 --> 00:43:01.830 but there's definitely lexical less exposure.

NOTE Confidence: 0.83473414182663

00:43:01.830 --> 00:43:04.427 But our concerns about this or not,

NOTE Confidence: 0.83473414182663

00:43:04.430 --> 00:43:05.546 just the nitrosamine's.

NOTE Confidence: 0.83473414182663

00:43:05.546 --> 00:43:08.520 There are a variety of other products that.

NOTE Confidence: 0.83473414182663

00:43:08.520 --> 00:43:10.100 Our existing E cigarettes,

NOTE Confidence: 0.83473414182663

00:43:10.100 --> 00:43:12.470 which by which combined with the

NOTE Confidence: 0.83473414182663

00:43:12.541 --> 00:43:14.815 way these products are being used,

NOTE Confidence: 0.83473414182663

00:43:14.820 --> 00:43:17.718 which is almost in many people almost

NOTE Confidence: 0.83473414182663

00:43:17.718 --> 00:43:19.550 constantly used throughout the day,

NOTE Confidence: 0.83473414182663

00:43:19.550 --> 00:43:22.126 raises a lot of concerns about what

NOTE Confidence: 0.83473414182663

00:43:22.126 --> 00:43:24.668 some of these contents could do.

NOTE Confidence: 0.83473414182663

00:43:24.670 --> 00:43:27.142 So an example of some of these are

NOTE Confidence: 0.83473414182663

00:43:27.142 --> 00:43:29.137 probably in glycol and vegetable

NOTE Confidence: 0.83473414182663

00:43:29.137 --> 00:43:31.317 glycerin which are used included

NOTE Confidence: 0.83473414182663

00:43:31.317 --> 00:43:33.339 as solvents or constituents.

NOTE Confidence: 0.83473414182663

00:43:33.340 --> 00:43:35.464 There are a lot of flavor

NOTE Confidence: 0.83473414182663

00:43:35.464 --> 00:43:37.680 chemicals which are all aldehydes,

NOTE Confidence: 0.83473414182663

00:43:37.680 --> 00:43:40.864 and I'll talk about them in a second.

NOTE Confidence: 0.83473414182663

00:43:40.870 --> 00:43:43.102 There are sweeteners that are present

NOTE Confidence: 0.83473414182663

00:43:43.102 --> 00:43:45.545 in these products and other solvents

NOTE Confidence: 0.83473414182663

00:43:45.545 --> 00:43:48.197 including alcohol and of course nicotine.

NOTE Confidence: 0.83473414182663

00:43:48.200 --> 00:43:51.161 Anna variety of metals and metals actually

NOTE Confidence: 0.83473414182663

00:43:51.161 --> 00:43:54.705 come from the coil when the coil is heated,

NOTE Confidence: 0.83473414182663

00:43:54.710 --> 00:43:57.454 it releases metals and so this is all

NOTE Confidence: 0.83473414182663

00:43:57.454 --> 00:44:00.240 part of what the individual is going

NOTE Confidence: 0.83473414182663

00:44:00.240 --> 00:44:03.255 to be inhaling when they inhale this

NOTE Confidence: 0.83473414182663

00:44:03.255 --> 00:44:05.997 particular product and the figure shows

NOTE Confidence: 0.83473414182663

00:44:05.997 --> 00:44:08.950 you some of the other ultrafine particles,

NOTE Confidence: 0.83473414182663

00:44:08.950 --> 00:44:11.416 and so on, which could be.

NOTE Confidence: 0.83473414182663

00:44:11.420 --> 00:44:13.170 Reduced Um,

NOTE Confidence: 0.83473414182663

00:44:13.170 --> 00:44:15.660 so I'll just briefly touch on

NOTE Confidence: 0.83473414182663

00:44:15.660 --> 00:44:17.949 Flavors because that is a huge.

NOTE Confidence: 0.83473414182663

00:44:17.950 --> 00:44:19.780 Focus of our tobacco center.

NOTE Confidence: 0.83473414182663

00:44:19.780 --> 00:44:20.905 Here at Yale,

NOTE Confidence: 0.83473414182663

00:44:20.905 --> 00:44:22.780 we're really interested in understanding

NOTE Confidence: 0.83473414182663

00:44:22.780 --> 00:44:24.898 the role of flavors and appeal,

NOTE Confidence: 0.83473414182663

00:44:24.900 --> 00:44:27.096 addiction and toxicity of these products,

NOTE Confidence: 0.83473414182663

00:44:27.100 --> 00:44:29.404 and I'm going to address toxicity

NOTE Confidence: 0.83473414182663

00:44:29.404 --> 00:44:32.374 here so the flavors as you know it

NOTE Confidence: 0.83473414182663

00:44:32.374 --> 00:44:34.414 are made up of flavor chemicals,

NOTE Confidence: 0.83473414182663

00:44:34.420 --> 00:44:36.250 so they're not just benign.

NOTE Confidence: 0.83473414182663

00:44:36.250 --> 00:44:37.834 You know flavor molecules.

NOTE Confidence: 0.83473414182663

00:44:37.834 --> 00:44:39.814 Some of these chemicals are

NOTE Confidence: 0.83473414182663

00:44:39.814 --> 00:44:41.736 identified and are listed out here.

NOTE Confidence: 0.83473414182663

00:44:41.740 --> 00:44:44.008 You'll see many of them are aldehydes

NOTE Confidence: 0.83473414182663

00:44:44.008 --> 00:44:46.130 and depending on the concentration,

NOTE Confidence: 0.83473414182663

00:44:46.130 --> 00:44:48.020 can have significant health effects.

NOTE Confidence: 0.83473414182663

00:44:48.020 --> 00:44:49.480 Not help to fix,

NOTE Confidence: 0.83473414182663

00:44:49.480 --> 00:44:50.210 I'm sorry.

NOTE Confidence: 0.83473414182663

00:44:50.210 --> 00:44:52.400 Let me back up significant toxicity.

NOTE Confidence: 0.83473414182663

00:44:52.400 --> 00:44:54.885 There was an argument made initially that

NOTE Confidence: 0.83473414182663

00:44:54.885 --> 00:44:57.491 these are flavor chemicals and they are

NOTE Confidence: 0.83473414182663

00:44:57.491 --> 00:44:59.699 gras or generally recognized as safe,

NOTE Confidence: 0.83473414182663

00:44:59.700 --> 00:45:01.932 but they are not generally recognized

NOTE Confidence: 0.83473414182663

00:45:01.932 --> 00:45:03.720 as safe for inhalational use.

NOTE Confidence: 0.83473414182663

00:45:03.720 --> 00:45:05.910 They are grass for edible use,

NOTE Confidence: 0.83473414182663

00:45:05.910 --> 00:45:07.730 not for any Hill inhalation.

NOTE Confidence: 0.83473414182663

00:45:07.730 --> 00:45:09.910 Using isn't very important distinction

NOTE Confidence: 0.83473414182663

00:45:09.910 --> 00:45:13.044 and what we're finding through a lot of

NOTE Confidence: 0.83473414182663

00:45:13.044 --> 00:45:15.123 the cellular toxicity work going on is

NOTE Confidence: 0.83473414182663

00:45:15.186 --> 00:45:18.026 that many of these flavor molecules are have.

NOTE Confidence: 0.83473414182663

00:45:18.030 --> 00:45:19.434 Are toxic to cells,

NOTE Confidence: 0.83473414182663

00:45:19.434 --> 00:45:21.540 some of them also have been

NOTE Confidence: 0.83473414182663

00:45:21.621 --> 00:45:23.786 known to have diseased risks.

NOTE Confidence: 0.83473414182663

00:45:23.790 --> 00:45:26.478 So an example of this is diacetyl,

NOTE Confidence: 0.83473414182663

00:45:26.480 --> 00:45:29.182 which is a chemical which is included

NOTE Confidence: 0.83473414182663

00:45:29.182 --> 00:45:31.902 to produce butter flavor and it has

NOTE Confidence: 0.83473414182663

00:45:31.902 --> 00:45:34.134 been known to be associated popcorn

NOTE Confidence: 0.83473414182663

00:45:34.207 --> 00:45:36.860 lung disease which is actually found in

NOTE Confidence: 0.83473414182663

00:45:36.860 --> 00:45:39.576 people who are working in popcorn factories,

NOTE Confidence: 0.83473414182663

00:45:39.576 --> 00:45:43.098 so this chemical is still used in many of

NOTE Confidence: 0.83473414182663

00:45:43.098 --> 00:45:45.282 these eliquids as a flavoring chemical,

NOTE Confidence: 0.83473414182663

00:45:45.290 --> 00:45:47.220 so there are concerns about

NOTE Confidence: 0.83473414182663

00:45:47.220 --> 00:45:48.764 toxicity of these flavors.

NOTE Confidence: 0.83473414182663

00:45:48.770 --> 00:45:51.437 And our tobacco center is also shown

NOTE Confidence: 0.83473414182663

00:45:51.437 --> 00:45:54.047 that his flavor aldehydes actually form

NOTE Confidence: 0.83473414182663

00:45:54.047 --> 00:45:56.819 what are called acetal addicts with

NOTE Confidence: 0.83473414182663

00:45:56.819 --> 00:45:59.634 the propylene glycol and glycerine in

NOTE Confidence: 0.83473414182663

00:45:59.634 --> 00:46:02.330 this illiquid and that these acetal

NOTE Confidence: 0.83473414182663

00:46:02.330 --> 00:46:04.850 out addicts that are formed when

NOTE Confidence: 0.83473414182663

00:46:04.850 --> 00:46:07.598 the salute are there just formed.

NOTE Confidence: 0.83473414182663

00:46:07.600 --> 00:46:10.127 When the illiquid just sitting on the

NOTE Confidence: 0.83473414182663

00:46:10.127 --> 00:46:12.646 shelf and these addicts we're showing

NOTE Confidence: 0.83473414182663

00:46:12.646 --> 00:46:14.926 are actually stronger airway irritants

NOTE Confidence: 0.83473414182663

00:46:14.926 --> 00:46:17.679 in the original aldehydes itself,

NOTE Confidence: 0.83473414182663

00:46:17.680 --> 00:46:18.697 so like vanillin.

NOTE Confidence: 0.83473414182663

00:46:18.697 --> 00:46:21.070 Adult will actually be is a stronger

NOTE Confidence: 0.818998157978058

00:46:21.140 --> 00:46:22.976 airway, urgent than vanillin itself,

NOTE Confidence: 0.818998157978058

00:46:22.976 --> 00:46:25.717 so this is an area which we need

NOTE Confidence: 0.818998157978058

00:46:25.717 --> 00:46:27.719 to need a lot more research on.

NOTE Confidence: 0.818998157978058

00:46:27.720 --> 00:46:29.820 The similar kind of work on all

NOTE Confidence: 0.818998157978058

00:46:29.820 --> 00:46:31.774 the other products that I listed

NOTE Confidence: 0.818998157978058

00:46:31.774 --> 00:46:33.424 earlier from E cigarettes from

NOTE Confidence: 0.818998157978058

00:46:33.424 --> 00:46:35.468 many other people in the country.

NOTE Confidence: 0.818998157978058

00:46:35.470 --> 00:46:37.626 And there was a National Academy of

NOTE Confidence: 0.818998157978058

00:46:37.626 --> 00:46:39.796 Science report which came out in 2018

NOTE Confidence: 0.818998157978058

00:46:39.796 --> 00:46:41.281 and the public health consequences

NOTE Confidence: 0.818998157978058

00:46:41.281 --> 00:46:43.396 of E cigarettes which basically I'm

NOTE Confidence: 0.818998157978058

00:46:43.396 --> 00:46:45.842 presenting you with an overview of findings,

NOTE Confidence: 0.818998157978058

00:46:45.842 --> 00:46:49.130 but you should feel free to check it out an.

NOTE Confidence: 0.818998157978058

00:46:49.130 --> 00:46:51.308 Be they concluded that E cigarettes

NOTE Confidence: 0.818998157978058

00:46:51.308 --> 00:46:52.760 were not risk free,

NOTE Confidence: 0.818998157978058

00:46:52.760 --> 00:46:54.425 while the current evidence suggests

NOTE Confidence: 0.818998157978058

00:46:54.425 --> 00:46:56.925 that they are far less harmful than

NOTE Confidence: 0.818998157978058

00:46:56.925 --> 00:46:58.850 combustible tobacco cigarettes and a

NOTE Confidence: 0.818998157978058

00:46:58.850 --> 00:47:01.500 smoker is exposed to lower levels of

NOTE Confidence: 0.818998157978058

00:47:01.500 --> 00:47:03.290 toxic substances other than nicotine.

NOTE Confidence: 0.818998157978058

00:47:03.290 --> 00:47:05.873 There may be some short term resulting

NOTE Confidence: 0.818998157978058

00:47:05.873 --> 00:47:07.764 in reduced short-term adverse health

NOTE Confidence: 0.818998157978058

00:47:07.764 --> 00:47:10.263 outcomes that there was very little data

NOTE Confidence: 0.818998157978058

00:47:10.263 --> 00:47:13.087 to assess the impact on cancer and health,

NOTE Confidence: 0.818998157978058

00:47:13.090 --> 00:47:14.236 heart disease risk.

NOTE Confidence: 0.818998157978058

00:47:14.236 --> 00:47:17.311 And there's a lot more evidence coming out

NOTE Confidence: 0.818998157978058

00:47:17.311 --> 00:47:20.147 on heart disease risk at this point, but.

NOTE Confidence: 0.818998157978058

00:47:20.147 --> 00:47:23.836 Not yet that much on cancer risk.

NOTE Confidence: 0.818998157978058

00:47:23.840 --> 00:47:26.030 I also thought you would be

NOTE Confidence: 0.818998157978058

00:47:26.030 --> 00:47:27.983 interested in seeing the specific

NOTE Confidence: 0.818998157978058

00:47:27.983 --> 00:47:30.509 cancer related section that they had

NOTE Confidence: 0.818998157978058

00:47:30.509 --> 00:47:32.900 in this public in this report.

NOTE Confidence: 0.818998157978058

00:47:32.900 --> 00:47:33.248 Essentially,

NOTE Confidence: 0.818998157978058

00:47:33.248 --> 00:47:36.032 what this says is there is no available

NOTE Confidence: 0.818998157978058

00:47:36.032 --> 00:47:38.635 evidence that E cigarette users associated

NOTE Confidence: 0.818998157978058

00:47:38.635 --> 00:47:40.387 with intermediate cancer endpoints,

NOTE Confidence: 0.818998157978058

00:47:40.390 --> 00:47:42.922 but that there is substantial evidence

NOTE Confidence: 0.818998157978058

00:47:42.922 --> 00:47:45.509 that some chemicals present present in E.

NOTE Confidence: 0.818998157978058

00:47:45.510 --> 00:47:47.106 Cigarette aerosol like formaldehyde

NOTE Confidence: 0.818998157978058

00:47:47.106 --> 00:47:49.101 and actually not capable of

NOTE Confidence: 0.818998157978058

00:47:49.101 --> 00:47:51.030 causing DNA damage in mutagenesis.

NOTE Confidence: 0.818998157978058

00:47:51.030 --> 00:47:53.907 But this has not panned out into

NOTE Confidence: 0.818998157978058

00:47:53.907 --> 00:47:56.189 a clinical outcome per say and.

NOTE Confidence: 0.818998157978058

00:47:56.190 --> 00:47:58.728 You know there's more to come and much more

NOTE Confidence: 0.818998157978058

00:47:58.728 --> 00:48:01.184 work that needs to be done on this issue.

NOTE Confidence: 0.818998157978058

00:48:01.190 --> 00:48:03.654 So let's move on to vivia concerned

NOTE Confidence: 0.818998157978058

00:48:03.654 --> 00:48:06.325 about this in the US and we're

NOTE Confidence: 0.818998157978058

00:48:06.325 --> 00:48:07.869 really concerned about it.

NOTE Confidence: 0.818998157978058

00:48:07.870 --> 00:48:09.710 We really started becoming very

NOTE Confidence: 0.818998157978058

00:48:09.710 --> 00:48:11.550 concerned about it because of

NOTE Confidence: 0.818998157978058

00:48:11.617 --> 00:48:13.427 the extensive use among youth.

NOTE Confidence: 0.818998157978058

00:48:13.430 --> 00:48:14.188 This show.

NOTE Confidence: 0.818998157978058

00:48:14.188 --> 00:48:16.462 This shows you the current tobacco

NOTE Confidence: 0.818998157978058

00:48:16.462 --> 00:48:18.785 product use amongst high school students

NOTE Confidence: 0.818998157978058

00:48:18.785 --> 00:48:21.430 in the US from the National Youth

NOTE Confidence: 0.818998157978058

00:48:21.430 --> 00:48:23.817 Tobacco data and you see here this,

NOTE Confidence: 0.818998157978058

00:48:23.820 --> 00:48:26.788 this red line is indicative of E cigarettes.

NOTE Confidence: 0.818998157978058

00:48:26.790 --> 00:48:29.238 Now their their rates were significantly

NOTE Confidence: 0.818998157978058

00:48:29.238 --> 00:48:31.299 increasing through 2019 and in 20.

NOTE Confidence: 0.818998157978058

00:48:31.300 --> 00:48:33.916 18 and 2019 we discovered a lot of

NOTE Confidence: 0.818998157978058

00:48:33.916 --> 00:48:35.893 these increasing rates was because of

NOTE Confidence: 0.818998157978058

00:48:35.893 --> 00:48:38.205 the presence of jewel in the market

NOTE Confidence: 0.818998157978058

00:48:38.205 --> 00:48:40.000 and they were certain regulations

NOTE Confidence: 0.818998157978058

00:48:40.000 --> 00:48:41.777 put on jewel in 2019.

NOTE Confidence: 0.818998157978058

00:48:41.777 --> 00:48:44.136 You do see a decrease in 2020,

NOTE Confidence: 0.818998157978058

00:48:44.140 --> 00:48:46.508 but I will tell you that we don't

NOTE Confidence: 0.818998157978058

00:48:46.508 --> 00:48:48.312 really know if this decreases

NOTE Confidence: 0.818998157978058

00:48:48.312 --> 00:48:50.598 because of the regulations that were

NOTE Confidence: 0.818998157978058

00:48:50.598 --> 00:48:52.986 put into place or whether it was

NOTE Confidence: 0.818998157978058

00:48:52.986 --> 00:48:54.618 covid related from 2 perspectives.

NOTE Confidence: 0.818998157978058

00:48:54.618 --> 00:48:54.956 First,

NOTE Confidence: 0.818998157978058

00:48:54.956 --> 00:48:57.660 this envy TS data collection of this data,

NOTE Confidence: 0.818998157978058

00:48:57.660 --> 00:48:59.694 which goes on pretty much through

NOTE Confidence: 0.818998157978058

00:48:59.694 --> 00:49:01.450 six months of the year.

NOTE Confidence: 0.818998157978058

00:49:01.450 --> 00:49:04.250 Had to be stopped because of Corbin's only,

NOTE Confidence: 0.818998157978058

00:49:04.250 --> 00:49:06.700 but they only got a partial sample.

NOTE Confidence: 0.818998157978058

00:49:06.700 --> 00:49:07.422 And Secondly,

NOTE Confidence: 0.818998157978058

00:49:07.422 --> 00:49:09.588 we are also seeing in Connecticut

NOTE Confidence: 0.818998157978058

00:49:09.588 --> 00:49:10.560 that rates in.

NOTE Confidence: 0.818998157978058

00:49:10.560 --> 00:49:12.630 Amongst you have gone down because

NOTE Confidence: 0.818998157978058

00:49:12.630 --> 00:49:14.938 of lack of access and lack of

NOTE Confidence: 0.818998157978058

00:49:14.938 --> 00:49:16.933 the same kind of cues that they

NOTE Confidence: 0.818998157978058

00:49:17.008 --> 00:49:18.868 experience in schools from seeing

NOTE Confidence: 0.818998157978058

00:49:18.868 --> 00:49:20.728 their peers use and so

NOTE Confidence: 0.857419550418854

00:49:20.730 --> 00:49:22.998 on and so forth so we don't

NOTE Confidence: 0.857419550418854

00:49:22.998 --> 00:49:25.140 know what this is related to,

NOTE Confidence: 0.857419550418854

00:49:25.140 --> 00:49:27.506 whether it's regulatory or related to kovid,

NOTE Confidence: 0.857419550418854

00:49:27.510 --> 00:49:30.561 but the rates have gone down at least in

NOTE Confidence: 0.857419550418854

00:49:30.561 --> 00:49:33.609 the early 2020 to what it was in 2018.

NOTE Confidence: 0.857419550418854

00:49:33.610 --> 00:49:34.970 That's still not low,

NOTE Confidence: 0.857419550418854

00:49:34.970 --> 00:49:36.822 but it's still, you know,

NOTE Confidence: 0.857419550418854

00:49:36.822 --> 00:49:39.318 did head in the right direction.

NOTE Confidence: 0.857419550418854

00:49:39.320 --> 00:49:41.994 Youth are using multiple kinds of devices,

NOTE Confidence: 0.857419550418854

00:49:42.000 --> 00:49:45.069 so this is the other concern BC youth using

NOTE Confidence: 0.857419550418854

00:49:45.069 --> 00:49:48.129 every device that's available on the market.

NOTE Confidence: 0.857419550418854

00:49:48.130 --> 00:49:50.642 There is a lot of concern about nicotine

NOTE Confidence: 0.857419550418854

00:49:50.642 --> 00:49:53.407 use in these devices because devices like

NOTE Confidence: 0.857419550418854

00:49:53.407 --> 00:49:56.359 the jewel contain very high levels of

NOTE Confidence: 0.857419550418854

00:49:56.359 --> 00:49:59.208 nicotine and the adolescent brain is more

NOTE Confidence: 0.857419550418854

00:49:59.208 --> 00:50:01.918 sensitive to nicotine than the adult Bremen.

NOTE Confidence: 0.857419550418854

00:50:01.920 --> 00:50:02.684 Israeli tobacco,

NOTE Confidence: 0.857419550418854

00:50:02.684 --> 00:50:03.830 nicotine exposure, primes,

NOTE Confidence: 0.857419550418854

00:50:03.830 --> 00:50:06.128 the adolescent brain for nicotine addiction,

NOTE Confidence: 0.857419550418854

00:50:06.130 --> 00:50:08.040 addiction to other substances that

NOTE Confidence: 0.857419550418854

00:50:08.040 --> 00:50:09.543 alters developmental maturing, and.

NOTE Confidence: 0.857419550418854

00:50:09.543 --> 00:50:12.367 It can also have effects on multiple organs.

NOTE Confidence: 0.857419550418854

00:50:12.370 --> 00:50:14.354 I'm sure you are all well aware of

NOTE Confidence: 0.857419550418854

00:50:14.354 --> 00:50:16.680 the of the acetyl choline or the

NOTE Confidence: 0.857419550418854

00:50:16.680 --> 00:50:18.440 cholinergic system and know that

NOTE Confidence: 0.857419550418854

00:50:18.501 --> 00:50:20.591 nicotine binds to cholinergic receptors

NOTE Confidence: 0.857419550418854

00:50:20.591 --> 00:50:23.191 and can therefore influence a variety

NOTE Confidence: 0.857419550418854

00:50:23.191 --> 00:50:26.197 of other organ systems shown here.

NOTE Confidence: 0.857419550418854

00:50:26.200 --> 00:50:27.928 You thought so use multiple flavors

NOTE Confidence: 0.857419550418854

00:50:27.928 --> 00:50:30.111 and I've already talked to you a little

NOTE Confidence: 0.857419550418854

00:50:30.111 --> 00:50:31.575 bit about the toxicity of flavors.

NOTE Confidence: 0.857419550418854

00:50:31.580 --> 00:50:33.188 Flavors are what draw youth to

NOTE Confidence: 0.857419550418854

00:50:33.188 --> 00:50:33.992 user these products,

NOTE Confidence: 0.857419550418854

00:50:34.000 --> 00:50:35.992 so this is a great deal

NOTE Confidence: 0.857419550418854

00:50:35.992 --> 00:50:37.320 of concern about this.

NOTE Confidence: 0.857419550418854

00:50:37.320 --> 00:50:39.005 You choose the cigarettes for

NOTE Confidence: 0.857419550418854

00:50:39.005 --> 00:50:40.016 many alternative purposes.

NOTE Confidence: 0.857419550418854

00:50:40.020 --> 00:50:42.708 You know they use them for vape tricks,

NOTE Confidence: 0.857419550418854

00:50:42.710 --> 00:50:45.160 which is a huge cloud competitions and

NOTE Confidence: 0.857419550418854

00:50:45.160 --> 00:50:47.430 vape clouds that you may have seen.

NOTE Confidence: 0.857419550418854

00:50:47.430 --> 00:50:49.120 They participate in cloud competitions.

NOTE Confidence: 0.857419550418854

00:50:49.120 --> 00:50:51.269 These are some of the clouds that

NOTE Confidence: 0.857419550418854

00:50:51.269 --> 00:50:53.382 you shapes that you can create

NOTE Confidence: 0.857419550418854

00:50:53.382 --> 00:50:54.510 using these products.

NOTE Confidence: 0.857419550418854

00:50:54.510 --> 00:50:56.869 They use it for something called dripping,

NOTE Confidence: 0.857419550418854

00:50:56.870 --> 00:50:59.019 which means opening up the device and

NOTE Confidence: 0.857419550418854

00:50:59.019 --> 00:51:01.096 putting the E liquid directly onto

NOTE Confidence: 0.857419550418854

00:51:01.096 --> 00:51:03.268 the open battery and inhaling it.

NOTE Confidence: 0.857419550418854

00:51:03.270 --> 00:51:05.298 They use it for vaping cannabis

NOTE Confidence: 0.857419550418854

00:51:05.298 --> 00:51:07.689 so this has in fact gone up.

NOTE Confidence: 0.857419550418854

00:51:07.690 --> 00:51:08.814 Significantly, as I said,

NOTE Confidence: 0.857419550418854

00:51:08.814 --> 00:51:11.350 a lot of these products can be manipulated.

NOTE Confidence: 0.857419550418854

00:51:11.350 --> 00:51:12.875 So Uther actually adding in

NOTE Confidence: 0.857419550418854

00:51:12.875 --> 00:51:14.400 other things into these devices.

NOTE Confidence: 0.857419550418854

00:51:14.400 --> 00:51:16.230 So if you see somebody vaping,

NOTE Confidence: 0.857419550418854

00:51:16.230 --> 00:51:17.450 there's no guarantee there,

NOTE Confidence: 0.857419550418854

00:51:17.450 --> 00:51:18.365 just vaping nicotine.

NOTE Confidence: 0.857419550418854

00:51:18.370 --> 00:51:19.890 They could be using something

NOTE Confidence: 0.857419550418854

00:51:19.890 --> 00:51:21.106 else in the product,

NOTE Confidence: 0.857419550418854

00:51:21.110 --> 00:51:23.402 and most likely that it's probably

NOTE Confidence: 0.857419550418854

00:51:23.402 --> 00:51:24.930 a cannabis related product.

NOTE Confidence: 0.857419550418854

00:51:24.930 --> 00:51:26.932 And as I said the there is

NOTE Confidence: 0.857419550418854

00:51:26.932 --> 00:51:28.180 multiple papers on this,

NOTE Confidence: 0.857419550418854

00:51:28.180 --> 00:51:30.133 but this is one of our papers

NOTE Confidence: 0.857419550418854

00:51:30.133 --> 00:51:32.009 which shows that E cigarette use,

NOTE Confidence: 0.857419550418854

00:51:32.010 --> 00:51:34.060 amongst Euclides to cigarette use.

NOTE Confidence: 0.857419550418854

00:51:34.060 --> 00:51:36.398 So let's now move on to talking

NOTE Confidence: 0.857419550418854

00:51:36.398 --> 00:51:37.400 about smoking cessation.

NOTE Confidence: 0.857419550418854

00:51:37.400 --> 00:51:40.064 So we've talked about all the bad things.

NOTE Confidence: 0.857419550418854

00:51:40.070 --> 00:51:41.069 Now let's see.

NOTE Confidence: 0.857419550418854

00:51:41.069 --> 00:51:43.750 Well, is it actually doing what it was?

NOTE Confidence: 0.857419550418854

00:51:43.750 --> 00:51:45.748 What it set out to do?

NOTE Confidence: 0.857419550418854

00:51:45.750 --> 00:51:47.748 Which is help smokers quit smoking.

NOTE Confidence: 0.857419550418854

00:51:47.750 --> 00:51:50.088 The evidence on that is still emerging.

NOTE Confidence: 0.857419550418854

00:51:50.090 --> 00:51:52.118 Unfortunately, we don't have clear cut.

NOTE Confidence: 0.857419550418854

00:51:52.120 --> 00:51:54.268 Answers yet because doing an RCT

NOTE Confidence: 0.857419550418854

00:51:54.268 --> 00:51:56.870 on this issue in the US is very,

NOTE Confidence: 0.857419550418854

00:51:56.870 --> 00:51:58.565 very difficult because of the

NOTE Confidence: 0.857419550418854

00:51:58.565 --> 00:52:00.260 way the products are regulated.

NOTE Confidence: 0.857419550418854

00:52:00.260 --> 00:52:02.940 Once the FDA maybe once the FDA gets

NOTE Confidence: 0.857419550418854

00:52:02.940 --> 00:52:05.022 more information on the toxicity and

NOTE Confidence: 0.857419550418854

00:52:05.022 --> 00:52:07.032 safety of some of these products,

NOTE Confidence: 0.857419550418854

00:52:07.040 --> 00:52:08.780 they would be willing to allow

NOTE Confidence: 0.857419550418854

00:52:08.780 --> 00:52:10.849 an RCT to proceed more easily

NOTE Confidence: 0.857419550418854

00:52:10.849 --> 00:52:12.118 for cessation purposes,

NOTE Confidence: 0.810862898826599

00:52:12.120 --> 00:52:15.510 but at this point that is very hard to do.

NOTE Confidence: 0.810862898826599

00:52:15.510 --> 00:52:17.550 There have been a few few.

NOTE Confidence: 0.810862898826599

00:52:17.550 --> 00:52:19.966 Weldon are our CTS and but the overall

NOTE Confidence: 0.810862898826599

00:52:19.966 --> 00:52:22.724 idea is based off based on some Cochrane

NOTE Confidence: 0.810862898826599

00:52:22.724 --> 00:52:25.430 reviews is there are small sample sizes.

NOTE Confidence: 0.810862898826599

00:52:25.430 --> 00:52:27.790 Um, and but they do seem to show

NOTE Confidence: 0.810862898826599

00:52:27.790 --> 00:52:29.265 some efficacy, but there are

NOTE Confidence: 0.810862898826599

00:52:29.265 --> 00:52:30.445 multiple observation ull studies.

NOTE Confidence: 0.810862898826599

00:52:30.450 --> 00:52:32.578 So if you go out and talk to

NOTE Confidence: 0.810862898826599

00:52:32.578 --> 00:52:34.280 smokers that are many smokers,

NOTE Confidence: 0.810862898826599

00:52:34.280 --> 00:52:36.504 who will tell you that these products have

NOTE Confidence: 0.810862898826599

00:52:36.504 --> 00:52:38.407 helped them reduce use of cigarettes?

NOTE Confidence: 0.810862898826599

00:52:38.410 --> 00:52:39.774 If not, completely quit,

NOTE Confidence: 0.810862898826599

00:52:39.774 --> 00:52:42.205 which of course then leads to the

NOTE Confidence: 0.810862898826599

00:52:42.205 --> 00:52:44.417 concern I had raised earlier about use

NOTE Confidence: 0.810862898826599

00:52:44.417 --> 00:52:46.760 of both products at the same time.

NOTE Confidence: 0.810862898826599

00:52:46.760 --> 00:52:49.400 This is a result of an RCT which

NOTE Confidence: 0.810862898826599

00:52:49.400 --> 00:52:51.832 came out in New England Journal

NOTE Confidence: 0.810862898826599

00:52:51.832 --> 00:52:53.937 of Medicine from the UK,

NOTE Confidence: 0.810862898826599

00:52:53.940 --> 00:52:56.299 which shows you that use of E

NOTE Confidence: 0.810862898826599

00:52:56.299 --> 00:52:58.100 cigarettes versus nicotine replacement.

NOTE Confidence: 0.810862898826599

00:52:58.100 --> 00:53:01.538 The outcomes at at the end of 52 weeks.

NOTE Confidence: 0.810862898826599

00:53:01.540 --> 00:53:04.319 After the initial start of the trial,

NOTE Confidence: 0.810862898826599

00:53:04.320 --> 00:53:06.679 the outcome is better for E cigarettes

NOTE Confidence: 0.810862898826599

00:53:06.679 --> 00:53:09.479 than it is for nicotine replacement,

NOTE Confidence: 0.810862898826599

00:53:09.480 --> 00:53:12.184 and also that those who use E cigarettes

NOTE Confidence: 0.810862898826599

00:53:12.184 --> 00:53:15.216 seem to have some benefits in terms of

NOTE Confidence: 0.810862898826599

00:53:15.216 --> 00:53:17.781 some of the respiratory outcomes that

NOTE Confidence: 0.810862898826599

00:53:17.781 --> 00:53:20.196 are associated with cigarette use.

NOTE Confidence: 0.810862898826599

00:53:20.200 --> 00:53:22.414 This is another trial that just

NOTE Confidence: 0.810862898826599

00:53:22.414 --> 00:53:24.570 came out from New Zealand,

NOTE Confidence: 0.810862898826599

00:53:24.570 --> 00:53:26.525 where they showed again that

NOTE Confidence: 0.810862898826599

00:53:26.525 --> 00:53:28.930 use E cigarettes do have some,

NOTE Confidence: 0.810862898826599

00:53:28.930 --> 00:53:31.765 albiet very small benefit over and above.

NOTE Confidence: 0.810862898826599

00:53:31.770 --> 00:53:34.297 Using patches alone in terms of produce,

NOTE Confidence: 0.810862898826599

00:53:34.300 --> 00:53:36.250 having an efficacy or helping

NOTE Confidence: 0.810862898826599

00:53:36.250 --> 00:53:38.894 smokers quit smoking so the jury is

NOTE Confidence: 0.810862898826599

00:53:38.894 --> 00:53:40.454 still out on this issue.

NOTE Confidence: 0.810862898826599

00:53:40.460 --> 00:53:42.994 Also and as the National Academy of

NOTE Confidence: 0.810862898826599

00:53:42.994 --> 00:53:44.800 Sciences report basically said there,

NOTE Confidence: 0.810862898826599

00:53:44.800 --> 00:53:46.984 there where they are very concerned

NOTE Confidence: 0.810862898826599

00:53:46.984 --> 00:53:49.149 about the use of the pump.

NOTE Confidence: 0.810862898826599

00:53:49.150 --> 00:53:51.700 When you consider the public health

NOTE Confidence: 0.810862898826599

00:53:51.700 --> 00:53:54.068 consequences of E cigarettes we have

NOTE Confidence: 0.810862898826599

00:53:54.068 --> 00:53:56.460 this huge divide of of a product that

NOTE Confidence: 0.810862898826599

00:53:56.527 --> 00:53:58.914 is really having an impact on youth.

NOTE Confidence: 0.810862898826599

00:53:58.920 --> 00:54:00.775 There is limited evidence that

NOTE Confidence: 0.810862898826599

00:54:00.775 --> 00:54:02.259 the product may help.

NOTE Confidence: 0.810862898826599

00:54:02.260 --> 00:54:04.588 Um people stop smoking cigarettes completely.

NOTE Confidence: 0.810862898826599

00:54:04.590 --> 00:54:06.924 There seems to be more evidence

NOTE Confidence: 0.810862898826599

00:54:06.924 --> 00:54:08.480 of dual use behaviors,

NOTE Confidence: 0.810862898826599

00:54:08.480 --> 00:54:11.496 so we really need more work to help

NOTE Confidence: 0.810862898826599

00:54:11.496 --> 00:54:13.538 people convert to E cigarettes.

NOTE Confidence: 0.810862898826599

00:54:13.540 --> 00:54:15.703 And they also said that if people

NOTE Confidence: 0.810862898826599

00:54:15.703 --> 00:54:17.689 are able to completely switch

NOTE Confidence: 0.810862898826599

00:54:17.689 --> 00:54:20.144 from cigarettes to E cigarettes,

NOTE Confidence: 0.810862898826599

00:54:20.150 --> 00:54:22.922 it will reduce exposure to numerous

NOTE Confidence: 0.810862898826599

00:54:22.922 --> 00:54:24.770 toxins that cops imagines.

NOTE Confidence: 0.810862898826599

00:54:24.770 --> 00:54:26.330 Now one might ask, well,

NOTE Confidence: 0.810862898826599

00:54:26.330 --> 00:54:28.214 is there some way of regulating

NOTE Confidence: 0.810862898826599

00:54:28.214 --> 00:54:29.750 these products to prevent use?

NOTE Confidence: 0.810862898826599

00:54:29.750 --> 00:54:30.404 You choose,

NOTE Confidence: 0.810862898826599

00:54:30.404 --> 00:54:32.039 but suppose smoking cessation and

NOTE Confidence: 0.810862898826599

00:54:32.039 --> 00:54:34.506 this is a debate that the field has

NOTE Confidence: 0.810862898826599

00:54:34.506 --> 00:54:36.589 been having for a very long time,

NOTE Confidence: 0.810862898826599

00:54:36.590 --> 00:54:38.384 and I will basically tell you

NOTE Confidence: 0.810862898826599

00:54:38.384 --> 00:54:40.280 that we haven't reached any big

NOTE Confidence: 0.810862898826599

00:54:40.280 --> 00:54:41.560 conclusions at this point,

NOTE Confidence: 0.810862898826599

00:54:41.560 --> 00:54:43.737 I've listed some ways we could go.

NOTE Confidence: 0.810862898826599

00:54:43.740 --> 00:54:45.618 We could regulate the nicotine levels.

NOTE Confidence: 0.810862898826599

00:54:45.620 --> 00:54:48.350 You for example only allows a nicotine

NOTE Confidence: 0.810862898826599

00:54:48.350 --> 00:54:51.318 level up to 20 milligrams per mil,

NOTE Confidence: 0.810862898826599

00:54:51.320 --> 00:54:52.042 in illiquid.

NOTE Confidence: 0.810862898826599

00:54:52.042 --> 00:54:53.847 To give you an example,

NOTE Confidence: 0.810862898826599

00:54:53.850 --> 00:54:56.570 jewel contains up to 60 milligrams per mil.

NOTE Confidence: 0.810862898826599

00:54:56.570 --> 00:54:58.496 The concern here is that smokers

NOTE Confidence: 0.810862898826599

00:54:58.496 --> 00:55:00.521 may actually need higher levels of

NOTE Confidence: 0.810862898826599

00:55:00.521 --> 00:55:02.549 nicotine to quit smoking and get

NOTE Confidence: 0.810862898826599

00:55:02.549 --> 00:55:04.079 satisfaction from their product,

NOTE Confidence: 0.810862898826599

00:55:04.080 --> 00:55:06.271 so this issue has really not been

NOTE Confidence: 0.810862898826599

00:55:06.271 --> 00:55:08.161 resolved and there doesn't seem to

NOTE Confidence: 0.810862898826599

00:55:08.161 --> 00:55:10.226 be that much movement in terms of

NOTE Confidence: 0.831678867340088

00:55:10.292 --> 00:55:11.918 regulating nicotine levels,

NOTE Confidence: 0.831678867340088

00:55:11.920 --> 00:55:13.284 we could regulate flavors.

NOTE Confidence: 0.831678867340088

00:55:13.284 --> 00:55:14.648 An example is Canada.

NOTE Confidence: 0.831678867340088

00:55:14.650 --> 00:55:16.690 They removed all flavors in Eliquids,

NOTE Confidence: 0.831678867340088

00:55:16.690 --> 00:55:19.741 but then there is a concern that smokers may

NOTE Confidence: 0.831678867340088

00:55:19.741 --> 00:55:22.259 actually need the flavors to quit smoking.

NOTE Confidence: 0.831678867340088

00:55:22.260 --> 00:55:24.264 We know this is something that

NOTE Confidence: 0.831678867340088

00:55:24.264 --> 00:55:25.958 will definitely be beneficial for

NOTE Confidence: 0.831678867340088

00:55:25.958 --> 00:55:27.458 youth because Uther really drawn

NOTE Confidence: 0.831678867340088

00:55:27.458 --> 00:55:29.390 to the flavors in the product.

NOTE Confidence: 0.831678867340088

00:55:29.390 --> 00:55:31.005 We could regulate the kind

NOTE Confidence: 0.831678867340088

00:55:31.005 --> 00:55:31.974 of devices available.

NOTE Confidence: 0.831678867340088

00:55:31.980 --> 00:55:33.768 You know, I talked about these

NOTE Confidence: 0.831678867340088

00:55:33.768 --> 00:55:35.540 open and close system products,

NOTE Confidence: 0.831678867340088

00:55:35.540 --> 00:55:36.515 open system products.

NOTE Confidence: 0.831678867340088

00:55:36.515 --> 00:55:38.140 You can add things in.

NOTE Confidence: 0.831678867340088

00:55:38.140 --> 00:55:39.755 It can sleep through a

NOTE Confidence: 0.831678867340088

00:55:39.755 --> 00:55:41.047 variety of other behaviors,

NOTE Confidence: 0.831678867340088

00:55:41.050 --> 00:55:42.022 but you know,

NOTE Confidence: 0.831678867340088

00:55:42.022 --> 00:55:43.966 there's a concern about that also.

NOTE Confidence: 0.831678867340088

00:55:43.970 --> 00:55:45.806 And you could just allow close

NOTE Confidence: 0.831678867340088

00:55:45.806 --> 00:55:47.419 system devices but close system

NOTE Confidence: 0.831678867340088

00:55:47.419 --> 00:55:49.387 devices were the ones which are

NOTE Confidence: 0.831678867340088

00:55:49.387 --> 00:55:50.770 very popular amongst youth,

NOTE Confidence: 0.831678867340088

00:55:50.770 --> 00:55:52.786 so we really not reached any.

NOTE Confidence: 0.831678867340088

00:55:52.790 --> 00:55:54.558 Consensus about this issue.

NOTE Confidence: 0.831678867340088

00:55:54.558 --> 00:55:58.186 So I just wanted to end with this

NOTE Confidence: 0.831678867340088

00:55:58.186 --> 00:56:01.287 about what you can do as clinicians.

NOTE Confidence: 0.831678867340088

00:56:01.290 --> 00:56:02.990 People working in this area,

NOTE Confidence: 0.831678867340088

00:56:02.990 --> 00:56:04.922 I would say continue to encourage

NOTE Confidence: 0.831678867340088

00:56:04.922 --> 00:56:06.740 your patients to quit smoking.

NOTE Confidence: 0.831678867340088

00:56:06.740 --> 00:56:08.450 I don't think there is.

NOTE Confidence: 0.831678867340088

00:56:08.450 --> 00:56:10.030 I think a combustible cigarette

NOTE Confidence: 0.831678867340088

00:56:10.030 --> 00:56:12.200 use is about the worst behavior,

NOTE Confidence: 0.831678867340088

00:56:12.200 --> 00:56:13.900 especially from a cancer risk,

NOTE Confidence: 0.831678867340088

00:56:13.900 --> 00:56:15.946 so that does need to continue.

NOTE Confidence: 0.831678867340088

00:56:15.950 --> 00:56:17.390 Use treatments that have been

NOTE Confidence: 0.831678867340088

00:56:17.390 --> 00:56:19.634 shown to work and that are approved

NOTE Confidence: 0.831678867340088

00:56:19.634 --> 00:56:21.118 like the existing behavioral

NOTE Confidence: 0.831678867340088

00:56:21.118 --> 00:56:23.110 interventions and gum and Chantix.

NOTE Confidence: 0.831678867340088

00:56:23.110 --> 00:56:25.135 And these are proven interventions

NOTE Confidence: 0.831678867340088

00:56:25.135 --> 00:56:27.160 have been shown to work.

NOTE Confidence: 0.831678867340088

00:56:27.160 --> 00:56:29.260 If nothing else works on your patients,

NOTE Confidence: 0.831678867340088

00:56:29.260 --> 00:56:30.760 want to use his cigarettes,

NOTE Confidence: 0.831678867340088

00:56:30.760 --> 00:56:32.860 then I think you could support them,

NOTE Confidence: 0.831678867340088

00:56:32.860 --> 00:56:34.694 but you need to warn them about

NOTE Confidence: 0.831678867340088

00:56:34.694 --> 00:56:36.497 not over using E cigarettes and

NOTE Confidence: 0.831678867340088

00:56:36.497 --> 00:56:38.092 getting in more nicotine than

NOTE Confidence: 0.831678867340088

00:56:38.092 --> 00:56:39.760 what they normally will do.

NOTE Confidence: 0.831678867340088

00:56:39.760 --> 00:56:41.912 They also need to have a plan for

NOTE Confidence: 0.831678867340088

00:56:41.912 --> 00:56:43.060 quitting cigarettes completely.

NOTE Confidence: 0.831678867340088

00:56:43.060 --> 00:56:44.240 No dual use behaviors,

NOTE Confidence: 0.831678867340088

00:56:44.240 --> 00:56:46.010 you know they shouldn't just use

NOTE Confidence: 0.831678867340088

00:56:46.072 --> 00:56:47.340 the product whenever convenient

NOTE Confidence: 0.831678867340088

00:56:47.340 --> 00:56:49.242 and they should have a plan

NOTE Confidence: 0.831678867340088

00:56:49.300 --> 00:56:50.860 to quit E cigarettes as well.

NOTE Confidence: 0.831678867340088

00:56:50.860 --> 00:56:52.813 We don't want to have a generation

NOTE Confidence: 0.831678867340088

00:56:52.813 --> 00:56:54.306 just dependent on nicotine either

NOTE Confidence: 0.831678867340088

00:56:54.306 --> 00:56:56.406 because we don't know what the long

NOTE Confidence: 0.831678867340088

00:56:56.406 --> 00:56:58.107 term consequences of this are.

NOTE Confidence: 0.831678867340088

00:56:58.110 --> 00:57:00.468 You can also educate your parents

NOTE Confidence: 0.831678867340088

00:57:00.468 --> 00:57:02.441 and help educate communities and

NOTE Confidence: 0.831678867340088

00:57:02.441 --> 00:57:04.457 local schools to really advise them

NOTE Confidence: 0.831678867340088

00:57:04.457 --> 00:57:06.669 of what these products could do.

NOTE Confidence: 0.831678867340088

00:57:06.670 --> 00:57:09.526 And finally I would say really help us

NOTE Confidence: 0.831678867340088

00:57:09.526 --> 00:57:11.868 collect scientific evidence on E cigarettes.

NOTE Confidence: 0.831678867340088

00:57:11.870 --> 00:57:14.806 I know that E cigarettes was on the

NOTE Confidence: 0.831678867340088

00:57:14.806 --> 00:57:17.022 grand challenge during the retreat and

NOTE Confidence: 0.831678867340088

00:57:17.022 --> 00:57:19.595 I hope that this push will continue

NOTE Confidence: 0.831678867340088

00:57:19.595 --> 00:57:22.262 and that you all will be involved

NOTE Confidence: 0.831678867340088

00:57:22.262 --> 00:57:24.626 in helping us collect more toxicity,

NOTE Confidence: 0.831678867340088

00:57:24.626 --> 00:57:26.621 safety and efficacy data on

NOTE Confidence: 0.831678867340088

00:57:26.621 --> 00:57:28.308 these product so we can.

NOTE Confidence: 0.831678867340088

00:57:28.310 --> 00:57:29.345 Regulate them appropriately.

NOTE Confidence: 0.831678867340088

00:57:29.345 --> 00:57:32.490 The point is they are out in the market.

NOTE Confidence: 0.831678867340088

00:57:32.490 --> 00:57:34.940 Everybody is using them and we are

NOTE Confidence: 0.831678867340088

00:57:34.940 --> 00:57:37.008 trying to develop all the signs.

NOTE Confidence: 0.831678867340088

00:57:37.010 --> 00:57:39.236 It's almost like backtracking on the

NOTE Confidence: 0.831678867340088

00:57:39.236 --> 00:57:41.415 development of science and that is

NOTE Confidence: 0.831678867340088

00:57:41.415 --> 00:57:43.613 where many of these concerns have risen.

NOTE Confidence: 0.831678867340088

00:57:43.620 --> 00:57:45.360 So I will stop there.

NOTE Confidence: 0.831678867340088

00:57:45.360 --> 00:57:47.095 Considering the time and happy

NOTE Confidence: 0.831678867340088

00:57:47.095 --> 00:57:48.483 to answer any questions.

NOTE Confidence: 0.822980761528015

00:57:49.350 --> 00:57:50.902 Mr Teacher, thank you.

NOTE Confidence: 0.822980761528015

00:57:50.902 --> 00:57:53.230 I know we're a little late,

NOTE Confidence: 0.822980761528015

00:57:53.230 --> 00:57:55.030 I just actually Melinda Irwin

NOTE Confidence: 0.822980761528015

00:57:55.030 --> 00:57:57.500 sent more comment than a question,

NOTE Confidence: 0.822980761528015

00:57:57.500 --> 00:58:00.293 but I think it's it's important she

NOTE Confidence: 0.822980761528015

00:58:00.293 --> 00:58:02.538 writes important talk an area focus.

NOTE Confidence: 0.822980761528015

00:58:02.540 --> 00:58:05.126 Given the 50% of reduction in

NOTE Confidence: 0.822980761528015

00:58:05.126 --> 00:58:07.320 cancer mortality from the peak.

NOTE Confidence: 0.822980761528015

00:58:07.320 --> 00:58:10.904 Do the tobacco control and obviously I guess,

NOTE Confidence: 0.822980761528015

00:58:10.910 --> 00:58:13.340 given your point, this sort of

NOTE Confidence: 0.822980761528015

00:58:13.340 --> 00:58:15.850 resurgence of exposure 3 cigarettes,

NOTE Confidence: 0.822980761528015

00:58:15.850 --> 00:58:18.544 do you perceive that that actually

NOTE Confidence: 0.822980761528015

00:58:18.544 --> 00:58:21.690 could reverse the trend, as it were?

NOTE Confidence: 0.889474877289363

00:58:22.730 --> 00:58:26.706 I'm hoping not. No, but we do.

NOTE Confidence: 0.889474877289363

00:58:26.710 --> 00:58:28.060 I think the question is

NOTE Confidence: 0.889474877289363

00:58:28.060 --> 00:58:29.850 can we get all these youth?

NOTE Confidence: 0.889474877289363

00:58:29.850 --> 00:58:31.275 Who are the new entrants

NOTE Confidence: 0.889474877289363

00:58:31.275 --> 00:58:32.700 into this area to stop?

NOTE Confidence: 0.889474877289363

00:58:32.700 --> 00:58:34.980 And that's what a lot of prevention work.

NOTE Confidence: 0.889474877289363

00:58:34.980 --> 00:58:36.690 And also our work at Yale.

NOTE Confidence: 0.889474877289363

00:58:36.690 --> 00:58:38.115 We're doing a lot of

NOTE Confidence: 0.889474877289363

00:58:38.115 --> 00:58:38.970 cessation related program,

NOTE Confidence: 0.889474877289363

00:58:38.970 --> 00:58:40.958 so we're doing a lot of education,

NOTE Confidence: 0.889474877289363

00:58:40.960 --> 00:58:42.670 prevention and cessation and high schools.

NOTE Confidence: 0.889474877289363

00:58:42.670 --> 00:58:45.340 So if you or any of you are aware of

NOTE Confidence: 0.889474877289363

00:58:45.421 --> 00:58:47.698 the need, please send me a note and

NOTE Confidence: 0.889474877289363

00:58:47.698 --> 00:58:49.861 we can certainly go out and talk to

NOTE Confidence: 0.889474877289363

00:58:49.861 --> 00:58:52.360 the group if we can prevent these entrance,

NOTE Confidence: 0.889474877289363

00:58:52.360 --> 00:58:53.790 I think we would be.

NOTE Confidence: 0.889474877289363

00:58:53.790 --> 00:58:55.235 We would really serve public

NOTE Confidence: 0.889474877289363

00:58:55.235 --> 00:58:56.680 health very well because we.

NOTE Confidence: 0.889474877289363

00:58:56.680 --> 00:58:59.304 One thing we don't want them to do,

NOTE Confidence: 0.889474877289363

00:58:59.310 --> 00:59:01.098 we don't want them to then

NOTE Confidence: 0.889474877289363

00:59:01.098 --> 00:59:02.930 convert to using the products.

NOTE Confidence: 0.889474877289363

00:59:02.930 --> 00:59:04.855 These are all all these kids are

NOTE Confidence: 0.889474877289363

00:59:04.855 --> 00:59:06.879 going to be nicotine addicted.

NOTE Confidence: 0.889474877289363

00:59:06.880 --> 00:59:09.176 If E cigarettes don't serve them well,

NOTE Confidence: 0.889474877289363

00:59:09.180 --> 00:59:11.154 they're going to want to move

NOTE Confidence: 0.889474877289363

00:59:11.154 --> 00:59:12.470 on to product switch.

NOTE Confidence: 0.889474877289363

00:59:12.470 --> 00:59:13.460 Serve them better.

NOTE Confidence: 0.889474877289363

00:59:13.460 --> 00:59:14.450 Which are cigarettes.

NOTE Confidence: 0.889474877289363

00:59:14.450 --> 00:59:16.774 Cigarette is one of the best nicotine

NOTE Confidence: 0.889474877289363

00:59:16.774 --> 00:59:18.718 delivery devices I have ever seen,

NOTE Confidence: 0.889474877289363

00:59:18.720 --> 00:59:20.634 so that's the biggest concern which

NOTE Confidence: 0.889474877289363

00:59:20.634 --> 00:59:23.399 is will there be a re emergence of

NOTE Confidence: 0.889474877289363

00:59:23.399 --> 00:59:24.823 combustible tobacco and nicotine

NOTE Confidence: 0.889474877289363

00:59:24.823 --> 00:59:27.008 use and will that then lead to?

NOTE Confidence: 0.889474877289363

00:59:27.010 --> 00:59:28.710 The problems we've seen earlier,

NOTE Confidence: 0.889474877289363

00:59:28.710 --> 00:59:30.750 so I can't answer that question.

NOTE Confidence: 0.889474877289363

00:59:30.750 --> 00:59:31.090 Melinda,

NOTE Confidence: 0.889474877289363

00:59:31.090 --> 00:59:32.450 it's a very good

NOTE Confidence: 0.821239793300628

00:59:32.450 --> 00:59:34.120 one though. Well, thank you.

NOTE Confidence: 0.821239793300628

00:59:34.120 --> 00:59:35.770 Excellent talk, you know it.

NOTE Confidence: 0.821239793300628

00:59:35.770 --> 00:59:38.410 It's 103 so I think will will break.

NOTE Confidence: 0.821239793300628

00:59:38.410 --> 00:59:40.566 But I wanted to say thank you

NOTE Confidence: 0.821239793300628

00:59:40.566 --> 00:59:43.028 teacher and Ed for two superb talks.

NOTE Confidence: 0.821239793300628

00:59:43.030 --> 00:59:44.960 Thank you all for attending

NOTE Confidence: 0.821239793300628

00:59:44.960 --> 00:59:47.679 and enjoy the rest of your day.

NOTE Confidence: 0.821239793300628

00:59:47.680 --> 00:59:51.572 Thank you bye bye.