

WEBVTT

00:00:00.000 --> 00:00:01.960 Funding for Yale Cancer Answers

NOTE Confidence: 0.95807236

00:00:01.960 --> 00:00:03.920 is provided by Smilow Cancer

NOTE Confidence: 0.95807236

00:00:03.990 --> 00:00:05.690 Hospital and AstraZeneca.

NOTE Confidence: 0.9644924

00:00:07.850 --> 00:00:09.298 Welcome to Yale Cancer

NOTE Confidence: 0.9644924

00:00:09.298 --> 00:00:10.746 Answers with your host

NOTE Confidence: 0.9644924

00:00:10.750 --> 00:00:12.868 Doctor Anees Chagpar.

NOTE Confidence: 0.9644924

00:00:12.868 --> 00:00:14.280 Yale Cancer Answers features the latest

NOTE Confidence: 0.9644924

00:00:14.340 --> 00:00:16.460 information on cancer care by

NOTE Confidence: 0.9644924

00:00:16.460 --> 00:00:18.156 welcoming oncologists and specialists

NOTE Confidence: 0.9644924

00:00:18.156 --> 00:00:20.442 who are on the forefront of the

NOTE Confidence: 0.9644924

00:00:20.442 --> 00:00:22.368 battle to fight cancer. This week

NOTE Confidence: 0.9644924

00:00:22.368 --> 00:00:24.188 it's a conversation about transfusion

NOTE Confidence: 0.9644924

00:00:24.190 --> 00:00:26.000 oncology with Doctor Edward Snyder.

NOTE Confidence: 0.9644924

00:00:26.000 --> 00:00:28.124 Doctor Snyder is a professor of

NOTE Confidence: 0.9644924

00:00:28.124 --> 00:00:30.333 laboratory medicine at the Yale School

NOTE Confidence: 0.9644924

00:00:30.333 --> 00:00:32.529 of Medicine where Doctor Chagpar is

NOTE Confidence: 0.9644924

00:00:32.530 --> 00:00:36.070 a professor of surgical oncology.

NOTE Confidence: 0.95895237

00:00:36.070 --> 00:00:38.266 Maybe we can start off by

NOTE Confidence: 0.95895237

00:00:38.266 --> 00:00:40.690 you telling us a little bit

NOTE Confidence: 0.95895237

00:00:40.690 --> 00:00:44.146 about yourself and what it is you do.

NOTE Confidence: 0.95895237

00:00:44.150 --> 00:00:46.460 I'm a professor of laboratory medicine.

NOTE Confidence: 0.95895237

00:00:46.460 --> 00:00:48.385 I've been in the field

NOTE Confidence: 0.95895237

00:00:48.385 --> 00:00:49.925 for almost four decades,

NOTE Confidence: 0.95895237

00:00:49.930 --> 00:00:52.740 and transfusion medicine is basically

NOTE Confidence: 0.95895237

00:00:52.740 --> 00:00:55.337 what I do, all aspects of it,

NOTE Confidence: 0.95895237

00:00:55.340 --> 00:00:56.688 supplying the blood,

NOTE Confidence: 0.95895237

00:00:56.688 --> 00:00:58.710 seeing people who have any reactions

NOTE Confidence: 0.95895237

00:00:58.771 --> 00:01:00.251 and providing consultation to

NOTE Confidence: 0.95895237

00:01:00.251 --> 00:01:01.361 oncologists whose patients

NOTE Confidence: 0.95895237

00:01:01.361 --> 00:01:03.530 may need a blood transfusion.

NOTE Confidence: 0.95895237

00:01:03.530 --> 00:01:05.390 And they have some difficulties.

00:01:07.250 --> 00:01:09.476 Talk a bit more about that whole specialty.

NOTE Confidence: 0.9724028

00:01:09.480 --> 00:01:11.468 Because for many of us

NOTE Confidence: 0.9724028

00:01:11.468 --> 00:01:13.404 we don't really think about

NOTE Confidence: 0.9724028

00:01:13.404 --> 00:01:15.428 transfusion medicine or transfusion

NOTE Confidence: 0.9724028

00:01:15.430 --> 00:01:18.406 oncology as a specialty in and of itself.

00:01:21.158 --> 00:01:23.650 Tell us a bit more about

NOTE Confidence: 0.9724028

00:01:23.650 --> 00:01:25.885 what's the purview of

NOTE Confidence: 0.9724028

00:01:25.885 --> 00:01:27.226 people who specialize in that area?

NOTE Confidence: 0.9834391

00:01:27.230 --> 00:01:31.437 Transfusion medicine is an area

NOTE Confidence: 0.9834391

00:01:31.440 --> 00:01:34.624 that originally started off in

NOTE Confidence: 0.9834391

00:01:34.624 --> 00:01:37.697 pathology and what happened was as

NOTE Confidence: 0.9834391

00:01:37.700 --> 00:01:40.046 the field grew pretty much stimulated

NOTE Confidence: 0.9834391

00:01:40.046 --> 00:01:41.610 by infectious disease concerns,

NOTE Confidence: 0.9834391

00:01:41.610 --> 00:01:44.522 it became much more of a consultative

NOTE Confidence: 0.9834391

00:01:44.522 --> 00:01:46.690 service involving medicine and surgery,

NOTE Confidence: 0.9834391

00:01:46.690 --> 00:01:48.640 so the term blood banking,

NOTE Confidence: 0.9834391

00:01:48.640 --> 00:01:51.482 which was really more of the storing  
NOTE Confidence: 0.9834391

00:01:51.482 --> 00:01:54.252 of blood and so forth which we  
NOTE Confidence: 0.9834391

00:01:54.252 --> 00:01:56.860 can talk about in a little bit,  
NOTE Confidence: 0.9834391

00:01:56.860 --> 00:01:59.506 but the consultative aspect of the service  
NOTE Confidence: 0.9834391

00:01:59.506 --> 00:02:02.019 where we talked to other physicians,  
NOTE Confidence: 0.9834391

00:02:02.020 --> 00:02:04.200 you had trouble providing blood  
NOTE Confidence: 0.9834391

00:02:04.200 --> 00:02:06.790 products for patients because of  
NOTE Confidence: 0.9834391

00:02:06.790 --> 00:02:09.170 a variety of concerns and people from  
NOTE Confidence: 0.9834391

00:02:09.170 --> 00:02:11.630 a variety of specialties, pathology,  
NOTE Confidence: 0.9834391

00:02:11.630 --> 00:02:13.720 my backgrounds in internal medicine  
NOTE Confidence: 0.9834391

00:02:13.720 --> 00:02:14.556 and hematology,  
NOTE Confidence: 0.9834391

00:02:14.560 --> 00:02:17.068 others are in anesthesiology or surgery.  
00:02:20.126 --> 00:02:22.918 And it is more than just storing blood in a refrigerator.  
NOTE Confidence: 0.9834391

00:02:22.920 --> 00:02:26.560 It really has to do with supplying the  
NOTE Confidence: 0.9834391

00:02:26.560 --> 00:02:29.183 appropriate blood component for a patient  
NOTE Confidence: 0.9834391

00:02:29.183 --> 00:02:32.930 in the right amount and at the right time.

NOTE Confidence: 0.9834391

00:02:32.930 --> 00:02:34.034 And most physicians, the terminology

00:02:36.680 --> 00:02:38.180 I use or phrase I use,

NOTE Confidence: 0.9834391

00:02:38.180 --> 00:02:40.148 if you don't know your jewels,

00:02:40.774 --> 00:02:42.958 know your jeweler, and most physicians don't

NOTE Confidence: 0.9834391

00:02:42.958 --> 00:02:45.068 really know much about blood transfusion,

NOTE Confidence: 0.9834391

00:02:45.070 --> 00:02:47.359 so they rely very heavily on the blood bank.

NOTE Confidence: 0.9836273

00:02:47.360 --> 00:02:49.313 Tell us a little

NOTE Confidence: 0.9836273

00:02:49.313 --> 00:02:51.378 bit more about the role of

NOTE Confidence: 0.9836273

00:02:51.378 --> 00:02:52.934 transfusion medicine in oncology.

NOTE Confidence: 0.9836273

00:02:52.940 --> 00:02:55.252 I mean, many of us think about using

NOTE Confidence: 0.9836273

00:02:55.252 --> 00:02:56.978 blood in trauma situations where

NOTE Confidence: 0.9836273

00:02:56.978 --> 00:02:59.498 people have lost a lot of blood.

NOTE Confidence: 0.9836273

00:02:59.500 --> 00:03:00.868 But for cancer patients,

NOTE Confidence: 0.9836273

00:03:00.868 --> 00:03:03.630 things might be a little bit different.

NOTE Confidence: 0.9836273

00:03:03.630 --> 00:03:05.863 What are the needs of cancer patients

NOTE Confidence: 0.9836273

00:03:05.863 --> 00:03:07.890 when it comes to transfusions?

NOTE Confidence: 0.92826647

00:03:09.200 --> 00:03:11.678 Many of the chemotherapeutic  
NOTE Confidence: 0.92826647

00:03:11.678 --> 00:03:14.205 regimens that are used to treat  
NOTE Confidence: 0.92826647

00:03:14.205 --> 00:03:16.641 cancer cause what's called a  
NOTE Confidence: 0.92826647

00:03:16.641 --> 00:03:18.727 hyperproliferative state in the bone marrow.  
NOTE Confidence: 0.92826647

00:03:18.730 --> 00:03:21.810 That is, the bone marrow is affected  
NOTE Confidence: 0.92826647

00:03:21.810 --> 00:03:24.632 by the chemotherapy in ways that are  
NOTE Confidence: 0.92826647

00:03:24.632 --> 00:03:27.860 similar to the effect it has on the tumor.  
NOTE Confidence: 0.92826647

00:03:27.860 --> 00:03:30.275 And the goal of chemotherapy  
NOTE Confidence: 0.92826647

00:03:30.275 --> 00:03:32.599 would be to specifically have a  
NOTE Confidence: 0.92826647

00:03:32.599 --> 00:03:35.023 negative impact on the tumor and  
NOTE Confidence: 0.92826647

00:03:35.023 --> 00:03:37.777 to leave all healthy tissue alone.  
NOTE Confidence: 0.92826647

00:03:39.870 --> 00:03:42.120 The chemotherapy also lowers the bone  
NOTE Confidence: 0.92826647

00:03:42.120 --> 00:03:44.648 marrow's ability to make new blood cells,  
NOTE Confidence: 0.92826647

00:03:44.650 --> 00:03:46.122 red cells or platelets,  
NOTE Confidence: 0.92826647

00:03:46.122 --> 00:03:47.594 and when that happens,  
NOTE Confidence: 0.92826647

00:03:47.600 --> 00:03:49.676 the patient becomes anemic and then

NOTE Confidence: 0.92826647

00:03:49.676 --> 00:03:52.280 they need a blood transfusion or if

NOTE Confidence: 0.92826647

00:03:52.280 --> 00:03:54.584 their platelet count gets very low,

NOTE Confidence: 0.92826647

00:03:54.590 --> 00:03:56.430 they'll need a platelet transfusion.

NOTE Confidence: 0.92826647

00:03:56.430 --> 00:03:59.358 The concern is that when you start giving

NOTE Confidence: 0.92826647

00:03:59.358 --> 00:04:01.799 blood products to people that they can

NOTE Confidence: 0.92826647

00:04:01.799 --> 00:04:04.160 develop an antibody to the component,

NOTE Confidence: 0.92826647

00:04:04.160 --> 00:04:07.096 the same way when you get a vaccination,

NOTE Confidence: 0.92826647

00:04:07.100 --> 00:04:09.998 you develop an antibody to the material

NOTE Confidence: 0.92826647

00:04:10.000 --> 00:04 that's injected and some people develop

NOTE Confidence: 0.92826647

00:04:11.885 --> 00:04:13.770 antibodies to red blood cells.

NOTE Confidence: 0.92826647

00:04:13.770 --> 00:04:16.409 Inside they have hemoglobin,

NOTE Confidence: 0.92826647

00:04:16.410 --> 00:04:17.538 which carries oxygen,

NOTE Confidence: 0.92826647

00:04:17.538 --> 00:04:18.666 which is important.

NOTE Confidence: 0.92826647

00:04:18.670 --> 00:04:21.622 But the surface of the cell is also studded

NOTE Confidence: 0.92826647

00:04:21.622 --> 00:04:24.698 with a variety of chemicals called antigens,

NOTE Confidence: 0.92826647

00:04:24.700 --> 00:04:26.968 which are foreign to some patients.  
NOTE Confidence: 0.92826647

00:04:26.970 --> 00:04:29.595 Not everyone has the same blood type.  
NOTE Confidence: 0.92826647

00:04:29.600 --> 00:04:31.490 Everyone knows about ABO types,  
NOTE Confidence: 0.92826647

00:04:31.490 --> 00:04:33.842 but there are hundreds of other  
NOTE Confidence: 0.92826647

00:04:33.842 --> 00:04:36.388 blood types that are on the cell,  
NOTE Confidence: 0.92826647

00:04:36.390 --> 00:04:39.029 most of which are not clinically significant,  
NOTE Confidence: 0.92826647

00:04:39.030 --> 00:04:40.215 but some are.  
NOTE Confidence: 0.92826647

00:04:40.215 --> 00:04:42.585 And when some of those blood  
NOTE Confidence: 0.92826647

00:04:42.585 --> 00:04:45.047 types of the transfused blood,  
NOTE Confidence: 0.92826647

00:04:45.050 --> 00:04:47.618 even though they're compatible for the  
NOTE Confidence: 0.92826647

00:04:47.618 --> 00:04:50.798 ABO system and also the RH system which  
NOTE Confidence: 0.92826647

00:04:50.798 --> 00:04:53.800 many people know of many of the other  
NOTE Confidence: 0.92826647

00:04:53.800 --> 00:04:56.326 blood antigens with names that most  
NOTE Confidence: 0.92826647

00:04:56.326 --> 00:04:58.790 people probably haven't heard of,  
00:05:01.620 --> 00:05:04.038 they can develop antibodies to that,  
NOTE Confidence: 0.92826647

00:05:04.040 --> 00:05:05.636 and when that happens,  
NOTE Confidence: 0.92826647



00:05:05.636 --> 00:05:07.631 it becomes difficult to find  
NOTE Confidence: 0.92826647

00:05:07.631 --> 00:05:09.288 blood for that patient,  
NOTE Confidence: 0.92826647

00:05:09.290 --> 00:05:10.942 especially if they've had  
NOTE Confidence: 0.92826647

00:05:10.942 --> 00:05:11.768 multiple transfusions.  
NOTE Confidence: 0.92826647

00:05:11.770 --> 00:05:13.550 And they've developed multiple antibodies,  
NOTE Confidence: 0.92826647

00:05:13.550 --> 00:05:15.685 so the blood bank director and that  
NOTE Confidence: 0.92826647

00:05:15.685 --> 00:05:17.871 point the consults with the oncologist  
NOTE Confidence: 0.92826647

00:05:17.871 --> 00:05:20.283 because the patient has gotten chemotherapy,  
NOTE Confidence: 0.92826647

00:05:20.290 --> 00:05:22.342 their blood count is dropped and  
NOTE Confidence: 0.92826647

00:05:22.342 --> 00:05:24.808 they need to get a transfusion most  
NOTE Confidence: 0.92826647

00:05:24.808 --> 00:05:27.202 of the time it's not a problem  
NOTE Confidence: 0.92826647

00:05:27.274 --> 00:05:28.810 if things go smoothly,  
NOTE Confidence: 0.92826647

00:05:28.810 --> 00:05:30.988 but on occasion when there are  
NOTE Confidence: 0.92826647

00:05:30.988 --> 00:05:33.205 problems they contact the blood bank  
NOTE Confidence: 0.92826647

00:05:33.205 --> 00:05:35.655 and we work with the physician to  
NOTE Confidence: 0.92826647

00:05:35.655 --> 00:05:37.690 determine how much blood is needed.

NOTE Confidence: 0.92826647  
00:05:37.690 --> 00:05:38.046 Also,  
NOTE Confidence: 0.92826647  
00:05:38.046 --> 00:05:40.182 many surgical patients who have cancer  
NOTE Confidence: 0.92826647  
00:05:40.182 --> 00:05:42.459 require blood during operative procedures.  
NOTE Confidence: 0.92826647  
00:05:42.460 --> 00:05:45.120 And we work with the surgeons as  
NOTE Confidence: 0.92826647  
00:05:45.120 --> 00:05:48.811 well to see how much blood is needed  
NOTE Confidence: 0.92826647  
00:05:48.811 --> 00:05:51.271 and whether they need platelets.  
NOTE Confidence: 0.92826647  
00:05:51.280 --> 00:05:52.450 For example,  
NOTE Confidence: 0.92826647  
00:05:52.450 --> 00:05:54.790 platelets are little fragments  
NOTE Confidence: 0.92826647  
00:05:54.790 --> 00:05:56.545 of blood cells.  
NOTE Confidence: 0.92826647  
00:05:56.550 --> 00:05:58.122 Unrelated to red cells,  
NOTE Confidence: 0.92826647  
00:05:58.122 --> 00:05:59.694 although they all derived  
NOTE Confidence: 0.92826647  
00:05:59.694 --> 00:06:01.130 from common lineages,  
NOTE Confidence: 0.92826647  
00:06:01.130 --> 00:06:05.938 going way way back to embryonic cell growth.  
NOTE Confidence: 0.92826647  
00:06:05.940 --> 00:06:07.968 And platelets are also needed and  
NOTE Confidence: 0.92826647  
00:06:07.968 --> 00:06:10.122 for patients and the number of  
NOTE Confidence: 0.92826647

00:06:10.122 --> 00:06:12.330 platelets may be lower because again,  
NOTE Confidence: 0.92826647

00:06:12.330 --> 00:06:14.050 the chemotherapy or other illnesses  
NOTE Confidence: 0.92826647

00:06:14.050 --> 00:06:16.554 that are part of the illness itself  
NOTE Confidence: 0.92826647

00:06:16.554 --> 00:06:18.720 may cause the platelets to drop.  
NOTE Confidence: 0.92826647

00:06:18.720 --> 00:06:21.560 So if you were to transfuse a platelet,  
NOTE Confidence: 0.92826647

00:06:21.560 --> 00:06:23.474 the platelet count may not go  
NOTE Confidence: 0.92826647

00:06:23.474 --> 00:06:24.750 up to the level  
NOTE Confidence: 0.96768165

00:06:24.826 --> 00:06:27.315 that's wanted, and you wind up having  
NOTE Confidence: 0.96768165

00:06:27.315 --> 00:06:29.268 a patient who can't really receive  
NOTE Confidence: 0.96768165

00:06:29.268 --> 00:06:31.223 platelet transfusions and get  
NOTE Confidence: 0.96768165

00:06:31.223 --> 00:06:33.280 the response that's needed.  
NOTE Confidence: 0.96768165

00:06:33.280 --> 00:06:36.544 The platelet count is not  
NOTE Confidence: 0.96768165

00:06:36.550 --> 00:06:38.986 elevated as expected and that definitely  
NOTE Confidence: 0.96768165

00:06:38.986 --> 00:06:41.008 requires a consultation from the  
NOTE Confidence: 0.96768165

00:06:41.008 --> 00:06:43.018 blood bank with the clinician to  
NOTE Confidence: 0.96768165

00:06:43.018 --> 00:06:45.149 determine what other options there are,

NOTE Confidence: 0.96768165

00:06:45.150 --> 00:06:47.020 and there are multiple options

NOTE Confidence: 0.96768165

00:06:47.020 --> 00:06:48.516 for finding compatible platelets.

NOTE Confidence: 0.96768165

00:06:48.520 --> 00:06:51.288 Then there are other patients who

NOTE Confidence: 0.96768165

00:06:51.288 --> 00:06:53.713 have other illnesses where the plasma

NOTE Confidence: 0.96768165

00:06:53.713 --> 00:06:56.750 levels of some plasma products may be low,

NOTE Confidence: 0.96768165

00:06:56.750 --> 00:06:59.734 and they would need a plasma transfusion,

NOTE Confidence: 0.96768165

00:06:59.740 --> 00:07:03.496 so blood banks get involved in a

NOTE Confidence: 0.96768165

00:07:03.500 --> 00:07:05.996 variety of issues related to oncology,

NOTE Confidence: 0.96768165

00:07:06.000 --> 00:07:08.684 whether it's surgical or

NOTE Confidence: 0.96768165

00:07:08.684 --> 00:07:10.697 whether it's chemotherapy, or

NOTE Confidence: 0.96768165

00:07:10.700 --> 00:07:12.640 whether it's illness based.

NOTE Confidence: 0.96768165

00:07:12.640 --> 00:07:13.804 In some cancers,

NOTE Confidence: 0.96768165

00:07:13.810 --> 00:07:16.690 the bone marrow is affected by the growth

NOTE Confidence: 0.96768165

00:07:16.690 --> 00:07:19.514 of the tumor and the tumor actually

NOTE Confidence: 0.96768165

00:07:19.514 --> 00:07:22.369 replaces some of the bone marrow

NOTE Confidence: 0.96768165

00:07:22.370 --> 00:07:26.479 causing platelet counts to become too low

NOTE Confidence: 0.96768165

00:07:26.480 --> 00:07:28.958 and for patients who actually have a good

NOTE Confidence: 0.96768165

00:07:28.958 --> 00:07:31.175 lifestyle and we consult for those

NOTE Confidence: 0.96768165

00:07:31.175 --> 00:07:33.700 issues as well, so

NOTE Confidence: 0.96768165

00:07:33.700 --> 00:07:34.420 in addition,

NOTE Confidence: 0.96768165

00:07:34.420 --> 00:07:36.658 if someone gets a transfusion and

NOTE Confidence: 0.96768165

00:07:36.658 --> 00:07:39.118 they have a reaction of some type,

NOTE Confidence: 0.96768165

00:07:39.120 --> 00:07:42.000 whether it's a nallergic reaction or a fever,

NOTE Confidence: 0.96768165

00:07:42.000 --> 00:07:44.166 we consult with that as well.

NOTE Confidence: 0.96768165

00:07:44.170 --> 00:07:45.614 So we're pretty busy.

NOTE Confidence: 0.96768165

00:07:45.614 --> 00:07:47.780 It's a very clinically oriented specialty.

NOTE Confidence: 0.97068

00:07:47.780 --> 00:07:51.029 You make a few really good points,

NOTE Confidence: 0.97068

00:07:51.030 --> 00:07:53.263 and one of which is that some

NOTE Confidence: 0.97068

00:07:53.263 --> 00:07:55.123 cancer patients will need repetitive

NOTE Confidence: 0.97068

00:07:55.123 --> 00:07:57.218 transfusions and can build up

NOTE Confidence: 0.97068

00:07:57.220 --> 00:07:58.876 these antibody responses.

NOTE Confidence: 0.97068

00:07:58.876 --> 00:08:01.636 So just out of curiosity,

NOTE Confidence: 0.97068

00:08:01.640 --> 00:08:03.908 how do you get around that?

00:08:05.374 --> 00:08:08.047 I think this is a question that

NOTE Confidence: 0.97068

00:08:08.047 --> 00:08:10.057 many patients and their families

NOTE Confidence: 0.97068

00:08:10.057 --> 00:08:12.792 may have is should we be donating

NOTE Confidence: 0.97068

00:08:12.792 --> 00:08:14.898 our own blood and banking it,

NOTE Confidence: 0.97068

00:08:14.900 --> 00:08:16.412 knowing that we may,

NOTE Confidence: 0.97068

00:08:16.412 --> 00:08:18.160 with chemotherapy, for example,

NOTE Confidence: 0.97068

00:08:18.160 --> 00:08:21.130 need a transfusion in the future?

NOTE Confidence: 0.97068

00:08:21.130 --> 00:08:23.670 Are there particular banks that

NOTE Confidence: 0.97068

00:08:23.670 --> 00:08:26.824 have rare blood types where

NOTE Confidence: 0.97068

00:08:26.824 --> 00:08:29.449 people who have developed

NOTE Confidence: 0.97068

00:08:29.449 --> 00:08:31.549 many antibodies to various

NOTE Confidence: 0.97068

00:08:31.641 --> 00:08:34.569 antigens can still find blood?

NOTE Confidence: 0.97068

00:08:34.570 --> 00:08:38.189 How do you work around those issues?

NOTE Confidence: 0.9032252

00:08:39.140 --> 00:08:41.078 Well, one needs to be creative,

NOTE Confidence: 0.9032252

00:08:41.080 --> 00:08:42.700 so let's get some definitions,

NOTE Confidence: 0.9032252

00:08:42.700 --> 00:08:44.465 orthologous blood auto logus who

NOTE Confidence: 0.9032252

00:08:44.465 --> 00:08:46.230 pronounced autologous is your own

NOTE Confidence: 0.9032252

00:08:46.285 --> 00:08:47.887 blood being given back to you,

NOTE Confidence: 0.9032252

00:08:47.890 --> 00:08:50.474 and so some of our listeners may say,

NOTE Confidence: 0.9032252

00:08:50.480 --> 00:08:53.064 well, why can't I store my own blood?

NOTE Confidence: 0.9032252

00:08:53.070 --> 00:08:55.654 Well, if your blood count is high enough,

NOTE Confidence: 0.9032252

00:08:55.660 --> 00:08:57.903 you can store your own blood

NOTE Confidence: 0.9032252

00:08:57.903 --> 00:08:59.954 someplace and it used to be very popular

NOTE Confidence: 0.9032252

00:08:59.954 --> 00:09:02.508 to do that during the AIDS

NOTE Confidence: 0.9032252

00:09:02.508 --> 00:09:04.739 epidemic when people were very concerned

NOTE Confidence: 0.9032252

00:09:04.740 --> 00:09:06.360 but that when the AIDS,

NOTE Confidence: 0.9032252

00:09:06.360 --> 00:09:08.982 a virus and how to treat, it became.

NOTE Confidence: 0.9032252

00:09:08.982 --> 00:09:10.687 Part of standard of care

NOTE Confidence: 0.9032252

00:09:10.687 --> 00:09:12.430 for for AIDS patients,

NOTE Confidence: 0.9032252

00:09:12.430 --> 00:09:14.425 the need to provide it their own  
NOTE Confidence: 0.9032252

00:09:14.425 --> 00:09:16.329 blood really wasn't important anymore.  
NOTE Confidence: 0.9032252

00:09:16.330 --> 00:09:18.598 And many blood centers stopped that practice.  
NOTE Confidence: 0.9032252

00:09:18.600 --> 00:09:20.586 One of the problems with donating  
NOTE Confidence: 0.9032252

00:09:20.586 --> 00:09:22.913 your own blood is you have to  
NOTE Confidence: 0.9032252

00:09:22.913 --> 00:09:24.773 have a blood count high enough,  
NOTE Confidence: 0.9032252

00:09:24.780 --> 00:09:27.055 otherwise you become anemic and you just  
NOTE Confidence: 0.9032252

00:09:27.055 --> 00:09:29.681 have to give you the blood right back  
NOTE Confidence: 0.9032252

00:09:29.681 --> 00:09:31.977 or they were actually blood banks that  
NOTE Confidence: 0.9032252

00:09:31.977 --> 00:09:34.521 were set up where you could freeze blood,  
NOTE Confidence: 0.9032252

00:09:34.530 --> 00:09:37.130 which was fine as I used to say,  
NOTE Confidence: 0.9032252

00:09:37.130 --> 00:09:39.755 unless you're on a vacation in Hawaii.  
NOTE Confidence: 0.9032252

00:09:39.760 --> 00:09:41.422 And something happens and you need  
NOTE Confidence: 0.9032252

00:09:41.422 --> 00:09:43.508 blood and the blood is frozen in the  
NOTE Confidence: 0.9032252

00:09:43.508 --> 00:09:45.460 New York or in Washington or New Haven.  
NOTE Confidence: 0.9032252

00:09:45.460 --> 00:09:48.628 And you can't get to it.



NOTE Confidence: 0.9032252

00:09:48.630 --> 00:09:50.650 It became clear that donating

NOTE Confidence: 0.9032252

00:09:50.650 --> 00:09:52.670 blood for yourself really wasn't

NOTE Confidence: 0.9032252

00:09:52.736 --> 00:09:54.296 going to be very useful,

NOTE Confidence: 0.9032252

00:09:54.300 --> 00:09:56.190 and practice is not really

NOTE Confidence: 0.9032252

00:09:56.190 --> 00:09:58.080 done much anymore at all.

NOTE Confidence: 0.9032252

00:09:58.080 --> 00:10:00.880 Very some places don't even accept some blood

NOTE Confidence: 0.9032252

00:10:00.880 --> 00:10:03.370 centers don't even accept autologous blood.

NOTE Confidence: 0.9032252

00:10:03.370 --> 00:10:06.401 The second would be a directed donation

NOTE Confidence: 0.9032252

00:10:06.401 --> 00:10:09.196 where a family member would donate

NOTE Confidence: 0.9032252

00:10:09.196 --> 00:10:12.028 a unit of blood specifically for.

NOTE Confidence: 0.9032252

00:10:12.030 --> 00:10:13.206 The patient that requires,

NOTE Confidence: 0.9032252

00:10:13.206 --> 00:10:15.630 of course that the blood be compatible,

NOTE Confidence: 0.9032252

00:10:15.630 --> 00:10:17.260 which is often is not.

NOTE Confidence: 0.9032252

00:10:17.260 --> 00:10:18.241 In addition, come,

NOTE Confidence: 0.9032252

00:10:18.241 --> 00:10:19.876 it's not just a relative,

NOTE Confidence: 0.9032252

00:10:19.880 --> 00:10:21.515 but some people wanted close  
NOTE Confidence: 0.9032252

00:10:21.515 --> 00:10:22.169 personal friends,  
NOTE Confidence: 0.9032252

00:10:22.170 --> 00:10:22.496 or,  
NOTE Confidence: 0.9032252

00:10:22.496 --> 00:10:24.126 as I used to comment,  
NOTE Confidence: 0.9032252

00:10:24.130 --> 00:10:25.765 the captain of their bowling  
NOTE Confidence: 0.9032252

00:10:25.765 --> 00:10:27.400 team was a close friend,  
NOTE Confidence: 0.9032252

00:10:27.400 --> 00:10:29.395 so they wanted the captain of the  
NOTE Confidence: 0.9032252

00:10:29.395 --> 00:10:31.362 bowling team to donate blood for  
NOTE Confidence: 0.9032252

00:10:31.362 --> 00:10:33.107 them because they believe that  
NOTE Confidence: 0.9032252

00:10:33.107 --> 00:10:34.918 because they were their friend,  
NOTE Confidence: 0.9032252

00:10:34.920 --> 00:10:36.430 they were biologically safer as  
NOTE Confidence: 0.9032252

00:10:36.430 --> 00:10:38.717 a donor and they didn't have to  
NOTE Confidence: 0.9032252

00:10:38.717 --> 00:10:40.145 worry about different diseases.  
NOTE Confidence: 0.9032252

00:10:40.150 --> 00:10:42.579 Well, quite frankly, you don't know what.  
NOTE Confidence: 0.9032252

00:10:42.580 --> 00:10:45.485 The captain of your bowling team is,  
NOTE Confidence: 0.9032252

00:10:45.490 --> 00:10:48.818 it does after they leave the bowling alley.

NOTE Confidence: 0.9032252

00:10:48.820 --> 00:10:50.998 So directed donations as a means

NOTE Confidence: 0.9032252

00:10:50.998 --> 00:10:52.968 of getting blood from someone

NOTE Confidence: 0.9032252

00:10:52.968 --> 00:10:55.218 you're comfortable with doesn't is

NOTE Confidence: 0.9032252

00:10:55.218 --> 00:10:57.560 in practice much anymore either.

NOTE Confidence: 0.9032252

00:10:57.560 --> 00:11:00.880 So that leaves us with the third category,

NOTE Confidence: 0.9032252

00:11:00.880 --> 00:11:03.799 which is what is called allogenic LLOGENEC,

NOTE Confidence: 0.9032252

00:11:03.800 --> 00:11:06.290 which is blood from other people.

NOTE Confidence: 0.9032252

00:11:06.290 --> 00:11:09.202 And that's what almost all the blood

NOTE Confidence: 0.9032252

00:11:09.202 --> 00:11:12.386 that we provide is blood from people

NOTE Confidence: 0.9032252

00:11:12.386 --> 00:11:15.170 who are concerned about their fellow.

NOTE Confidence: 0.9032252

00:11:15.170 --> 00:11:18.075 Human and they donate blood or they

NOTE Confidence: 0.9032252

00:11:18.075 --> 00:11:20.638 donate platelets or they donate red

NOTE Confidence: 0.9032252

00:11:20.638 --> 00:11:23.104 cells or plasma to blood centers.

NOTE Confidence: 0.9032252

00:11:23.110 --> 00:11:24.886 And that's the blood that's given.

NOTE Confidence: 0.9032252

00:11:24.890 --> 00:11:26.822 We have ways of matching the blood

NOTE Confidence: 0.9032252

00:11:26.822 --> 00:11:28.660 so that the antigens I talked  
NOTE Confidence: 0.9032252

00:11:28.660 --> 00:11:30.235 about are not a problem.  
NOTE Confidence: 0.9032252

00:11:30.240 --> 00:11:32.608 We pick out for someone who was typo.  
NOTE Confidence: 0.9032252

00:11:32.610 --> 00:11:33.798 We give old blood.  
NOTE Confidence: 0.9032252

00:11:33.798 --> 00:11:35.283 If someone is type A,  
NOTE Confidence: 0.93231624

00:11:35.290 --> 00:11:37.159 we can give type A blood or  
NOTE Confidence: 0.93231624

00:11:37.159 --> 00:11:39.306 type O blood and so forth and  
NOTE Confidence: 0.93231624

00:11:39.306 --> 00:11:41.226 so on for the various antigens.  
NOTE Confidence: 0.93231624

00:11:41.230 --> 00:11:43.204 And we have a whole system  
NOTE Confidence: 0.93231624

00:11:43.204 --> 00:11:45.470 set up in blood banking of.  
NOTE Confidence: 0.93231624

00:11:45.470 --> 00:11:48.102 Of cells that allow us to determine  
NOTE Confidence: 0.93231624

00:11:48.102 --> 00:11:50.291 blood that's compatible and we do  
NOTE Confidence: 0.93231624

00:11:50.291 --> 00:11:52.277 that so that kind of compatibility  
NOTE Confidence: 0.93231624

00:11:52.277 --> 00:11:54.401 testing is sort of the bread and  
NOTE Confidence: 0.93231624

00:11:54.401 --> 00:11:56.387 butter of what blood banks do and  
NOTE Confidence: 0.93231624

00:11:56.387 --> 00:11:58.718 and that's that is taken care of if

NOTE Confidence: 0.93231624

00:11:58.718 --> 00:12:00.578 it comes to problems where someone

NOTE Confidence: 0.93231624

00:12:00.578 --> 00:12:02.878 with a local blood bank can't

NOTE Confidence: 0.93231624

00:12:02.878 --> 00:12:04.614 find anything that's compatible.

NOTE Confidence: 0.93231624

00:12:04.620 --> 00:12:06.776 You have systems like the Red Cross

NOTE Confidence: 0.93231624

00:12:06.776 --> 00:12:09.098 that have 35 or 40 blood centers

NOTE Confidence: 0.93231624

00:12:09.098 --> 00:12:11.096 around the country and they have

NOTE Confidence: 0.93231624

00:12:11.169 --> 00:12:13.287 what they call rare donor files

NOTE Confidence: 0.93231624

00:12:13.287 --> 00:12:15.492 where they have peoples blood types

NOTE Confidence: 0.93231624

00:12:15.492 --> 00:12:18.264 on record and they can ask for

NOTE Confidence: 0.93231624

00:12:18.264 --> 00:12:21.173 blood to be sent if they have them

NOTE Confidence: 0.93231624

00:12:21.173 --> 00:12:23.723 frozen or they may have liquid

NOTE Confidence: 0.93231624

00:12:23.723 --> 00:12:25.615 units that aren't frozen.

NOTE Confidence: 0.93231624

00:12:25.620 --> 00:12:27.834 And there are ways of working

NOTE Confidence: 0.93231624

00:12:27.834 --> 00:12:29.818 with the larger blood providers

NOTE Confidence: 0.93231624

00:12:29.818 --> 00:12:31.988 to work around that issue.

NOTE Confidence: 0.93231624

00:12:31.990 --> 00:12:33.975 There are other blood systems  
NOTE Confidence: 0.93231624

00:12:33.975 --> 00:12:35.563 besides the ABO system.  
NOTE Confidence: 0.93231624

00:12:35.570 --> 00:12:38.266 One is the HLA system and  
NOTE Confidence: 0.93231624

00:12:38.266 --> 00:12:41.051 people may have antibodies to HLA or  
NOTE Confidence: 0.93231624

00:12:41.051 --> 00:12:43.930 they may have antibodies to platelets.  
NOTE Confidence: 0.93231624

00:12:43.930 --> 00:12:46.120 There are platelet antigens like there  
NOTE Confidence: 0.93231624

00:12:46.120 --> 00:12:49.114 are red cells and again the Red  
NOTE Confidence: 0.93231624

00:12:49.114 --> 00:12:51.280 Cross has donor records and we  
NOTE Confidence: 0.93231624

00:12:51.280 --> 00:12:54.160 can test and find people who are  
NOTE Confidence: 0.93231624

00:12:54.160 --> 00:12:56.235 compatible for the patient.  
NOTE Confidence: 0.93231624

00:12:56.240 --> 00:12:57.990 There's a whole series of  
NOTE Confidence: 0.93231624

00:12:57.990 --> 00:13:00.040 things that we have to do.  
NOTE Confidence: 0.93231624

00:13:00.040 --> 00:13:02.476 You can't just have a small blood  
NOTE Confidence: 0.93231624

00:13:02.476 --> 00:13:04.867 bank working on its own.  
NOTE Confidence: 0.93231624

00:13:04.870 --> 00:13:08.320 You really need to be part of a large system,  
NOTE Confidence: 0.93231624

00:13:08.320 --> 00:13:10.040 certainly a hospital like Yale,

NOTE Confidence: 0.93231624

00:13:10.040 --> 00:13:12.455 with 1600 beds and many,

NOTE Confidence: 0.93231624

00:13:12.460 --> 00:13:14.025 many patients who are fortunately

NOTE Confidence: 0.93231624

00:13:14.025 --> 00:13:16.039 living longer and longer with malignant

NOTE Confidence: 0.93231624

00:13:16.039 --> 00:13:17.627 conditions that are treatable.

NOTE Confidence: 0.93231624

00:13:17.630 --> 00:13:20.129 But when they're transfused a lot during

NOTE Confidence: 0.93231624

00:13:20.129 --> 00:13:22.459 their therapy when they come back,

NOTE Confidence: 0.93231624

00:13:22.460 --> 00:13:25.004 if they have a relapse then the

NOTE Confidence: 0.93231624

00:13:25.004 --> 00:13:27.399 possibility of having incompatible blood

NOTE Confidence: 0.93231624

00:13:27.400 --> 00:13:29.848 either for red cells or incompatibility

NOTE Confidence: 0.93231624

00:13:29.848 --> 00:13:32.213 with platelets becomes a real issue

NOTE Confidence: 0.93231624

00:13:32.213 --> 00:13:34.537 and you need a large support structure

NOTE Confidence: 0.93231624

00:13:34.537 --> 00:13:36.653 in blood centers to provide blood

NOTE Confidence: 0.93231624

00:13:36.653 --> 00:13:39.112 so that the patient can be treated

NOTE Confidence: 0.93231624

00:13:39.112 --> 00:13:41.308 and go into remission again.

NOTE Confidence: 0.93231624

00:13:41.310 --> 00:13:44.238 So there's a lot we have to do.

NOTE Confidence: 0.93231624

00:13:44.240 --> 00:13:46.662 We consult on a lot of different  
NOTE Confidence: 0.93231624

00:13:46.662 --> 00:13:49.359 issues and it keeps us pretty busy.  
NOTE Confidence: 0.97330827

00:13:50.360 --> 00:13:53.062 Great, well, we're going to take a  
NOTE Confidence: 0.97330827

00:13:53.062 --> 00:13:55.609 short break for a medical minute.  
NOTE Confidence: 0.97330827

00:13:55.610 --> 00:13:58.034 Please stay tuned to learn more  
NOTE Confidence: 0.97330827

00:13:58.034 --> 00:13:59.246 about transfusion oncology  
NOTE Confidence: 0.97330827

00:13:59.250 --> 00:14:01.668 with my guest doctor Edward Snyder.  
NOTE Confidence: 0.97330827

00:14:01.670 --> 00:14:03.690 Funding for Yale Cancer Answers  
NOTE Confidence: 0.97330827

00:14:03.690 --> 00:14:05.710 comes from Smilow Cancer Hospital where  
NOTE Confidence: 0.97330827

00:14:05.710 --> 00:14:08.104 15 care centers offer access to  
NOTE Confidence: 0.97330827

00:14:08.104 --> 00:14:09.700 oncologists committed to providing  
NOTE Confidence: 0.97330827

00:14:09.761 --> 00:14:12.179 patients with cancer and blood diseases  
NOTE Confidence: 0.97330827

00:14:12.180 --> 00:14:13.392 individualized, innovative care.  
NOTE Confidence: 0.97330827

00:14:13.392 --> 00:14:15.808 Find a Smilow Care Center near  
NOTE Confidence: 0.97330827

00:14:15.808 --> 00:14:17.014 you at [yalecancercenter.org](http://yalecancercenter.org).  
NOTE Confidence: 0.9852343

00:14:19.070 --> 00:14:21.608 The American Cancer Society estimates that



NOTE Confidence: 0.9852343

00:14:21.608 --> 00:14:24.521 over 200,000 cases of Melanoma will be

NOTE Confidence: 0.9852343

00:14:24.521 --> 00:14:27.202 diagnosed in the United States this year,

NOTE Confidence: 0.9852343

00:14:27.210 --> 00:14:30.059 with over 1000 patients in Connecticut alone.

NOTE Confidence: 0.9852343

00:14:30.060 --> 00:14:32.095 While Melanoma accounts for only

NOTE Confidence: 0.9852343

00:14:32.095 --> 00:14:34.462 about 1% of skin cancer cases,

NOTE Confidence: 0.9852343

00:14:34.462 --> 00:14:37.390 it causes the most skin cancer deaths,

NOTE Confidence: 0.9852343

00:14:37.390 --> 00:14:38.930 but when detected early,

NOTE Confidence: 0.9852343

00:14:38.930 --> 00:14:41.860 it is easily treated and highly curable.

NOTE Confidence: 0.9852343

00:14:41.860 --> 00:14:44.320 Clinical trials are currently underway

NOTE Confidence: 0.9852343

00:14:44.320 --> 00:14:46.288 at federally designated Comprehensive

NOTE Confidence: 0.9852343

00:14:46.288 --> 00:14:48.474 cancer centers such as Yale Cancer

NOTE Confidence: 0.9852343

00:14:48.474 --> 00:14:50.700 Center and at Smilow Cancer Hospital

NOTE Confidence: 0.9852343

00:14:50.700 --> 00:14:52.740 to test innovative new treatments

NOTE Confidence: 0.9852343

00:14:52.740 --> 00:14:53.556 for Melanoma.

NOTE Confidence: 0.9852343

00:14:53.560 --> 00:14:56.104 The goal of the specialized programs

NOTE Confidence: 0.9852343

00:14:56.104 --> 00:14:58.253 of research excellence and Skin  
NOTE Confidence: 0.9852343

00:14:58.253 --> 00:15:00.515 Cancer Grant is to better understand  
NOTE Confidence: 0.9852343

00:15:00.515 --> 00:15:02.529 the biology of skin cancer  
NOTE Confidence: 0.9852343

00:15:02.530 --> 00:15:04.265 with a focus on discovering  
NOTE Confidence: 0.9852343

00:15:04.265 --> 00:15:06.615 targets that will lead to improved  
NOTE Confidence: 0.9852343

00:15:06.615 --> 00:15:08.238 diagnosis and treatment.  
NOTE Confidence: 0.9852343

00:15:08.240 --> 00:15:10.340 More information is available at  
NOTE Confidence: 0.9852343

00:15:10.340 --> 00:15:11.600 yalecancercenter.org. You're listening  
NOTE Confidence: 0.9852343

00:15:11.600 --> 00:15:13.139 to Connecticut Public Radio.  
NOTE Confidence: 0.9751068

00:15:15.690 --> 00:15:17.880 Welcome back to Yale Cancer Answers.  
NOTE Confidence: 0.9751068

00:15:17.880 --> 00:15:20.848 This is doctor Anees Chagpar and I'm  
NOTE Confidence: 0.9751068

00:15:20.848 --> 00:15:23.744 joined tonight by my guest Doctor Ed Snyder.  
NOTE Confidence: 0.9751068

00:15:23.744 --> 00:15:25.252 We're talking about transfusion  
NOTE Confidence: 0.9751068

00:15:25.252 --> 00:15:27.370 oncology and right before the break  
NOTE Confidence: 0.9751068

00:15:27.370 --> 00:15:29.708 Ed you were talking about the fact  
NOTE Confidence: 0.9751068

00:15:29.708 --> 00:15:31.696 that some cancer patients require

NOTE Confidence: 0.9751068

00:15:31.696 --> 00:15:33.528 multiple transfusions and there's

NOTE Confidence: 0.9751068

00:15:33.528 --> 00:15:36.587 really a benefit to being part of a

NOTE Confidence: 0.9751068

00:15:36.587 --> 00:15:38.675 large system such as the Red Cross,

NOTE Confidence: 0.9751068

00:15:38.675 --> 00:15:41.160 where if you have developed

NOTE Confidence: 0.9751068

00:15:41.160 --> 00:15:43.797 antibodies to a particular antigen in blood,

NOTE Confidence: 0.9751068

00:15:43.800 --> 00:15:47.016 that there still are rare donors who

NOTE Confidence: 0.9751068

00:15:47.020 --> 00:15:49.190 could provide blood for you,

NOTE Confidence: 0.9751068

00:15:49.190 --> 00:15:51.728 but I wonder about other modalities

NOTE Confidence: 0.9751068

00:15:51.728 --> 00:15:53.931 that might actually reduce our

NOTE Confidence: 0.9751068

00:15:53.931 --> 00:15:55.679 need for blood transfusions.

NOTE Confidence: 0.9751068

00:15:55.680 --> 00:15:57.845 So what are your thoughts

NOTE Confidence: 0.9751068

00:15:57.845 --> 00:15:59.577 on things like that?

NOTE Confidence: 0.9751068

00:15:59.580 --> 00:16:02.541 I know that for many of our

NOTE Confidence: 0.9751068

00:16:02.541 --> 00:16:04.769 cancer patients there are drugs,

NOTE Confidence: 0.9751068

00:16:04.770 --> 00:16:05.868 for example,

NOTE Confidence: 0.9751068

00:16:05.868 --> 00:16:09.162 that oncologists use either to increase  
NOTE Confidence: 0.9751068

00:16:09.162 --> 00:16:12.746 red blood cells or white blood cells.  
NOTE Confidence: 0.9751068

00:16:12.750 --> 00:16:14.787 How effective are they and do  
NOTE Confidence: 0.9751068

00:16:14.787 --> 00:16:17.030 you find that that reduces the  
NOTE Confidence: 0.9751068

00:16:17.030 --> 00:16:18.766 transfusion needs for patients?  
NOTE Confidence: 0.9468253

00:16:19.860 --> 00:16:22.793 Well, yes, the saying that we have  
NOTE Confidence: 0.9468253

00:16:22.793 --> 00:16:25.201 in transfusion is the safest unit  
NOTE Confidence: 0.9468253

00:16:25.201 --> 00:16:28.090 of blood is the one you don't get.  
NOTE Confidence: 0.9468253

00:16:28.090 --> 00:16:30.328 And even though we do everything  
NOTE Confidence: 0.9468253

00:16:30.328 --> 00:16:33.189 we can to ensure the blood safety,  
NOTE Confidence: 0.9468253

00:16:33.190 --> 00:16:35.542 there are still the possibility of concerns  
NOTE Confidence: 0.9468253

00:16:35.542 --> 00:16:37.889 regarding fever or transmission of illnesses.  
NOTE Confidence: 0.9468253

00:16:37.890 --> 00:16:40.887 As anytime you do any kind of a  
NOTE Confidence: 0.9468253

00:16:40.887 --> 00:16:43.302 transplant which really a transplant  
NOTE Confidence: 0.9468253

00:16:43.302 --> 00:16:46.520 is really what a blood transfusion is.  
NOTE Confidence: 0.9468253

00:16:46.520 --> 00:16:49.744 Only it's a transplant of red blood cells.

NOTE Confidence: 0.9468253

00:16:49.750 --> 00:16:50.193 Platelets.

NOTE Confidence: 0.9468253

00:16:50.193 --> 00:16:52.851 There are a variety of reagents which

NOTE Confidence: 0.9468253

00:16:52.851 --> 00:16:55.523 are designed to stimulate red cell

NOTE Confidence: 0.9468253

00:16:55.523 --> 00:16:58.055 production from some of those have

NOTE Confidence: 0.9468253

00:16:58.055 --> 00:17:00.194 shown to cause problems and are

NOTE Confidence: 0.9468253

00:17:00.194 --> 00:17:02.590 not used as often as they were.

NOTE Confidence: 0.9468253

00:17:07.080 --> 00:17:09.999 There are agents that can be used

NOTE Confidence: 0.9468253

00:17:09.999 --> 00:17:11.920 to stimulate platelets as well.

00:17:18.020 --> 00:17:20.498 But those are predicated on the fact

NOTE Confidence: 0.9468253

00:17:20.498 --> 00:17:23.078 that your bone marrow can actually make

NOTE Confidence: 0.9468253

00:17:23.078 --> 00:17:25.685 more if your bone marrow is damaged

NOTE Confidence: 0.9468253

00:17:25.685 --> 00:17:28.261 and you don't have the cells that

NOTE Confidence: 0.9468253

00:17:28.261 --> 00:17:30.480 can respond to those chemicals and

NOTE Confidence: 0.9468253

00:17:30.480 --> 00:17:33.126 actually make more of those kinds of

NOTE Confidence: 0.9468253

00:17:33.126 --> 00:17:35.950 cells that they're not going to be effective.

NOTE Confidence: 0.9468253

00:17:35.950 --> 00:17:37.780 Although there are those chemical

NOTE Confidence: 0.9468253

00:17:37.780 --> 00:17:39.980 reagents that can be used,

NOTE Confidence: 0.9468253

00:17:39.980 --> 00:17:42.170 they may in some patients have

NOTE Confidence: 0.9468253

00:17:42.170 --> 00:17:44.016 limited usefulness, so a transfusion

NOTE Confidence: 0.9468253

00:17:44.016 --> 00:17:45.876 I think although people try

NOTE Confidence: 0.9468253

00:17:45.876 --> 00:17:47.609 to minimize the times,

NOTE Confidence: 0.9468253

00:17:47.610 --> 00:17:49.590 blood transfusions are needed,

NOTE Confidence: 0.9468253

00:17:49.590 --> 00:17:52.560 they still need to be there.

NOTE Confidence: 0.9468253

00:17:52.560 --> 00:17:54.174 One of the things that's important

NOTE Confidence: 0.9468253

00:17:54.174 --> 00:17:56.417 about that is a concern about the reactions.

NOTE Confidence: 0.9468253

00:17:58.270 --> 00:18:00.798 And there's a variety of types of reactions,

NOTE Confidence: 0.9468253

00:18:00.800 --> 00:18:03.970 one of which is a febrile which is a fever,

NOTE Confidence: 0.9468253

00:18:03.970 --> 00:18:05.555 and that's because when you're

NOTE Confidence: 0.9468253

00:18:05.555 --> 00:18:06.823 giving a foreign protein,

NOTE Confidence: 0.9468253

00:18:06.830 --> 00:18:09.358 which blood cells have proteins on them,

NOTE Confidence: 0.9468253

00:18:09.360 --> 00:18:10.950 you can get a fever.

NOTE Confidence: 0.9468253

00:18:10.950 --> 00:18:12.530 There's that in and of  
NOTE Confidence: 0.9468253

00:18:12.530 --> 00:18:13.794 itself is not dangerous.  
NOTE Confidence: 0.9468253

00:18:13.800 --> 00:18:14.434 It's uncomfortable,  
NOTE Confidence: 0.9468253

00:18:14.434 --> 00:18:16.970 and we like to minimize that from happening.  
NOTE Confidence: 0.9468253

00:18:16.970 --> 00:18:19.506 But patients do can get a fever.  
NOTE Confidence: 0.9468253

00:18:19.510 --> 00:18:21.090 They can also get hives,  
NOTE Confidence: 0.9468253

00:18:21.090 --> 00:18:22.760 or they can get allergic  
NOTE Confidence: 0.9468253

00:18:22.760 --> 00:18:25.178 reactions they can also have some  
NOTE Confidence: 0.9468253

00:18:25.178 --> 00:18:26.790 other kinds of complications,  
NOTE Confidence: 0.9468253

00:18:26.790 --> 00:18:28.835 all of which the transfusion  
NOTE Confidence: 0.9468253

00:18:28.835 --> 00:18:31.735 service is aware of and we try  
NOTE Confidence: 0.9468253

00:18:31.735 --> 00:18:34.039 to minimize as much as possible.  
NOTE Confidence: 0.9468253

00:18:34.040 --> 00:18:36.055 One of the areas that's  
NOTE Confidence: 0.9468253

00:18:36.055 --> 00:18:38.070 a really big concern is,  
NOTE Confidence: 0.9468253

00:18:38.070 --> 00:18:39.730 as I mentioned earlier,  
NOTE Confidence: 0.9468253

00:18:39.730 --> 00:18:41.805 infectious problems and that

NOTE Confidence: 0.9468253

00:18:41.805 --> 00:18:44.474 has led to the production of a whole

NOTE Confidence: 0.9468253

00:18:44.474 --> 00:18:46.939 new field of transfusion medicine,

NOTE Confidence: 0.9468253

00:18:46.940 --> 00:18:48.552 which is pathogen reduction.

00:18:51.031 --> 00:18:52.414 10-15 years ago

NOTE Confidence: 0.9468253

00:18:52.414 --> 00:18:56.160 if there was a virus that came out

NOTE Confidence: 0.9468253

00:18:56.160 --> 00:18:58.355 like Zika or West Nile,

NOTE Confidence: 0.9468253

00:18:58.360 --> 00:19:01.256 we knew there was a virus

NOTE Confidence: 0.9468253

00:19:01.256 --> 00:19:04.169 that had entered the blood supply,

NOTE Confidence: 0.9468253

00:19:04.170 --> 00:19:06.654 molecular biology was used to

NOTE Confidence: 0.9468253

00:19:06.654 --> 00:19:07.896 identify the virus,

NOTE Confidence: 0.9468253

00:19:07.900 --> 00:19:10.390 determine where it could be neutralized, and

NOTE Confidence: 0.9468253

00:19:10.390 --> 00:19:12.880 tests were made to identify it,

NOTE Confidence: 0.9468253

00:19:12.880 --> 00:19:14.125 treatments were developed.

NOTE Confidence: 0.9468253

00:19:14.125 --> 00:19:17.030 But then all of that cost money,

NOTE Confidence: 0.9468253

00:19:17.030 --> 00:19:20.124 and then the hospitals and the blood

NOTE Confidence: 0.9468253

00:19:20.124 --> 00:19:23.359 centers had to spend a lot of money.



NOTE Confidence: 0.9468253

00:19:23.360 --> 00:19:23.876 For that,

NOTE Confidence: 0.9468253

00:19:23.876 --> 00:19:25.940 the FDA took a long time to approve

NOTE Confidence: 0.9468253

00:19:26.003 --> 00:19:28.037 the testing and evaluation of

NOTE Confidence: 0.9468253

00:19:28.037 --> 00:19:29.910 donors for that particular illness.

NOTE Confidence: 0.9468253

00:19:29.910 --> 00:19:32.094 And while all this was going on,

NOTE Confidence: 0.9675721

00:19:32.100 --> 00:19:33.655 Medicare may or may not

NOTE Confidence: 0.9675721

00:19:33.655 --> 00:19:34.899 have reimbursed for it.

NOTE Confidence: 0.9675721

00:19:34.900 --> 00:19:37.260 So there was a financial what I call

NOTE Confidence: 0.9675721

00:19:37.260 --> 00:19:39.268 the banking part of blood banking,

NOTE Confidence: 0.9675721

00:19:39.270 --> 00:19:41.454 and then every time you got through

NOTE Confidence: 0.9675721

00:19:41.454 --> 00:19:43.686 with one virus, another one came along.

NOTE Confidence: 0.9675721

00:19:43.686 --> 00:19:46.648 So the field decided to move to a new type

NOTE Confidence: 0.9675721

00:19:46.648 --> 00:19:49.260 of tech that is called a reactive approach.

NOTE Confidence: 0.9675721

00:19:49.260 --> 00:19:51.132 That is, you identify a pathogen

NOTE Confidence: 0.9675721

00:19:51.132 --> 00:19:53.419 of some sort or something that

NOTE Confidence: 0.9675721

00:19:53.420 --> 00:19:55.390 shouldn't be in blood,  
NOTE Confidence: 0.9675721

00:19:55.390 --> 00:19:58.134 whether it's a virus or bacteria,  
NOTE Confidence: 0.9675721

00:19:58.140 --> 00:20:00.576 and then you try to mitigate  
NOTE Confidence: 0.9675721

00:20:00.576 --> 00:20:04.029 it or get rid of it.  
NOTE Confidence: 0.9675721

00:20:04.030 --> 00:20:05.598 This pathogen reduction technology  
NOTE Confidence: 0.9675721

00:20:05.598 --> 00:20:07.536 is not reactive, it's proactive.  
NOTE Confidence: 0.9675721

00:20:07.536 --> 00:20:10.182 There are reagents that are put into  
NOTE Confidence: 0.9675721

00:20:10.182 --> 00:20:13.224 the blood bag that are designed to  
NOTE Confidence: 0.9675721

00:20:13.224 --> 00:20:14.952 inactivate pathogens by attacking  
NOTE Confidence: 0.9675721

00:20:15.025 --> 00:20:17.384 the DNA and RNA of those pathogens,  
NOTE Confidence: 0.9675721

00:20:17.390 --> 00:20:18.228 blood cells,  
NOTE Confidence: 0.9675721

00:20:18.228 --> 00:20:20.742 the human red cells and platelets  
NOTE Confidence: 0.9675721

00:20:20.742 --> 00:20:23.568 do not have DNA or RNA because  
NOTE Confidence: 0.9675721

00:20:23.570 --> 00:20:25.238 it's not part of what that  
NOTE Confidence: 0.9675721

00:20:25.238 --> 00:20:26.072 particular cell has,  
NOTE Confidence: 0.9675721

00:20:26.080 --> 00:20:28.304 they had them when they were growing,

NOTE Confidence: 0.9675721

00:20:28.310 --> 00:20:29.990 but when they become mature cells,

NOTE Confidence: 0.9675721

00:20:29.990 --> 00:20:31.658 the DNA and RNA isn't there.

NOTE Confidence: 0.9675721

00:20:31.660 --> 00:20:33.796 So the only thing that has DNA or

NOTE Confidence: 0.9675721

00:20:33.796 --> 00:20:36.399 RNA in a unit of blood is a pathogen.

NOTE Confidence: 0.9675721

00:20:36.400 --> 00:20:38.409 So if you can put chemicals in

NOTE Confidence: 0.9675721

00:20:38.409 --> 00:20:40.029 that affect the DNA or RNA,

NOTE Confidence: 0.9675721

00:20:40.030 --> 00:20:41.545 you're really sparing the good

NOTE Confidence: 0.9675721

00:20:41.545 --> 00:20:43.344 cells and you're just trying to

NOTE Confidence: 0.9675721

00:20:43.344 --> 00:20:44.499 get rid of any pathogen.

NOTE Confidence: 0.9675721

00:20:44.500 --> 00:20:46.652 Well, you can say with all the testing

NOTE Confidence: 0.9675721

00:20:46.652 --> 00:20:48.680 why should there be a pathogen there?

NOTE Confidence: 0.9675721

00:20:48.680 --> 00:20:49.481 There shouldn't be,

NOTE Confidence: 0.9675721

00:20:49.481 --> 00:20:50.816 but sometimes pathogens are in

NOTE Confidence: 0.9675721

00:20:50.816 --> 00:20:52.308 very low levels like bacteria,

NOTE Confidence: 0.9675721

00:20:52.310 --> 00:20:54.180 but then they can grow.

NOTE Confidence: 0.9675721

00:20:54.180 --> 00:20:54.948 Other times,  
NOTE Confidence: 0.9675721

00:20:54.948 --> 00:20:58.020 new viruses come in like the COVID-19  
NOTE Confidence: 0.9675721

00:20:58.092 --> 00:21:01.074 virus is not transmitted by blood,  
NOTE Confidence: 0.9675721

00:21:01.080 --> 00:21:01.486 fortunately,  
NOTE Confidence: 0.9675721

00:21:01.486 --> 00:21:03.516 as bad as it is,  
NOTE Confidence: 0.9675721

00:21:03.520 --> 00:21:05.550 and it's a horrific virus,  
NOTE Confidence: 0.9675721

00:21:05.550 --> 00:21:08.385 but it is not transmissible by blood.  
NOTE Confidence: 0.9675721

00:21:08.390 --> 00:21:11.046 The HIV virus or AIDS with  
NOTE Confidence: 0.9675721

00:21:11.046 --> 00:21:12.595 the pathogen reduction technology  
NOTE Confidence: 0.9675721

00:21:12.595 --> 00:21:15.416 it puts reagents in the blood  
NOTE Confidence: 0.9675721

00:21:15.416 --> 00:21:17.764 bag that will inactivate pathogens  
NOTE Confidence: 0.9675721

00:21:17.764 --> 00:21:20.099 and many pathogens share common  
NOTE Confidence: 0.9675721

00:21:20.099 --> 00:21:23.066 DNA or RNA types so that the  
NOTE Confidence: 0.9675721

00:21:23.066 --> 00:21:25.100 reagents that are put in  
NOTE Confidence: 0.9675721

00:21:25.100 --> 00:21:27.170 will be effective against them.  
NOTE Confidence: 0.9675721

00:21:27.170 --> 00:21:29.325 And indeed the pathogen reduction

NOTE Confidence: 0.9675721

00:21:29.325 --> 00:21:31.480 technology that has been studied

NOTE Confidence: 0.9675721

00:21:31.550 --> 00:21:33.380 and proven to be successful

NOTE Confidence: 0.9675721

00:21:33.380 --> 00:21:35.864 it doesn't

NOTE Confidence: 0.9675721

00:21:35.864 --> 00:21:37.520 activate the COVID-19 virus,

NOTE Confidence: 0.9675721

00:21:37.520 --> 00:21:39.998 although it's not a bloodborne problem,

NOTE Confidence: 0.9675721

00:21:40.000 --> 00:21:42.490 but the next one might be,

NOTE Confidence: 0.9675721

00:21:42.490 --> 00:21:45.100 so pathogen reduction has been approved

NOTE Confidence: 0.9675721

00:21:45.100 --> 00:21:48.250 for platelets and for plasma they are

NOTE Confidence: 0.9675721

00:21:48.250 --> 00:21:50.465 currently doing clinical trials for

NOTE Confidence: 0.9675721

00:21:50.465 --> 00:21:53.164 red cells and we are doing several

NOTE Confidence: 0.9675721

00:21:53.164 --> 00:21:55.305 of those trials at Yale and at

NOTE Confidence: 0.9675721

00:21:55.305 --> 00:21:57.675 15 other sites around the country

NOTE Confidence: 0.9675721

00:21:57.675 --> 00:22:00.435 and once we have pathogen

NOTE Confidence: 0.9675721

00:22:00.435 --> 00:22:02.691 reduction approved then we will have

NOTE Confidence: 0.9675721

00:22:02.757 --> 00:22:04.701 a much safer blood supply because

NOTE Confidence: 0.9675721

00:22:04.701 --> 00:22:07.452 not only will we be testing for known  
NOTE Confidence: 0.9675721

00:22:07.452 --> 00:22:09.267 viruses and pathogens and bacteria,  
NOTE Confidence: 0.9675721

00:22:09.270 --> 00:22:11.090 but also for unknown ones,  
NOTE Confidence: 0.9675721

00:22:11.090 --> 00:22:13.274 which is critical for the safety  
NOTE Confidence: 0.9675721

00:22:13.274 --> 00:22:14.730 of the blood supply.  
NOTE Confidence: 0.9675721

00:22:14.730 --> 00:22:16.178 These kinds of technologies,  
NOTE Confidence: 0.9675721

00:22:16.178 --> 00:22:17.988 molecular diagnostics and so forth  
NOTE Confidence: 0.9675721

00:22:17.988 --> 00:22:20.186 are really the future of transfusion.  
NOTE Confidence: 0.9675721

00:22:20.190 --> 00:22:20.926 In addition,  
NOTE Confidence: 0.9675721

00:22:20.926 --> 00:22:23.134 there are other types of approaches,  
NOTE Confidence: 0.9675721

00:22:23.134 --> 00:22:24.660 immunotherapy to treat patients  
NOTE Confidence: 0.9675721

00:22:24.660 --> 00:22:25.749 instead of using  
NOTE Confidence: 0.9675721

00:22:25.750 --> 00:22:27.460 chemotherapy that I mentioned earlier,  
NOTE Confidence: 0.9675721

00:22:27.460 --> 00:22:28.900 which can have cytotoxic,  
NOTE Confidence: 0.9675721

00:22:28.900 --> 00:22:31.060 which means it's toxic to cells  
NOTE Confidence: 0.9675721

00:22:31.125 --> 00:22:33.057 which can lower the amount

NOTE Confidence: 0.9675721

00:22:33.057 --> 00:22:34.345 of bone marrow that

NOTE Confidence: 0.98495424

00:22:34.411 --> 00:22:36.550 you have. Other types of therapy CAR

NOTE Confidence: 0.98495424

00:22:36.550 --> 00:22:38.890 T cell therapy you may have heard

NOTE Confidence: 0.98495424

00:22:38.890 --> 00:22:41.002 of or other types of immunotherapy

NOTE Confidence: 0.98495424

00:22:41.002 --> 00:22:43.507 where you do not depress the bone

NOTE Confidence: 0.98495424

00:22:43.507 --> 00:22:45.590 marrow when those patients may not

NOTE Confidence: 0.98495424

00:22:45.590 --> 00:22:47.340 need transfusions because their blood

NOTE Confidence: 0.98495424

00:22:47.340 --> 00:22:49.688 counts don't get that become that low.

NOTE Confidence: 0.98495424

00:22:49.690 --> 00:22:52.072 There are other aspects of transfusion

NOTE Confidence: 0.98495424

00:22:52.072 --> 00:22:54.066 medicine that those patients

NOTE Confidence: 0.98495424

00:22:54.066 --> 00:22:56.754 require and we don't have time in this

NOTE Confidence: 0.98495424

00:22:56.760 --> 00:22:59.350 discussion to go into all of that,

NOTE Confidence: 0.98495424

00:22:59.350 --> 00:23:02.070 but you can be sure that the blood

NOTE Confidence: 0.98495424

00:23:02.070 --> 00:23:03.637 transfusion service at the Hospital

NOTE Confidence: 0.98495424

00:23:03.637 --> 00:23:06.091 is working closely with the oncologists

NOTE Confidence: 0.98495424

00:23:06.091 --> 00:23:08.711 and the surgeons to ensure that the  
NOTE Confidence: 0.98495424

00:23:08.711 --> 00:23:11.110 best and the safest possible blood for  
NOTE Confidence: 0.98495424

00:23:11.110 --> 00:23:13.090 their patients and our field grows  
NOTE Confidence: 0.98495424

00:23:13.090 --> 00:23:15.629 as the field of therapeutics grows.  
NOTE Confidence: 0.98495424

00:23:15.630 --> 00:23:17.850 So we have the patient's best  
NOTE Confidence: 0.98495424

00:23:17.850 --> 00:23:18.960 interest at heart.  
NOTE Confidence: 0.98495424

00:23:18.960 --> 00:23:22.155 There are many sort of tricks in our bag  
NOTE Confidence: 0.98495424

00:23:22.155 --> 00:23:25.320 if you will, of how we can provide  
NOTE Confidence: 0.98495424

00:23:25.320 --> 00:23:26.856 safe blood pathogen reduction.  
NOTE Confidence: 0.98495424

00:23:26.860 --> 00:23:29.572 Again, is a critical advance in the field  
NOTE Confidence: 0.98495424

00:23:29.572 --> 00:23:32.380 and we just have one more cell type.  
NOTE Confidence: 0.98495424

00:23:32.380 --> 00:23:34.837 The red cells that the research  
NOTE Confidence: 0.98495424

00:23:34.837 --> 00:23:36.180 is being done on  
NOTE Confidence: 0.98495424

00:23:36.180 --> 00:23:39.120 now to have that available in  
NOTE Confidence: 0.98495424

00:23:39.120 --> 00:23:41.080 a couple of years.  
NOTE Confidence: 0.98495424

00:23:41.080 --> 00:23:42.160 And the goal,



NOTE Confidence: 0.98495424  
00:23:42.160 --> 00:23:42.880 of course,  
NOTE Confidence: 0.98495424  
00:23:42.880 --> 00:23:45.281 is to be able to treat patients  
NOTE Confidence: 0.98495424  
00:23:45.281 --> 00:23:47.125 and eventually just do away  
NOTE Confidence: 0.98495424  
00:23:47.125 --> 00:23:48.995 with this field of transfusion,  
NOTE Confidence: 0.98495424  
00:23:49.000 --> 00:23:51.880 because you won't need to give blood.  
NOTE Confidence: 0.98495424  
00:23:51.880 --> 00:23:54.400 But that's not in the foreseeable future,  
NOTE Confidence: 0.98495424  
00:23:54.400 --> 00:23:56.912 so the best we can do is provide  
NOTE Confidence: 0.98495424  
00:23:56.912 --> 00:23:58.720 the safest possible blood,  
NOTE Confidence: 0.98495424  
00:23:58.720 --> 00:24:00.160 the least amount needed,  
NOTE Confidence: 0.98495424  
00:24:00.160 --> 00:24:01.960 and the best quality for  
NOTE Confidence: 0.9844867  
00:24:01.960 --> 00:24:02.902 our patients.  
NOTE Confidence: 0.9844867  
00:24:02.902 --> 00:24:04.786 And you mentioned  
NOTE Confidence: 0.9844867  
00:24:04.786 --> 00:24:06.638 the term pathogen reduction  
NOTE Confidence: 0.9844867  
00:24:06.640 --> 00:24:08.708 it's not pathogen elimination,  
NOTE Confidence: 0.9844867  
00:24:08.708 --> 00:24:11.202 but it still is  
NOTE Confidence: 0.9844867

00:24:11.202 --> 00:24:13.734 really low odds that people get  
NOTE Confidence: 0.9844867

00:24:13.734 --> 00:24:15.829 infections with blood these days.  
NOTE Confidence: 0.9844867

00:24:15.830 --> 00:24:18.777 Can you remind us about those numbers?  
NOTE Confidence: 0.9844867

00:24:18.780 --> 00:24:21.396 What is the risk of  
NOTE Confidence: 0.9844867

00:24:21.396 --> 00:24:24.005 getting HIV or hepatitis from a  
NOTE Confidence: 0.9844867

00:24:24.005 --> 00:24:26.360 bag of blood these days?  
NOTE Confidence: 0.92934996

00:24:26.360 --> 00:24:29.728 The risk of HIV is in the millions,  
NOTE Confidence: 0.92934996

00:24:29.730 --> 00:24:33.090 one in a million, one in many millions.  
NOTE Confidence: 0.92934996

00:24:33.090 --> 00:24:34.263 That's for HIV.  
NOTE Confidence: 0.92934996

00:24:34.263 --> 00:24:37.720 It's also true for other types of viruses.  
NOTE Confidence: 0.92934996

00:24:37.720 --> 00:24:40.540 Hepatitis is somewhere in the range  
NOTE Confidence: 0.92934996

00:24:40.540 --> 00:24:43.899 of about one in 250,000 to 100.  
NOTE Confidence: 0.92934996

00:24:43.900 --> 00:24:46.322 I'm sorry 1 to 250,000  
NOTE Confidence: 0.92934996

00:24:46.322 --> 00:24:49.369 to 1 to 500,000 for bacteria.  
NOTE Confidence: 0.92934996

00:24:49.370 --> 00:24:52.142 The numbers are higher because bacteria  
NOTE Confidence: 0.92934996

00:24:52.142 --> 00:24:54.696 are much different organisms than viruses

NOTE Confidence: 0.92934996

00:24:54.696 --> 00:24:57.248 so the risk of getting a septic

NOTE Confidence: 0.92934996

00:24:57.318 --> 00:24:59.898 transfusion reaction is extremely low,

NOTE Confidence: 0.92934996

00:24:59.900 --> 00:25:02.959 but the risk of getting some bacteria

NOTE Confidence: 0.92934996

00:25:02.959 --> 00:25:05.421 growing in blood is somewhere in

NOTE Confidence: 0.92934996

00:25:05.421 --> 00:25:08.449 the range of 1 to the 30,000 in

NOTE Confidence: 0.92934996

00:25:08.449 --> 00:25:11.167 that range which are several orders

NOTE Confidence: 0.92934996

00:25:11.167 --> 00:25:13.589 of magnitude less than the HIV.

NOTE Confidence: 0.92934996

00:25:13.589 --> 00:25:16.060 Part of that problem is you can't

NOTE Confidence: 0.92934996

00:25:16.143 --> 00:25:18.627 test for all the different kinds

NOTE Confidence: 0.92934996

00:25:18.627 --> 00:25:20.660 of bacteria that there are.

NOTE Confidence: 0.92934996

00:25:20.660 --> 00:25:22.360 Some of them grow slowly.

NOTE Confidence: 0.92934996

00:25:22.360 --> 00:25:25.064 It depends on where the bacteria came from.

NOTE Confidence: 0.92934996

00:25:25.070 --> 00:25:27.436 There shouldn't be any bacteria in blood,

NOTE Confidence: 0.92934996

00:25:27.440 --> 00:25:29.820 and most of the time they're not.

NOTE Confidence: 0.92934996

00:25:29.820 --> 00:25:31.510 But that's where the pathogen

NOTE Confidence: 0.92934996

00:25:31.510 --> 00:25:32.524 reduction comes in,  
NOTE Confidence: 0.92934996

00:25:32.530 --> 00:25:34.046 because pathogen reduction would  
NOTE Confidence: 0.92934996

00:25:34.046 --> 00:25:36.320 inactivate any viruses or any bacteria  
NOTE Confidence: 0.92934996

00:25:36.383 --> 00:25:38.623 that get through the testing that we have.  
NOTE Confidence: 0.92934996

00:25:38.630 --> 00:25:41.115 So it's not something  
NOTE Confidence: 0.92934996

00:25:41.115 --> 00:25:43.103 to be concerned about.  
NOTE Confidence: 0.92934996

00:25:43.110 --> 00:25:45.427 Because the donor  
NOTE Confidence: 0.92934996

00:25:45.427 --> 00:25:47.170 history is extremely inquisitive.  
NOTE Confidence: 0.92934996

00:25:47.170 --> 00:25:50.482 We're asking a lot of questions,  
NOTE Confidence: 0.92934996

00:25:50.490 --> 00:25:53.434 many of which took years  
NOTE Confidence: 0.92934996

00:25:53.440 --> 00:25:55.276 to get accepted because  
NOTE Confidence: 0.92934996

00:25:55.276 --> 00:25:57.894 a lot of the questions relate to  
NOTE Confidence: 0.92934996

00:25:57.894 --> 00:26:00.534 sexual practices and many people were  
NOTE Confidence: 0.92934996

00:26:00.534 --> 00:26:02.772 offended by those questions when we  
NOTE Confidence: 0.92934996

00:26:02.772 --> 00:26:04.880 started asking it when we realized  
NOTE Confidence: 0.92934996

00:26:04.880 --> 00:26:06.730 that HIV was sexually transmitted.

NOTE Confidence: 0.92934996

00:26:06.730 --> 00:26:09.226 But it was required to do it

NOTE Confidence: 0.92934996

00:26:09.226 --> 00:26:11.750 for the safety of the patients

NOTE Confidence: 0.92934996

00:26:11.750 --> 00:26:14.020 who are receiving the blood.

NOTE Confidence: 0.92934996

00:26:14.020 --> 00:26:16.393 But now that we know more about

NOTE Confidence: 0.92934996

00:26:16.393 --> 00:26:18.649 how to treat these diseases,

NOTE Confidence: 0.92934996

00:26:18.650 --> 00:26:21.150 many of those individuals come

NOTE Confidence: 0.92934996

00:26:21.150 --> 00:26:23.382 who are negative for these various

NOTE Confidence: 0.92934996

00:26:23.382 --> 00:26:25.718 tests are able to donate blood

NOTE Confidence: 0.92934996

00:26:25.718 --> 00:26:28.028 and it's a different field.

NOTE Confidence: 0.92934996

00:26:28.030 --> 00:26:31.459 We have to grow with the field as the

NOTE Confidence: 0.92934996

00:26:31.460 --> 00:26:33.370 knowledge grows and

NOTE Confidence: 0.92934996

00:26:33.370 --> 00:26:34.898 that's what transfusion is,

NOTE Confidence: 0.92934996

00:26:34.900 --> 00:26:36.428 there's a practical side

NOTE Confidence: 0.92934996

00:26:36.428 --> 00:26:37.956 for the patient care.

NOTE Confidence: 0.92934996

00:26:37.960 --> 00:26:40.050 There's the collection side and

NOTE Confidence: 0.92934996

00:26:40.050 --> 00:26:42.140 there's also the research side  
NOTE Confidence: 0.92934996

00:26:42.215 --> 00:26:44.117 which is allowing us to advance  
NOTE Confidence: 0.92934996

00:26:44.117 --> 00:26:46.738 the field in so many different ways.  
NOTE Confidence: 0.985111

00:26:46.740 --> 00:26:49.414 One last question is,  
NOTE Confidence: 0.985111

00:26:49.420 --> 00:26:50.779 perhaps,  
NOTE Confidence: 0.985111

00:26:50.779 --> 00:26:53.497 we had mentioned the fact that  
NOTE Confidence: 0.985111

00:26:53.500 --> 00:26:55.196 as therapeutics advance  
NOTE Confidence: 0.985111

00:26:55.196 --> 00:26:58.928 we may have less and less need for  
NOTE Confidence: 0.985111

00:26:58.928 --> 00:27:01.470 transfusion, but at the moment it  
NOTE Confidence: 0.985111

00:27:01.470 --> 00:27:04.999 still is a part of clinical care.  
NOTE Confidence: 0.985111

00:27:05.000 --> 00:27:08.663 How do you get around the needs of patients  
NOTE Confidence: 0.985111

00:27:08.663 --> 00:27:12.360 who cannot take due to religious reasons  
NOTE Confidence: 0.985111

00:27:12.360 --> 00:27:13.740 for example, blood?  
NOTE Confidence: 0.985111

00:27:13.740 --> 00:27:16.040 Are there other options for  
NOTE Confidence: 0.985111

00:27:16.040 --> 00:27:18.339 them outside of a transfusion?  
NOTE Confidence: 0.985111

00:27:18.340 --> 00:27:19.720 That's an excellent

NOTE Confidence: 0.95942134

00:27:19.720 --> 00:27:21.800 question. There are individuals who

NOTE Confidence: 0.95942134

00:27:21.800 --> 00:27:24.870 do not want a blood transfusion.

NOTE Confidence: 0.95942134

00:27:24.870 --> 00:27:27.481 For a variety of religious reasons or

NOTE Confidence: 0.95942134

00:27:27.481 --> 00:27:29.349 other reasons, for those individuals,

NOTE Confidence: 0.95942134

00:27:29.349 --> 00:27:31.214 consultation with the patients physician

NOTE Confidence: 0.95942134

00:27:31.214 --> 00:27:33.820 is required, as well as the family.

NOTE Confidence: 0.95942134

00:27:33.820 --> 00:27:36.700 We have a family meeting to discuss options

NOTE Confidence: 0.95942134

00:27:36.700 --> 00:27:40.154 and if blood transfusion is not one of them

NOTE Confidence: 0.95942134

00:27:40.160 --> 00:27:42.813 you mentioned the various reagents that

NOTE Confidence: 0.95942134

00:27:42.813 --> 00:27:45.066 are developed to stimulate the production

NOTE Confidence: 0.95942134

00:27:45.066 --> 00:27:48.000 of platelets or red cells in the person.

NOTE Confidence: 0.95942134

00:27:48.000 --> 00:27:50.178 Those chemicals can be given that

NOTE Confidence: 0.95942134

00:27:50.178 --> 00:27:52.909 may be possible to take some blood

NOTE Confidence: 0.95942134

00:27:52.909 --> 00:27:55.327 from the patient prior to treatment

NOTE Confidence: 0.95942134

00:27:55.330 --> 00:27:57.598 and store it so that if the

NOTE Confidence: 0.95942134

00:27:57.598 --> 00:27:59.349 patient's count does drop,  
NOTE Confidence: 0.95942134

00:27:59.350 --> 00:28:01.360 they will have stored their own  
NOTE Confidence: 0.95942134

00:28:01.360 --> 00:28:03.372 blood in advance, which in someone  
NOTE Confidence: 0.95942134

00:28:03.372 --> 00:28:05.376 who doesn't want to get transfusion,  
NOTE Confidence: 0.95942134

00:28:05.380 --> 00:28:07.060 of someone else's blood,  
NOTE Confidence: 0.95942134

00:28:07.060 --> 00:28:09.740 may be willing to accept their own blood.  
NOTE Confidence: 0.95942134

00:28:09.740 --> 00:28:11.410 Some individuals don't want to  
NOTE Confidence: 0.95942134

00:28:11.410 --> 00:28:12.746 accept blood from themselves,  
NOTE Confidence: 0.95942134

00:28:12.750 --> 00:28:15.095 that's been taken out of their body,  
NOTE Confidence: 0.95942134

00:28:15.100 --> 00:28:17.110 separated, stored, and then given back.  
NOTE Confidence: 0.95942134

00:28:17.110 --> 00:28:20.035 So it depends on the degree to which the  
NOTE Confidence: 0.95942134

00:28:20.035 --> 00:28:22.468 individual will be willing to accept blood,  
NOTE Confidence: 0.95942134

00:28:22.470 --> 00:28:24.516 but those can cause some very  
NOTE Confidence: 0.95942134

00:28:24.516 --> 00:28:25.880 difficult treatment situations.  
NOTE Confidence: 0.95942134

00:28:25.880 --> 00:28:28.736 That has to be discussed with the patient,  
NOTE Confidence: 0.95942134

00:28:28.740 --> 00:28:29.808 the patient's family,



NOTE Confidence: 0.95942134

00:28:29.808 --> 00:28:31.944 the physician and the blood bank.

NOTE Confidence: 0.9295102

00:28:31.950 --> 00:28:34.266 Doctor Edward Snyder is a

NOTE Confidence: 0.9295102

00:28:34.266 --> 00:28:35.810 professor of laboratory medicine

NOTE Confidence: 0.9295102

00:28:35.872 --> 00:28:37.660 at the Yale School of Medicine.

NOTE Confidence: 0.9295102

00:28:37.660 --> 00:28:39.260 If you have questions,

NOTE Confidence: 0.9295102

00:28:39.260 --> 00:28:40.860 the address is canceranswers@yale.edu

NOTE Confidence: 0.9295102

00:28:40.860 --> 00:28:43.064 and past editions of the program

NOTE Confidence: 0.9295102

00:28:43.064 --> 00:28:45.080 are available in audio and written

NOTE Confidence: 0.9295102

00:28:45.142 --> 00:28:46.936 form at yalecancercenter.org.

NOTE Confidence: 0.9295102

00:28:46.940 --> 00:28:49.244 We hope you'll join us next week to

NOTE Confidence: 0.9295102

00:28:49.244 --> 00:28:51.471 learn more about the fight against

NOTE Confidence: 0.9295102

00:28:51.471 --> 00:28:53.446 cancer here on Connecticut Public

NOTE Confidence: 0.9295102

00:28:53.446 --> 00:28:55.920 radio funding for Yale Cancer answers.

NOTE Confidence: 0.9295102

00:28:55.920 --> 00:28:58.225 Was provided by Smilow Cancer

NOTE Confidence: 0.9295102

00:28:58.225 --> 00:29:00.069 Hospital and AstraZeneca.