WEBVTT

NOTE duration:"01:02:36"

NOTE recognizability:0.829

NOTE language:en-us

NOTE Confidence: 0.881477285333333

00:00:00.000 --> 00:00:03.672 I'd like to welcome you to the 4th

NOTE Confidence: 0.881477285333333

00:00:03.672 --> 00:00:07.856 session of Smilo shares with primary care.

NOTE Confidence: 0.881477285333333

00:00:07.860 --> 00:00:11.541 This is a series of talks that we think

NOTE Confidence: 0.881477285333333

00:00:11.541 --> 00:00:14.706 will be of interest and importance

NOTE Confidence: 0.881477285333333

00:00:14.706 --> 00:00:18.660 to our primary care colleagues as

NOTE Confidence: 0.881477285333333

00:00:18.660 --> 00:00:22.020 they are taking care of patients.

NOTE Confidence: 0.881477285333333

00:00:22.020 --> 00:00:25.309 And trying to best understand indications

NOTE Confidence: 0.881477285333333

00:00:25.309 --> 00:00:29.012 for referral and what happens when people

NOTE Confidence: 0.881477285333333

00:00:29.012 --> 00:00:32.319 are referred to the Smilo Cancer Center,

NOTE Confidence: 0.881477285333333

00:00:32.320 --> 00:00:35.200 which is such a valuable part

NOTE Confidence: 0.881477285333333

00:00:35.200 --> 00:00:37.120 of our health system.

NOTE Confidence: 0.881477285333333

00:00:37.120 --> 00:00:40.145 These talks are targeted towards

NOTE Confidence: 0.881477285333333

00:00:40.145 --> 00:00:43.488 primary care and the faculty panel

NOTE Confidence: 0.881477285333333

00:00:43.488 --> 00:00:46.680 has rotated on specific to the

NOTE Confidence: 0.881477285333333

00:00:46.782 --> 00:00:50.586 specialty of the talk that's being

NOTE Confidence: 0.881477285333333

00:00:50.586 --> 00:00:54.249 addressed and today's topic is anemia.

NOTE Confidence: 0.881477285333333

00:00:54.250 --> 00:00:56.356 There are many other venues for

NOTE Confidence: 0.881477285333333

00:00:56.356 --> 00:00:58.164 education for primary care clinicians

NOTE Confidence: 0.881477285333333

00:00:58.164 --> 00:01:00.544 and we know your time is valuable,

NOTE Confidence: 0.881477285333333

00:01:00.550 --> 00:01:03.049 so thank you so much for joining.

NOTE Confidence: 0.881477285333333

00:01:03.050 --> 00:01:04.265 Just for convenience,

NOTE Confidence: 0.881477285333333

00:01:04.265 --> 00:01:06.695 these talks will always be monthly

NOTE Confidence: 0.881477285333333

00:01:06.695 --> 00:01:09.087 on the 1st Tuesday from 5 to 6

NOTE Confidence: 0.881477285333333

00:01:09.087 --> 00:01:10.950 and there is a master schedule

NOTE Confidence: 0.881477285333333

00:01:10.950 --> 00:01:13.730 and we'll show you at the end the

NOTE Confidence: 0.881477285333333

00:01:13.730 --> 00:01:16.330 previews of the next sessions.

NOTE Confidence: 0.881477285333333

00:01:16.330 --> 00:01:19.420 These sessions are recorded and NE

NOTE Confidence: 0.881477285333333

00:01:19.420 --> 00:01:22.005 Medical Group clinicians can find

NOTE Confidence: 0.881477285333333

00:01:22.005 --> 00:01:24.651 those on the the clinician website

NOTE Confidence: 0.881477285333333

00:01:24.651 --> 00:01:28.216 under that and we will send out a link

NOTE Confidence: 0.881477285333333

00:01:28.216 --> 00:01:30.866 afterwards to all of those who attended.

NOTE Confidence: 0.881477285333333

00:01:30.866 --> 00:01:34.752 At the end of the session there will be a

NOTE Confidence: 0.881477285333333

00:01:34.752 --> 00:01:37.699 brief survey and please stay tuned for that.

NOTE Confidence: 0.9318204875

00:01:40.950 --> 00:01:44.530 This is the schedule we will move

NOTE Confidence: 0.9318204875

00:01:44.530 --> 00:01:46.094 shortly into case presentations

NOTE Confidence: 0.9318204875

00:01:46.094 --> 00:01:48.920 and then the best part of these

NOTE Confidence: 0.9318204875

00:01:48.920 --> 00:01:51.386 sessions is the question and answer.

NOTE Confidence: 0.9318204875

00:01:51.390 --> 00:01:54.130 As you hear the presentation,

NOTE Confidence: 0.9318204875

00:01:54.130 --> 00:01:56.280 please use the Q&A field

NOTE Confidence: 0.9318204875

00:01:56.280 --> 00:01:58.430 to queue up your questions.

NOTE Confidence: 0.9318204875

00:01:58.430 --> 00:02:00.908 We will stop briefly after each of

NOTE Confidence: 0.9318204875

00:02:00.910 --> 00:02:03.270 three cases to address the questions

NOTE Confidence: 0.9318204875

00:02:03.270 --> 00:02:05.456 pertinent to the case and then have

NOTE Confidence: 0.9318204875

00:02:05.456 --> 00:02:07.214 some open discussion at the end.

NOTE Confidence: 0.959529158333333

00:02:09.440 --> 00:02:12.050 I'd like to introduce our speakers

NOTE Confidence: 0.959529158333333

00:02:12.050 --> 00:02:15.380 on on the left, Bob Bona,

NOTE Confidence: 0.959529158333333

00:02:15.380 --> 00:02:17.872 who's the director of the benign hematology

NOTE Confidence: 0.959529158333333

00:02:17.872 --> 00:02:20.613 program and the medical director of the

NOTE Confidence: 0.959529158333333

00:02:20.613 --> 00:02:22.623 Hemophilia Treatment Center at Yale.

NOTE Confidence: 0.959529158333333

00:02:22.630 --> 00:02:24.120 He's originally from New York,

NOTE Confidence: 0.959529158333333

00:02:24.120 --> 00:02:25.416 and he and his wife Georgiana,

NOTE Confidence: 0.959529158333333

00:02:25.420 --> 00:02:27.538 are current residents of New Haven

NOTE Confidence: 0.959529158333333

00:02:27.538 --> 00:02:29.720 and longtime residents of Connecticut,

NOTE Confidence: 0.959529158333333

00:02:29.720 --> 00:02:31.898 where they raised their three children.

NOTE Confidence: 0.959529158333333

00:02:31.900 --> 00:02:33.600 Prior to coming to Yale,

NOTE Confidence: 0.959529158333333

00:02:33.600 --> 00:02:35.406 he was a founding faculty member

NOTE Confidence: 0.959529158333333

00:02:35.406 --> 00:02:37.526 of the Frank Netter School of

NOTE Confidence: 0.959529158333333

00:02:37.526 --> 00:02:39.226 Medicine at Quinnipiac University.

NOTE Confidence: 0.959529158333333

00:02:39.230 --> 00:02:39.998 Prior to that,

NOTE Confidence: 0.959529158333333

00:02:39.998 --> 00:02:41.534 he was a professor of medicine

NOTE Confidence: 0.959529158333333

00:02:41.534 --> 00:02:43.388 at the UConn School of Medicine,

NOTE Confidence: 0.959529158333333

00:02:43.390 --> 00:02:45.526 having trained there and at Saint

NOTE Confidence: 0.959529158333333

00:02:45.526 --> 00:02:46.950 Francis Hospital in Hartford.

NOTE Confidence: 0.959529158333333

00:02:46.950 --> 00:02:48.510 At the UConn School of Medicine.

NOTE Confidence: 0.959529158333333

00:02:48.510 --> 00:02:51.457 He did serve as the hematology and

NOTE Confidence: 0.959529158333333

00:02:51.457 --> 00:02:53.410 Oncology Fellowship program Director,

NOTE Confidence: 0.959529158333333

00:02:53.410 --> 00:02:56.693 chief of the Division of Hematology and

NOTE Confidence: 0.959529158333333

00:02:56.693 --> 00:02:59.389 a hemophilia treatment cancer director.

NOTE Confidence: 0.959529158333333

00:02:59.390 --> 00:03:01.686 He has a strong interest in his

NOTE Confidence: 0.959529158333333

00:03:01.686 --> 00:03:03.532 career in medical education and

NOTE Confidence: 0.959529158333333

00:03:03.532 --> 00:03:05.902 is a graduate of SUNY Upstate

NOTE Confidence: 0.959529158333333

00:03:05.902 --> 00:03:07.569 Medical College in Syracuse.

NOTE Confidence: 0.959529158333333

00:03:07.570 --> 00:03:09.369 I think you will see his teaching.

NOTE Confidence: 0.959529158333333

00:03:09.370 --> 00:03:11.910 Skills on broad display here.

NOTE Confidence: 0.959529158333333

00:03:11.910 --> 00:03:15.288 And Anna Crest received her medical

NOTE Confidence: 0.959529158333333

00:03:15.288 --> 00:03:17.540 degree from Columbia University.

NOTE Confidence: 0.959529158333333

00:03:17.540 --> 00:03:20.516 Vagelos College of Physicians and surgeons,

NOTE Confidence: 0.959529158333333

00:03:20.520 --> 00:03:22.585 her internship and residency were

NOTE Confidence: 0.959529158333333

00:03:22.585 --> 00:03:24.237 completed at Columbia University,

NOTE Confidence: 0.959529158333333

00:03:24.240 --> 00:03:26.500 New York Presbyterian Hospital.

NOTE Confidence: 0.959529158333333

00:03:26.500 --> 00:03:27.630 After residency,

NOTE Confidence: 0.959529158333333

00:03:27.630 --> 00:03:29.565 Dr Crest completed her fellowship

NOTE Confidence: 0.959529158333333

00:03:29.565 --> 00:03:31.500 in medical oncology and hematology

NOTE Confidence: 0.959529158333333

00:03:31.561 --> 00:03:33.430 at the Yale Cancer Center and served

NOTE Confidence: 0.959529158333333

00:03:33.430 --> 00:03:35.716 as a Chief fellow in her third year.

NOTE Confidence: 0.959529158333333

00:03:35.720 --> 00:03:38.155 Her clinical and research interests

NOTE Confidence: 0.959529158333333

00:03:38.155 --> 00:03:40.103 include various topics within

NOTE Confidence: 0.959529158333333

00:03:40.103 --> 00:03:42.279 classical and malignant hematology.

NOTE Confidence: 0.959529158333333

00:03:42.280 --> 00:03:45.059 Frank Ciminello is an internist in Trumbull,

NOTE Confidence: 0.959529158333333

00:03:45.060 --> 00:03:47.517 Connecticut and has over 20 years of.

NOTE Confidence: 0.959529158333333

00:03:47.520 --> 00:03:49.270 Experience in the medical field.

NOTE Confidence: 0.959529158333333

00:03:49.270 --> 00:03:51.484 He graduated from NYU School of

NOTE Confidence: 0.959529158333333

00:03:51.484 --> 00:03:53.432 Medicine and completed his residency

NOTE Confidence: 0.959529158333333

00:03:53.432 --> 00:03:55.467 in Internal Medicine primary care

NOTE Confidence: 0.959529158333333

00:03:55.467 --> 00:03:57.990 at the University of Pennsylvania.

NOTE Confidence: 0.959529158333333

00:03:57.990 --> 00:04:00.195 He also has an MBA from the Yale School

NOTE Confidence: 0.959529158333333

00:04:00.195 --> 00:04:02.069 of Management and currently serves

NOTE Confidence: 0.959529158333333

00:04:02.069 --> 00:04:04.415 as both a Regional Medical director

NOTE Confidence: 0.959529158333333

00:04:04.482 --> 00:04:06.618 for Northeast Medical Group in the

NOTE Confidence: 0.959529158333333

00:04:06.618 --> 00:04:08.720 Bridgeport Region and also as the

NOTE Confidence: 0.959529158333333

00:04:08.720 --> 00:04:10.730 President of the Primed Medical Group,

NOTE Confidence: 0.959529158333333

00:04:10.730 --> 00:04:15.077 which is a PSA group within NE Medical Group.

NOTE Confidence: 0.959529158333333

00:04:15.080 --> 00:04:16.112 Kelsey Martin,

NOTE Confidence: 0.959529158333333

00:04:16.112 --> 00:04:17.660 our final panelist,

NOTE Confidence: 0.959529158333333

00:04:17.660 --> 00:04:19.750 is an assistant professor of

NOTE Confidence: 0.959529158333333

00:04:19.750 --> 00:04:21.840 clinical medicine at the Yale

NOTE Confidence: 0.959529158333333

00:04:21.915 --> 00:04:24.333 Cancer Center and Cares for patients

NOTE Confidence: 0.959529158333333

00:04:24.333 --> 00:04:26.530 at the SMILO Cancer Center.

NOTE Confidence: 0.959529158333333

00:04:26.530 --> 00:04:27.190 In Orange,

NOTE Confidence: 0.959529158333333

00:04:27.190 --> 00:04:27.520 CT,

NOTE Confidence: 0.959529158333333

00:04:27.520 --> 00:04:29.500 she received her medical degree from

NOTE Confidence: 0.959529158333333

00:04:29.500 --> 00:04:31.780 the Royal College of Surgeons in

NOTE Confidence: 0.959529158333333

00:04:31.780 --> 00:04:33.670 Dublin and completed her residency

NOTE Confidence: 0.959529158333333

00:04:33.730 --> 00:04:36.106 in internal medicine at the Jacobi

NOTE Confidence: 0.959529158333333

00:04:36.106 --> 00:04:37.690 Medical Albert Einstein College

NOTE Confidence: 0.959529158333333

00:04:37.690 --> 00:04:39.330 of Medicine in New York.

NOTE Confidence: 0.959529158333333

00:04:39.330 --> 00:04:41.354 She subsequently completed specialty

NOTE Confidence: 0.959529158333333

00:04:41.354 --> 00:04:43.884 training in hematology and medical

NOTE Confidence: 0.959529158333333

00:04:43.884 --> 00:04:45.722 oncology at Lenox Hill Hospital

NOTE Confidence: 0.959529158333333

00:04:45.722 --> 00:04:46.986 in New York City.

NOTE Confidence: 0.959529158333333

00:04:46.990 --> 00:04:48.554 Doctor Martin's clinical interests

NOTE Confidence: 0.959529158333333

00:04:48.554 --> 00:04:49.727 are patient communication,

NOTE Confidence: 0.959529158333333

00:04:49.730 --> 00:04:50.321 hematology,

NOTE Confidence: 0.959529158333333

00:04:50.321 --> 00:04:52.685 hematologic disorders in women's

NOTE Confidence: 0.959529158333333

00:04:52.685 --> 00:04:53.867 cancer prevention,

NOTE Confidence: 0.959529158333333

00:04:53.870 --> 00:04:56.430 including the role of nutrition.

NOTE Confidence: 0.959529158333333

00:04:56.430 --> 00:04:59.154 Obesity and an environment in cancer

NOTE Confidence: 0.959529158333333

00:04:59.154 --> 00:04:59.608 promotion.

NOTE Confidence: 0.959529158333333

00:04:59.610 --> 00:05:01.415 Doctor Martin is actively involved

NOTE Confidence: 0.959529158333333

00:05:01.415 --> 00:05:03.857 in the Yale community as a member

NOTE Confidence: 0.959529158333333

00:05:03.857 --> 00:05:05.866 of the Status of Women in Medicine

NOTE Confidence: 0.959529158333333

00:05:05.866 --> 00:05:07.689 and the Women Faculty Forum.

NOTE Confidence: 0.959529158333333

00:05:07.690 --> 00:05:08.545 With that said,

NOTE Confidence: 0.959529158333333

00:05:08.545 --> 00:05:10.936 I think you have a lot of learning

NOTE Confidence: 0.959529158333333

00:05:10.936 --> 00:05:13.816 in front of you and I'm going to turn

NOTE Confidence: 0.959529158333333

00:05:13.891 --> 00:05:16.187 to over to our panelist to begin.

NOTE Confidence: 0.959529158333333

00:05:16.190 --> 00:05:16.610 Frank,

NOTE Confidence: 0.959529158333333

00:05:16.610 --> 00:05:19.970 do you want to introduce the first case?

NOTE Confidence: 0.959529158333333

00:05:19.970 --> 00:05:21.059 Thank you and.

NOTE Confidence: 0.871126412

00:05:23.510 --> 00:05:24.940 Well you just put yourself on mute

NOTE Confidence: 0.851466764545454

00:05:25.750 --> 00:05:28.498 I muted unmuted and muted again

NOTE Confidence: 0.851466764545454

00:05:28.498 --> 00:05:30.850 myself so sorry about that.

NOTE Confidence: 0.851466764545454

00:05:30.850 --> 00:05:33.258 So we have three cases I'll I'll

NOTE Confidence: 0.851466764545454

00:05:33.258 --> 00:05:35.916 present them and then each of the

NOTE Confidence: 0.851466764545454

00:05:35.916 --> 00:05:37.851 our our panelists are specialists

NOTE Confidence: 0.851466764545454

00:05:37.851 --> 00:05:40.238 will will help guide us through

NOTE Confidence: 0.851466764545454

00:05:40.238 --> 00:05:42.710 some discussions some work up and

NOTE Confidence: 0.851466764545454

00:05:42.793 --> 00:05:45.264 and and we hope this is extremely

NOTE Confidence: 0.851466764545454

00:05:45.270 --> 00:05:47.340 educational and beneficial to you

NOTE Confidence: 0.851466764545454

00:05:47.340 --> 00:05:50.646 and and your patience and as I'm sure

NOTE Confidence: 0.851466764545454

00:05:50.646 --> 00:05:53.064 you know anemia is extremely common.

NOTE Confidence: 0.851466764545454

00:05:53.064 --> 00:05:55.542 And and it seems as patients get

NOTE Confidence: 0.851466764545454

00:05:55.542 --> 00:05:57.970 older the the chances are the

NOTE Confidence: 0.851466764545454

00:05:57.970 --> 00:06:00.020 prevalence of anemia really does

NOTE Confidence: 0.851466764545454

00:06:00.020 --> 00:06:01.316 increase quite dramatically.

NOTE Confidence: 0.851466764545454

00:06:01.316 --> 00:06:04.340 So we we hope these three cases

NOTE Confidence: 0.851466764545454

00:06:04.418 --> 00:06:06.662 which we picked from literally a

NOTE Confidence: 0.851466764545454

00:06:06.662 --> 00:06:09.319 week of my patients a few weeks ago

NOTE Confidence: 0.851466764545454

00:06:09.320 --> 00:06:13.576 is is relevant for you as well.

NOTE Confidence: 0.851466764545454

00:06:13.580 --> 00:06:15.980 So case one is a is a woman 52 year

NOTE Confidence: 0.851466764545454

00:06:16.049 --> 00:06:18.737 old woman who is coming in for a

NOTE Confidence: 0.851466764545454

00:06:18.737 --> 00:06:21.079 routine physical she's a history of

NOTE Confidence: 0.851466764545454

00:06:21.079 --> 00:06:23.461 thyroid disease, sleep apnea, diabetes.

NOTE Confidence: 0.851466764545454

00:06:23.461 --> 00:06:27.150 And you can see her current blood

NOTE Confidence: 0.851466764545454

00:06:27.253 --> 00:06:30.007 work which showed an anemia and

NOTE Confidence: 0.851466764545454

00:06:30.007 --> 00:06:33.330 and the prior year showed a little

NOTE Confidence: 0.851466764545454

00:06:33.330 --> 00:06:34.789 less severe anemia,

NOTE Confidence: 0.851466764545454

00:06:34.789 --> 00:06:37.783 but you'll notice a drop in

NOTE Confidence: 0.851466764545454

00:06:37.783 --> 00:06:41.299 hemoglobin and a drop in her MCV

NOTE Confidence: 0.851466764545454

00:06:41.299 --> 00:06:43.699 although MCV is still normal.

NOTE Confidence: 0.851466764545454

00:06:43.700 --> 00:06:44.663 And then, uh,

NOTE Confidence: 0.851466764545454

00:06:44.663 --> 00:06:46.910 next slide and there's a routine village.

NOTE Confidence: 0.851466764545454

00:06:46.910 --> 00:06:50.180 You had no symptoms at all.

NOTE Confidence: 0.851466764545454

00:06:50.180 --> 00:06:51.510 Um, get next slide, please.

NOTE Confidence: 0.91797641

00:06:54.450 --> 00:06:56.690 I am trying to move to the next

NOTE Confidence: 0.91797641

00:06:56.690 --> 00:06:58.480 slide and it's not working.

NOTE Confidence: 0.935453766666667

00:07:00.810 --> 00:07:02.678 I've been having some network problems.

NOTE Confidence: 0.935453766666667

00:07:02.678 --> 00:07:06.050 Renee, can you pull up this slide deck?

NOTE Confidence: 0.935453766666667

00:07:06.050 --> 00:07:09.080 I'm going to stop. Sharing.

NOTE Confidence: 0.935453766666667

00:07:09.080 --> 00:07:10.820 Actually I can try resharing one

NOTE Confidence: 0.935453766666667

00:07:10.820 --> 00:07:12.848 more time and see if that works.

NOTE Confidence: 0.7964623

00:07:15.100 --> 00:07:17.560 No, it's not working right now.

NOTE Confidence: 0.7964623

00:07:17.560 --> 00:07:20.849 Have you? Pull it up.

NOTE Confidence: 0.91072315

00:07:24.330 --> 00:07:26.050 Apologies for the delay.

NOTE Confidence: 0.3068154

00:07:30.390 --> 00:07:33.479 Um, oh, there we go.

NOTE Confidence: 0.3068154

00:07:33.480 --> 00:07:36.576 Alright, so we sent her for some additional

NOTE Confidence: 0.3068154

00:07:36.576 --> 00:07:39.217 blood work and you'll see her iron

NOTE Confidence: 0.3068154

00:07:39.217 --> 00:07:42.298 levels tsat TABC, which is now high.

NOTE Confidence: 0.3068154

00:07:42.300 --> 00:07:45.672 Her ferritin is low and her B12 was normal.

NOTE Confidence: 0.3068154

00:07:45.672 --> 00:07:48.336 She did have a colonoscopy the

NOTE Confidence: 0.3068154

00:07:48.336 --> 00:07:52.304 prior year that showed us a benign

NOTE Confidence: 0.3068154

00:07:52.304 --> 00:07:54.592 hyperplastic polyp and diverticulosis.

NOTE Confidence: 0.3068154

00:07:54.600 --> 00:07:57.250 And uh, if we can go to the next slide,

NOTE Confidence: 0.3068154

00:07:57.250 --> 00:07:58.801 actually those questions,

NOTE Confidence: 0.3068154

00:07:58.801 --> 00:08:00.869 yeah, sorry the the.

NOTE Confidence: 0.3068154

00:08:00.870 --> 00:08:03.747 So I'll hand it off to Kelsey,

NOTE Confidence: 0.3068154

00:08:03.750 --> 00:08:04.662 but beforehand,

NOTE Confidence: 0.3068154

00:08:04.662 --> 00:08:06.754 we'll ask Kelsey, you know,

NOTE Confidence: 0.3068154

00:08:06.754 --> 00:08:08.996 what other tests she would want done

NOTE Confidence: 0.3068154

00:08:08.996 --> 00:08:12.015 by us or that we should do first and

NOTE Confidence: 0.3068154

00:08:12.015 --> 00:08:13.631 any recommendations for treatment

NOTE Confidence: 0.3068154

00:08:13.631 --> 00:08:16.374 and then when we would want to

NOTE Confidence: 0.3068154

00:08:16.374 --> 00:08:18.204 refer this person to hematology.

NOTE Confidence: 0.3068154

00:08:18.210 --> 00:08:18.978 Alright, thank you.

NOTE Confidence: 0.894521579

00:08:19.670 --> 00:08:21.692 Alright. Thank you so much for

NOTE Confidence: 0.894521579

00:08:21.692 --> 00:08:23.040 the opportunity this evening.

NOTE Confidence: 0.894521579

00:08:23.040 --> 00:08:25.000 Frank, would you mind just flipping back

NOTE Confidence: 0.894521579

00:08:25.000 --> 00:08:27.281 to the labs that we did already perfect.

NOTE Confidence: 0.894521579

00:08:27.281 --> 00:08:30.089 So I think in looking at this case,

NOTE Confidence: 0.894521579

00:08:30.090 --> 00:08:31.784 I think what jumps off the page

NOTE Confidence: 0.894521579

00:08:31.784 --> 00:08:34.226 to me right away is that you know

NOTE Confidence: 0.894521579

00:08:34.226 --> 00:08:35.554 that hemoglobin hematocrit dropped

NOTE Confidence: 0.894521579

00:08:35.554 --> 00:08:37.868 in about a year's time span as you

NOTE Confidence: 0.894521579

00:08:37.868 --> 00:08:39.993 mentioned the MCV started to decrease.

NOTE Confidence: 0.894521579

00:08:39.993 --> 00:08:43.010 The platelet count was also kind of

NOTE Confidence: 0.894521579

00:08:43.094 --> 00:08:45.542 heading towards the upper limit of

NOTE Confidence: 0.894521579

00:08:45.542 --> 00:08:48.785 normal and the MCV and I'm sorry the RDW

NOTE Confidence: 0.894521579

00:08:48.785 --> 00:08:50.970 is also starting to increase as well.

NOTE Confidence: 0.894521579

00:08:50.970 --> 00:08:53.644 I think these labs as far really

NOTE Confidence: 0.894521579

00:08:53.650 --> 00:08:55.970 clearly consistent with iron deficiency.

NOTE Confidence: 0.894521579

00:08:55.970 --> 00:08:58.896 The ferritin being less than 30 really

NOTE Confidence: 0.894521579

00:08:58.896 --> 00:09:00.840 is as a number we would look at.

NOTE Confidence: 0.894521579

00:09:00.840 --> 00:09:02.590 So certainly if it's less than 10,

NOTE Confidence: 0.894521579

00:09:02.590 --> 00:09:04.830 I think that this is clear cut

NOTE Confidence: 0.894521579

00:09:04.830 --> 00:09:05.470 iron deficiency,

NOTE Confidence: 0.894521579

00:09:05.470 --> 00:09:07.220 a retic count I think is helpful

NOTE Confidence: 0.894521579

00:09:07.220 --> 00:09:09.139 just to sort of to to show sort

NOTE Confidence: 0.894521579

00:09:09.139 --> 00:09:10.810 of the lack of narrow response.

NOTE Confidence: 0.894521579

00:09:10.810 --> 00:09:13.197 The peripheral smear is always I think

NOTE Confidence: 0.894521579

00:09:13.197 --> 00:09:15.824 useful to in hematology and and I

NOTE Confidence: 0.894521579

00:09:15.824 --> 00:09:18.116 think actually truthfully I think if

NOTE Confidence: 0.894521579

00:09:18.185 --> 00:09:20.950 if the patient is is not describing

NOTE Confidence: 0.894521579

00:09:20.950 --> 00:09:23.436 significant bleeding or history of bleeding.

NOTE Confidence: 0.894521579

00:09:23.436 --> 00:09:27.000 I may even be content with stopping there.

NOTE Confidence: 0.894521579

00:09:27.000 --> 00:09:29.358 I think if a patient is giving a history

NOTE Confidence: 0.894521579

00:09:29.358 --> 00:09:31.880 of a long standing history of bleeding,

NOTE Confidence: 0.894521579

00:09:31.880 --> 00:09:33.980 particularly something like a menstrual,

NOTE Confidence: 0.894521579

00:09:33.980 --> 00:09:36.020 bleeding will come into that in a second.

NOTE Confidence: 0.894521579

00:09:36.020 --> 00:09:37.284 And as a hematologist,

NOTE Confidence: 0.894521579

00:09:37.284 --> 00:09:39.695 I do start to think about bleeding

NOTE Confidence: 0.894521579

00:09:39.695 --> 00:09:41.030 disorders as well,

NOTE Confidence: 0.894521579

00:09:41.030 --> 00:09:42.920 things like von Willebrands disease that

NOTE Confidence: 0.894521579

00:09:42.920 --> 00:09:45.478 are that are common in the population and

NOTE Confidence: 0.894521579

00:09:45.478 --> 00:09:47.338 that can manifest as iron deficiency.

NOTE Confidence: 0.894521579

00:09:47.340 --> 00:09:48.834 And so I actually would probably

NOTE Confidence: 0.894521579

00:09:48.834 --> 00:09:50.879 not do too much more at this point.

NOTE Confidence: 0.894521579

00:09:50.880 --> 00:09:52.146 I actually think we have enough

NOTE Confidence: 0.894521579

00:09:52.146 --> 00:09:53.250 of a diagnosis to make.

NOTE Confidence: 0.60314803

00:09:58.310 --> 00:09:59.920 So and.

NOTE Confidence: 0.8466977675

00:10:02.440 --> 00:10:03.895 We can break.

NOTE Confidence: 0.8466977675

00:10:03.895 --> 00:10:06.320 Iron deficiency is extremely common.

NOTE Confidence: 0.8466977675

00:10:06.320 --> 00:10:08.848 A significant burden globally

NOTE Confidence: 0.8466977675

00:10:08.848 --> 00:10:10.112 and disproportionately

NOTE Confidence: 0.8466977675

00:10:10.112 --> 00:10:12.640 impacts children and women.

NOTE Confidence: 0.8466977675

00:10:12.640 --> 00:10:15.629 We can break down the main etiologies

NOTE Confidence: 0.8466977675

00:10:15.629 --> 00:10:18.370 or causes of iron deficiency.

NOTE Confidence: 0.8466977675

00:10:18.370 --> 00:10:19.810 Most commonly here we're seeing

NOTE Confidence: 0.8466977675

00:10:19.810 --> 00:10:21.250 things like chronic blood loss,

NOTE Confidence: 0.8466977675

00:10:21.250 --> 00:10:22.480 GI blood loss.

NOTE Confidence: 0.8466977675

00:10:22.480 --> 00:10:24.940 Particularly in a man until proven

NOTE Confidence: 0.8466977675

00:10:24.940 --> 00:10:26.679 otherwise and postmenopausal

NOTE Confidence: 0.8466977675

00:10:26.680 --> 00:10:28.744 women's menstrual bleeding,

NOTE Confidence: 0.8466977675

00:10:28.744 --> 00:10:32.872 gynecological bleeding and and Gu bleeding,

NOTE Confidence: 0.8466977675

00:10:32.880 --> 00:10:35.298 sort of the second sort of

NOTE Confidence: 0.8466977675

00:10:35.298 --> 00:10:36.910 major category be malabsorption.

NOTE Confidence: 0.8466977675

00:10:36.910 --> 00:10:39.532 And this we see commonly I

NOTE Confidence: 0.8466977675

00:10:39.532 --> 00:10:42.142 think in our patients with a

NOTE Confidence: 0.8466977675

00:10:42.142 --> 00:10:44.297 history of bariatric surgery as

NOTE Confidence: 0.8466977675

00:10:44.297 --> 00:10:46.239 obesity and continues to rise.

NOTE Confidence: 0.8466977675

00:10:46.240 --> 00:10:48.263 And also Umm H pylori is another

NOTE Confidence: 0.8466977675

00:10:48.263 --> 00:10:50.046 quite common thing I feel that

NOTE Confidence: 0.8466977675

00:10:50.046 --> 00:10:51.750 we see in the outpatient setting.

NOTE Confidence: 0.758115975

00:10:53.830 --> 00:10:57.318 And then there is sort of another second,

NOTE Confidence: 0.758115975

00:10:57.320 --> 00:10:58.560 third major category would

NOTE Confidence: 0.758115975

00:10:58.560 --> 00:11:00.110 be sort of physiologic need.

NOTE Confidence: 0.758115975

00:11:00.110 --> 00:11:01.886 So you know, periods of growth,

NOTE Confidence: 0.758115975

00:11:01.890 --> 00:11:05.282 childhood, adolescence and certainly

NOTE Confidence: 0.758115975

00:11:05.282 --> 00:11:08.778 during pregnancy where nearly half of

NOTE Confidence: 0.758115975

00:11:08.778 --> 00:11:10.358 pregnant women are iron deficient.

NOTE Confidence: 0.8290755

00:11:12.870 --> 00:11:16.909 So we could flip the next slide.

NOTE Confidence: 0.8290755

00:11:16.910 --> 00:11:19.856 So we think specifically looking at

NOTE Confidence: 0.8290755

00:11:19.856 --> 00:11:21.820 more pathologic disorders associated

NOTE Confidence: 0.8290755

00:11:21.889 --> 00:11:24.385 with iron deficiency and as mentioned

NOTE Confidence: 0.8290755

00:11:24.385 --> 00:11:28.780 in this patient's case, she had seen.

NOTE Confidence: 0.8290755

00:11:28.780 --> 00:11:30.356 Gastroenterology not in the

NOTE Confidence: 0.8290755

00:11:30.356 --> 00:11:32.326 recent future right played Frank.

NOTE Confidence: 0.8290755

00:11:32.330 --> 00:11:36.100 It was in the last year or two in this case.

NOTE Confidence: 0.8290755

00:11:36.100 --> 00:11:37.612 But always important for us to

NOTE Confidence: 0.8290755

00:11:37.612 --> 00:11:39.289 think about the entire job GI tract.

NOTE Confidence: 0.758217754166667

00:11:41.380 --> 00:11:43.745 I think particularly about H

NOTE Confidence: 0.758217754166667

00:11:43.745 --> 00:11:46.869 pylori again as an as an NPI,

NOTE Confidence: 0.758217754166667

00:11:46.870 --> 00:11:49.138 that's something that we see that

NOTE Confidence: 0.758217754166667

00:11:49.138 --> 00:11:51.456 can contribute to or hydria,

NOTE Confidence: 0.758217754166667

00:11:51.456 --> 00:11:55.572 which can also contribute to iron deficiency.

NOTE Confidence: 0.758217754166667

00:11:55.580 --> 00:11:57.080 We sometimes are screening patients

NOTE Confidence: 0.758217754166667

00:11:57.080 --> 00:11:58.580 for celiac disease as well,

NOTE Confidence: 0.758217754166667

00:11:58.580 --> 00:12:00.708 I think UM and that it comes up

NOTE Confidence: 0.758217754166667

00:12:00.708 --> 00:12:02.848 often in our patients who are

NOTE Confidence: 0.758217754166667

00:12:02.848 --> 00:12:04.773 also refractured iron which I'll

NOTE Confidence: 0.758217754166667

00:12:04.773 --> 00:12:07.028 come back to in a couple slides.

NOTE Confidence: 0.758217754166667

00:12:07.030 --> 00:12:08.885 And then there is a number of

NOTE Confidence: 0.758217754166667

00:12:08.885 --> 00:12:10.721 conditions as well that we see

NOTE Confidence: 0.758217754166667

00:12:10.721 --> 00:12:12.025 frequently and particularly in

NOTE Confidence: 0.758217754166667

00:12:12.025 --> 00:12:14.226 the primary care setting of anemia

NOTE Confidence: 0.758217754166667

00:12:14.226 --> 00:12:16.161 associated with chronic disease where

NOTE Confidence: 0.758217754166667

00:12:16.161 --> 00:12:18.332 those patients or maybe have poor

NOTE Confidence: 0.758217754166667

00:12:18.332 --> 00:12:21.003 utilization of of iron and and that's

NOTE Confidence: 0.758217754166667

00:12:21.003 --> 00:12:23.548 patients with chronic heart failure,

NOTE Confidence: 0.758217754166667

00:12:23.550 --> 00:12:25.540 chronic kidney disease and other.

NOTE Confidence: 0.758217754166667

00:12:25.540 --> 00:12:27.469 Chronic inflammatory disorders,

NOTE Confidence: 0.758217754166667

00:12:27.469 --> 00:12:29.398 particularly things like

NOTE Confidence: 0.758217754166667

00:12:29.398 --> 00:12:31.327 inflammatory bowel disease,

NOTE Confidence: 0.758217754166667

00:12:31.330 --> 00:12:33.150 I listed on the right hand side

NOTE Confidence: 0.758217754166667

00:12:33.150 --> 00:12:34.853 here just a couple of other

NOTE Confidence: 0.758217754166667

00:12:34.853 --> 00:12:36.848 things I feel that we see often

NOTE Confidence: 0.758217754166667

00:12:36.909 --> 00:12:38.909 in our practice as hematologists.

NOTE Confidence: 0.758217754166667

00:12:38.910 --> 00:12:42.487 So I think food insecurity and sort

NOTE Confidence: 0.758217754166667

00:12:42.487 --> 00:12:45.463 maybe for access to diverse diet,

NOTE Confidence: 0.758217754166667

00:12:45.463 --> 00:12:47.581 diet is something that we should

NOTE Confidence: 0.758217754166667

00:12:47.581 --> 00:12:49.924 probably dig into a little bit deeper

NOTE Confidence: 0.758217754166667

00:12:49.924 --> 00:12:52.440 with our patients as we take a history.

NOTE Confidence: 0.758217754166667

00:12:52.440 --> 00:12:54.372 Blood donation and I have a a

NOTE Confidence: 0.758217754166667

00:12:54.372 --> 00:12:56.215 number of patients who are those

NOTE Confidence: 0.758217754166667

00:12:56.215 --> 00:12:58.152 frequent blood donors you know who

NOTE Confidence: 0.758217754166667

00:12:58.152 --> 00:13:00.264 are donating their blood every you

NOTE Confidence: 0.758217754166667

00:13:00.264 --> 00:13:02.957 know between 50 to 60 days and and

NOTE Confidence: 0.758217754166667

00:13:02.957 --> 00:13:04.945 there's and they're saying to just

NOTE Confidence: 0.758217754166667

00:13:04.945 --> 00:13:06.705 support those types of patients

NOTE Confidence: 0.758217754166667

00:13:06.705 --> 00:13:09.260 should be on oral iron supplementation

NOTE Confidence: 0.758217754166667

00:13:09.260 --> 00:13:11.540 to prevent iron deficiency.

NOTE Confidence: 0.758217754166667

00:13:11.540 --> 00:13:14.221 So I think again a good history

NOTE Confidence: 0.758217754166667

00:13:14.221 --> 00:13:16.791 comes comes in handy there as

NOTE Confidence: 0.758217754166667

00:13:16.791 --> 00:13:18.435 mentioned before gynecologic bleeding

NOTE Confidence: 0.758217754166667

00:13:18.435 --> 00:13:20.490 you know iron deficiency again

NOTE Confidence: 0.758217754166667

00:13:20.555 --> 00:13:22.119 disproportionately impacts.

NOTE Confidence: 0.758217754166667

00:13:22.120 --> 00:13:22.872 And then?

NOTE Confidence: 0.758217754166667

00:13:22.872 --> 00:13:25.128 And have you menstrual periods is

NOTE Confidence: 0.758217754166667

00:13:25.128 --> 00:13:27.798 is common and so working closely

NOTE Confidence: 0.758217754166667

00:13:27.798 --> 00:13:30.103 with our gynecologists can be

NOTE Confidence: 0.758217754166667

00:13:30.103 --> 00:13:31.682 tremendously helpful in improving

NOTE Confidence: 0.758217754166667

00:13:31.682 --> 00:13:34.517 the quality of life of of of women

NOTE Confidence: 0.758217754166667

00:13:34.517 --> 00:13:36.899 with iron deficiency and and asking

NOTE Confidence: 0.758217754166667

00:13:36.899 --> 00:13:38.833 about hematuria and just other

NOTE Confidence: 0.758217754166667

00:13:38.833 --> 00:13:40.508 sources of of blood loss.

NOTE Confidence: 0.758217754166667

00:13:40.510 --> 00:13:44.248 And then patients who receive

NOTE Confidence: 0.758217754166667

00:13:44.248 --> 00:13:46.216 erythropoietin stimulating agents

NOTE Confidence: 0.758217754166667

00:13:46.216 --> 00:13:48.840 or darbepoetin for example,

NOTE Confidence: 0.758217754166667

00:13:48.840 --> 00:13:50.891 those patients use up their iron stores

NOTE Confidence: 0.758217754166667

00:13:50.891 --> 00:13:53.438 over time and it's important that they are.

NOTE Confidence: 0.758217754166667

00:13:53.440 --> 00:13:56.300 Also receiving.

NOTE Confidence: 0.758217754166667

00:13:56.300 --> 00:13:58.068 Iron supplementation so important

NOTE Confidence: 0.758217754166667

00:13:58.068 --> 00:14:00.720 as we look in patients medications

NOTE Confidence: 0.758217754166667

00:14:00.785 --> 00:14:03.057 to to see if that's playing a role.

NOTE Confidence: 0.758217754166667

00:14:03.060 --> 00:14:05.556 And we also know by researchers

NOTE Confidence: 0.758217754166667

00:14:05.556 --> 00:14:08.416 from here at Yale that Trimberg

NOTE Confidence: 0.758217754166667

00:14:08.416 --> 00:14:11.728 for example that there are genetic

NOTE Confidence: 0.758217754166667

00:14:11.728 --> 00:14:14.692 conditions where some people do not

NOTE Confidence: 0.758217754166667

00:14:14.692 --> 00:14:16.772 absorb iron adequately and that's

NOTE Confidence: 0.758217754166667

00:14:16.772 --> 00:14:18.495 due to inappropriately increased

NOTE Confidence: 0.758217754166667

00:14:18.495 --> 00:14:20.913 levels of hepcidin which is our

NOTE Confidence: 0.758217754166667

00:14:20.913 --> 00:14:22.719 master regulator of of iron.

NOTE Confidence: 0.758217754166667

00:14:22.720 --> 00:14:24.904 So we think about that a lot in

NOTE Confidence: 0.758217754166667

00:14:24.904 --> 00:14:26.570 patients who have been taking.

NOTE Confidence: 0.758217754166667

00:14:26.570 --> 00:14:28.082 Iron supplements appropriately,

NOTE Confidence: 0.758217754166667

00:14:28.082 --> 00:14:31.610 but are not not achieving an adequate

NOTE Confidence: 0.758217754166667

00:14:31.683 --> 00:14:33.099 response. Next slide, please.

NOTE Confidence: 0.705350016

00:14:35.630 --> 00:14:39.092 And a couple of just clinical pearls

NOTE Confidence: 0.705350016

00:14:39.092 --> 00:14:41.847 perhaps are things to consider?

NOTE Confidence: 0.705350016

00:14:41.850 --> 00:14:44.258 An iron deficiency can can be due

NOTE Confidence: 0.705350016

00:14:44.258 --> 00:14:46.866 to more than one thing at a time.

NOTE Confidence: 0.705350016

00:14:46.870 --> 00:14:49.636 And in dual pathology for example,

NOTE Confidence: 0.705350016

00:14:49.640 --> 00:14:51.404 both upper and GI tract involvement

NOTE Confidence: 0.705350016

00:14:51.404 --> 00:14:53.400 is found in about 1 to 10% of

NOTE Confidence: 0.705350016

00:14:53.400 --> 00:14:55.640 cases and and and with our aging

NOTE Confidence: 0.705350016

00:14:55.640 --> 00:14:57.609 population this becomes more common.

NOTE Confidence: 0.811523976666667

00:15:00.740 --> 00:15:03.380 In both males and postmenopausal women,

NOTE Confidence: 0.811523976666667

00:15:03.380 --> 00:15:04.778 cancer of the GI tract is

NOTE Confidence: 0.811523976666667

00:15:04.778 --> 00:15:06.752 found about 8 to 10% of cases,

NOTE Confidence: 0.811523976666667

00:15:06.752 --> 00:15:08.376 which is quite significant.

NOTE Confidence: 0.811523976666667

00:15:08.380 --> 00:15:12.350 In our pre menopausal women, women.

NOTE Confidence: 0.811523976666667

00:15:12.350 --> 00:15:15.050 Cancer of the GI tract is is much less

NOTE Confidence: 0.811523976666667

00:15:15.050 --> 00:15:17.455 common and and heavy menstrual periods

NOTE Confidence: 0.811523976666667

00:15:17.455 --> 00:15:21.000 would be playing a major role in that case.

NOTE Confidence: 0.811523976666667

00:15:21.000 --> 00:15:23.142 Next slide, so for the ferritin

NOTE Confidence: 0.811523976666667

00:15:23.142 --> 00:15:25.436 is probably the most single most

NOTE Confidence: 0.811523976666667

00:15:25.436 --> 00:15:27.806 useful test we can have performed.

NOTE Confidence: 0.811523976666667

00:15:27.810 --> 00:15:30.006 And going back to your question

NOTE Confidence: 0.811523976666667

00:15:30.006 --> 00:15:32.014 about what additional testing can be

NOTE Confidence: 0.811523976666667

00:15:32.014 --> 00:15:34.291 done and and if it's low which is is

NOTE Confidence: 0.811523976666667

00:15:34.291 --> 00:15:36.055 really characterized by less than 15

NOTE Confidence: 0.811523976666667

00:15:36.055 --> 00:15:38.652 to 30 and then then you've already

NOTE Confidence: 0.811523976666667

00:15:38.652 --> 00:15:40.364 confirmed absolute iron deficiency

NOTE Confidence: 0.811523976666667

00:15:40.364 --> 00:15:42.749 and and that's why with that prior

NOTE Confidence: 0.811523976666667

00:15:42.749 --> 00:15:44.924 case I think with a ferritin of

NOTE Confidence: 0.811523976666667

00:15:44.924 --> 00:15:47.157 three that was very helpful to have

NOTE Confidence: 0.811523976666667

00:15:47.157 --> 00:15:49.010 an iron saturation of less than

NOTE Confidence: 0.811523976666667

00:15:49.010 --> 00:15:50.990 20% is is also another useful.

NOTE Confidence: 0.811523976666667

00:15:50.990 --> 00:15:53.384 A target and when doctor bonus speaks,

NOTE Confidence: 0.811523976666667

00:15:53.390 --> 00:15:56.308 I think he's going to you know

NOTE Confidence: 0.811523976666667

00:15:56.308 --> 00:15:58.541 make reference to how we how we

NOTE Confidence: 0.811523976666667

00:15:58.541 --> 00:16:00.140 interpret situations where patients

NOTE Confidence: 0.811523976666667

00:16:00.140 --> 00:16:02.564 may still be iron deficient yet

NOTE Confidence: 0.811523976666667

00:16:02.570 --> 00:16:03.950 have anemia of chronic disease.

NOTE Confidence: 0.811523976666667

00:16:03.950 --> 00:16:05.750 So, so important to pay attention

NOTE Confidence: 0.811523976666667

00:16:05.750 --> 00:16:06.950 to that iron saturation,

NOTE Confidence: 0.811523976666667

00:16:06.950 --> 00:16:09.230 the peripheral smear can show us

NOTE Confidence: 0.811523976666667

00:16:09.230 --> 00:16:11.323 classic findings of iron deficiency

NOTE Confidence: 0.811523976666667

00:16:11.323 --> 00:16:13.347 and the reticulocyte count,

NOTE Confidence: 0.811523976666667

00:16:13.350 --> 00:16:15.714 RDW and platelet count are also

NOTE Confidence: 0.811523976666667

00:16:15.714 --> 00:16:18.415 all factor into my decision making

NOTE Confidence: 0.811523976666667

00:16:18.415 --> 00:16:21.547 process as I evaluate these patients.

NOTE Confidence: 0.811523976666667

00:16:21.550 --> 00:16:23.180 Umm.

NOTE Confidence: 0.811523976666667

00:16:23.180 --> 00:16:23.988 I think in history,

NOTE Confidence: 0.811523976666667

00:16:23.988 --> 00:16:25.760 I I will come back to that in

NOTE Confidence: 0.811523976666667

00:16:25.760 --> 00:16:27.272 that I don't think much additional

NOTE Confidence: 0.811523976666667

00:16:27.272 --> 00:16:28.419 lab work is required,

NOTE Confidence: 0.811523976666667

00:16:28.420 --> 00:16:30.422 but I think a strong history taking

NOTE Confidence: 0.811523976666667

00:16:30.422 --> 00:16:32.328 our strong history taking skills are

NOTE Confidence: 0.811523976666667

00:16:32.328 --> 00:16:34.302 really useful and asking patients if

NOTE Confidence: 0.811523976666667

00:16:34.302 --> 00:16:36.596 they're craving ice or being crunchy things.

NOTE Confidence: 0.811523976666667

00:16:36.600 --> 00:16:42.388 I think it's also very helpful and also

NOTE Confidence: 0.811523976666667

00:16:42.388 --> 00:16:45.498 quite specific for iron deficiency.

NOTE Confidence: 0.811523976666667

00:16:45.500 --> 00:16:48.128 And so I asked that often of my patients

NOTE Confidence: 0.811523976666667

00:16:48.128 --> 00:16:51.138 and other things like restless leg syndrome,

NOTE Confidence: 0.811523976666667

00:16:51.140 --> 00:16:52.994 cold intolerance which I feel like

NOTE Confidence: 0.811523976666667

00:16:52.994 --> 00:16:54.740 patients mention often and and I do,

NOTE Confidence: 0.811523976666667

00:16:54.740 --> 00:16:57.044 I do find that patients mention

NOTE Confidence: 0.811523976666667

00:16:57.044 --> 00:17:00.180 alopecia as a as a concern should I'll

NOTE Confidence: 0.811523976666667

00:17:00.180 --> 00:17:02.580 bring our attention to iron deficiency

NOTE Confidence: 0.811523976666667

00:17:02.580 --> 00:17:04.980 and maybe out of the scope of today,

NOTE Confidence: 0.811523976666667

00:17:04.980 --> 00:17:07.035 but certainly patients maybe carries

NOTE Confidence: 0.811523976666667

00:17:07.035 --> 00:17:10.026 a beta thalassemia and it can be

NOTE Confidence: 0.811523976666667

00:17:10.026 --> 00:17:11.750 sometimes challenging when someone

NOTE Confidence: 0.811523976666667

00:17:11.750 --> 00:17:14.344 has a microcytic anemia to help

NOTE Confidence: 0.811523976666667

00:17:14.344 --> 00:17:15.538 make that distinction.

NOTE Confidence: 0.811523976666667

00:17:15.540 --> 00:17:18.636 And the Mentor Index is a is a tool

NOTE Confidence: 0.811523976666667

00:17:18.636 --> 00:17:21.338 worth the MCV over the RBC Count,

NOTE Confidence: 0.811523976666667

00:17:21.340 --> 00:17:23.620 which can help us, you know,

NOTE Confidence: 0.811523976666667

00:17:23.620 --> 00:17:26.260 try to make that distinction.

NOTE Confidence: 0.811523976666667

00:17:26.260 --> 00:17:28.930 And excited.

NOTE Confidence: 0.811523976666667

00:17:28.930 --> 00:17:30.560 Something I've thought about and

NOTE Confidence: 0.811523976666667

00:17:30.560 --> 00:17:32.512 I thought maybe others might do

NOTE Confidence: 0.811523976666667

00:17:32.512 --> 00:17:34.381 is you know should our patients be

NOTE Confidence: 0.811523976666667

00:17:34.381 --> 00:17:36.218 fasting when we when we check iron

NOTE Confidence: 0.811523976666667

00:17:36.218 --> 00:17:38.966 levels and I think it can be,

NOTE Confidence: 0.811523976666667

00:17:38.970 --> 00:17:39.930 but it doesn't have to be.

NOTE Confidence: 0.811523976666667

00:17:39.930 --> 00:17:42.270 It's how I interpret the data.

NOTE Confidence: 0.811523976666667

00:17:42.270 --> 00:17:44.531 I'm not sure if my colleague should

NOTE Confidence: 0.811523976666667

00:17:44.531 --> 00:17:46.447 answer this but I I think that

NOTE Confidence: 0.811523976666667

00:17:46.450 --> 00:17:48.715 there are some diurnal variations

NOTE Confidence: 0.811523976666667

00:17:48.715 --> 00:17:51.412 and also some changes after meals

NOTE Confidence: 0.811523976666667

00:17:51.412 --> 00:17:53.904 that that impact serum iron and and

NOTE Confidence: 0.811523976666667

00:17:53.904 --> 00:17:56.551 and so our serum iron levels peak

NOTE Confidence: 0.811523976666667

00:17:56.551 --> 00:17:59.490 in the late morning and it also.

NOTE Confidence: 0.811523976666667

00:17:59.490 --> 00:18:01.650 Increases after a meal.

NOTE Confidence: 0.811523976666667

00:18:01.650 --> 00:18:04.290 But it also decreases after fasting

NOTE Confidence: 0.811523976666667

00:18:04.290 --> 00:18:06.667 and so my interpretation of this

NOTE Confidence: 0.811523976666667

00:18:06.667 --> 00:18:08.027 is that I think it

NOTE Confidence: 0.836655822307692

00:18:08.030 --> 00:18:11.566 is not is not crucial to to to

NOTE Confidence: 0.836655822307692

00:18:11.566 --> 00:18:14.609 measure iron studies fasting but.

NOTE Confidence: 0.836655822307692

00:18:14.610 --> 00:18:16.170 Sort of on the on the flip side,

NOTE Confidence: 0.836655822307692

00:18:16.170 --> 00:18:18.123 on the other end of the spectrum

NOTE Confidence: 0.836655822307692

00:18:18.123 --> 00:18:19.828 where sometimes we see very high

NOTE Confidence: 0.836655822307692

00:18:19.828 --> 00:18:21.704 levels of of iron and we're sending

NOTE Confidence: 0.836655822307692

00:18:21.768 --> 00:18:23.468 patients to that for hemochromatosis

NOTE Confidence: 0.836655822307692

00:18:23.468 --> 00:18:25.710 and those patients I will often

NOTE Confidence: 0.836655822307692

00:18:25.710 --> 00:18:29.130 have them repeat it fasting in that

NOTE Confidence: 0.836655822307692

00:18:29.130 --> 00:18:31.290 circumstance and it it appears that

NOTE Confidence: 0.836655822307692

00:18:31.290 --> 00:18:34.534 the tsap performs just as well in non

NOTE Confidence: 0.836655822307692

00:18:34.534 --> 00:18:36.729 fasting versus fasting patients so.

NOTE Confidence: 0.836655822307692

00:18:36.730 --> 00:18:37.660 Next slide, please.

NOTE Confidence: 0.886910722

00:18:39.690 --> 00:18:41.634 So our goals of treatment or

NOTE Confidence: 0.886910722

00:18:41.634 --> 00:18:42.930 management of iron deficiency,

NOTE Confidence: 0.886910722

00:18:42.930 --> 00:18:45.415 we want to first and foremost identify

NOTE Confidence: 0.886910722

00:18:45.415 --> 00:18:48.404 and treat the underlying cause of the

NOTE Confidence: 0.886910722

00:18:48.404 --> 00:18:50.724 end deficiency and working typically

NOTE Confidence: 0.886910722

00:18:50.724 --> 00:18:53.407 closely with our gynecologist and

NOTE Confidence: 0.886910722

00:18:53.407 --> 00:18:55.555 gastroenterologist colleagues is key.

NOTE Confidence: 0.886910722

00:18:55.560 --> 00:18:57.680 And maybe less commonly, urology,

NOTE Confidence: 0.886910722

00:18:57.680 --> 00:18:59.728 we want to replete the iron stores and

NOTE Confidence: 0.886910722

00:18:59.728 --> 00:19:02.032 we want to normalize the hemoglobin if

NOTE Confidence: 0.886910722

00:19:02.032 --> 00:19:04.255 someone's anemic and improve or reverse

NOTE Confidence: 0.886910722

00:19:04.255 --> 00:19:06.440 the symptoms that they're experiencing.

NOTE Confidence: 0.886910722

00:19:06.440 --> 00:19:07.976 And usually, you know,

NOTE Confidence: 0.886910722

00:19:07.976 --> 00:19:09.896 the craving of ice ships,

NOTE Confidence: 0.886910722

00:19:09.900 --> 00:19:11.380 you know, response quite quickly.

NOTE Confidence: 0.886910722

00:19:11.380 --> 00:19:13.487 And I often remind patients to bring

NOTE Confidence: 0.886910722

00:19:13.487 --> 00:19:15.817 that to our attention if they notice

NOTE Confidence: 0.886910722

00:19:15.817 --> 00:19:18.580 it in the future because it's such a

NOTE Confidence: 0.886910722

00:19:18.580 --> 00:19:20.480 sensitive sign and the goal is not

NOTE Confidence: 0.886910722

00:19:20.480 --> 00:19:22.040 to keep patients on lifelong iron.

NOTE Confidence: 0.886910722

00:19:22.040 --> 00:19:23.880 And as I'm sure, as we've all seen,

NOTE Confidence: 0.886910722

00:19:23.880 --> 00:19:25.245 Umm, sometimes it's a medication

NOTE Confidence: 0.886910722

00:19:25.245 --> 00:19:27.200 that seems to linger on medication.

NOTE Confidence: 0.886910722

00:19:27.200 --> 00:19:27.482 Lists.

NOTE Confidence: 0.886910722

00:19:27.482 --> 00:19:29.174 And I think it's always worth

NOTE Confidence: 0.886910722

00:19:29.174 --> 00:19:30.299 reevaluating whether the patient

NOTE Confidence: 0.886910722

00:19:30.299 --> 00:19:32.147 really truly still needs to be on it.

NOTE Confidence: 0.886910722

00:19:32.150 --> 00:19:36.750 So. Next slide, please.

NOTE Confidence: 0.886910722

00:19:36.750 --> 00:19:39.888 So what is the best approach?

NOTE Confidence: 0.886910722

00:19:39.890 --> 00:19:40.802 So in our.

NOTE Confidence: 0.886910722

00:19:40.802 --> 00:19:42.930 Case that patient team was around 9:00

NOTE Confidence: 0.886910722

00:19:43.001 --> 00:19:45.045 and I think this patient has Frank

NOTE Confidence: 0.886910722

00:19:45.045 --> 00:19:46.834 you said was largely asymptomatic

NOTE Confidence: 0.886910722

00:19:46.834 --> 00:19:49.372 and probably this patient could be

NOTE Confidence: 0.886910722

00:19:49.372 --> 00:19:51.627 managed with oral iron supplements.

NOTE Confidence: 0.886910722

00:19:51.627 --> 00:19:54.910 Patients often I find ask you know

NOTE Confidence: 0.886910722

00:19:54.993 --> 00:19:58.098 can they just eat eat more meat or or

NOTE Confidence: 0.886910722

00:19:58.098 --> 00:20:00.896 make a change and I think that's is

NOTE Confidence: 0.886910722

00:20:00.896 --> 00:20:03.471 limited and it's in its efficacy once

NOTE Confidence: 0.886910722

00:20:03.471 --> 00:20:05.231 patients are becoming progressively

NOTE Confidence: 0.886910722

00:20:05.231 --> 00:20:08.305 anemic but but could be considered if

NOTE Confidence: 0.886910722

00:20:08.305 --> 00:20:10.699 if someone has a normal hemoglobin

NOTE Confidence: 0.886910722

00:20:10.699 --> 00:20:12.619 but maybe borderline iron levels.

NOTE Confidence: 0.886910722

00:20:12.619 --> 00:20:15.230 I think it's that reasonable to to

NOTE Confidence: 0.886910722

00:20:15.303 --> 00:20:17.544 try and I've just listed some some

NOTE Confidence: 0.886910722

00:20:17.544 --> 00:20:19.973 some foods that are rich in iron

NOTE Confidence: 0.886910722

00:20:19.973 --> 00:20:22.095 and Anaheim iron from from from meat

NOTE Confidence: 0.886910722

00:20:22.095 --> 00:20:23.904 or poultry and fish is is absorbed

NOTE Confidence: 0.886910722

00:20:23.904 --> 00:20:25.389 more efficiently than iron that

NOTE Confidence: 0.886910722

00:20:25.389 --> 00:20:27.030 comes from plant based sources.

NOTE Confidence: 0.886910722

00:20:27.030 --> 00:20:29.316 But I would you know certainly

NOTE Confidence: 0.886910722

00:20:29.316 --> 00:20:31.850 doesn't have to be what someone

NOTE Confidence: 0.886910722

00:20:31.850 --> 00:20:34.646 needs if they're vegan for example.

NOTE Confidence: 0.886910722

00:20:34.650 --> 00:20:36.806 I think if there's one thing that

NOTE Confidence: 0.886910722

00:20:36.810 --> 00:20:38.672 people in the audience want to listen

NOTE Confidence: 0.886910722

00:20:38.672 --> 00:20:42.990 to today is how to to give oral iron.

NOTE Confidence: 0.886910722

00:20:42.990 --> 00:20:45.566 And we now have a growing collection

NOTE Confidence: 0.886910722

00:20:45.566 --> 00:20:48.966 of data that that tells us that every

NOTE Confidence: 0.886910722

00:20:48.966 --> 00:20:51.181 other day iron supplementation is,

NOTE Confidence: 0.886910722

00:20:51.190 --> 00:20:52.490 is the way to go.

NOTE Confidence: 0.886910722

00:20:52.490 --> 00:20:55.274 And we're really no longer giving

NOTE Confidence: 0.886910722

00:20:55.274 --> 00:20:57.884 iron daily and certainly not daily

NOTE Confidence: 0.886910722

00:20:57.884 --> 00:21:00.928 in in 3 divided doses as as, as,

NOTE Confidence: 0.886910722

00:21:00.928 --> 00:21:04.318 as Epic automatically orders it.

NOTE Confidence: 0.886910722

00:21:04.320 --> 00:21:04.980 So, Umm,

NOTE Confidence: 0.886910722

00:21:04.980 --> 00:21:07.290 and and it's it's easy to remember

NOTE Confidence: 0.886910722

00:21:07.290 --> 00:21:09.346 about 100 milligrams of elemental

NOTE Confidence: 0.886910722

00:21:09.346 --> 00:21:10.998 iron every other day.

NOTE Confidence: 0.886910722

00:21:11.000 --> 00:21:14.645 I think 1 can't go wrong and and this

NOTE Confidence: 0.886910722

00:21:14.645 --> 00:21:18.230 is the the the reason behind this is.

NOTE Confidence: 0.886910722

00:21:18.230 --> 00:21:18.896 Sort of.

NOTE Confidence: 0.886910722

00:21:18.896 --> 00:21:19.229 If,

NOTE Confidence: 0.886910722

00:21:19.229 --> 00:21:21.227 if there's a really simplistic way

NOTE Confidence: 0.886910722

00:21:21.227 --> 00:21:23.774 is if there's kind of too much

NOTE Confidence: 0.886910722

00:21:23.774 --> 00:21:25.126 consistent iron that hepcidin,

NOTE Confidence: 0.886910722

00:21:25.126 --> 00:21:27.352 which again is sort of our master

NOTE Confidence: 0.886910722

00:21:27.352 --> 00:21:28.768 regulator of iron absorption,

NOTE Confidence: 0.886910722

00:21:28.770 --> 00:21:30.702 starts to impair our ability to

NOTE Confidence: 0.886910722

00:21:30.702 --> 00:21:31.668 absorb further iron,

NOTE Confidence: 0.886910722

00:21:31.670 --> 00:21:35.818 and taking the iron every other day is best.

NOTE Confidence: 0.886910722

00:21:35.818 --> 00:21:38.786 It's also best on an empty stomach,

NOTE Confidence: 0.886910722

00:21:38.790 --> 00:21:42.605 hour before 2 hours after a meal.

NOTE Confidence: 0.886910722

00:21:42.610 --> 00:21:43.844 You know,

NOTE Confidence: 0.886910722

00:21:43.844 --> 00:21:47.546 regarding the rule of vitamin C

NOTE Confidence: 0.886910722

00:21:47.550 --> 00:21:49.220 from from from my understanding,

NOTE Confidence: 0.886910722

00:21:49.220 --> 00:21:50.642 there's really no data to sort

NOTE Confidence: 0.886910722

00:21:50.642 --> 00:21:51.590 of fully make this

NOTE Confidence: 0.812843023636364

00:21:51.643 --> 00:21:52.370 recommendation.

NOTE Confidence: 0.812843023636364

00:21:52.370 --> 00:21:53.262 I often personally don't.

NOTE Confidence: 0.812843023636364

00:21:53.262 --> 00:21:54.600 I'm not sure if my colleagues

NOTE Confidence: 0.812843023636364

00:21:54.640 --> 00:21:55.369 would answer that,

NOTE Confidence: 0.812843023636364

00:21:55.370 --> 00:21:56.868 but I never really push for it.

NOTE Confidence: 0.812843023636364

00:21:56.870 --> 00:21:59.075 But it doesn't bother me

NOTE Confidence: 0.812843023636364

00:21:59.075 --> 00:22:00.839 if someone's taking it.

NOTE Confidence: 0.812843023636364

00:22:00.840 --> 00:22:03.066 And it really needs to be

NOTE Confidence: 0.812843023636364

00:22:03.066 --> 00:22:05.210 continued for a few months.

NOTE Confidence: 0.812843023636364

00:22:05.210 --> 00:22:06.890 At least three to six months

NOTE Confidence: 0.812843023636364

00:22:06.890 --> 00:22:08.370 after the iron deficiency has

NOTE Confidence: 0.812843023636364

00:22:08.370 --> 00:22:09.850 been corrected in order to

NOTE Confidence: 0.812843023636364

00:22:09.912 --> 00:22:11.288 to replenish those stores.

NOTE Confidence: 0.812843023636364

00:22:11.290 --> 00:22:13.644 So it takes a few months for it

NOTE Confidence: 0.812843023636364

00:22:13.644 --> 00:22:15.303 to be effective and and I would

NOTE Confidence: 0.812843023636364

00:22:15.303 --> 00:22:17.154 just keep that in mind as again

NOTE Confidence: 0.812843023636364

00:22:17.154 --> 00:22:18.884 as we make decisions about which

NOTE Confidence: 0.812843023636364

00:22:18.884 --> 00:22:20.786 patients might might need to have.

NOTE Confidence: 0.812843023636364

00:22:20.790 --> 00:22:23.425 Their anemia improved quicker and

NOTE Confidence: 0.812843023636364

00:22:23.425 --> 00:22:26.560 as we talked about intravenous iron.

NOTE Confidence: 0.812843023636364

00:22:26.560 --> 00:22:28.256 Also, a lot of patients can't tolerate it.

NOTE Confidence: 0.812843023636364

00:22:28.260 --> 00:22:28.950 You know more.

NOTE Confidence: 0.812843023636364

00:22:28.950 --> 00:22:29.410 You know,

NOTE Confidence: 0.812843023636364

00:22:29.410 --> 00:22:32.438 somewhere between 30 to 70% of patients have,

NOTE Confidence: 0.812843023636364

00:22:32.438 --> 00:22:35.850 you know, usually GI upset.

NOTE Confidence: 0.812843023636364

00:22:35.850 --> 00:22:37.920 As a result,

NOTE Confidence: 0.812843023636364

00:22:37.920 --> 00:22:39.825 there's a number of different

NOTE Confidence: 0.812843023636364

00:22:39.825 --> 00:22:41.349 brands on the available.

NOTE Confidence: 0.812843023636364

00:22:41.350 --> 00:22:42.666 Usually do recommend fair

NOTE Confidence: 0.812843023636364

00:22:42.666 --> 00:22:44.640 sulfate because I think it has

NOTE Confidence: 0.812843023636364

00:22:44.705 --> 00:22:46.722 the most data supporting it,

NOTE Confidence: 0.812843023636364

00:22:46.722 --> 00:22:51.102 and I I personally am weary of

NOTE Confidence: 0.812843023636364

00:22:51.102 --> 00:22:53.598 slow release formulations because

NOTE Confidence: 0.812843023636364

00:22:53.598 --> 00:22:56.486 its absorption is passed the

NOTE Confidence: 0.812843023636364

00:22:56.486 --> 00:22:58.066 duodenum where iron is absorbed.

NOTE Confidence: 0.812843023636364

00:22:58.070 --> 00:22:59.869 So I'm personally wary that I'd be

NOTE Confidence: 0.812843023636364

00:22:59.869 --> 00:23:02.029 curious with my colleagues say about that.

NOTE Confidence: 0.812843023636364

00:23:02.030 --> 00:23:04.280 Umm.

NOTE Confidence: 0.812843023636364

00:23:04.280 --> 00:23:04.912 Next slide,

NOTE Confidence: 0.812843023636364

00:23:04.912 --> 00:23:05.228 please.

NOTE Confidence: 0.807578874444444

00:23:08.300 --> 00:23:10.484 We as hematologists offer

NOTE Confidence: 0.807578874444444

00:23:10.484 --> 00:23:13.214 a lot of intravenous iron.

NOTE Confidence: 0.807578874444444

00:23:13.220 --> 00:23:15.512 And the patients who I consider

NOTE Confidence: 0.807578874444444

00:23:15.512 --> 00:23:18.022 it in are largely those patients

NOTE Confidence: 0.807578874444444

00:23:18.022 --> 00:23:20.282 who are either intolerant or

NOTE Confidence: 0.807578874444444

00:23:20.282 --> 00:23:22.940 sort of failed oral iron therapy.

NOTE Confidence: 0.807578874444444

00:23:22.940 --> 00:23:26.060 Many of our patients also have

NOTE Confidence: 0.807578874444444

00:23:26.060 --> 00:23:27.620 malabsorption medical conditions,

NOTE Confidence: 0.807578874444444

00:23:27.620 --> 00:23:29.456 patients with gastric bypass for example,

NOTE Confidence: 0.807578874444444

00:23:29.460 --> 00:23:31.925 or patients with inflammatory bowel

NOTE Confidence: 0.807578874444444

00:23:31.925 --> 00:23:34.760 disease where the utilization of iron

NOTE Confidence: 0.807578874444444

00:23:34.760 --> 00:23:38.528 given intravenously is much more efficient.

NOTE Confidence: 0.807578874444444

00:23:38.530 --> 00:23:39.175 As I mentioned,

NOTE Confidence: 0.807578874444444

00:23:39.175 --> 00:23:40.680 it takes a few months for oral

NOTE Confidence: 0.807578874444444

00:23:40.728 --> 00:23:41.708 iron to be effective,

NOTE Confidence: 0.807578874444444

00:23:41.710 --> 00:23:44.236 so sometimes we need to improve

NOTE Confidence: 0.807578874444444

00:23:44.236 --> 00:23:45.078 things quickly.

NOTE Confidence: 0.807578874444444

00:23:45.080 --> 00:23:46.655 Maybe someone is going to

NOTE Confidence: 0.807578874444444

00:23:46.655 --> 00:23:48.480 have surgery or if someone is.

NOTE Confidence: 0.848313987407408

00:23:51.360 --> 00:23:53.960 34 weeks pregnant and and we need to

NOTE Confidence: 0.848313987407408

00:23:53.960 --> 00:23:56.430 improve their anemia in a shorter time

NOTE Confidence: 0.848313987407408

00:23:56.430 --> 00:23:59.104 frame and I think intravenous iron is

NOTE Confidence: 0.848313987407408

00:23:59.104 --> 00:24:01.239 extremely helpful in those situations.

NOTE Confidence: 0.848313987407408

00:24:01.240 --> 00:24:04.173 It is also common in patients who

NOTE Confidence: 0.848313987407408

00:24:04.173 --> 00:24:06.948 are with chronic kidney disease on

NOTE Confidence: 0.848313987407408

00:24:06.950 --> 00:24:10.558 erythropoietin stimulating agents often

NOTE Confidence: 0.848313987407408

00:24:10.558 --> 00:24:14.660 benefit from intravenous iron. Umm.

NOTE Confidence: 0.87935176375

00:24:20.710 --> 00:24:25.030 We have ways of calculating the iron deficit.

NOTE Confidence: 0.87935176375

00:24:25.030 --> 00:24:27.520 That calculation is stated there.

NOTE Confidence: 0.87935176375

00:24:27.520 --> 00:24:30.474 It usually ends up being somewhere around

NOTE Confidence: 0.87935176375

00:24:30.474 --> 00:24:33.379 1000 milligrams that someone needs repleted,

NOTE Confidence: 0.87935176375

00:24:33.380 --> 00:24:36.176 and there's a number of different

NOTE Confidence: 0.87935176375

00:24:36.176 --> 00:24:38.040 brands that are available.

NOTE Confidence: 0.87935176375

00:24:38.040 --> 00:24:41.578 They. At the end of the day,

NOTE Confidence: 0.87935176375

00:24:41.580 --> 00:24:45.262 can I think we choose which brand

NOTE Confidence: 0.87935176375

00:24:45.262 --> 00:24:51.188 based on patients, insurance and and?

NOTE Confidence: 0.87935176375

00:24:51.190 --> 00:24:52.422 Potentially, how many visits

NOTE Confidence: 0.87935176375

00:24:52.422 --> 00:24:54.270 it might be to the clinic.

NOTE Confidence: 0.87935176375

00:24:54.270 --> 00:24:56.590 Some of them require more

NOTE Confidence: 0.87935176375

00:24:56.590 --> 00:25:00.210 more than one visit. Umm.

NOTE Confidence: 0.87935176375

00:25:00.210 --> 00:25:02.178 There is evolving literature

NOTE Confidence: 0.87935176375

00:25:02.178 --> 00:25:04.846 about the risk of infusion related

NOTE Confidence: 0.87935176375

00:25:04.846 --> 00:25:06.934 reactions that can happen with iron.

NOTE Confidence: 0.809997115333333

00:25:09.560 --> 00:25:10.744 Including our own published

NOTE Confidence: 0.809997115333333

00:25:10.744 --> 00:25:12.520 data that seems to be maybe

NOTE Confidence: 0.809997115333333

00:25:12.576 --> 00:25:14.296 relevant to patients blood type,

NOTE Confidence: 0.809997115333333

00:25:14.300 --> 00:25:16.756 but I think it still is quite rare,

NOTE Confidence: 0.809997115333333

00:25:16.760 --> 00:25:19.020 maybe maybe somewhere around 1%

NOTE Confidence: 0.809997115333333

00:25:19.020 --> 00:25:21.470 of patients have what we call an

NOTE Confidence: 0.809997115333333

00:25:21.470 --> 00:25:23.546 infusion related or which is a

NOTE Confidence: 0.809997115333333

00:25:23.546 --> 00:25:25.256 sort of allergic type reaction.

NOTE Confidence: 0.809997115333333

00:25:25.260 --> 00:25:28.559 But for the most part there's no brand

NOTE Confidence: 0.809997115333333

00:25:28.559 --> 00:25:31.030 preference at the end of the day.

NOTE Confidence: 0.9083769

00:25:33.720 --> 00:25:34.560 Next slide, please.

NOTE Confidence: 0.777776185714286

00:25:37.250 --> 00:25:39.847 So who should be sent to hematology,

NOTE Confidence: 0.777776185714286

00:25:39.850 --> 00:25:42.118 I think patients who who who benefit

NOTE Confidence: 0.777776185714286

00:25:42.118 --> 00:25:44.586 from IV iron will always happy to

NOTE Confidence: 0.777776185714286

00:25:44.586 --> 00:25:47.021 see those patients and I think if

NOTE Confidence: 0.777776185714286

00:25:47.021 --> 00:25:49.043 the patient is having a history

NOTE Confidence: 0.777776185714286

00:25:49.043 --> 00:25:51.535 with significant bleeding and that

NOTE Confidence: 0.777776185714286

00:25:51.535 --> 00:25:54.130 includes a heavy menstrual periods.

NOTE Confidence: 0.777776185714286

00:25:54.130 --> 00:25:55.910 Patients who have prolonged menstrual

NOTE Confidence: 0.777776185714286

00:25:55.910 --> 00:25:57.174 periods, patients who see clots

NOTE Confidence: 0.777776185714286

00:25:57.174 --> 00:25:58.304 of blood during their periods,

NOTE Confidence: 0.777776185714286

00:25:58.310 --> 00:25:59.714 patients who say every woman in

NOTE Confidence: 0.777776185714286

00:25:59.714 --> 00:26:01.050 their family had heavy periods,

NOTE Confidence: 0.777776185714286

00:26:01.050 --> 00:26:03.082 I think it can be very helpful for

NOTE Confidence: 0.777776185714286

00:26:03.082 --> 00:26:05.104 us to make sure those patients

NOTE Confidence: 0.777776185714286

00:26:05.104 --> 00:26:07.276 do not have a bleeding disorder.

NOTE Confidence: 0.777776185714286

00:26:07.280 --> 00:26:09.280 Patients who bleed after pregnancy,

NOTE Confidence: 0.777776185714286

00:26:09.280 --> 00:26:11.812 these are patients who are frequently

NOTE Confidence: 0.777776185714286

00:26:11.812 --> 00:26:14.325 missed in their diagnosis and then

NOTE Confidence: 0.777776185714286

00:26:14.325 --> 00:26:16.666 patients who are refractory to patients

NOTE Confidence: 0.777776185714286

00:26:16.666 --> 00:26:18.997 who have been taking oral iron appropriately.

NOTE Confidence: 0.777776185714286

00:26:19.000 --> 00:26:21.198 So again, I just think back on,

NOTE Confidence: 0.777776185714286

00:26:21.200 --> 00:26:22.558 are they taking it every other day,

NOTE Confidence: 0.777776185714286

00:26:22.560 --> 00:26:23.504 are they taking it,

NOTE Confidence: 0.777776185714286

00:26:23.504 --> 00:26:24.920 are they taking on empty stomach,

NOTE Confidence: 0.777776185714286

00:26:24.920 --> 00:26:25.428 are they,

NOTE Confidence: 0.777776185714286

00:26:25.428 --> 00:26:27.999 are they are they taking it the way we've

NOTE Confidence: 0.777776185714286

00:26:27.999 --> 00:26:31.906 recommended for patients that really are or?

NOTE Confidence: 0.777776185714286

00:26:31.910 --> 00:26:33.016 I think it can be helpful for

NOTE Confidence: 0.777776185714286

00:26:33.016 --> 00:26:34.472 us to to think outside the box a

NOTE Confidence: 0.777776185714286

00:26:34.472 --> 00:26:36.133 little bit as to what the cause of

NOTE Confidence: 0.777776185714286

00:26:36.133 --> 00:26:37.037 their iron deficiency is.

NOTE Confidence: 0.62390435

00:26:40.560 --> 00:26:43.048 Good. I'll just pop in one of

NOTE Confidence: 0.62390435

00:26:43.048 --> 00:26:45.030 the questions on Katie Reeve,

NOTE Confidence: 0.819223925

00:26:45.030 --> 00:26:49.179 who's one of our EMG internist in the New

NOTE Confidence: 0.819223925

00:26:49.179 --> 00:26:52.136 London region or the Far East region,

NOTE Confidence: 0.819223925

00:26:52.140 --> 00:26:53.980 says other than pill burden,

NOTE Confidence: 0.819223925

00:26:53.980 --> 00:26:56.014 is there a downside to long-term

NOTE Confidence: 0.819223925

00:26:56.014 --> 00:26:57.803 iron that people aren't feeling

NOTE Confidence: 0.819223925

00:26:57.803 --> 00:26:59.668 side effects are their harms?

NOTE Confidence: 0.736122402

00:27:00.660 --> 00:27:04.240 Well because the there's no,

NOTE Confidence: 0.736122402

00:27:04.240 --> 00:27:06.784 there's no real way for our the human

NOTE Confidence: 0.736122402

00:27:06.784 --> 00:27:09.118 body to get rid of excess iron.

NOTE Confidence: 0.736122402

00:27:09.120 --> 00:27:12.258 I do worry about iron overload

NOTE Confidence: 0.736122402

00:27:12.260 --> 00:27:14.138 and occasionally I think we do.

NOTE Confidence: 0.736122402

00:27:14.140 --> 00:27:17.780 We do see patients who start to have

NOTE Confidence: 0.736122402

00:27:17.780 --> 00:27:20.025 high duration and high ferritin from

NOTE Confidence: 0.736122402

00:27:20.025 --> 00:27:23.219 being on you know a long standing iron.

NOTE Confidence: 0.736122402

00:27:23.220 --> 00:27:26.289 So I I do think, I do think.

NOTE Confidence: 0.736122402

00:27:26.290 --> 00:27:27.532 It really should just be done

NOTE Confidence: 0.736122402

00:27:27.532 --> 00:27:29.118 for a fine out amount of time.

NOTE Confidence: 0.694814606666667

00:27:30.430 --> 00:27:33.118 Alright. And Doctor Zarko Power just

NOTE Confidence: 0.694814606666667

00:27:33.118 --> 00:27:36.270 points out that you know chronic blood

NOTE Confidence: 0.694814606666667

00:27:36.270 --> 00:27:38.520 loss especially angiodysplasia and other

NOTE Confidence: 0.694814606666667

00:27:38.520 --> 00:27:41.332 GI issues on seems to be really common.

NOTE Confidence: 0.694814606666667

00:27:41.332 --> 00:27:43.264 And I'll add one more question.

NOTE Confidence: 0.694814606666667

00:27:43.270 --> 00:27:45.640 Sometimes we use the platelet

NOTE Confidence: 0.694814606666667

00:27:45.640 --> 00:27:48.384 count as a kind of approximator

NOTE Confidence: 0.694814606666667

00:27:48.384 --> 00:27:50.628 of how acute the bleeding is.

NOTE Confidence: 0.694814606666667

00:27:50.630 --> 00:27:52.326 Is there any truth to that that people

NOTE Confidence: 0.694814606666667

00:27:52.326 --> 00:27:54.007 who have a high platelet count with

NOTE Confidence: 0.694814606666667

00:27:54.007 --> 00:27:55.880 their iron deficiency are more likely

NOTE Confidence: 0.694814606666667

00:27:55.880 --> 00:27:59.300 actively bleeding than than than not?

NOTE Confidence: 0.963651486

00:28:01.780 --> 00:28:04.100 I'm not aware of that.

NOTE Confidence: 0.963651486

00:28:04.100 --> 00:28:05.395 I don't know the answer to that.

NOTE Confidence: 0.963651486

00:28:05.400 --> 00:28:08.640 I I feel like we see.

NOTE Confidence: 0.963651486

00:28:08.640 --> 00:28:10.755 And I actually think so when I did some

NOTE Confidence: 0.963651486

00:28:10.755 --> 00:28:13.131 of the research that that that the the

NOTE Confidence: 0.963651486

00:28:13.131 --> 00:28:15.731 platelet count is is often high in iron

NOTE Confidence: 0.963651486

00:28:15.731 --> 00:28:17.381 deficiency through its own mechanism.

NOTE Confidence: 0.963651486

00:28:17.390 --> 00:28:19.595 So I but I I don't know how bleeding

NOTE Confidence: 0.963651486

00:28:19.595 --> 00:28:21.324 offsets that's why I actually just

NOTE Confidence: 0.963651486

00:28:21.324 --> 00:28:23.590 don't know the answer to that question.

NOTE Confidence: 0.963651486

00:28:23.590 --> 00:28:26.054 I don't know I'll defer to my colleague

NOTE Confidence: 0.963651486

00:28:26.054 --> 00:28:27.938 someone else has a nose of more than

NOTE Confidence: 0.963651486

00:28:27.938 --> 00:28:30.347 I do but I and I but I absolutely

NOTE Confidence: 0.963651486

00:28:30.347 --> 00:28:32.097 agree with interact with ours about

NOTE Confidence: 0.963651486

00:28:32.097 --> 00:28:33.753 Andrew dysplasia and and and we do have

NOTE Confidence: 0.963651486

00:28:33.753 --> 00:28:35.316 some patients I think that are kind

NOTE Confidence: 0.963651486

00:28:35.316 --> 00:28:36.860 of chronic leaders and and for those

NOTE Confidence: 0.963651486

00:28:36.860 --> 00:28:38.832 patients I think yes they could stay on iron.

NOTE Confidence: 0.963651486

00:28:38.832 --> 00:28:40.137 As long as you're someone's

NOTE Confidence: 0.963651486

00:28:40.137 --> 00:28:41.660 like tracking it and measuring.

NOTE Confidence: 0.963651486

00:28:42.660 --> 00:28:44.080 OK. But.

NOTE Confidence: 0.89384889

00:28:47.620 --> 00:28:49.750 So I'll, I'll take this back.

NOTE Confidence: 0.89384889

00:28:49.750 --> 00:28:51.850 Thank you, Kelsey, very much.

NOTE Confidence: 0.89384889

00:28:51.850 --> 00:28:54.020 And even though I prepared these cases

NOTE Confidence: 0.89384889

00:28:54.020 --> 00:28:56.207 and knew what you're going to say,

NOTE Confidence: 0.89384889

00:28:56.210 --> 00:28:59.010 I still learned three things just now.

NOTE Confidence: 0.89384889

00:28:59.010 --> 00:29:03.938 So thank you. So this woman did have

NOTE Confidence: 0.89384889

00:29:03.938 --> 00:29:06.870 manraja on more directed questioning

NOTE Confidence: 0.89384889

00:29:06.870 --> 00:29:09.470 and ultrasound that showed polyps.

NOTE Confidence: 0.89384889

00:29:09.470 --> 00:29:12.150 She had a GYN who took her surgery.

NOTE Confidence: 0.89384889

00:29:12.150 --> 00:29:14.910 She did well after surgery.

NOTE Confidence: 0.89384889

00:29:14.910 --> 00:29:17.412 And she's had a normal hemoglobin

NOTE Confidence: 0.89384889

00:29:17.412 --> 00:29:20.051 postop and and since and still

NOTE Confidence: 0.89384889

00:29:20.051 --> 00:29:22.715 without any symptoms which is great.

NOTE Confidence: 0.89384889

00:29:22.720 --> 00:29:25.765 So and I think she had just

NOTE Confidence: 0.89384889

00:29:25.765 --> 00:29:29.830 oral iron I believe in the end.

NOTE Confidence: 0.89384889

00:29:29.830 --> 00:29:33.778 Thank you. I think we answered.

NOTE Confidence: 0.89384889

00:29:33.780 --> 00:29:35.334 Yes, I think we answered all

NOTE Confidence: 0.89384889

00:29:35.334 --> 00:29:36.900 of our questions for case one.

NOTE Confidence: 0.89384889

00:29:36.900 --> 00:29:40.680 So I'm going to move us through to case two.

NOTE Confidence: 0.89384889

00:29:40.680 --> 00:29:43.389 So SN is another patient of mine,

NOTE Confidence: 0.89384889

00:29:43.390 --> 00:29:45.266 76 year old gentleman a little older,

NOTE Confidence: 0.89384889

00:29:45.270 --> 00:29:47.300 a little bit thicker coronary artery disease,

NOTE Confidence: 0.89384889

00:29:47.300 --> 00:29:52.546 prefer all disease Tia, stroke, COPD,

NOTE Confidence: 0.89384889

00:29:52.546 --> 00:29:57.876 chronic kidney disease stage 3.

NOTE Confidence: 0.89384889

00:29:57.880 --> 00:30:01.040 Which is not in there but that's what

NOTE Confidence: 0.89384889

00:30:01.040 --> 00:30:04.560 he has who came in with the subacute

NOTE Confidence: 0.89384889

00:30:04.560 --> 00:30:07.727 of one to two-month history of chronic

NOTE Confidence: 0.89384889

00:30:07.727 --> 00:30:10.541 dyspnea on exertion that over that

NOTE Confidence: 0.89384889

00:30:10.541 --> 00:30:13.518 time period has been getting worse.

NOTE Confidence: 0.89384889

00:30:13.520 --> 00:30:17.378 Here's his most recent blood work

NOTE Confidence: 0.89384889

00:30:17.380 --> 00:30:19.571 and I was calculating his GFR by

NOTE Confidence: 0.89384889

00:30:19.571 --> 00:30:21.978 memory but I might have overshot.

NOTE Confidence: 0.89384889

00:30:21.980 --> 00:30:25.326 But you can see he is anemic

NOTE Confidence: 0.89384889

00:30:25.326 --> 00:30:27.634 hemoglobin of nine his ferritin.

NOTE Confidence: 0.89384889

00:30:27.634 --> 00:30:32.317 Was in the normal range of B12 in the upper

NOTE Confidence: 0.89384889

00:30:32.317 --> 00:30:36.146 normal range and his platelets were normal,

NOTE Confidence: 0.89384889

00:30:36.150 --> 00:30:37.938 his MCV normal.

NOTE Confidence: 0.840800659230769

00:30:40.380 --> 00:30:43.719 We'll go and through the next slide

NOTE Confidence: 0.840800659230769

00:30:43.719 --> 00:30:46.939 for a little bit more history.

NOTE Confidence: 0.840800659230769

00:30:46.940 --> 00:30:49.640 We did a a fit card that was negative

NOTE Confidence: 0.840800659230769

00:30:49.640 --> 00:30:51.410 because of his comorbidities.

NOTE Confidence: 0.840800659230769

00:30:51.410 --> 00:30:54.386 Um, he was probably just about due for

NOTE Confidence: 0.840800659230769

00:30:54.386 --> 00:30:56.643 a colonoscopy now and the decision

NOTE Confidence: 0.840800659230769

00:30:56.643 --> 00:30:59.370 really wasn't to do unless we had to.

NOTE Confidence: 0.840800659230769

00:30:59.370 --> 00:31:01.836 But his colonoscopy exactly 10 years

NOTE Confidence: 0.840800659230769

00:31:01.836 --> 00:31:04.670 ago was essentially normal as well,

NOTE Confidence: 0.840800659230769

00:31:04.670 --> 00:31:07.360 diverticulosis and and internal hemorrhoids.

NOTE Confidence: 0.840800659230769

00:31:07.360 --> 00:31:10.104 So I'm going to pass it on to

NOTE Confidence: 0.840800659230769

00:31:10.110 --> 00:31:13.360 Bob Bona and the questions first

NOTE Confidence: 0.840800659230769

00:31:13.360 --> 00:31:15.816 would be what other testing would

NOTE Confidence: 0.840800659230769

00:31:15.816 --> 00:31:18.100 you recommend in this case? Thank

NOTE Confidence: 0.85454854

00:31:18.110 --> 00:31:19.499 you. Thanks, Frank.

NOTE Confidence: 0.85454854

00:31:19.499 --> 00:31:21.814 And just to echo Kelsey,

NOTE Confidence: 0.85454854

00:31:21.820 --> 00:31:23.878 I appreciate the opportunity to be here

NOTE Confidence: 0.85454854

00:31:23.878 --> 00:31:26.160 this evening to speaking with all of you,

NOTE Confidence: 0.85454854

00:31:26.160 --> 00:31:28.188 it's a it's a real pleasure.

NOTE Confidence: 0.85454854

00:31:28.190 --> 00:31:29.670 And so just to recap,

NOTE Confidence: 0.85454854

00:31:29.670 --> 00:31:32.560 this is a a man in his 70s who has

NOTE Confidence: 0.85454854

00:31:32.651 --> 00:31:35.765 multiple medical issues who now has

NOTE Confidence: 0.85454854

00:31:35.765 --> 00:31:38.460 some symptoms of dyspnea and has what

NOTE Confidence: 0.85454854

00:31:38.546 --> 00:31:41.626 I would characterize in many of us

NOTE Confidence: 0.85454854

00:31:41.626 --> 00:31:44.449 would characterize as a moderate anemia.

NOTE Confidence: 0.85454854

00:31:44.450 --> 00:31:46.270 And I think what other

NOTE Confidence: 0.85454854

00:31:46.270 --> 00:31:47.726 tests would you recommend?

NOTE Confidence: 0.85454854

00:31:47.730 --> 00:31:51.194 I think it's always helpful to know what

NOTE Confidence: 0.85454854

00:31:51.194 --> 00:31:54.107 the previous CBC values are certainly

NOTE Confidence: 0.85454854

00:31:54.110 --> 00:31:56.546 is this anemia developed rather quickly,

NOTE Confidence: 0.85454854

00:31:56.550 --> 00:31:58.090 has it been present for

NOTE Confidence: 0.85454854

00:31:58.090 --> 00:31:59.630 many years or many months,

NOTE Confidence: 0.85454854

00:31:59.630 --> 00:32:01.274 in which case the the dyspnea

NOTE Confidence: 0.85454854

00:32:01.274 --> 00:32:03.228 may not be related to the anemia.

NOTE Confidence: 0.85454854

00:32:03.230 --> 00:32:05.882 So having those values is really

NOTE Confidence: 0.85454854

00:32:05.882 --> 00:32:08.767 very helpful and also keeping in

NOTE Confidence: 0.85454854

00:32:08.767 --> 00:32:11.347 mind that individuals who develop

NOTE Confidence: 0.85454854

00:32:11.347 --> 00:32:14.369 anemia slowly have a great capacity.

NOTE Confidence: 0.85454854

00:32:14.370 --> 00:32:17.210 To to to compensate for that and may

NOTE Confidence: 0.85454854

00:32:17.210 --> 00:32:20.147 and may or may not have symptoms

NOTE Confidence: 0.85454854

00:32:20.147 --> 00:32:22.287 until they get quite anemic.

NOTE Confidence: 0.85454854

00:32:22.290 --> 00:32:24.225 The Reticulocyte count is really

NOTE Confidence: 0.85454854

00:32:24.225 --> 00:32:26.160 a must in this situation,

NOTE Confidence: 0.85454854

00:32:26.160 --> 00:32:28.183 I think where we're looking at in

NOTE Confidence: 0.85454854

00:32:28.183 --> 00:32:30.419 anemia where it's not so straightforward.

NOTE Confidence: 0.85454854

00:32:30.420 --> 00:32:32.716 And then a peripheral blood smear I

NOTE Confidence: 0.85454854

00:32:32.716 --> 00:32:35.000 think is always a very reasonable

NOTE Confidence: 0.85454854

00:32:35.000 --> 00:32:37.466 thing to request from our pathology

NOTE Confidence: 0.85454854

00:32:37.466 --> 00:32:39.799 colleagues to get any clues about what

NOTE Confidence: 0.85454854

00:32:39.799 --> 00:32:43.708 this anemia could be could be due to.

NOTE Confidence: 0.85454854

00:32:43.710 --> 00:32:45.627 The the maybe there I'm going to come to

NOTE Confidence: 0.85454854

00:32:45.627 --> 00:32:47.629 as we go through this case if I could.

NOTE Confidence: 0.85454854

00:32:47.630 --> 00:32:50.786 So if if you could please

NOTE Confidence: 0.85454854

00:32:50.786 --> 00:32:52.890 just advance the slide.

NOTE Confidence: 0.85454854

00:32:52.890 --> 00:32:55.130 So I just want to spend a minute

NOTE Confidence: 0.85454854

00:32:55.130 --> 00:32:56.700 talking about reticulocytes if I

NOTE Confidence: 0.85454854

00:32:56.700 --> 00:32:58.912 can because I think there's a lot

NOTE Confidence: 0.85454854

00:32:58.980 --> 00:33:00.990 of confusion about how these are

NOTE Confidence: 0.85454854

00:33:00.990 --> 00:33:03.126 reported and how these are interpreted.

NOTE Confidence: 0.85454854

00:33:03.126 --> 00:33:06.310 So most of us know that these are

NOTE Confidence: 0.85454854

00:33:06.398 --> 00:33:08.868 have been reported as percents,

NOTE Confidence: 0.85454854

00:33:08.870 --> 00:33:10.435 reticular site percent and then

NOTE Confidence: 0.85454854

00:33:10.435 --> 00:33:12.418 where we've been taught to calculate

NOTE Confidence: 0.85454854

00:33:12.418 --> 00:33:14.218 a reticular site production index

NOTE Confidence: 0.85454854

00:33:14.218 --> 00:33:15.298 or a curriculum.

NOTE Confidence: 0.85454854

00:33:15.300 --> 00:33:16.608 Corrected reticulocyte count.

NOTE Confidence: 0.85454854

00:33:16.608 --> 00:33:20.600 And then look at that number and to determine

NOTE Confidence: 0.85454854

00:33:20.600 --> 00:33:23.186 if the anemia is hypo proliferative.

NOTE Confidence: 0.85454854

00:33:23.190 --> 00:33:24.714 That is from the point of

NOTE Confidence: 0.85454854

00:33:24.714 --> 00:33:26.150 view of the blood smear,

NOTE Confidence: 0.85454854

00:33:26.150 --> 00:33:29.155 bone marrow not producing blood

NOTE Confidence: 0.85454854

00:33:29.155 --> 00:33:30.958 cells or hyperproliferative.

NOTE Confidence: 0.85454854

00:33:30.960 --> 00:33:33.464 Again, if you're standing out in the blood,

NOTE Confidence: 0.85454854

00:33:33.470 --> 00:33:35.990 the bone marrow producing a lot of blood,

NOTE Confidence: 0.85454854

00:33:35.990 --> 00:33:37.080 a lot of blood cells,

NOTE Confidence: 0.85454854

00:33:37.080 --> 00:33:38.440 the bone marrow are producing

NOTE Confidence: 0.85454854

00:33:38.440 --> 00:33:39.800 a lot of blood cells,

NOTE Confidence: 0.85454854

00:33:39.800 --> 00:33:41.295 and I personally find that

NOTE Confidence: 0.85454854

00:33:41.295 --> 00:33:42.790 many of us do that.

NOTE Confidence: 0.85454854

00:33:42.790 --> 00:33:44.635 The absolute reticulocyte count is

NOTE Confidence: 0.85454854

00:33:44.635 --> 00:33:47.608 probably the best way to think about this.

NOTE Confidence: 0.85454854

00:33:47.610 --> 00:33:48.954 And just a moment,

NOTE Confidence: 0.85454854

00:33:48.954 --> 00:33:50.970 just a a word about that.

NOTE Confidence: 0.85454854

00:33:50.970 --> 00:33:53.546 So if the normal red count is 5

NOTE Confidence: 0.85454854

00:33:53.546 --> 00:33:55.790 * 10 to the six per microliter

NOTE Confidence: 0.85454854

00:33:55.790 --> 00:33:57.760 of 5,000,000 per microliter.

NOTE Confidence: 0.85454854

00:33:57.760 --> 00:34:01.060 And the red blood cell survival

NOTE Confidence: 0.85454854

00:34:01.060 --> 00:34:03.080 is 100 days or so.

NOTE Confidence: 0.85454854

00:34:03.080 --> 00:34:05.837 We therefore replace about 1% of

NOTE Confidence: 0.85454854

00:34:05.837 --> 00:34:07.859 our red blood cells every day.

NOTE Confidence: 0.85454854

00:34:07.860 --> 00:34:12.412 So our reticulocyte count is 1% * 5

NOTE Confidence: 0.85454854

00:34:12.412 --> 00:34:16.400 * 10 to the 6th, 1% of 5,000,000,

NOTE Confidence: 0.85454854

00:34:16.400 --> 00:34:18.140 and that's 50,000.

NOTE Confidence: 0.85454854

00:34:18.140 --> 00:34:21.977 And sometimes this is reported as 50,000.

NOTE Confidence: 0.85454854

00:34:21.977 --> 00:34:24.196 Sometimes in the Yale lab it's reported

NOTE Confidence: 0.85454854

00:34:24.196 --> 00:34:26.718 as a number of times 10 to the 6th.

NOTE Confidence: 0.85454854

00:34:26.720 --> 00:34:28.586 So it comes out to point.

NOTE Confidence: 0.760395563076923

00:34:28.590 --> 00:34:31.814 05 and I and I think again understanding

NOTE Confidence: 0.760395563076923

00:34:31.814 --> 00:34:34.448 how that's reported is important.

NOTE Confidence: 0.760395563076923

00:34:34.450 --> 00:34:37.590 And so if a person has an anemia and has a

NOTE Confidence: 0.760395563076923

00:34:37.590 --> 00:34:40.098 reticulocyte count of 50 or 60 or 70,000,

NOTE Confidence: 0.760395563076923

00:34:40.098 --> 00:34:42.814 they are under producing red blood cells

NOTE Confidence: 0.760395563076923

00:34:42.814 --> 00:34:45.739 and the bone and the bone marrow is

NOTE Confidence: 0.760395563076923

00:34:45.739 --> 00:34:48.238 not able to compensate for the anemia.

NOTE Confidence: 0.760395563076923

00:34:48.240 --> 00:34:50.759 And on the other hand, if the articular

NOTE Confidence: 0.760395563076923

00:34:50.759 --> 00:34:52.921 side can is 150,000 for instance,

NOTE Confidence: 0.760395563076923

00:34:52.921 --> 00:34:54.756 that suggests that the bone

NOTE Confidence: 0.760395563076923

00:34:54.756 --> 00:34:57.237 marrow is producing a lot of red

NOTE Confidence: 0.760395563076923

00:34:57.237 --> 00:34:58.917 blood cells despite the anemia.

NOTE Confidence: 0.760395563076923

00:34:58.920 --> 00:35:00.545 And this is critically important

NOTE Confidence: 0.760395563076923

00:35:00.545 --> 00:35:02.836 because there are only a couple of

NOTE Confidence: 0.760395563076923

00:35:02.836 --> 00:35:04.648 things that give an anemia with

NOTE Confidence: 0.760395563076923

00:35:04.648 --> 00:35:06.399 an elevated reticulocyte count.

NOTE Confidence: 0.760395563076923

00:35:06.400 --> 00:35:08.896 And one of those is of course hemolysis.

NOTE Confidence: 0.760395563076923

00:35:08.900 --> 00:35:11.660 With an adequate bone marrow response,

NOTE Confidence: 0.760395563076923

00:35:11.660 --> 00:35:13.858 you can have homolysis and not have

NOTE Confidence: 0.760395563076923

00:35:13.858 --> 00:35:15.469 an elevated reticular site count.

NOTE Confidence: 0.760395563076923

00:35:15.470 --> 00:35:18.358 So if you have iron deficiency for instance.

NOTE Confidence: 0.760395563076923

00:35:18.360 --> 00:35:19.430 Plus hemolysis,

NOTE Confidence: 0.760395563076923

00:35:19.430 --> 00:35:22.105 the bone marrow can't respond.

NOTE Confidence: 0.760395563076923

00:35:22.110 --> 00:35:24.182 The other thing that will give an

NOTE Confidence: 0.760395563076923

00:35:24.182 --> 00:35:25.681 increased reticulocyte count is that

NOTE Confidence: 0.760395563076923

00:35:25.681 --> 00:35:27.648 there's some recovery from an anemic process.

NOTE Confidence: 0.760395563076923

00:35:27.650 --> 00:35:29.252 So someone's had a bleed and

NOTE Confidence: 0.760395563076923

00:35:29.252 --> 00:35:31.332 you're seeing them a week or two

NOTE Confidence: 0.760395563076923

00:35:31.332 --> 00:35:32.608 later and they're recovering.

NOTE Confidence: 0.760395563076923

00:35:32.610 --> 00:35:34.866 Or as in the previous case

NOTE Confidence: 0.760395563076923

00:35:34.866 --> 00:35:36.370 that Kelsey discussed you,

NOTE Confidence: 0.760395563076923

00:35:36.370 --> 00:35:37.900 you're giving someone iron and

NOTE Confidence: 0.760395563076923

00:35:37.900 --> 00:35:39.430 their anemia is getting better.

NOTE Confidence: 0.760395563076923

00:35:39.430 --> 00:35:40.720 And in those cases, again,

NOTE Confidence: 0.760395563076923

00:35:40.720 --> 00:35:43.758 you'd expect the reticulocyte count to be

NOTE Confidence: 0.760395563076923

00:35:43.758 --> 00:35:47.090 increased as the bone marrow is recovering.

NOTE Confidence: 0.760395563076923

00:35:47.090 --> 00:35:48.476 And just as a quick reminder,

NOTE Confidence: 0.760395563076923

00:35:48.480 --> 00:35:48.775 those.

NOTE Confidence: 0.760395563076923

00:35:48.775 --> 00:35:50.250 Particular sites are the bigger,

NOTE Confidence: 0.760395563076923

00:35:50.250 --> 00:35:52.145 bluer cells on the peripheral

NOTE Confidence: 0.760395563076923

00:35:52.145 --> 00:35:54.500 blood smear indicated by the arrow.

NOTE Confidence: 0.760395563076923

00:35:54.500 --> 00:35:55.922 So for me,

NOTE Confidence: 0.760395563076923

00:35:55.922 --> 00:35:58.292 absolute reticulocyte count is a

NOTE Confidence: 0.760395563076923

00:35:58.292 --> 00:36:01.038 very important number that I look at

NOTE Confidence: 0.760395563076923

00:36:01.040 --> 00:36:04.820 to try to help decipher the anemia.

NOTE Confidence: 0.760395563076923

00:36:04.820 --> 00:36:06.724 And then if, yeah, if we could move.

NOTE Confidence: 0.760395563076923

00:36:06.730 --> 00:36:08.500 Thank you.

NOTE Confidence: 0.760395563076923

00:36:08.500 --> 00:36:11.615 So the blood smear is also very

NOTE Confidence: 0.760395563076923

00:36:11.615 --> 00:36:15.525 important and especially if there are

NOTE Confidence: 0.760395563076923

00:36:15.525 --> 00:36:18.297 some characteristic abnormalities described.

NOTE Confidence: 0.760395563076923

00:36:18.300 --> 00:36:21.079 So for instance, if there are teardrop

NOTE Confidence: 0.760395563076923

00:36:21.079 --> 00:36:24.377 cells noted on the peripheral blood smear,

NOTE Confidence: 0.760395563076923

00:36:24.380 --> 00:36:27.105 we're often thinking of myelofibrosis

NOTE Confidence: 0.760395563076923

00:36:27.105 --> 00:36:28.195 or myelopoiesis.

NOTE Confidence: 0.760395563076923

00:36:28.200 --> 00:36:29.193 Myelopoiesis, of course,

NOTE Confidence: 0.760395563076923

00:36:29.193 --> 00:36:30.848 is where there's something invading

NOTE Confidence: 0.760395563076923

00:36:30.848 --> 00:36:31.900 the bone marrow.

NOTE Confidence: 0.760395563076923

00:36:31.900 --> 00:36:33.376 That could be cancer.

NOTE Confidence: 0.760395563076923

00:36:33.376 --> 00:36:35.590 It could be infection like tuberculosis.

NOTE Confidence: 0.760395563076923

00:36:35.590 --> 00:36:38.230 It could be granulomas with sarcoid

NOTE Confidence: 0.760395563076923

00:36:38.230 --> 00:36:39.110 for instance.

NOTE Confidence: 0.760395563076923

00:36:39.110 --> 00:36:42.246 So the presence of teardrops is helpful.

NOTE Confidence: 0.760395563076923

00:36:42.250 --> 00:36:44.455 Burr cells are often seen in uremia

NOTE Confidence: 0.760395563076923

00:36:44.455 --> 00:36:46.684 spur cells and liver disease target

NOTE Confidence: 0.760395563076923

00:36:46.684 --> 00:36:48.587 cells and liver disease, etcetera.

NOTE Confidence: 0.760395563076923

00:36:48.587 --> 00:36:50.526 So I won't go through the list,

NOTE Confidence: 0.760395563076923

00:36:50.530 --> 00:36:52.861 but these things you know can really

NOTE Confidence: 0.760395563076923

00:36:52.861 --> 00:36:56.115 help us a lot and give us clues as to

NOTE Confidence: 0.760395563076923

00:36:56.115 --> 00:36:58.649 why the patient is developing anemia.

NOTE Confidence: 0.760395563076923

00:36:58.650 --> 00:37:00.715 And we would either look at the

NOTE Confidence: 0.760395563076923

00:37:00.715 --> 00:37:02.735 smear in clinic ourselves or ask

NOTE Confidence: 0.760395563076923

00:37:02.735 --> 00:37:04.520 our pathology colleagues to look

NOTE Confidence: 0.760395563076923

00:37:04.520 --> 00:37:06.746 at this and then give a formal.

NOTE Confidence: 0.760395563076923

00:37:06.750 --> 00:37:08.830 Report in the chart.

NOTE Confidence: 0.8488761725

00:37:11.350 --> 00:37:16.430 Thank you. And so back to this case,

NOTE Confidence: 0.8488761725

00:37:16.430 --> 00:37:19.006 I think represents one of the harder

NOTE Confidence: 0.8488761725

00:37:19.006 --> 00:37:22.097 cases of anemia for me as a practicing

NOTE Confidence: 0.8488761725

00:37:22.097 --> 00:37:24.007 hematologist because you have a

NOTE Confidence: 0.8488761725

00:37:24.086 --> 00:37:26.211 patient who has multiple medical

NOTE Confidence: 0.8488761725

00:37:26.211 --> 00:37:28.597 problems who has a moderate anemia,

NOTE Confidence: 0.8488761725

00:37:28.597 --> 00:37:30.139 one that we can't just say

NOTE Confidence: 0.8488761725

00:37:30.139 --> 00:37:31.729 is just a tiny bit off.

NOTE Confidence: 0.8488761725

00:37:31.730 --> 00:37:34.136 You know, there's something going on

NOTE Confidence: 0.8488761725

00:37:34.136 --> 00:37:36.530 here with the hemoglobin of 9 grams.

NOTE Confidence: 0.8488761725

00:37:36.530 --> 00:37:39.010 And and it's normal chromic

NOTE Confidence: 0.8488761725

00:37:39.010 --> 00:37:40.945 and presumably it's, sorry,

NOTE Confidence: 0.8488761725

00:37:40.945 --> 00:37:42.725 it's Norma acidic and

NOTE Confidence: 0.8488761725

00:37:42.725 --> 00:37:43.615 presumably normochromic.

NOTE Confidence: 0.8488761725

00:37:43.620 --> 00:37:46.244 And I'm going to assume here that the

NOTE Confidence: 0.8488761725

00:37:46.244 --> 00:37:48.136 reticulocyte count is low in this case.

NOTE Confidence: 0.8488761725

00:37:48.140 --> 00:37:50.344 So these are hard,

NOTE Confidence: 0.8488761725

00:37:50.344 --> 00:37:53.472 hard anemias to decipher because there

NOTE Confidence: 0.8488761725

00:37:53.472 --> 00:37:56.076 are many things that can cause the

NOTE Confidence: 0.8488761725

00:37:56.076 --> 00:37:58.976 anemia and there are and and likely

NOTE Confidence: 0.8488761725

00:37:58.976 --> 00:38:01.336 multifactorial causes of the anemia.

NOTE Confidence: 0.8488761725

00:38:01.340 --> 00:38:02.453 And at the end of the day

NOTE Confidence: 0.8488761725

00:38:02.453 --> 00:38:03.779 when I see someone like this,

NOTE Confidence: 0.8488761725

00:38:03.780 --> 00:38:05.442 the question that's in my mind

NOTE Confidence: 0.8488761725

00:38:05.442 --> 00:38:06.550 is do they need.

NOTE Confidence: 0.8488761725

00:38:06.550 --> 00:38:07.462 Bone marrow biopsy,

NOTE Confidence: 0.8488761725

00:38:07.462 --> 00:38:09.590 do we need to suggest a bone

NOTE Confidence: 0.8488761725

00:38:09.656 --> 00:38:11.240 marrow aspiration biopsy,

NOTE Confidence: 0.8488761725

00:38:11.240 --> 00:38:14.240 determine the cause of the anemia?

NOTE Confidence: 0.8488761725

00:38:14.240 --> 00:38:16.460 And on the left there is just kind of a

NOTE Confidence: 0.8488761725

00:38:16.523 --> 00:38:18.518 broad overview of the classifications

NOTE Confidence: 0.8488761725

00:38:18.518 --> 00:38:20.568 for anemia, bone marrow failure,

NOTE Confidence: 0.8488761725

00:38:20.568 --> 00:38:21.816 bone marrow replacement,

NOTE Confidence: 0.8488761725

00:38:21.820 --> 00:38:24.988 nutritional or hormone deficiency,

NOTE Confidence: 0.8488761725

00:38:24.988 --> 00:38:25.780 etcetera.

NOTE Confidence: 0.8488761725

00:38:25.780 --> 00:38:28.420 And then on the right is kind of

NOTE Confidence: 0.8488761725

00:38:28.420 --> 00:38:30.303 the thinking that I will go through

NOTE Confidence: 0.8488761725

00:38:30.303 --> 00:38:32.338 when I see a patient like this.

NOTE Confidence: 0.8488761725

00:38:32.340 --> 00:38:34.700 So is this anemia urgent and we do,

NOTE Confidence: 0.8488761725

00:38:34.700 --> 00:38:36.650 we needs to do something today.

NOTE Confidence: 0.8488761725

00:38:36.650 --> 00:38:40.528 Tomorrow. So is it new and severe?

NOTE Confidence: 0.8488761725

00:38:40.530 --> 00:38:42.380 Is the patient significantly symptomatic

NOTE Confidence: 0.8488761725

00:38:42.380 --> 00:38:45.030 where they might need an intervention,

NOTE Confidence: 0.8488761725

00:38:45.030 --> 00:38:45.740 for instance,

NOTE Confidence: 0.8488761725

00:38:45.740 --> 00:38:48.225 like a blood transfusion from the anemia?

NOTE Confidence: 0.8488761725

00:38:48.230 --> 00:38:49.770 We don't usually expect that

NOTE Confidence: 0.8488761725

00:38:49.770 --> 00:38:51.310 with the hemoglobin of nine,

NOTE Confidence: 0.8488761725

00:38:51.310 --> 00:38:53.277 but if someone had a hemoglobin of

NOTE Confidence: 0.8488761725

00:38:53.277 --> 00:38:55.228 14 yesterday and they're nine today,

NOTE Confidence: 0.8488761725

00:38:55.230 --> 00:38:57.841 they are going to be symptomatic and

NOTE Confidence: 0.8488761725

00:38:57.841 --> 00:39:00.798 will likely need some urgent intervention.

NOTE Confidence: 0.8488761725

00:39:00.800 --> 00:39:03.096 And so the history is quite important

NOTE Confidence: 0.8488761725

00:39:03.096 --> 00:39:05.565 here to help us understand that in

NOTE Confidence: 0.8488761725

00:39:05.565 --> 00:39:08.220 terms of the development of this anemia.

NOTE Confidence: 0.8488761725

00:39:08.220 --> 00:39:09.606 And then the other thing to think

NOTE Confidence: 0.8488761725

00:39:09.606 --> 00:39:11.005 about is there some other process

NOTE Confidence: 0.8488761725

00:39:11.005 --> 00:39:12.517 that's life threatening going on here

NOTE Confidence: 0.8488761725

00:39:12.517 --> 00:39:14.138 that we need to deal with right away?

NOTE Confidence: 0.8488761725

00:39:14.140 --> 00:39:16.080 Is this TTP, for instance,

NOTE Confidence: 0.8488761725

00:39:16.080 --> 00:39:18.340 so are there just a sites on the blood smear?

NOTE Confidence: 0.8488761725

00:39:18.340 --> 00:39:20.620 Is there thrombocytopenia as well?

NOTE Confidence: 0.8488761725

00:39:20.620 --> 00:39:22.937 Are there myeloblasts on the blood smear?

NOTE Confidence: 0.8488761725

00:39:22.940 --> 00:39:25.054 So this may be an acute leukemia.

NOTE Confidence: 0.8488761725

00:39:25.060 --> 00:39:27.722 So those are kind of things that we

NOTE Confidence: 0.8488761725

00:39:27.722 --> 00:39:30.256 often need to think about right away.

NOTE Confidence: 0.8488761725

00:39:30.260 --> 00:39:32.745 Because those patients really need to be

NOTE Confidence: 0.8488761725

00:39:32.745 --> 00:39:35.398 seen right away and triaged differently.

NOTE Confidence: 0.8488761725

00:39:35.400 --> 00:39:38.040 If those things are not present,

NOTE Confidence: 0.8488761725

00:39:38.040 --> 00:39:40.160 so I'm thinking about it,

NOTE Confidence: 0.8488761725

00:39:40.160 --> 00:39:42.212 could this be bone marrow invasion

NOTE Confidence: 0.8488761725

00:39:42.212 --> 00:39:43.580 with cancer for instance?

NOTE Confidence: 0.8488761725

00:39:43.580 --> 00:39:45.560 And so a good history,

NOTE Confidence: 0.8488761725

00:39:45.560 --> 00:39:47.438 a good physical exam are really,

NOTE Confidence: 0.8488761725

00:39:47.440 --> 00:39:48.445 really important here.

NOTE Confidence: 0.8488761725

00:39:48.445 --> 00:39:50.120 Has there been weight loss,

NOTE Confidence: 0.8488761725

00:39:50.120 --> 00:39:53.354 other sweats, fevers, is there a mass,

NOTE Confidence: 0.8488761725

00:39:53.360 --> 00:39:55.538 is there a history of cancer?

NOTE Confidence: 0.8488761725

00:39:55.540 --> 00:39:58.108 Is there frequent urination with with

NOTE Confidence: 0.8488761725

00:39:58.108 --> 00:40:00.384 prostate enlargement and a possibility

NOTE Confidence: 0.8488761725

00:40:00.384 --> 00:40:02.839 of prostate cancer for instance,

NOTE Confidence: 0.8488761725

00:40:02.840 --> 00:40:05.018 because prostate cancer and bone marrow.

NOTE Confidence: 0.8488761725

00:40:05.020 --> 00:40:08.368 Invasion is not uncommon.

NOTE Confidence: 0.8488761725

00:40:08.370 --> 00:40:10.090 I always will think about

NOTE Confidence: 0.8488761725

00:40:10.090 --> 00:40:11.810 multiple myeloma in this setting.

NOTE Confidence: 0.8488761725

00:40:11.810 --> 00:40:13.865 So a normochromic anemia in

NOTE Confidence: 0.8488761725

00:40:13.865 --> 00:40:15.920 an older individual I think

NOTE Confidence: 0.818529248823529

00:40:16.001 --> 00:40:19.067 who also has some chronic kidney disease.

NOTE Confidence: 0.818529248823529

00:40:19.070 --> 00:40:21.638 We we need to make sure we're not

NOTE Confidence: 0.818529248823529

00:40:21.638 --> 00:40:23.631 missing multiple myeloma and it often

NOTE Confidence: 0.818529248823529

00:40:23.631 --> 00:40:26.086 I will get protein studies in these

NOTE Confidence: 0.818529248823529

00:40:26.086 --> 00:40:28.396 individuals and those will include

NOTE Confidence: 0.818529248823529

00:40:28.396 --> 00:40:30.850 a serum protein electrophoresis and

NOTE Confidence: 0.818529248823529

00:40:30.850 --> 00:40:33.250 immunofixation electrophoresis and serum

NOTE Confidence: 0.818529248823529

00:40:33.250 --> 00:40:36.406 free light chains because about 20%

NOTE Confidence: 0.818529248823529

00:40:36.406 --> 00:40:38.666 of individuals with multiple myeloma.

NOTE Confidence: 0.818529248823529

00:40:38.670 --> 00:40:42.912 Will not have an M spike on their serum

NOTE Confidence: 0.818529248823529

00:40:42.912 --> 00:40:45.772 protein electrophoresis and the serum

NOTE Confidence: 0.818529248823529

00:40:45.772 --> 00:40:49.189 free light chains will be abnormal.

NOTE Confidence: 0.818529248823529

00:40:49.190 --> 00:40:51.675 I'm often thinking about in

NOTE Confidence: 0.818529248823529

00:40:51.675 --> 00:40:53.166 chronic inflammation here.

NOTE Confidence: 0.818529248823529

00:40:53.170 --> 00:40:55.326 There are a number of disorders this

NOTE Confidence: 0.818529248823529

00:40:55.326 --> 00:40:57.889 patient has that cause chronic inflammation.

NOTE Confidence: 0.818529248823529

00:40:57.890 --> 00:40:59.815 So I might be thinking about a

NOTE Confidence: 0.818529248823529

00:40:59.815 --> 00:41:00.970 SED rate or CRP,

NOTE Confidence: 0.818529248823529

00:41:00.970 --> 00:41:02.720 or I might think that's

NOTE Confidence: 0.818529248823529

00:41:02.720 --> 00:41:04.120 superfluous at this point,

NOTE Confidence: 0.818529248823529

00:41:04.120 --> 00:41:06.046 that the patient does have chronic

NOTE Confidence: 0.818529248823529

00:41:06.046 --> 00:41:07.626 inflammation and I don't really

NOTE Confidence: 0.818529248823529

00:41:07.626 --> 00:41:09.024 need to get a SED rate.

NOTE Confidence: 0.818529248823529

00:41:09.030 --> 00:41:11.254 But one of the things that I'm also

NOTE Confidence: 0.818529248823529

00:41:11.254 --> 00:41:13.090 thinking about is temporal arteritis.

NOTE Confidence: 0.818529248823529

00:41:13.090 --> 00:41:16.130 And in my history I'm asking about headaches,

NOTE Confidence: 0.818529248823529

00:41:16.130 --> 00:41:18.664 I'm asking about weakness in the shoulders,

NOTE Confidence: 0.818529248823529

00:41:18.670 --> 00:41:20.440 and I'm pressing on the temporal.

NOTE Confidence: 0.818529248823529

00:41:20.440 --> 00:41:22.588 Arteries when I examine a patient

NOTE Confidence: 0.818529248823529

00:41:22.588 --> 00:41:24.432 like this cause another diagnosis

NOTE Confidence: 0.818529248823529

00:41:24.432 --> 00:41:26.472 that you certainly don't want to

NOTE Confidence: 0.818529248823529

00:41:26.472 --> 00:41:28.939 miss and is is a common diagnosis.

NOTE Confidence: 0.818529248823529

00:41:28.940 --> 00:41:31.028 And even though this anemia is

NOTE Confidence: 0.818529248823529

00:41:31.028 --> 00:41:32.880 not microcytic or macrocytic with

NOTE Confidence: 0.818529248823529

00:41:32.880 --> 00:41:35.280 the way we usually think about

NOTE Confidence: 0.818529248823529

00:41:35.280 --> 00:41:36.080 nutritional deficiencies,

NOTE Confidence: 0.818529248823529

00:41:36.080 --> 00:41:38.843 I am going also going to think about a

NOTE Confidence: 0.818529248823529

00:41:38.843 --> 00:41:40.832 nutritional deficiency here as combined

NOTE Confidence: 0.818529248823529

00:41:40.832 --> 00:41:43.262 with anemia of chronic inflammation or

NOTE Confidence: 0.818529248823529

00:41:43.327 --> 00:41:45.597 as a possible multifactorial process.

NOTE Confidence: 0.818529248823529

00:41:45.600 --> 00:41:47.896 So even though this is not normal,

NOTE Confidence: 0.818529248823529

00:41:47.900 --> 00:41:49.696 not microcytic or macrocytic.

NOTE Confidence: 0.818529248823529

00:41:49.696 --> 00:41:52.390 I certainly will worry about this.

NOTE Confidence: 0.818529248823529

00:41:52.390 --> 00:41:54.988 Anemia of chronic inflammation is also

NOTE Confidence: 0.818529248823529

00:41:54.988 --> 00:41:57.677 something we would think about and if

NOTE Confidence: 0.818529248823529

00:41:57.677 --> 00:42:00.300 you could go to the next slide please.

NOTE Confidence: 0.818529248823529

00:42:00.300 --> 00:42:02.260 So this person does have stage 3

NOTE Confidence: 0.818529248823529

00:42:02.260 --> 00:42:04.364 chronic kidney disease and about

NOTE Confidence: 0.818529248823529

00:42:04.364 --> 00:42:06.776 17% of patients with chronic kidney

NOTE Confidence: 0.818529248823529

00:42:06.776 --> 00:42:09.220 disease stage three will have anemia.

NOTE Confidence: 0.818529248823529

00:42:09.220 --> 00:42:10.520 And the next slide please,

NOTE Confidence: 0.818529248823529

00:42:10.520 --> 00:42:13.999 a very important slide here because I

NOTE Confidence: 0.818529248823529

00:42:13.999 --> 00:42:17.000 think this slide demonstrates to us

NOTE Confidence: 0.818529248823529

00:42:17.000 --> 00:42:20.660 that if you have a ferritin that is.

NOTE Confidence: 0.818529248823529

00:42:20.660 --> 00:42:23.481 200 or less with an iron saturation

NOTE Confidence: 0.818529248823529

00:42:23.481 --> 00:42:24.934 of 20% or less,

NOTE Confidence: 0.818529248823529

00:42:24.934 --> 00:42:27.188 you can still have iron deficiency if

NOTE Confidence: 0.818529248823529

00:42:27.188 --> 00:42:29.451 you have chronic kidney disease and

NOTE Confidence: 0.818529248823529

00:42:29.451 --> 00:42:32.296 the ferritin might even be as high as

NOTE Confidence: 0.818529248823529

00:42:32.296 --> 00:42:35.020 500 if you have more advanced kidney disease.

NOTE Confidence: 0.818529248823529

00:42:35.020 --> 00:42:38.620 And then so the final slide.

NOTE Confidence: 0.818529248823529

00:42:38.620 --> 00:42:40.126 Is that what I would do?

NOTE Confidence: 0.818529248823529

00:42:40.130 --> 00:42:42.790 I would certainly do the things we

NOTE Confidence: 0.818529248823529

00:42:42.790 --> 00:42:45.821 talked about the previous red cell CBC

NOTE Confidence: 0.818529248823529

00:42:45.821 --> 00:42:48.545 values or ticad peripheral blood count.

NOTE Confidence: 0.818529248823529

00:42:48.550 --> 00:42:51.196 I would probably give this person oral

NOTE Confidence: 0.818529248823529

00:42:51.196 --> 00:42:53.925 iron and see what happens with their

NOTE Confidence: 0.818529248823529

00:42:53.925 --> 00:42:57.552 anemia before I went off on a on a a

NOTE Confidence: 0.818529248823529

00:42:57.552 --> 00:42:59.763 workup that included a bone marrow biopsy.

NOTE Confidence: 0.818529248823529

00:42:59.763 --> 00:43:01.814 I think if this person didn't get

NOTE Confidence: 0.818529248823529

00:43:01.814 --> 00:43:03.949 better with oral iron or had monoclonal

NOTE Confidence: 0.818529248823529

00:43:03.949 --> 00:43:06.140 proteins in their blood or there was

NOTE Confidence: 0.818529248823529

00:43:06.140 --> 00:43:08.048 some other reason to suspect cancer,

NOTE Confidence: 0.818529248823529

00:43:08.050 --> 00:43:09.960 I would refer this patient.

NOTE Confidence: 0.818529248823529

00:43:09.960 --> 00:43:10.784 To hematology.

NOTE Confidence: 0.818529248823529

00:43:10.784 --> 00:43:13.668 So I would hope that this patient

NOTE Confidence: 0.818529248823529

00:43:13.668 --> 00:43:15.878 gets better with with iron,

NOTE Confidence: 0.818529248823529

00:43:15.880 --> 00:43:18.544 but otherwise I think I would refer this

NOTE Confidence: 0.818529248823529

00:43:18.544 --> 00:43:21.328 patient for an evaluation by a hematologist.

NOTE Confidence: 0.9050948

00:43:23.740 --> 00:43:26.116 Great, thank. Thank you very, very much.

NOTE Confidence: 0.9050948

00:43:26.116 --> 00:43:29.380 I had one questions on the retic count,

NOTE Confidence: 0.9050948

00:43:29.380 --> 00:43:31.828 I would do more and then we'll move to

NOTE Confidence: 0.9050948

00:43:31.828 --> 00:43:34.624 the next case just so we can stay on time.

NOTE Confidence: 0.9050948

00:43:34.630 --> 00:43:37.550 You know one of those hallmarks of teaching

NOTE Confidence: 0.9050948

00:43:37.550 --> 00:43:40.077 and residency that I I still remember is.

NOTE Confidence: 0.9050948

00:43:40.080 --> 00:43:42.152 Uh if you have someone with who

NOTE Confidence: 0.9050948

00:43:42.152 --> 00:43:43.788 might have iron deficiency anemia

NOTE Confidence: 0.9050948

00:43:43.788 --> 00:43:46.182 and you give them iron and the,

NOTE Confidence: 0.9050948

00:43:46.190 --> 00:43:48.640 you know the first thing that might

NOTE Confidence: 0.9050948

00:43:48.640 --> 00:43:50.756 improve before their hemoglobin is the

NOTE Confidence: 0.9050948

00:43:50.756 --> 00:43:53.080 retic count to know that if they're

NOTE Confidence: 0.9050948

00:43:53.080 --> 00:43:54.991 responding and just would just sort of

NOTE Confidence: 0.9050948

00:43:54.991 --> 00:43:56.782 ask if that's still common teaching

NOTE Confidence: 0.9050948

00:43:56.782 --> 00:43:58.917 and and something that we can follow

NOTE Confidence: 0.9050948

00:43:58.969 --> 00:44:01.020 because we'll see someone in two weeks.

NOTE Confidence: 0.9050948

00:44:01.020 --> 00:44:02.684 Let's say we put them on iron and

NOTE Confidence: 0.9050948

00:44:02.684 --> 00:44:04.436 if we hadn't had the retic before

NOTE Confidence: 0.9050948

00:44:04.436 --> 00:44:05.716 but check it now it,

NOTE Confidence: 0.9050948

00:44:05.720 --> 00:44:07.673 would it still be helpful to know

NOTE Confidence: 0.9050948

00:44:07.673 --> 00:44:09.629 that maybe we're on the right track?

NOTE Confidence: 0.773121231538462

00:44:10.150 --> 00:44:11.137 Yeah, absolutely, frank.

NOTE Confidence: 0.773121231538462

00:44:11.137 --> 00:44:12.453 The reticulocyte count should

NOTE Confidence: 0.773121231538462

00:44:12.453 --> 00:44:14.328 be the first thing to respond.

NOTE Confidence: 0.773121231538462

00:44:14.330 --> 00:44:17.282 And and now we get some

NOTE Confidence: 0.773121231538462

00:44:17.282 --> 00:44:18.764 additional fancier tests that

NOTE Confidence: 0.773121231538462

00:44:18.764 --> 00:44:19.999 you may see sometimes there,

NOTE Confidence: 0.773121231538462

00:44:20.000 --> 00:44:20.962 articulus reticulocyte,

NOTE Confidence: 0.773121231538462

00:44:20.962 --> 00:44:21.924 hemoglobin content.

NOTE Confidence: 0.773121231538462

00:44:21.924 --> 00:44:24.810 So that's just what it is,

NOTE Confidence: 0.773121231538462

00:44:24.810 --> 00:44:26.245 the amount of hemoglobin in

NOTE Confidence: 0.773121231538462

00:44:26.245 --> 00:44:27.680 particular sites and that often

NOTE Confidence: 0.773121231538462

00:44:27.732 --> 00:44:29.217 will respond even before the

NOTE Confidence: 0.773121231538462

00:44:29.217 --> 00:44:30.405 reticular site count does.

NOTE Confidence: 0.9240245

00:44:31.290 --> 00:44:35.610 OK. All right. Thank you. Ohh.

NOTE Confidence: 0.9240245

00:44:35.610 --> 00:44:37.010 All right. And and we do have one,

NOTE Confidence: 0.9240245

00:44:37.010 --> 00:44:40.384 it totally falls into this question here.

NOTE Confidence: 0.9240245

00:44:40.390 --> 00:44:42.442 How quickly do we expect to see a rise

NOTE Confidence: 0.9240245

00:44:42.442 --> 00:44:44.737 in the hemoglobin with iron supplement?

NOTE Confidence: 0.905643552857143

00:44:46.850 --> 00:44:48.544 I'll tell you what I remember is,

NOTE Confidence: 0.905643552857143

00:44:48.550 --> 00:44:52.760 um, if they're appropriately dosed,

NOTE Confidence: 0.905643552857143

00:44:52.760 --> 00:44:56.810 it's usually 1 gram and three to four weeks.

NOTE Confidence: 0.905643552857143

00:44:56.810 --> 00:44:58.646 But I got 3 experts here,

NOTE Confidence: 0.905643552857143

00:44:58.650 --> 00:45:00.480 so correct me if I'm wrong.

NOTE Confidence: 0.873088568

00:45:02.690 --> 00:45:04.209 That's how I remember it. Frank,

NOTE Confidence: 0.873088568

00:45:04.209 --> 00:45:06.302 is about a gram of hemoglobin in

NOTE Confidence: 0.873088568

00:45:06.302 --> 00:45:08.630 the first month improvement. Yeah.

NOTE Confidence: 0.902869432

00:45:09.400 --> 00:45:10.560 All right, great. Thank you.

NOTE Confidence: 0.902869432

00:45:10.560 --> 00:45:13.197 All right. Uh case 3DS is a 55 year

NOTE Confidence: 0.902869432

00:45:13.197 --> 00:45:15.900 old female history of hypertension,

NOTE Confidence: 0.902869432

00:45:15.900 --> 00:45:17.630 ulcerative colitis, high blood pressure,

NOTE Confidence: 0.902869432

00:45:17.630 --> 00:45:19.955 high and pre diabetes who

NOTE Confidence: 0.902869432

00:45:19.955 --> 00:45:22.280 comes in for routine physical.

NOTE Confidence: 0.902869432

00:45:22.280 --> 00:45:24.644 Her CBC is pretty much identical

NOTE Confidence: 0.902869432

00:45:24.644 --> 00:45:27.410 to the the year prior and we'll

NOTE Confidence: 0.902869432

00:45:27.410 --> 00:45:30.490 point out that she has a high high,

NOTE Confidence: 0.902869432

00:45:30.490 --> 00:45:34.480 high platelets and a high MCV.

NOTE Confidence: 0.902869432

00:45:34.480 --> 00:45:35.548 I always think of before I

NOTE Confidence: 0.902869432

00:45:35.548 --> 00:45:36.480 was a doctor I was,

NOTE Confidence: 0.902869432

00:45:36.480 --> 00:45:39.603 I was actually a social worker in an HIV.

NOTE Confidence: 0.902869432

00:45:39.610 --> 00:45:41.845 Clinic and everyone had a

NOTE Confidence: 0.902869432

00:45:41.845 --> 00:45:45.640 high MCV back then, but.

NOTE Confidence: 0.902869432

00:45:45.640 --> 00:45:47.348 Otherwise, we don't see it as often,

NOTE Confidence: 0.902869432

00:45:47.350 --> 00:45:50.556 but we thought that discussing a case

NOTE Confidence: 0.902869432

00:45:50.556 --> 00:45:53.750 of macrocytosis might be helpful to the

NOTE Confidence: 0.902869432

00:45:53.750 --> 00:45:56.360 to the participants and the attendees.

NOTE Confidence: 0.902869432

00:45:56.360 --> 00:45:59.030 So here's the what we have,

NOTE Confidence: 0.902869432

00:45:59.030 --> 00:46:01.508 we'll go to the next slide please.

NOTE Confidence: 0.902869432

00:46:01.510 --> 00:46:02.959 Before we turn it over to Anna,

NOTE Confidence: 0.902869432

00:46:02.960 --> 00:46:05.336 here's a list of her medications.

NOTE Confidence: 0.902869432

00:46:05.340 --> 00:46:09.498 There is an AC is not AZT or Combivir,

NOTE Confidence: 0.902869432

00:46:09.500 --> 00:46:12.713 but you can see she is on some medications

NOTE Confidence: 0.902869432

00:46:12.713 --> 00:46:15.869 for her colitis and a similar question.

NOTE Confidence: 0.902869432

00:46:15.870 --> 00:46:17.450 To the other two cases,

NOTE Confidence: 0.902869432

00:46:17.450 --> 00:46:19.110 what other testing or treatment

NOTE Confidence: 0.902869432

00:46:19.110 --> 00:46:20.106 would you recommend?

NOTE Confidence: 0.902869432

00:46:20.110 --> 00:46:20.938 And once again,

NOTE Confidence: 0.902869432

00:46:20.938 --> 00:46:23.748 one is a good time that we should be

NOTE Confidence: 0.902869432

00:46:23.748 --> 00:46:25.768 sending a referral to hematology.

NOTE Confidence: 0.902869432

00:46:25.770 --> 00:46:26.854 Alright, Anna,

NOTE Confidence: 0.902869432

00:46:26.854 --> 00:46:27.938 thank you.

NOTE Confidence: 0.628829122

00:46:29.300 --> 00:46:31.520 Thanks, Frank. Umm.

NOTE Confidence: 0.628829122

00:46:31.520 --> 00:46:35.976 So Umm, just to touch on sort of

NOTE Confidence: 0.628829122

00:46:35.976 --> 00:46:38.720 macrocytosis and macrocytic anemia briefly.

NOTE Confidence: 0.628829122

00:46:38.720 --> 00:46:40.848 I wanted to start off by saying that,

NOTE Confidence: 0.628829122

00:46:40.850 --> 00:46:43.649 you know, I think you know as as Bob

NOTE Confidence: 0.628829122

00:46:43.649 --> 00:46:46.477 Donna mentioned also that the lines are

NOTE Confidence: 0.628829122

00:46:46.480 --> 00:46:48.840 not so clearly delineated sometimes.

NOTE Confidence: 0.628829122

00:46:48.840 --> 00:46:50.478 So even though we like to think of anemia

NOTE Confidence: 0.628829122

00:46:50.478 --> 00:46:52.009 and the three buckets of microcytic,

NOTE Confidence: 0.628829122

00:46:52.010 --> 00:46:54.908 normocytic and macrocytic.

NOTE Confidence: 0.628829122

00:46:54.910 --> 00:46:56.527 You know, using just the cut offs,

NOTE Confidence: 0.628829122

00:46:56.530 --> 00:46:58.612 you know for example an epic

NOTE Confidence: 0.628829122

00:46:58.612 --> 00:47:00.000 is is not always,

NOTE Confidence: 0.628829122

00:47:00.000 --> 00:47:01.757 is not always the way to go.

NOTE Confidence: 0.628829122

00:47:01.760 --> 00:47:03.800 Someone might be slightly macrocytic.

NOTE Confidence: 0.628829122

00:47:03.800 --> 00:47:05.676 I would still include you know all

NOTE Confidence: 0.628829122

00:47:05.676 --> 00:47:07.399 the workup that Doctor Bona just

NOTE Confidence: 0.628829122

00:47:07.399 --> 00:47:09.115 went through for the most part.

NOTE Confidence: 0.628829122

00:47:09.120 --> 00:47:11.670 Similarly patients who are enormous headache,

NOTE Confidence: 0.628829122

00:47:11.670 --> 00:47:13.110 I might include workup that

NOTE Confidence: 0.628829122

00:47:13.110 --> 00:47:14.840 I'm about to go through now.

NOTE Confidence: 0.628829122

00:47:14.840 --> 00:47:15.865 I think where that doesn't

NOTE Confidence: 0.628829122

00:47:15.865 --> 00:47:17.320 hold true is that the extremes.

NOTE Confidence: 0.628829122

00:47:17.320 --> 00:47:18.920 So somebody who's extremely

NOTE Confidence: 0.628829122

00:47:18.920 --> 00:47:20.520 microcytic or extremely macrocytic,

NOTE Confidence: 0.628829122

00:47:20.520 --> 00:47:22.248 you know those differentials are are

NOTE Confidence: 0.628829122

00:47:22.248 --> 00:47:23.954 very different but I think there's

NOTE Confidence: 0.628829122

00:47:23.954 --> 00:47:25.683 a big Gray zone in the middle.

NOTE Confidence: 0.628829122

00:47:25.690 --> 00:47:28.330 Umm, in terms of macrocytic anemia,

NOTE Confidence: 0.628829122

00:47:28.330 --> 00:47:30.454 I think you know two of the the big

NOTE Confidence: 0.628829122

00:47:30.454 --> 00:47:32.117 buckets that that falls into our,

NOTE Confidence: 0.628829122

00:47:32.120 --> 00:47:33.425 whether it's megaloblastic

NOTE Confidence: 0.628829122

00:47:33.425 --> 00:47:34.730 or non megaloblastic,

NOTE Confidence: 0.628829122

00:47:34.730 --> 00:47:37.762 which really has to do with whether DNA

NOTE Confidence: 0.628829122

00:47:37.762 --> 00:47:40.350 synthesis is actually being impaired,

NOTE Confidence: 0.628829122

00:47:40.350 --> 00:47:40.902 megaloblastic anemia.

NOTE Confidence: 0.628829122

00:47:40.902 --> 00:47:43.773 What we mean when we say that is we see

NOTE Confidence: 0.628829122

00:47:43.773 --> 00:47:45.585 some characteristic findings both in the

NOTE Confidence: 0.628829122

00:47:45.585 --> 00:47:47.680 bone marrow and on the peripheral blood,

NOTE Confidence: 0.628829122

00:47:47.680 --> 00:47:49.240 but just to speak about the

NOTE Confidence: 0.628829122

00:47:49.240 --> 00:47:50.790 peripheral blood for our purposes,

NOTE Confidence: 0.628829122

00:47:50.790 --> 00:47:52.962 things like hypersegmented

NOTE Confidence: 0.628829122

00:47:52.962 --> 00:47:55.858 neutrophils and also macrocytic.

NOTE Confidence: 0.628829122

00:47:55.860 --> 00:47:56.268 Um,

NOTE Confidence: 0.628829122

00:47:56.268 --> 00:47:57.492 red blood cells.

NOTE Confidence: 0.628829122

00:47:57.492 --> 00:47:59.940 These are can be indications that

NOTE Confidence: 0.628829122

00:48:00.017 --> 00:48:02.597 there is a megaloblastic process going

NOTE Confidence: 0.628829122

00:48:02.597 --> 00:48:05.591 on or impaired DNA synthesis leading

NOTE Confidence: 0.628829122

00:48:05.591 --> 00:48:08.146 to ineffective erythropoiesis 2 of

NOTE Confidence: 0.628829122

00:48:08.146 --> 00:48:10.939 the major causes of megaloblastic

NOTE Confidence: 0.628829122

00:48:10.939 --> 00:48:13.632 anemia are B12 and folate deficiency,

NOTE Confidence: 0.628829122

00:48:13.632 --> 00:48:15.690 which could really be a whole

NOTE Confidence: 0.628829122

00:48:15.758 --> 00:48:16.738 talk on its own.

NOTE Confidence: 0.628829122

00:48:16.740 --> 00:48:18.126 But you know briefly how we

NOTE Confidence: 0.628829122

00:48:18.126 --> 00:48:19.700 work this up in the clinic,

NOTE Confidence: 0.628829122

00:48:19.700 --> 00:48:22.070 the gotos are just serum B12

NOTE Confidence: 0.628829122

00:48:22.070 --> 00:48:23.255 and folate levels.

NOTE Confidence: 0.628829122

00:48:23.260 --> 00:48:25.330 I will say that you know,

NOTE Confidence: 0.628829122

00:48:25.330 --> 00:48:27.546 again just relying on the normal range and.

NOTE Confidence: 0.628829122

00:48:27.550 --> 00:48:28.081 Epic,

NOTE Confidence: 0.628829122

00:48:28.081 --> 00:48:31.798 especially in the case of B12 level

NOTE Confidence: 0.628829122

00:48:31.800 --> 00:48:34.089 is is can sometimes be a pitfall

NOTE Confidence: 0.628829122

00:48:34.089 --> 00:48:36.219 because for a couple reasons.

NOTE Confidence: 0.628829122

00:48:36.220 --> 00:48:37.174 Umm, you know,

NOTE Confidence: 0.628829122

00:48:37.174 --> 00:48:39.828 I sort of consider things in the less

NOTE Confidence: 0.628829122

00:48:39.828 --> 00:48:42.313 than 400 range to be very borderline.

NOTE Confidence: 0.628829122

00:48:42.320 --> 00:48:44.567 And though that's an area where I

NOTE Confidence: 0.628829122

00:48:44.567 --> 00:48:46.540 would always send an MMA to confirm,

NOTE Confidence: 0.628829122

00:48:46.540 --> 00:48:48.500 I put over here on the right

NOTE Confidence: 0.628829122

00:48:48.500 --> 00:48:50.090 an image to remind us,

NOTE Confidence: 0.628829122

00:48:50.090 --> 00:48:52.436 you know why we check homocysteine

NOTE Confidence: 0.628829122

00:48:52.436 --> 00:48:54.956 and MMA in B12 and folate

NOTE Confidence: 0.628829122

00:48:54.956 --> 00:48:57.560 deficiency and why we would see.

NOTE Confidence: 0.628829122

00:48:57.560 --> 00:48:59.650 Elevated you know MO, sorry,

NOTE Confidence: 0.628829122

00:48:59.650 --> 00:49:00.610 my life just went off.

NOTE Confidence: 0.628829122

00:49:00.610 --> 00:49:03.718 MMA and homocysteine and beach called

NOTE Confidence: 0.628829122

00:49:03.718 --> 00:49:05.790 deficiency and only homocysteine

NOTE Confidence: 0.628829122

00:49:05.870 --> 00:49:07.870 in in in folate deficiency.

NOTE Confidence: 0.628829122

00:49:07.870 --> 00:49:10.173 But so borderline B12 levels are a

NOTE Confidence: 0.628829122

00:49:10.173 --> 00:49:13.007 case where I would always send it

NOTE Confidence: 0.628829122

00:49:13.007 --> 00:49:15.222 also very strong clinical suspicion.

NOTE Confidence: 0.628829122

00:49:15.230 --> 00:49:17.008 So even with a normal B12 level,

NOTE Confidence: 0.628829122

00:49:17.010 --> 00:49:18.935 if the story if everything else you

NOTE Confidence: 0.628829122

00:49:18.935 --> 00:49:21.470 know is really suspicious for B12 deficiency,

NOTE Confidence: 0.628829122

00:49:21.470 --> 00:49:22.946 I will send it.

NOTE Confidence: 0.628829122

00:49:22.946 --> 00:49:25.160 It's also worth being aware that

NOTE Confidence: 0.628829122

00:49:25.245 --> 00:49:27.709 patients with pernicious anemia.

NOTE Confidence: 0.628829122

00:49:27.710 --> 00:49:30.185 So auto antibodies to intrinsic

NOTE Confidence: 0.628829122

00:49:30.185 --> 00:49:32.660 factor or to parietal cells

NOTE Confidence: 0.791946850625

00:49:32.753 --> 00:49:35.609 due to actually a lab interference

NOTE Confidence: 0.791946850625

00:49:35.610 --> 00:49:39.672 due to issues with the assay with the

NOTE Confidence: 0.791946850625

00:49:39.672 --> 00:49:41.748 presence of these antibodies can have

NOTE Confidence: 0.791946850625

00:49:41.748 --> 00:49:44.432 a normal serum B12 on lab testing

NOTE Confidence: 0.791946850625

00:49:44.432 --> 00:49:46.352 when they're actually B12 deficient.

NOTE Confidence: 0.791946850625

00:49:46.360 --> 00:49:48.538 So again, if you're suspecting this,

NOTE Confidence: 0.791946850625

00:49:48.540 --> 00:49:51.142 you'd want to check an MA as well, Umm.

NOTE Confidence: 0.791946850625

00:49:51.142 --> 00:49:53.554 And then a reminder that B12,

NOTE Confidence: 0.791946850625

00:49:53.560 --> 00:49:55.069 severe B12 deficiency,

NOTE Confidence: 0.791946850625

00:49:55.069 --> 00:49:57.584 we can see neurologic deficits.

NOTE Confidence: 0.791946850625

00:49:57.590 --> 00:49:58.640 And that's why, you know,

NOTE Confidence: 0.791946850625

00:49:58.640 --> 00:50:01.016 there's the classic teaching that you

NOTE Confidence: 0.791946850625

00:50:01.016 --> 00:50:03.977 know you you want to be cautious not

NOTE Confidence: 0.791946850625

00:50:03.977 --> 00:50:05.647 to treat folate deficiency without

NOTE Confidence: 0.791946850625

00:50:05.647 --> 00:50:07.681 making sure that the patient does

NOTE Confidence: 0.791946850625

00:50:07.681 --> 00:50:09.747 not have concurrent B12 deficiency,

NOTE Confidence: 0.791946850625

00:50:09.750 --> 00:50:13.194 because you could have progression

NOTE Confidence: 0.791946850625

00:50:13.194 --> 00:50:14.824 of neurologic symptoms in that

NOTE Confidence: 0.791946850625

00:50:14.824 --> 00:50:16.605 setting because you're not correcting

NOTE Confidence: 0.791946850625

00:50:16.605 --> 00:50:17.658 the B12 deficiency.

NOTE Confidence: 0.791946850625

00:50:17.660 --> 00:50:21.081 So B12 and folate deficiency can

NOTE Confidence: 0.791946850625

00:50:21.081 --> 00:50:23.187 happen for a variety of reasons,

NOTE Confidence: 0.791946850625

00:50:23.190 --> 00:50:24.750 and I'll go through some of the common

NOTE Confidence: 0.791946850625

00:50:24.750 --> 00:50:26.250 ones between the two of them in a second,

NOTE Confidence: 0.791946850625

00:50:26.250 --> 00:50:28.567 but particular to B12 is pernicious anemia.

NOTE Confidence: 0.791946850625

00:50:28.570 --> 00:50:31.340 She just spoke about PPI,

NOTE Confidence: 0.791946850625

00:50:31.340 --> 00:50:33.758 which can inhibit absorption of B12.

NOTE Confidence: 0.791946850625

00:50:33.760 --> 00:50:34.951 Strictly vegan diet,

NOTE Confidence: 0.791946850625

00:50:34.951 --> 00:50:38.500 as B12 is often found in animal products.

NOTE Confidence: 0.791946850625

00:50:38.500 --> 00:50:39.610 Fully deficiency.

NOTE Confidence: 0.791946850625

00:50:39.610 --> 00:50:42.940 Less commonly seen from a dietary

NOTE Confidence: 0.791946850625

00:50:42.940 --> 00:50:45.618 perspective because at least in the US,

NOTE Confidence: 0.791946850625

00:50:45.620 --> 00:50:47.930 flowers routinely supplemented with folic

NOTE Confidence: 0.791946850625

00:50:47.930 --> 00:50:50.850 acid to prevent neural tube defects.

NOTE Confidence: 0.791946850625

00:50:50.850 --> 00:50:52.159 So it's less common to see this,

NOTE Confidence: 0.791946850625

00:50:52.160 --> 00:50:56.218 but we do see an Alcoholics also in in

NOTE Confidence: 0.791946850625

00:50:56.218 --> 00:50:58.894 patients who have high cell turnover.

NOTE Confidence: 0.791946850625

00:50:58.900 --> 00:50:59.990 For a variety of reasons.

NOTE Confidence: 0.791946850625

00:50:59.990 --> 00:51:01.598 So any patient with a chronic

NOTE Confidence: 0.791946850625

00:51:01.598 --> 00:51:02.134 hemolytic anemia,

NOTE Confidence: 0.791946850625

00:51:02.140 --> 00:51:05.200 including sickle cell anemia or psoriasis,

NOTE Confidence: 0.791946850625

00:51:05.200 --> 00:51:07.105 these would be clinical scenarios

NOTE Confidence: 0.791946850625

00:51:07.105 --> 00:51:09.633 in which you'd be more suspicious

NOTE Confidence: 0.791946850625

00:51:09.633 --> 00:51:11.268 of folate deficiency.

NOTE Confidence: 0.791946850625

00:51:11.270 --> 00:51:14.286 And I in in cases of macrocytic anemia

NOTE Confidence: 0.791946850625

00:51:14.286 --> 00:51:16.859 will pretty much always at minimum,

NOTE Confidence: 0.791946850625

00:51:16.860 --> 00:51:18.180 you know send these two tests.

NOTE Confidence: 0.91861876125

00:51:21.900 --> 00:51:25.228 So just very quickly in terms of causes,

NOTE Confidence: 0.91861876125

00:51:25.230 --> 00:51:27.252 etiologies of both B12 and folic

NOTE Confidence: 0.91861876125

00:51:27.252 --> 00:51:29.715 deficiency with which have to do with

NOTE Confidence: 0.91861876125

00:51:29.715 --> 00:51:31.465 how these micronutrients are absorbed.

NOTE Confidence: 0.91861876125

00:51:31.470 --> 00:51:35.306 So B12 when it's consumed in the upper

NOTE Confidence: 0.91861876125

00:51:35.306 --> 00:51:36.715 GI tract, binds to transcobalamin,

NOTE Confidence: 0.91861876125

00:51:36.715 --> 00:51:38.290 one, goes to the stomach,

NOTE Confidence: 0.91861876125

00:51:38.290 --> 00:51:40.660 intrinsic factor is produced by the

NOTE Confidence: 0.91861876125

00:51:40.660 --> 00:51:43.965 parietal cells of the stomach, binds to B12,

NOTE Confidence: 0.91861876125

00:51:43.965 --> 00:51:46.155 goes into the small intestine where

NOTE Confidence: 0.91861876125

00:51:46.155 --> 00:51:48.723 it's absorbed in the terminal ileum

NOTE Confidence: 0.91861876125

00:51:48.723 --> 00:51:51.060 and then binds to transcobalamin 2.

NOTE Confidence: 0.91861876125

00:51:51.060 --> 00:51:52.124 Absorbed into the bloodstream

NOTE Confidence: 0.91861876125

00:51:52.124 --> 00:51:53.720 and taken up into the tissues,

NOTE Confidence: 0.91861876125

00:51:53.720 --> 00:51:56.254 whereas folate is sort of a more

NOTE Confidence: 0.91861876125

00:51:56.254 --> 00:51:57.960 passive absorption process but also

NOTE Confidence: 0.91861876125

00:51:57.960 --> 00:51:59.635 absorbed in the small intestine.

NOTE Confidence: 0.91861876125

00:51:59.640 --> 00:52:01.460 So for this reason anyone who's had

NOTE Confidence: 0.91861876125

00:52:01.460 --> 00:52:03.855 who has some kind of small bowel

NOTE Confidence: 0.91861876125

00:52:03.855 --> 00:52:05.019 pathology including resection,

NOTE Confidence: 0.91861876125

00:52:05.020 --> 00:52:07.480 whether that be small bowel resection,

NOTE Confidence: 0.91861876125

00:52:07.480 --> 00:52:08.680 bacterial overgrowth,

NOTE Confidence: 0.91861876125

00:52:08.680 --> 00:52:10.480 inflammatory bowel disease,

NOTE Confidence: 0.91861876125

00:52:10.480 --> 00:52:11.114 celiac disease,

NOTE Confidence: 0.91861876125

00:52:11.114 --> 00:52:13.333 these patients are all at risk for

NOTE Confidence: 0.91861876125

00:52:13.333 --> 00:52:15.317 deficiencies of both of these micronutrients.

NOTE Confidence: 0.91861876125

00:52:15.320 --> 00:52:18.834 And then in particular you do have

NOTE Confidence: 0.91861876125

00:52:18.834 --> 00:52:21.118 to consider gastrectomy as a.

NOTE Confidence: 0.91861876125

00:52:21.118 --> 00:52:23.452 Potential cause of loss of parietal

NOTE Confidence: 0.91861876125

00:52:23.452 --> 00:52:26.370 cells and therefore intrinsic factor,

NOTE Confidence: 0.91861876125

00:52:26.370 --> 00:52:28.428 which could also lead to B12 deficiency.

NOTE Confidence: 0.893134962857143

00:52:31.340 --> 00:52:33.884 So this is just a very short list

NOTE Confidence: 0.893134962857143

00:52:33.884 --> 00:52:37.395 of of an otherwise very long list of

NOTE Confidence: 0.893134962857143

00:52:37.395 --> 00:52:40.400 medications that can cause macrocytosis.

NOTE Confidence: 0.893134962857143

00:52:40.400 --> 00:52:42.512 The ones I've included here and

NOTE Confidence: 0.893134962857143

00:52:42.512 --> 00:52:44.583 many of the medications that that

NOTE Confidence: 0.893134962857143

00:52:44.583 --> 00:52:46.902 do this in general actually do

NOTE Confidence: 0.893134962857143

00:52:46.902 --> 00:52:49.707 this via a megaloblastic process.

NOTE Confidence: 0.893134962857143

00:52:49.710 --> 00:52:51.995 So they actually do interfere

NOTE Confidence: 0.893134962857143

00:52:51.995 --> 00:52:53.823 with with DNA synthesis,

NOTE Confidence: 0.893134962857143

00:52:53.830 --> 00:52:55.734 which is why we see this macrocytosis.

NOTE Confidence: 0.893134962857143

00:52:55.740 --> 00:52:57.534 There are others that can cause

NOTE Confidence: 0.893134962857143

00:52:57.534 --> 00:52:58.730 macrocytosis for other reasons,

NOTE Confidence: 0.893134962857143

00:52:58.730 --> 00:52:59.562 for example.

NOTE Confidence: 0.893134962857143

00:52:59.562 --> 00:53:01.977 If somebody has G6PD deficiency and

NOTE Confidence: 0.893134962857143

00:53:01.977 --> 00:53:03.922 develops you know hemolytic anemia

NOTE Confidence: 0.893134962857143

00:53:03.922 --> 00:53:06.823 from a medication and can have a

NOTE Confidence: 0.893134962857143

00:53:06.823 --> 00:53:08.467 reticulocytosis in that setting.

NOTE Confidence: 0.893134962857143

00:53:08.470 --> 00:53:10.241 And and and as Doctor Bonner showed

NOTE Confidence: 0.893134962857143

00:53:10.241 --> 00:53:11.828 us particular sites are larger cells.

NOTE Confidence: 0.893134962857143

00:53:11.830 --> 00:53:14.482 So a higher percentage of particular

NOTE Confidence: 0.893134962857143

00:53:14.482 --> 00:53:16.590 sites increases your average MCV.

NOTE Confidence: 0.893134962857143

00:53:16.590 --> 00:53:19.746 But here included are just medications

NOTE Confidence: 0.893134962857143

00:53:19.746 --> 00:53:21.850 that through megaloblastic process

NOTE Confidence: 0.893134962857143

00:53:21.925 --> 00:53:23.800 can cause an elevated MCV.

NOTE Confidence: 0.893134962857143

00:53:23.800 --> 00:53:25.380 And as Frank pointed out,

NOTE Confidence: 0.893134962857143

00:53:25.380 --> 00:53:28.817 antiretrovirals for HIV are a common one,

NOTE Confidence: 0.893134962857143

00:53:28.820 --> 00:53:30.914 so definitely something that to consider

NOTE Confidence: 0.893134962857143

00:53:30.914 --> 00:53:34.058 if you have a patient on HIV medication.

NOTE Confidence: 0.893134962857143

00:53:34.060 --> 00:53:36.475 But there's a host of them here

NOTE Confidence: 0.893134962857143

00:53:36.475 --> 00:53:38.050 including allopurinol and mercaptopurine,

NOTE Confidence: 0.893134962857143

00:53:38.050 --> 00:53:40.100 which the patient in this

NOTE Confidence: 0.893134962857143

00:53:40.100 --> 00:53:41.679 question stem was on both,

NOTE Confidence: 0.893134962857143

00:53:41.680 --> 00:53:43.532 but also anti epileptics,

NOTE Confidence: 0.893134962857143

00:53:43.532 --> 00:53:45.847 bactrum and some other commonly

NOTE Confidence: 0.893134962857143

00:53:45.847 --> 00:53:47.290 used medications.

NOTE Confidence: 0.868297492727273

00:53:50.390 --> 00:53:52.686 And so in terms of non megaloblastic

NOTE Confidence: 0.868297492727273

00:53:52.686 --> 00:53:54.130 causes of macrocytic anemia,

NOTE Confidence: 0.868297492727273

00:53:54.130 --> 00:53:55.404 I know we're running short on time

NOTE Confidence: 0.868297492727273

00:53:55.404 --> 00:53:56.668 and there's a lot to go through.

NOTE Confidence: 0.868297492727273

00:53:56.670 --> 00:53:59.454 But in general, so these are

NOTE Confidence: 0.868297492727273

00:53:59.454 --> 00:54:02.255 a means by which causes of of

NOTE Confidence: 0.868297492727273

00:54:02.255 --> 00:54:04.145 macrocytosis that don't have to do

NOTE Confidence: 0.868297492727273

00:54:04.145 --> 00:54:06.467 with interference with DNA synthesis.

NOTE Confidence: 0.868297492727273

00:54:06.470 --> 00:54:08.918 So you wouldn't see those classic

NOTE Confidence: 0.868297492727273

00:54:08.918 --> 00:54:10.142 megaloblastic changes like

NOTE Confidence: 0.868297492727273

00:54:10.142 --> 00:54:11.749 hypersegmented neutrophils etcetera.

NOTE Confidence: 0.868297492727273

00:54:11.750 --> 00:54:14.368 But some of these include liver disease,

NOTE Confidence: 0.868297492727273

00:54:14.370 --> 00:54:16.430 liver disease can cause anemia

NOTE Confidence: 0.868297492727273

00:54:16.430 --> 00:54:18.490 for a variety of reasons,

NOTE Confidence: 0.868297492727273

00:54:18.490 --> 00:54:20.576 some of which would not be macrocytic.

NOTE Confidence: 0.868297492727273

00:54:20.580 --> 00:54:21.474 For example,

NOTE Confidence: 0.868297492727273

00:54:21.474 --> 00:54:24.603 blood loss or anemia of chronic disease,

NOTE Confidence: 0.868297492727273

00:54:24.610 --> 00:54:27.606 but other means which can

NOTE Confidence: 0.868297492727273

00:54:27.606 --> 00:54:28.608 lead to macrocytosis,

NOTE Confidence: 0.868297492727273

00:54:28.610 --> 00:54:31.067 such as alterations in the in the

NOTE Confidence: 0.868297492727273

00:54:31.067 --> 00:54:33.188 cholesterol content of red blood cells.

NOTE Confidence: 0.868297492727273

00:54:33.190 --> 00:54:34.260 Also hemolysis,

NOTE Confidence: 0.868297492727273

00:54:34.260 --> 00:54:37.470 which could be either from hypersplenism,

NOTE Confidence: 0.868297492727273

00:54:37.470 --> 00:54:40.104 portal hypertension or as Doctor Bona

NOTE Confidence: 0.868297492727273

00:54:40.104 --> 00:54:43.298 also mentioned on this the review of

NOTE Confidence: 0.868297492727273

00:54:43.298 --> 00:54:46.028 different smear findings spur cell anemia,

NOTE Confidence: 0.868297492727273

00:54:46.030 --> 00:54:48.112 which in liver disease in particular

NOTE Confidence: 0.868297492727273

00:54:48.112 --> 00:54:49.870 is a poor prognostic sign.

NOTE Confidence: 0.868297492727273

00:54:49.870 --> 00:54:51.030 You know this site.

NOTE Confidence: 0.868297492727273

00:54:51.030 --> 00:54:52.770 We'll consider as guided by history.

NOTE Confidence: 0.868297492727273

00:54:52.770 --> 00:54:54.606 So if someone has a history of liver disease,

NOTE Confidence: 0.868297492727273

00:54:54.610 --> 00:54:57.678 there's concern by imaging abnormal LFT's,

NOTE Confidence: 0.868297492727273

00:54:57.678 --> 00:54:58.990 maybe a low albumin,

NOTE Confidence: 0.868297492727273

00:54:58.990 --> 00:55:00.370 a slightly abnormal INR,

NOTE Confidence: 0.868297492727273

00:55:00.370 --> 00:55:03.170 any smear findings that could be consistent?

NOTE Confidence: 0.868297492727273

00:55:03.170 --> 00:55:03.822 You know,

NOTE Confidence: 0.868297492727273

00:55:03.822 --> 00:55:06.104 those are the situations where I would

NOTE Confidence: 0.868297492727273

00:55:06.104 --> 00:55:08.385 consider that liver disease could be the

NOTE Confidence: 0.868297492727273

00:55:08.385 --> 00:55:10.450 cause of the underlying macrocytosis.

NOTE Confidence: 0.868297492727273

00:55:10.450 --> 00:55:13.312 Alcohol use certainly can lead to

NOTE Confidence: 0.868297492727273

00:55:13.312 --> 00:55:15.800 macrocytosis and this can actually

NOTE Confidence: 0.868297492727273

00:55:15.800 --> 00:55:18.770 take months to resolve after the

NOTE Confidence: 0.868297492727273

00:55:18.770 --> 00:55:20.790 patient ceases to consume alcohol.

NOTE Confidence: 0.868297492727273

00:55:20.790 --> 00:55:23.584 It's always important to take an alcohol

NOTE Confidence: 0.868297492727273

00:55:23.584 --> 00:55:26.236 history when working out these patients.

NOTE Confidence: 0.868297492727273

00:55:26.240 --> 00:55:29.282 As I mentioned increased reticulocytes which

NOTE Confidence: 0.868297492727273

00:55:29.282 --> 00:55:32.910 are larger cells and mature red blood cells,

NOTE Confidence: 0.868297492727273

00:55:32.910 --> 00:55:35.612 a higher percentage of reticular sites in

NOTE Confidence: 0.868297492727273

00:55:35.612 --> 00:55:37.960 the peripheral blood increases the MCV.

NOTE Confidence: 0.868297492727273

00:55:37.960 --> 00:55:40.156 So this is always something to

NOTE Confidence: 0.868297492727273

00:55:40.156 --> 00:55:42.359 consider like any anemia should be.

NOTE Confidence: 0.868297492727273

00:55:42.360 --> 00:55:42.794 You know,

NOTE Confidence: 0.868297492727273

00:55:42.794 --> 00:55:44.913 one of your go to 1st test is a

NOTE Confidence: 0.868297492727273

00:55:44.913 --> 00:55:46.503 reticulocyte count and if elevated

NOTE Confidence: 0.868297492727273

00:55:46.503 --> 00:55:48.450 you have to consider whether there

NOTE Confidence: 0.868297492727273

00:55:48.450 --> 00:55:50.280 could be an active, you know,

NOTE Confidence: 0.868297492727273

00:55:50.280 --> 00:55:51.780 a bleed, but more likely.

NOTE Confidence: 0.868297492727273

00:55:51.780 --> 00:55:52.376 You know,

NOTE Confidence: 0.868297492727273

00:55:52.376 --> 00:55:54.164 if this patient is really macrocytic,

NOTE Confidence: 0.868297492727273

00:55:54.170 --> 00:55:55.948 some kind of hemolysis and you'd want

NOTE Confidence: 0.868297492727273

00:55:55.948 --> 00:55:58.090 to send sort of a hemolytic evaluation.

NOTE Confidence: 0.868297492727273

00:55:58.090 --> 00:56:00.769 So LDH, haptoglobin,

NOTE Confidence: 0.868297492727273

00:56:00.770 --> 00:56:01.764 direct bilirubin,

NOTE Confidence: 0.868297492727273

00:56:01.764 --> 00:56:04.746 total bilirubin and a peripheral smear

NOTE Confidence: 0.868297492727273

00:56:04.750 --> 00:56:07.930 hypothyroidism can also lead to macrocytosis.

NOTE Confidence: 0.868297492727273

00:56:07.930 --> 00:56:08.611 You know, I,

NOTE Confidence: 0.868297492727273

00:56:08.611 --> 00:56:11.029 I do send this very often in these workups,

NOTE Confidence: 0.868297492727273

00:56:11.030 --> 00:56:12.878 but I think this also should

NOTE Confidence: 0.868297492727273

00:56:12.878 --> 00:56:14.110 be guided by history.

NOTE Confidence: 0.868297492727273

00:56:14.110 --> 00:56:16.174 I think it would be unusual to see

NOTE Confidence: 0.868297492727273

00:56:16.174 --> 00:56:18.386 somebody with a macrocytic anemia from

NOTE Confidence: 0.868297492727273

00:56:18.386 --> 00:56:20.022 hypothyroidism without otherwise having

NOTE Confidence: 0.868297492727273

00:56:20.022 --> 00:56:22.027 other signs and symptoms of that.

NOTE Confidence: 0.868297492727273

00:56:22.030 --> 00:56:23.985 Um copper deficiency can cause

NOTE Confidence: 0.868297492727273

00:56:23.985 --> 00:56:26.006 anemia of pretty much, you know,

NOTE Confidence: 0.868297492727273

00:56:26.006 --> 00:56:27.146 any size red blood cell.

NOTE Confidence: 0.868297492727273

00:56:27.150 --> 00:56:28.668 But again, as guided by history,

NOTE Confidence: 0.868297492727273

00:56:28.670 --> 00:56:32.710 if someone has some kind of absorptive issue,

NOTE Confidence: 0.868297492727273

00:56:32.710 --> 00:56:35.165 dietary deficiencies for other reasons

NOTE Confidence: 0.868297492727273

00:56:35.165 --> 00:56:38.090 or zinc toxicity and you know,

NOTE Confidence: 0.868297492727273

00:56:38.090 --> 00:56:40.274 one of the sort of curls is

NOTE Confidence: 0.868297492727273

00:56:40.274 --> 00:56:42.382 somebody who's using a denture glue

NOTE Confidence: 0.868297492727273

00:56:42.382 --> 00:56:44.474 that contains zinc, you know,

NOTE Confidence: 0.868297492727273

00:56:44.474 --> 00:56:46.442 which can paradoxically cause

NOTE Confidence: 0.868297492727273

00:56:46.442 --> 00:56:47.426 copper deficiency.

NOTE Confidence: 0.868297492727273

00:56:47.430 --> 00:56:47.660 Again,

NOTE Confidence: 0.868297492727273

00:56:47.660 --> 00:56:49.040 I don't routinely send this just

NOTE Confidence: 0.868297492727273

00:56:49.040 --> 00:56:50.785 if it's a high clinical suspicion

NOTE Confidence: 0.868297492727273

00:56:50.785 --> 00:56:52.460 or an otherwise totally negative.

NOTE Confidence: 0.868297492727273

00:56:52.460 --> 00:56:55.240 Uh, work up monoclonal gammopathy.

NOTE Confidence: 0.868297492727273

00:56:55.240 --> 00:56:57.480 So as Doctor Bona talked about two.

NOTE Confidence: 0.79177897

00:56:57.480 --> 00:56:59.286 So my threshold to send this for

NOTE Confidence: 0.79177897

00:56:59.286 --> 00:57:00.549 macrocytic anemia is very low.

NOTE Confidence: 0.79177897

00:57:00.550 --> 00:57:03.078 I'll send it on pretty much anyone unless

NOTE Confidence: 0.79177897

00:57:03.078 --> 00:57:05.520 there's a very clear clear cut reason.

NOTE Confidence: 0.79177897

00:57:05.520 --> 00:57:07.416 You know why they have a macrocytic anemia.

NOTE Confidence: 0.79177897

00:57:07.420 --> 00:57:09.964 So that includes not just the spec but

NOTE Confidence: 0.79177897

00:57:09.964 --> 00:57:12.233 as Doctor Bona said the Immunofixation

NOTE Confidence: 0.79177897

00:57:12.233 --> 00:57:14.579 and the the free light chains.

NOTE Confidence: 0.79177897

00:57:14.580 --> 00:57:16.708 And this can be even in the

NOTE Confidence: 0.79177897

00:57:16.708 --> 00:57:18.660 absence of other crab criteria.

NOTE Confidence: 0.79177897

00:57:18.660 --> 00:57:20.627 So even if you know the the

NOTE Confidence: 0.79177897

00:57:20.627 --> 00:57:21.980 renal function is normal,

NOTE Confidence: 0.79177897

00:57:21.980 --> 00:57:23.996 they have no Bony pain calcium.

NOTE Confidence: 0.79177897

00:57:24.000 --> 00:57:26.640 Normally I would still send it.

NOTE Confidence: 0.79177897

00:57:26.640 --> 00:57:27.820 And then macrocytic anemia,

NOTE Confidence: 0.79177897

00:57:27.820 --> 00:57:30.384 the last thing I'll say I think is that

NOTE Confidence: 0.79177897

00:57:30.384 --> 00:57:32.490 you know even more so than the other,

NOTE Confidence: 0.79177897

00:57:32.490 --> 00:57:34.465 you know Norma acidic or

NOTE Confidence: 0.79177897

00:57:34.465 --> 00:57:35.650 or microcytic anemias.

NOTE Confidence: 0.79177897

00:57:35.650 --> 00:57:37.570 The clinical suspicion for an

NOTE Confidence: 0.79177897

00:57:37.570 --> 00:57:39.490 underlying bone marrow process or

NOTE Confidence: 0.79177897

00:57:39.554 --> 00:57:41.745 malignancy has to be you know quite,

NOTE Confidence: 0.79177897

00:57:41.750 --> 00:57:43.927 quite high and the threshold to refer

NOTE Confidence: 0.79177897

00:57:43.927 --> 00:57:45.818 to hematology very low because we

NOTE Confidence: 0.79177897

00:57:45.818 --> 00:57:47.618 wouldn't want to miss something like

NOTE Confidence: 0.79177897

00:57:47.618 --> 00:57:49.806 an MGS or an under other malignancy,

NOTE Confidence: 0.79177897

00:57:49.810 --> 00:57:51.515 especially if this preliminary workup

NOTE Confidence: 0.79177897

00:57:51.515 --> 00:57:53.769 which is all pretty easy to obtain

NOTE Confidence: 0.79177897

00:57:53.770 --> 00:57:55.456 is negative or especially in the

NOTE Confidence: 0.79177897

00:57:55.456 --> 00:57:57.220 case where there are concurrent.

NOTE Confidence: 0.79177897

00:57:57.220 --> 00:57:59.424 Utopias with thrombocytopenia or

NOTE Confidence: 0.79177897

00:57:59.424 --> 00:58:01.830 leukopenia any other, Umm, you know,

NOTE Confidence: 0.79177897

00:58:01.830 --> 00:58:03.080 symptoms which might be concerning,

NOTE Confidence: 0.79177897

00:58:03.080 --> 00:58:03.980 but you know,

NOTE Confidence: 0.79177897

00:58:03.980 --> 00:58:06.080 the bottom line being that if there's

NOTE Confidence: 0.79177897

00:58:06.145 --> 00:58:08.090 no clear reason for macrocytosis,

NOTE Confidence: 0.79177897

00:58:08.090 --> 00:58:09.670 whether it be medication,

NOTE Confidence: 0.79177897

00:58:09.670 --> 00:58:10.460 A B12,

NOTE Confidence: 0.79177897

00:58:10.460 --> 00:58:12.632 folate deficiency or any of these

NOTE Confidence: 0.79177897

00:58:12.632 --> 00:58:14.005 other things that you know,

NOTE Confidence: 0.79177897

00:58:14.005 --> 00:58:15.080 the threshold should be very,

NOTE Confidence: 0.79177897

00:58:15.080 --> 00:58:16.964 very low to refer to hematology

NOTE Confidence: 0.79177897

00:58:16.964 --> 00:58:17.906 for further workout.

NOTE Confidence: 0.865536

00:58:23.710 --> 00:58:25.398 Good. So I'll take the

NOTE Confidence: 0.865536

00:58:25.398 --> 00:58:27.390 liberty of just asking the two

NOTE Confidence: 0.863112414285714

00:58:27.463 --> 00:58:29.159 final questions and then

NOTE Confidence: 0.9358071625

00:58:29.380 --> 00:58:31.020 we'll we'll wrap up.

NOTE Confidence: 0.816657403333333

00:58:31.330 --> 00:58:33.406 So I'm doctor Zarkov power ask

NOTE Confidence: 0.816657403333333

00:58:33.406 --> 00:58:35.538 again about frequency of B12 level

NOTE Confidence: 0.816657403333333

00:58:35.538 --> 00:58:37.238 whether it should be continued

NOTE Confidence: 0.816657403333333

00:58:37.238 --> 00:58:39.555 to be checked in patients on a

NOTE Confidence: 0.816657403333333

00:58:39.555 --> 00:58:41.403 bike rides and at what interval?

NOTE Confidence: 0.777239614

00:58:43.660 --> 00:58:45.760 Oh yeah. So good question.

NOTE Confidence: 0.777239614

00:58:45.760 --> 00:58:47.190 So I'm like on metformin.

NOTE Confidence: 0.917924

00:58:49.420 --> 00:58:50.740 So that's a good question.

NOTE Confidence: 0.917924

00:58:50.740 --> 00:58:52.240 I don't know that I really

NOTE Confidence: 0.917924

00:58:52.240 --> 00:58:53.580 know the answer to that.

NOTE Confidence: 0.917924

00:58:53.580 --> 00:58:55.116 My suspicion would be you know,

NOTE Confidence: 0.917924

00:58:55.120 --> 00:58:57.052 as long as the patient is

NOTE Confidence: 0.917924

00:58:57.052 --> 00:58:58.018 continuing on metformin,

NOTE Confidence: 0.917924

00:58:58.020 --> 00:59:01.359 if they develop B12 deficiency on metformin,

NOTE Confidence: 0.917924

00:59:01.360 --> 00:59:04.440 I would probably just keep them on B12,

NOTE Confidence: 0.917924

00:59:04.440 --> 00:59:06.540 you know, now and then you know

NOTE Confidence: 0.917924

00:59:06.540 --> 00:59:08.848 you could check a serum level and

NOTE Confidence: 0.917924

00:59:08.848 --> 00:59:10.518 see if it's responding every,

NOTE Confidence: 0.917924

00:59:10.520 --> 00:59:11.720 you know, six months.

NOTE Confidence: 0.917924

00:59:11.720 --> 00:59:13.520 So obviously most patients are on

NOTE Confidence: 0.917924

00:59:13.580 --> 00:59:15.220 metformin for years and years.

NOTE Confidence: 0.917924

00:59:15.220 --> 00:59:17.838 I don't know that there's a clear

NOTE Confidence: 0.917924

00:59:17.840 --> 00:59:19.418 clear cut guideline for how often.

NOTE Confidence: 0.917924

00:59:19.420 --> 00:59:19.978 Repeat that,

NOTE Confidence: 0.917924

00:59:19.978 --> 00:59:21.373 but I would probably just

NOTE Confidence: 0.917924

00:59:21.373 --> 00:59:22.559 leave the patient on it.

NOTE Confidence: 0.729520844

00:59:23.880 --> 00:59:27.089 And then Doctor Reeve asks patients,

NOTE Confidence: 0.729520844

00:59:27.089 --> 00:59:29.096 especially seeing naturopaths

NOTE Confidence: 0.729520844

00:59:29.096 --> 00:59:32.441 bring in reports of their

NOTE Confidence: 0.729520844

00:59:32.441 --> 00:59:34.566 methyltetrahydrofolate reductase testing.

NOTE Confidence: 0.729520844

00:59:34.566 --> 00:59:37.996 And the question is how?

NOTE Confidence: 0.729520844

00:59:38.000 --> 00:59:40.170 How much do they need this very

NOTE Confidence: 0.729520844

00:59:40.170 --> 00:59:42.001 special form of folate that's

NOTE Confidence: 0.729520844

00:59:42.001 --> 00:59:44.240 often prescribed for them if

NOTE Confidence: 0.729520844

00:59:44.240 --> 00:59:45.605 they've been asymptomatic?

NOTE Confidence: 0.864958019

00:59:46.440 --> 00:59:48.048 Yeah, no, I'm not aware of

NOTE Confidence: 0.864958019

00:59:48.048 --> 00:59:49.776 there being any data, you know,

NOTE Confidence: 0.864958019

00:59:49.776 --> 00:59:51.416 to support that at all.

NOTE Confidence: 0.864958019

00:59:51.420 --> 00:59:54.930 You know, somebody has fully 50.

NOTE Confidence: 0.864958019

00:59:54.930 --> 00:59:58.274 Folic acid usually use in one to two

NOTE Confidence: 0.864958019

00:59:58.274 --> 01:00:00.760 milligrams per day orally as well.

NOTE Confidence: 0.864958019

01:00:00.760 --> 01:00:03.572 It's very orally bioavailable,

NOTE Confidence: 0.864958019

01:00:03.572 --> 01:00:07.320 you know, people will respond to that.

NOTE Confidence: 0.864958019

01:00:07.320 --> 01:00:09.208 So no, I'm not aware of there being

NOTE Confidence: 0.864958019

01:00:09.208 --> 01:00:11.055 any data that any other formulations

NOTE Confidence: 0.864958019

01:00:11.055 --> 01:00:13.430 would be necessary in the setting of

NOTE Confidence: 0.864958019

01:00:13.430 --> 01:00:15.180 fully deficiency and especially not,

NOTE Confidence: 0.864958019

01:00:15.180 --> 01:00:16.200 you know, if there's no fully

NOTE Confidence: 0.793508171428571

01:00:16.210 --> 01:00:17.434 deficiency. OK.

NOTE Confidence: 0.793508171428571

01:00:17.434 --> 01:00:20.494 And now one final question.

NOTE Confidence: 0.793508171428571

01:00:20.500 --> 01:00:24.105 Like iron, I understand that the B12

NOTE Confidence: 0.793508171428571

01:00:24.105 --> 01:00:25.804 orally is actually more effective

NOTE Confidence: 0.793508171428571

01:00:25.804 --> 01:00:27.580 than we've given it credit for.

NOTE Confidence: 0.793508171428571

01:00:27.580 --> 01:00:28.425 We have a lot of people

NOTE Confidence: 0.793508171428571

01:00:28.425 --> 01:00:29.748 who are on injections.

NOTE Confidence: 0.793508171428571

01:00:29.748 --> 01:00:32.832 What is your threshold to cross

NOTE Confidence: 0.793508171428571

01:00:32.832 --> 01:00:35.380 over from oral to injection?

NOTE Confidence: 0.852815083888889

01:00:36.570 --> 01:00:38.922 So, you know, I think it it depends

NOTE Confidence: 0.852815083888889

01:00:38.922 --> 01:00:41.012 on the severity of the deficiency

NOTE Confidence: 0.852815083888889

01:00:41.012 --> 01:00:43.881 and also the D so for example,

NOTE Confidence: 0.852815083888889

01:00:43.881 --> 01:00:47.220 not that any of us really see

NOTE Confidence: 0.852815083888889

01:00:47.326 --> 01:00:48.990 this anymore or or often,

NOTE Confidence: 0.852815083888889

01:00:48.990 --> 01:00:51.669 but if somebody were to present to you

NOTE Confidence: 0.852815083888889

01:00:51.669 --> 01:00:53.544 with neurologic symptoms for example,

NOTE Confidence: 0.852815083888889

01:00:53.550 --> 01:00:55.035 that's somebody you'd want to

NOTE Confidence: 0.852815083888889

01:00:55.035 --> 01:00:56.520 I am injections right away.

NOTE Confidence: 0.852815083888889

01:00:56.520 --> 01:00:58.186 You wouldn't want to wait you know

NOTE Confidence: 0.852815083888889

01:00:58.186 --> 01:01:00.601 for an oral supplement also if it's

NOTE Confidence: 0.852815083888889

01:01:00.601 --> 01:01:02.486 somebody who has B12 deficiency

NOTE Confidence: 0.852815083888889

01:01:02.486 --> 01:01:05.040 for a malabsorptive reason either

NOTE Confidence: 0.852815083888889

01:01:05.040 --> 01:01:09.094 because of a gastric bypass surgery.

NOTE Confidence: 0.852815083888889

01:01:09.094 --> 01:01:10.211 Permission, yeah,

NOTE Confidence: 0.852815083888889

01:01:10.211 --> 01:01:12.166 they're not going to respond

NOTE Confidence: 0.852815083888889

01:01:12.166 --> 01:01:13.339 to PO supplementation.

NOTE Confidence: 0.852815083888889

01:01:13.340 --> 01:01:15.419 So those patients need to be on,

NOTE Confidence: 0.852815083888889

01:01:15.420 --> 01:01:17.004 I am probably lifelong,

NOTE Confidence: 0.852815083888889

01:01:17.004 --> 01:01:19.380 but otherwise in somebody who has

NOTE Confidence: 0.852815083888889

01:01:19.456 --> 01:01:21.664 bowed pathology who has no reason

NOTE Confidence: 0.852815083888889

01:01:21.664 --> 01:01:23.910 to not be absorbing it orally.

NOTE Confidence: 0.8145971

01:01:25.990 --> 01:01:28.130 PO B12 is very effective, you know,

NOTE Confidence: 0.8145971

01:01:28.130 --> 01:01:32.130 usually 1000 micrograms daily. Good.

NOTE Confidence: 0.855000306296296

01:01:32.130 --> 01:01:34.370 Well, I the pace kind of picked up

NOTE Confidence: 0.855000306296296

01:01:34.370 --> 01:01:37.218 at the end and I apologize for my

NOTE Confidence: 0.855000306296296

01:01:37.218 --> 01:01:39.118 time management that didn't have

NOTE Confidence: 0.855000306296296

01:01:39.118 --> 01:01:41.224 us a little more evenly spaced,

NOTE Confidence: 0.855000306296296

01:01:41.230 --> 01:01:43.450 but tremendous gratitude to

NOTE Confidence: 0.855000306296296

01:01:43.450 --> 01:01:44.930 all of our panelists.

NOTE Confidence: 0.855000306296296

01:01:44.930 --> 01:01:47.038 This was really terrific information.

NOTE Confidence: 0.855000306296296

01:01:47.038 --> 01:01:49.770 Like Frank, I was part of the

NOTE Confidence: 0.855000306296296

01:01:49.770 --> 01:01:51.226 preparation and still learned.

NOTE Confidence: 0.855000306296296

01:01:51.230 --> 01:01:53.267 So there were a lot of both,

NOTE Confidence: 0.855000306296296

01:01:53.270 --> 01:01:56.924 you know, very practical tips here the

NOTE Confidence: 0.855000306296296

01:01:56.924 --> 01:01:58.635 upcoming speakers are demonstrated,

NOTE Confidence: 0.855000306296296

01:01:58.635 --> 01:02:00.610 you know on the slide.

NOTE Confidence: 0.855000306296296

01:02:00.610 --> 01:02:05.236 Here we do not have a talk in January.

NOTE Confidence: 0.855000306296296

01:02:05.240 --> 01:02:07.424 It's just a little early in the

NOTE Confidence: 0.855000306296296

01:02:07.424 --> 01:02:10.440 month after the holidays to do that.

NOTE Confidence: 0.855000306296296

01:02:10.440 --> 01:02:12.897 So please join us and if you don't mind,

NOTE Confidence: 0.855000306296296

01:02:12.900 --> 01:02:13.848 please stay on.

NOTE Confidence: 0.855000306296296

01:02:13.848 --> 01:02:16.060 There will be a very quick survey

NOTE Confidence: 0.855000306296296

01:02:16.133 --> 01:02:19.270 at the end in order to.

NOTE Confidence: 0.855000306296296

01:02:19.270 --> 01:02:21.559 Just make sure that we get your

NOTE Confidence: 0.855000306296296

01:02:21.559 --> 01:02:23.922 feedback to help us in the future

NOTE Confidence: 0.855000306296296

01:02:23.922 --> 01:02:25.884 so Anne Chang couldn't be here.

NOTE Confidence: 0.855000306296296

01:02:25.890 --> 01:02:27.724 But on behalf of Anne and myself,

NOTE Confidence: 0.855000306296296

01:02:27.730 --> 01:02:29.218 we thank you so much for

NOTE Confidence: 0.855000306296296

01:02:29.218 --> 01:02:30.210 your attendance and again,

NOTE Confidence: 0.855000306296296

01:02:30.210 --> 01:02:31.410 thank you to our panelists.

NOTE Confidence: 0.82838878

01:02:33.790 --> 01:02:36.000 Goodnight. Thank you. Goodnight.