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High Risk Pregnancies

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Welcome to our session on high risk pregnancies. I'm Professor Adams. And with me today is Dr. Tony Shanks. Tony, thanks so much for being here today.

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Thank you for having me. It's an honor.

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Tony, can you tell us a little bit about your background and your experience working with women with high risk pregnancies?

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Yeah, so I think a good question is what does it actually mean to be a high risk obstetrician, which is kind of another term for what I do, which is Maternal Fetal Medicine. In terms of the background, I'm from Indiana, though I technically grew up in Hawaii. So I have roots, both in the Midwest and the islands. I went to medical school here in Indiana, and then for residency and St. Louis. I went to Washington St. Louis for both my residency, which is four years for ob gyn and then an additional three years specializing in what I do. So the term is Maternal Fetal Medicine. And I feel like that's a pretty good name because it catches both parts of the mom and the baby. That we deal with. And so it's complicated pregnancies. And that typically will

entail complications that maybe are above and beyond what a typical obstetrician covers. So these are moms that have increased risk for complications, which I'm sure we'll delve into, as well as both for the fetus as well. So following my training, I stayed on there. I have a large role with education. I was the program director for the residency in St. Louis. And then my medical school, successfully recruited me back. And so I've been here. This is now four and a half years at Indiana. And so the hats I wear is clinically I do Maternal Fetal Medicine. And then the other part, I do what's called the vice chair of education, where I kind of helped coordinate the Grand Rounds for our department of ob gyn and really have a hand in teaching a lot of the learners which includes her current fellows and residents, as well as we've a very large medical school.

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That's just a great background. So again, thank you so much for joining us. Can you tell us what Are some of the most common factors or complications that you encounter in high risk pregnancies?

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That's a great question. So it's tough because we see so many types of complication. So it's hard for me to pinpoint what would be the most common. Many obstetricians are comfortable managing things that deviate a little bit from the norm. So many primary obstetricians can take care of gestational diabetes, especially if they're taking a medicine that you just have to swallow a pill. But once you have to cross over and perhaps give yourself insulin, and have some additional what we call surveillance, that those are typical patients that we see. So we see a lot of patients with insulin requiring diabetes. Also, hypertension, we do see patients with connective tissue disorders like lupus so there's hard to say like what is the most common, but really anything above and beyond what a typical obstetrician will handle will come to us

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And then also age may be a factor as well. So teen pregnancies I'm guessing women over 35?

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Yeah, so that's an interesting question. And I would say in our patient population, we tend to see more of the older patients as patients are kind of delaying childbearing. And it's always kind of a funny thing, because no 35 is so young, I wish I was still 35. And there used to be this misnomer where they are called Advanced maternal age and the stigma attached with that. What's interesting is even practicing now seeing as people are deferring childbearing that it doesn't necessarily mean complications at age 35. Here in Indiana, we've kind of moved that to more like a 39/40 when the complications really start to increase and someone that just is 35 years old. I don't personally consider them a complicated patient. But teen pregnancy is an

interesting aspect because yes, teenagers are at risk for a lot of complications. Sometimes it's hard to tease out whether that's because they're teenagers. Or the socio economic factors that play a role in them getting pregnant as a teenager, which those definitely have associations. So you talk about the social determinants of health and that it's a very fascinating area.

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Sure, sure. Well, let's start off talking about teens, then what do you think are some of the special risks and what type of monitoring and possible treatment should be considered in covering in treating teen pregnancy?

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Yeah, so that's a good one. And I would say that if you looked at the data, they'll say that teenagers are at increased risk of preterm birth, their increased risk of preeclampsia. There's a suggestion of growth restriction. Those are the three. And I think what I always think of is, do I have an intervention that is actually going to make a difference for them. We do have some discussion a little bit later in our talk about aspirin, so we'll get to that. But in terms of some of these other complications, there's nothing. If someone doesn't have a history of preterm birth, I wouldn't necessarily do anything differently. I would actually think that a teenage pregnancy would benefit from clinics for services that specialize in teenage pregnancies. And a lot of academic centers do have that, because teenage pregnancies have unique needs. And I think having that dedicated clinic for them would be good.

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So beyond just the medical needs, as you mentioned, they may have socio economic needs that are needed as well. Okay. That makes very good sense. What about for older women? You said approaching age 39 or 40? What are some of the risks that they encounter?

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Yeah, and so let's pretend that they don't have any other medical complications. And as you get a little bit older, above 39, and 40. Frequently, we'll have some what we call comorbidities, hypertension and diabetes, but let's pretend you have a 40 year old woman with no medical problems and that's the only thing she brings to the table is her age. There is certainly a risk of what we call aneuploidy, which is the risk of trisomy 20. 113 and 18 are a little bit less common, but that risk goes up and it really kind of makes that inflection point.

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Explain what those are a little bit more.

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So, you know, when we have a baby, everyone has a normal complement of chromosomes, which is typically 46, 23 from the mother 23 from the Father. But as maternal age goes up the chances of having something called damsel Down syndrome, which is an increased complement of trisomy 21. That goes up. So we do screen for that, you know, we use ultrasound that is one thing that maternal fetal medicines do is we are kind of the keepers of the ultrasound to look for fetal anomalies, but we also use blood tests as well. So I would say screening for genetic conditions is a big one with moms over that age. And the other thing that I think of is growth restriction and stillbirth, which those are risks that go along with a lot of medical conditions. And those two things in particular, we actually do I use the term surveillance And so that means ultrasounds to make sure growth is going fine, as well as something called non stress tests where we listen to the baby's heartbeat in the third trimester to make sure that we are reassured that everything is okay.

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Okay, great, great. And then one common health condition in many pregnant well, even before women start pregnancy and gets even worse during the third trimester is low iron. Can you tell us what are the impacts of low iron? And what sort of testing and treatment you do when you observe that?

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Yeah, that's a that's a really good question. Because, you know, iron is fundamental to maintain your red blood cells. And when people talk about anemia, you'll frequently hear him talk about a consequence of being low iron. In terms of like the field that I'm in, there's a lot of different reasons why people can have anemia. Iron is just one facet of that. So they're not necessarily interchangeably. When you say someone has low iron, you're saying that it is an iron deficiency anemia. So again, answer your question. Why is that important? Well, when you're pregnant, you're going to have to increase your red blood cell mass, you're not only supplying yourself, but you're supplying, you know, another living organism within you. So your body is going to have to adjust to this. And consequently, you're going to have to use those iron stores to do that. So when your iron is low, you may not be able to accommodate these changes. So sometimes we think of growth restriction with that and the adverse outcomes that go along with growth restriction. And then I think in my field, making sure that it is really iron deficiency anemia, because most of the time when people get referred to a clinic for high risk ob it's not necessarily for iron deficiency anemia. You've already found what the answer is, when the replacement is iron. Oftentimes, we'll get someone that's referred for anemia and we have to go down that pathway to figure out what that is.

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Okay, great. And then for women with previous pregnancy complications, since quite a variety, so maybe we can go through each one. What are some The risks and the types of monitoring. So I'll tell you what one's already had a miscarriage, do you feel that they're much increased risk of having additional miscarriages in the future?

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Yeah, that's a great question. And so those patients will typically start off with their obstetrician. And unfortunately, you know, miscarriage is common. So when someone has that first miscarriage, it typically involves reassurance to let them know that they didn't do anything wrong, that sometimes fifth chromosomes just don't match up and that this is what happens. But when it becomes a multiple problem, when you have it in multiple pregnancies, that's when the workup really starts to happen. And it depends on what the etiology is for the miscarriage. Because sometimes people have miscarriages due to their uterus being shaped a little bit differently and it doesn't want to accommodate a normal pregnancy. Or there may be a genetic condition, someone may have a translocation that predisposes them to miscarriages. There's also rare conditions that you know, the treatment would be blood thinners. So the workup for that definitely matters. Our field and our specialty you know, we're kind of governed by societies that kind of read the literature and tell us what to do. In our field. We're typically when someone has three miscarriages in a row, that's when we start to do a workup in the reproductive endocrinology field. Sometimes I'll start investigating when it's a little bit less than that after to the terminology is also important because when you say the term miscarriage, we're talking about losses in the first trimester. That becomes quite different in terms of our workup and evaluation when people have a loss in the second trimester, and the third trimester. So someone that says that they've lost a pregnancy at eight weeks, likely the workup is going to be very different than someone that 18 weeks or someone at 28 weeks that went into labor.

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So you're generally much more concerned with those later miscarriages.

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I mean, I'm concerned for all but it's just the thought process on what happens you know how if someone has a history of contractions and preterm labor and that is why they delivered early. That's somebody that's treated differently than just being at home. And accidentally can. Things just kind of happen when we talk about cervical insufficiency that's quite a different condition versus someone that may be, you know, unfortunately presents with the history of a stillbirth. That's definitely the worst outcome. And so when we elucidate that history and talk to a mother, we kind of get an idea of which of these pathways we go.

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Okay. And then for some other common pregnancy complications, if someone's already had gestational diabetes, I'd assume they're going to be at an increased risk of that as well, unless they've altered their weight or other factors.

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Yeah, absolutely. Um, gestational diabetes is one that it's very important that mothers get tested after delivery because there's such a high risk for ongoing diabetes. In the situation you describe where someone has a history, and we're concerned, we can actually do early testing to determine if someone has As gestational diabetes, to potentially, you know, begin therapy sooner. A good question is, you know, what's the big deal about having gestational diabetes? You're pregnant, you need to eat more, you know, why is that bad? Well, gestational diabetes is your body not being able to accommodate this new glucose load that you're having. Normally, you have an insulin response to your body that can bring that down. So in pregnancy, glucose can cross the placenta, the medications that we treat, do not. So if you have someone that is uncontrolled with gestational diabetes, and that glucose crosses the placenta and gets to the baby, that baby can respond to that and rev up its own insulin, which insulin is a growth factor for babies. So when it has its own insulin, those are those babies that become macrosomic. When you hear stories of 12 pound, 14 pound babies, I always think Alright, those are the my diabetics that weren't controlled well, and they can also lead to labor dystocia your increased risk for having a C section and babies not actually getting stuck or getting stuck during the delivery process. is so very important that we maintain good glycemic control.

13:03
Oh, thanks for explaining the reasons for that. Let's move on to preeclampsia. Again, somewhat common condition. If someone has had that in the past. Are you more concerned about that in future pregnancies?

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Absolutely. And so preeclampsia get now that I think about what you're asking me about some of the common indications for referral. preeclampsia is definitely one. You we think of it happening around 7% of all pregnancies, but there are certain conditions that predispose to having preeclampsia, which for those listening that have never heard of that term, preeclampsia, it's a disease unique to pregnancy. And it's when women are exposed to this trophoblastic tissue for some reason, we don't know exactly why. They have elevated blood pressures, and it causes their blood vessels to spasm. So it's called pre eclampsia, because we want a diagnosis and treat it before it becomes eclampsia, which are seizures, which I believe the seizure part has been featured in Film and televisions often, I've been told that from

colleagues that have seen eclampsia featured in pop culture. But preeclampsia is a very common one and someone that has a history of preeclampsia is certainly at risk to have it again. And it also goes into their risk factors. Why do they have it in the first place? Do they have pre existing hypertension, or diabetes? Even if they don't, and they have preeclampsia, like, as you mentioned before a teenage pregnancy, that would be an increased risk with that. The one good thing is that recent literature in the past few years have recommended the use of baby aspirin to potentially decrease the risk of preeclampsia. So that's kind of helpful.

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Great, great. Well, it's great to know that there's new research coming out to give new guidance to new health.

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And I think that's a good point about the specialization in our field because, as we're seeing like current times right now, information comes fast. furious, and if you're a very busy clinician, like if you're a general ob gyn, sometimes it's hard to do all your demands of patient care, clinical charting surgeries, and still being able to keep and keep up with all the literature with what's changing. So when we have these specialties, whether it's what I do our reproductive endocrinologist or a GYN oncologist, we trust these people to kind of assimilate the literature and make it consumable for the rest of us.

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Yeah, very important point. And then finally, with preterm birth, very common condition of order 10% of pregnancies. How if someone has had a preterm birth before, do you think they're much higher risk of future pregnancies being a preterm birth?

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Yeah, absolutely. And it really is, you know, correlated with how early that pregnancy was, you know, someone that delivers at 28 weeks, they rupture their bag of water and they go into labor. I'm certainly concerned with them in future pregnancies and the things I would do to follow them would be much more closely than someone that had a term delivery at 38 weeks per se. And this kind of goes back to the we briefly touched about it the times of gestational age and when people deliver the stories matter, the clinical picture matters. And, you know, when we sit and have these consultations, we actually try and go through your pregnancy history like take me back was there contractions and then you went to the hospital and was found to be four centimeters dilated? Or were you at home bag of water broke, then you went to the hospital, like the timing matters and how we do it. And in terms of what we have available now, this is another area of evolving literature. You know, when I came through training for history of

preterm birth, it coincided with a very large trial called the nice trial Dr. meets me is where they gave 17 hydroxy progesterone shots to patients with a history of preterm birth, and they found a significant decrease. And so that became the standard of care for a very long time. that study was recently replicated and did not find quite as robust results. And so this medication that we've used now for over a decade has been really called into question. So I think for that indication alone, a history of preterm birth, it highlights the importance of talking to people that have a kind of an understanding of the history and where we're at and what kind of treatment you know, treatment solutions we have for patients.

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And I think he may make a very good point about the importance of that medical history and the importance of women summarizing that as clearly as they can for the physician, especially if they have a new physician for this pregnancy. And so maybe having them write it down and making sure those medical records are fully transferred. Sounds very important.

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Yeah. I always think, you know, in the moment, that's hard. It's hard to do. But I think it's very important, you know, when a mom does have, and let's pretend it's a mother that we see today that has a preterm birth, very important that we document what happened and that you get closure for the mom when you have your postpartum visit, because it's your chance to sit back and say, What happened? This is what I would do. If you were to get pregnant now that we would advocate for you getting pregnant right away, but what we would do with that knowledge, and so in terms of treatment in terms of, you know, what things we can offer, I mentioned progesterone a little bit, but we also have sir collages, which is a surgical procedure where we can actually stitch to the cervix. And we do that for different indications for people that have that early loss. Maybe someone that's had a history of preterm birth and the cervix is starting to shorten. So we do have things in our toolbox. It's very important to kind of pick the right patient for the right procedure.

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Yeah, very good point. And then for women who have may not have had a previous Pregnancy, or may have come in with certain special heart health conditions. Let's say they have diabetes or high blood pressure. How much increased risk Do you think they're at? And what are some things to do about that?

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So that's a great question. So I think that highlights the importance of these pre conceptual counseling to optimize someone's medical history so that they're in the tip top shape, because

when you think about it, pregnancy is a stress test. You know, it's getting on a treadmill, working hard, but you're doing it for nine months, and you're carrying another 30 to 40 pounds on you. So it is not easy. So we want people that can kind of handle that workload. But in my field where we are getting referred, they often have that so hypertension, diabetes, yeah. And you bring up a good point is that we have to think about what does what does pregnancy do? impact mom, and what is pregnancy or her condition going to do to impact Baby, both of those things we have to do is I mean, our field is unique because we're having to balance these things for both sides, what is best for mom and what is best for baby. And they sometimes don't, you know, point in the same direction. With those conditions, most of the time when we can manage those, you know, hypertensive patients, there are medications that we have in our toolbox that we can use. Same for diabetes. Moms that have congenital heart defects are definitely ones that we are very concerned about. There are some that really have a high risk of what we call maternal morbidity, complications and even mortality. And so if a mom, you know, had maybe they had their own heart corrected as a child, very important that they have a cardiologist involved in their care and seek advice from maternal fetal medicine to see if they're healthy enough for pregnancy.

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Now, remember, only leads into my next question that women can come in and report on pregnant PAL and saying I Have some concerns. But what we're trying to do is encourage more preconception visit, if people are thinking about getting pregnant, the importance of that. So could you talk about how that could help help by having a preconception visit to address some potential health concerns?

21:17
Oh, absolutely. And I think of it in a couple different ways, and I won't bring up that point again, or go into too much detail. But if you can maximize how a mother's condition is being treated, whether that's hypertension, you know, having where you start off in pregnancy is, you know, if you're in a good spot with your blood pressure, you're going to do better than someone that is very hypertensive and poorly controlled pregnancy will just exacerbate that. Same for diabetes. We've mentioned diabetes a couple times looking at someone's hemoglobin a wincy, which is a reflection of their diabetic control that has that is direct correlations to risk of miscarriage and congenital malformations and stillbirth. So very important to get those under control. But I think if you think about it when people seek prenatal care, oftentimes, that embryo has already started to form and it's already going under this development. By the time they've actually had that first prenatal visit, that may not happen until 10/12 weeks, a lot of stuff has already happened. So you want to maximize that time as this baby is developing. So making sure you're on the right prenatal vitamins, making sure that someone has looked through the list of

medications that you're on to make sure that they are not contraindicated in pregnancy. That's extremely important. So I love pre conceptual counselors, because I think it allows you to set the stage that you can double check to make sure that a mom is on the right medication, and that her pregnancy will go the best. You may find someone where you can say your pregnancy. I'm not saying you cannot get pregnant. Just maybe you can tee up your medical health so that you'll have a better outcome. Come for this pregnancy. So yeah, big fan of those visits. And I think as our current state now is with really moving to telehealth, those are great consultations where we can just get on the phone or do a little video like we're doing and kind of talk through conditions and go through lists.

23:16
Now, that's great. That's great. So in general, I think one of my takeaway messages from this is that there are certainly a number of factors age, but also health conditions or pre existing pregnancy complications, that all could lead to a high risk pregnancy, but by talking with your ob gyn, and then when needed going to a specialist like yourself, that there are treatments, testing that can be done for many of these conditions, treatments that can be done from any of these conditions, for tons, like most of these conditions can be controlled to a reasonable extent. So even women with high risk pregnancies can often have a successful pregnancy. Is that a fair statement? I do think that's fair

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enough. I think that

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the one part we haven't talked about, or the baby side, which often gets picked up, we can hold that one for a second. But I'm trying to think you know, someone that you know, does have hypertension, that does have diabetes, those are probably easy criteria to say like, okay, you're probably going to need to see a high risk ob. But another one is, you know, maybe you had a medical condition as a child and retreated for that all growing up, and now you find yourself pregnant, those are probably also good people that should seek a high risk ob obstetrician, I think of patients with connective tissue disorders, Marfan disease, or then certainly maternal cardiac problems. Those are the ones we would like to see as well. In addition to people that have had strokes or blood clots, that's another common one that we will see because that's treatment that we will probably have to manage during pregnancy. And that is just for the mom side. For the baby side. When moms get that ultrasound, they're expecting you know, a good healthy baby with everything fully formed, there are going to be times we pick up things that are not perfect, whether that's a heart defect, spinal cord defect, a congenital diaphragmatic hernia. Those are the ones that we will also see as maternal fetal medicine specialist to kind of help

manage those pregnancies and coordinate that continuum between pregnancy and delivery. And then going on to our pediatric colleagues.

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That's very important point that as you say that it's not just the mother, but also if they do detect those problems in the infant, then you can also work on those. Do you want to expand a little bit more on what how you might respond to some of those infant conditions if they're observed and referred to you?

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Yeah, I think one of the ones we get, you know, is something called Allo immunization, where a mother gets a blood type and we normally don't expect them to have antibodies, it's their own blood they should not have develop antibodies, you develop antibodies if there is a For an agent in your blood, and so it's a rare condition. But it does happen where a mother develops antibodies against the red blood cells of the fetus. And that typically happens when there is a mismatch between the mother and the father's blood type. So that is something that we can follow, actually non invasively with the use of ultrasound to ensure that that baby is not anemic. It's also not under not just under the auspices of maternal fetal medicine, of doing the ultrasound, but of actually doing fetal blood transfusions where we can do that. I think most academic centers will have someone that can do that transfusion while a mom is still pregnant. This goes back to the gestational age thing you know, if a mother is full term and you have this problem, or you can just deliver a baby but if you have a mom that is 24 weeks pregnant, you know that a 24 week pregnancy is much too early for delivery, you would want to try and keep her pregnant. Another thing that's come up in the past few years is the treatment of spinal cord defects within the uterus. And there are select centers that are, you know, across the country that are fantastic. And that's probably the best way to treat them that if you see someone with a spinal cord defect, you can actually refer them to the specialized centers that they can actually repair in utero. And the thought being that if you close off that defect before the baby is delivered, they actually do better long term in terms of their motor function.

27:26
That's great. That's great to know that these sorts of problems can be detected and in some cases treated or at least ameliorated. so wonderful. So we've covered a lot of different topics. I very much appreciate your time. Are there any closing points or recommendations you'd like to make to women who have just learned that they may have a high risk pregnancy or maybe at risk for high risk pregnancy?

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Yeah, I would say that pregnancy in and of itself is an anxiety producing time, even in the best

of circumstances. And there are going to be situations that are complications are increased. And I think just to reassure you that there are people that specialize in dealing with those conditions. And if your obstetrician says we would like you to see an MFM, all it means is that they are trying to maximize how your pregnancy is going to go. And that's all our intent is as well.

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So there shouldn't be overly alarmed by it. In fact, they should probably be reassured that you haven't bringing an expert on board who can help.

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Absolutely, absolutely more people to watch. We're nice people.

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Thank you very much. Well, thank you so much for sharing all your experience and knowledge. It's very helpful and very informative.

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Thank you very much. Thanks for the time.