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fell, twisted, and tore his meniscus rather badly. So we were able to give him a knee injection with exosomes and it got 90% better. It was still a little bit achy after three months, so we repeated it.

Now he is 100%. Couldn't tell you which side was injured. Hey there, welcome to the Recharged Biomedical Podcast. I'm Dr. Edward Park, and if you're curious about regenerative medicine, you've come to Hi, everybody.

This is Dr. Ed Park. I'm the host of the Recharge Biomedical Podcast. And this is one of our monthly provider webinars. We're going to be doing a little deep dive into the knees.

So let's get that started. What looks like a fern or a leaf is all roads leading to Rome. The theme I am trying to get across to you is that everything, including we were just at a mental health thing and they were talking about Alzheimer's, everything is cellular.

aging and decay. And in my opinion, it's all driven by telomere erosion. So you can learn more about that in telomeric time bombs and the book I wrote for Hay House called The Telomer Miracle, where you get all kinds of free ways to turn up your telon rice.

I have been cheating for 19 years, taking its long rice activator, and I think it has been helping. If you want to understand exosomes, Exosome Songs of Healing is the most recent offering.

For people that care, I did go to Harvard for undergrad and for OB-GYN residency, Columbia for medical and master's in public health. And if you want to learn about my Uber theory about aging, go tiny URL, et cetera, and learn Just to get everyone on the same page, exosomes are not cells.

They are produced by cells, as you can see. These tiny little blebs are reduced or excreted about a dozen at a time from the surface of the cell. And they knew this for 100 years from electron microscopy, but they deemed them to be poop.

About 26 years ago, someone said, what if they're not poop? What if their communication, and they turned out to right? So they are 100 nanometer bubbles with mRNA, some lipid, Proteins mess and micro RNA so it's actually invisible when you melt them as I did last night to treat myself They are invisible.

It's totally clear because light can only discern between 200 nanometers and above so they're there you have to melt to analyze what's in them and and There have been tens of thousands of studies doing just that and we won't cover that.

But the important thing is it's a cellular therapy and so your body can't reject them. It thinks it made them even though they came from cells from a newborn placenta pre-COVID.

So secondly to back pain, the knees give us trouble. And look at these horses above us. You see horses have conformation, straight legs, good. But you know, I walk around, and I see people's feet all the time twisted out, twisted in, their knees and varus and valgus.

So this is why the knees are getting uneven force. And of course, there's traumatic events, skiing, soccer, falling down. It's an unstable and overworked joint.

it occurs in all ages, but eventually osteoarthritis is inevitable. So the anonymous person says, well, it's deformed,

its arthritic. You know, you can't drive on brake pads for 300,000 miles and not expect them to be totally worn out.

Even though we are better than cars because the ends of the bones have the synovial lining which have stem cells in them which secrete their own MSC products and generate more cartilage, these are self-generating but eventually time, again telomere erosion will degrade the quality of your existing stem cell and you end up with arthritis.

Confirmation or alignment is an issue. Uh, weakness of muscles. Certainly you had to see basketball players wearing these braces to kind of remind them, but we get injury, we got aging and we'd get arthritities.

Although that's really much rarer than we think, you know, having active arthritis in the joint. Really. I trained eight years ago with a rheumatologist who said, whenever I tap the knee, it's always sterile.

There's no white blood cells. It's not inflammation. So it is not arthritis per se. It's arthrosis. What does osus mean? It means it's burnt out, it means the stem cells are tired, they're phoning it in, and that's how we get tendinosis in the shoulder.

Half the people over 80 have unattached shoulder tendons. Osus is not itis, okay? So it is all from the local depletion of stem cell. So what are the needs?

Well, we see the blue is the axial skeleton, right? That's the cranium, the rib cage, spine. And technically, you know, the shoulders connect to the arms, right?

And so the shoulder are not part of the axial skeleton. The hips are consisting of outer bones of pelvis, and the legs are part not of axial skeletons.

So the knees connect, of course, thigh bone connects to shin bone and there are two shin bones. And the knee is this powerful joint and it consists of femur above, patella, which is the knee cap or lever, and then the big bone tibia on the toe side and the fibula.

To extend your knee, you flex the quads. These are the vastus lateralis. Intermedius and medialis and the rectus femoris. You can see quite clearly how that would extend the knee.

The patella is a pulley system, giving you force and preventing it from buckling forward in hyperextension. And it sits there in a groove on the femur.

It is one knee joint. If you're going to treat the patella, you can just put it in the knee joint. There are other things in a knee, which we'll shortly get into.

In order to flex the need, You got the hamstrings. So what are those? Those come from below the calf muscles, the gastrocnemius mainly, and they attach above.

And that's how you kick back your knee. We have bursa which are little gel containing fluid containing things all around the knee. You have a prepatellar one, meaning in front of the neck cap.

And then you have the super patellary pouch, which is the technique that I learned eight years ago to inject the need joint. You use an ultrasound, you put it in the super patella bursa, but the problem is, as kind of suggested by this diagram to my left, 15% of the time, the Super patellar borsa does not communicate with the knee joint proper.

So that means 15 percent of time if you do that technique, your not even treating the need joint. Which is why I don't do it that way. So the bursa protect the sliding of these tendons and ligaments.

And it's just gel cushioning, right? So enough said. We get bercitis in females more. They have a wide pelvis and different conformation. People who are side sleepers without a pillow between their legs, obese people, runners, and those with flat feet.

Little tip and pearl. If you have pre-patella bursa, let's say you kneel too hard as the lady was knighting you, then you might get some irritation at the pre patello borsa.

It would look like the left. That would not restrict your motion. But if you have problems in the joint proper, it would limit the motion and things like gout, pseudo-gout infection like syphilis, rheumatoid arthritis, trauma, that would cause the picture above.

So you could still kind of see the outline of the kneecap if it's a fusion from the need joint. So what we're all headed towards is arthritis. So if you do an x-ray, plain film, you'll see that the normal joint space looks like it's magically, the femur is hovering above the tibial plateau, but it is not.

The x ray density of the cartilage in between is what were seeing as black space. When the black space goes away, that implies that the cartilage is thinning.

So what is the carlidge? Look above me in this catatonic segment. We see a healthy one on the left. That juicy white plateau on that tibia is that blackspace.

that's the college that is supposed to be there. Whereas we see an 88 year old person is worn down like a brake pad. And you can see that. The white is poking through to the pink ends of the bone.

Again, I think that's pretty clear, right? So the ends of the bones have this synovial lining which generate the cartilage. So we're better than brakes.

We regenerate our cartilages, but eventually the stem cells get tired. They get mutated and depleted. Now this little conversation I had with one of my very first patients was hilarious.

His wife and he came to me. He had knee arthritis. That's like a six foot three, 220 pounds gear all his life. And his wife actually owns a very prominent ski resort and So we did a knee injection six months prior.

He said hey no miracles, but they seem to be working better He was starting to golf again with the cart less pain, and I've stopped looking at knee replacement very funny So he sent me another x-ray.

I really wish I had saved it But you could clearly see that the black space had increased which was amazing and his symptoms were better so I thought Okay, we have a customer.

But he wrote me back the next year. He said, hey, my knee doctor said no more x-rays. I guess he didn't like the increase in the cartilage. And so he got a double knee replacement.

Luckily, all's well that ends well, even though a third of people after knee replacements have pain, he was not in that third. So, good for him. Um, menisci are like these linings.

I kind of covered it up, but you could see the old bottle caps, metal bottlecaps have a plastic liner in them that as a kid, if you have OCD, you can try and peel it out and then chew it.

That's what a meniskus is. We call it menskus in the knees. And I don't know why in a shoulder and the hip, we call labor. Same thing. So if we look on the left, it's pink, But it, It's usually actually white.

The, the, The cartoon diagram lies. And why is that important? Because this bottle cap liner, the lateral and the medium in this guy, help the femur sit properly in the joint, right?

So you can imagine, as in my very good friend Claude, who I wrote about in a book, if you hurt it in your 20s and they remove the meniscus, you no longer have tight alignment, just like the pop would leak out of the soda.

So what does that mean? It means through your life you end up having like a mortar and pestle. You're grinding it down and it's a setup for arthritis universally.

And they'll tell you that. In fact, in the last two years since payment is so bad for orthopedic surgeons, they're actually saying, hey, what is the evidence?

Maybe we could just leave them alone. So a lot of times, you know, just say, leave it alone, the surgery doesn't help. Now, what are the symptoms like?

I had a maniacal session of hitting a golf ball repeatedly and I tore my meniscus and for a couple of years it was okay with the TA65 but it's clicking, it is hurting and so that's not great.

Pain with motion. One way you can test this is Thessaly Science. Stand on one foot, do the chubby checker twist. If it hurts, then you're probably looking at a meniscal issue, which will be confirmed by an MRI.

It's usually white cartilage, not pink. If you're under 11 years old, it might be pink because there's blood vessels. And the reason they surgically resect it is because cartilages has very few blood vessel.

So it can't really regrow. It can heal the sutures that you will put in there. Right. So anyway, this brings up a point. One of my friends who we met a couple of weeks ago, she has a twin sister, Erica, and she's a Lisa song.

And Erica hurt her meniscus and convinced the doctor to sew it, but the stitches were not being absorbed and they were causing more pain. So thankfully we were able to inject her knee a couple of years ago and she was able go with her daughter on the Eagle Scout hike and all's well that ends well.

Above us, we see the types of terrorists. It's not really important. Terror is a terror. So yeah, you can suture it, but the sutures probably won't take because there's no blood supply, unlike your scalp or whatnot.

They cut it off like a hangnail and it's a setup for arthritis. Uh, here next to my head is a picture. The yellow is the Jersey of my son, Oliver falling.

It's a video which I might include on the final edit. And he's basically somewhat inebriated at a frat party or a. club party and he's trying to get a piggyback ride from his 105 pound girlfriend.

And he fell, twisted and tore his meniscus rather badly. So we were able to give him a knee injection with exosomes and it got 90% better. It was still a little bit achy after three months.

I repeated it. Now he is a hundred percent. Couldn't tell you which side was injured. Indeed, this is the first thing I did for myself eight years ago when I tested exasomes.

it fixed my clickiness and my pain. And it's been one and done for eight years on that torn meniscus. Okay. So. Tendons. What are tendons? Tenders are the ends of muscles that connect it to bone.

And so again, we see above us tendinopathy or tendinosus and that is part of aging, my friends. If we get a strain on a tendon, T for tendon. A sprain is like a ligament.

Sprain with a P is ligaments. Strain, with the T is tendon I don't know why it's like that. But yeah, We can get problems with tendenosis and we can hopefully mitigate that with exosomes as well.

There are the collateral ligaments. The medial collateral is also called the tibial-collateral ligament. It's on the big toe side. And the lateral-colateral is the fibular collateral that's in the pinky toe.

Inside there are two joint ligaments. One is ACL, which is like putting your hands in your pockets, outside to inside down. That's illustrated on far left, the ACL.

And the posterior cruciate ligament, crucic because they form a cross, does the opposite. ACL. So the reason I have modified the technique, my poor friend Claude with the, used to be bad knees, but now he skis 36 days a year in Park City.

Did it on the medial side once and I got into his ACL, so always do it in the lateral side because you're not going to hit the ACL that hurts like a female dog.

Okay, so we can tear the lateral collateral or the medial collateral. And the most famous thing, speaking of skiing, is the unhappy triad. If you get clipped from behind during soccer or you're skiing and your boot and body go one way or another.

You get the triad, which is what? A torn ACL, the medial collateral ligament gets ripped, and also the meniscus can get torn usually laterally or medially, sorry.

It's a triade. So what do we do? Well, rice, rest, ice, compression, elevation. I really don't think this does anything. It buys time, much like physical therapy probably doesn't do anything, so what does?

Your body is secreting exosomes, it's trying to heal as best as it can. That is our fundamental method. If you want to go back in time, you can watch my ex-sum video.

We talk about steroids, prolotherapy. Hyaluronic acid I used to use, and we can get into the whole scaffolding issue, but I didn't find it added much.

It adds cost, a slight increased risk of infection because you're opening another thing. And it's really indicated, the evidence will show it only helped for a couple of months.

That's not anything that ever makes it permanently better. Surgery for severe lesions, I never tell somebody with a completely torn ACL to do exosomes because you got to surgically reattach it, right?

Knee replacement is the final common pathway and that's what it looks like above me. It's titanium on silastic or plastic and yeah, that is what they do.

It's better to get an autograph than a cadaver one because the MHC, the cells are not, you can reject it, right? Because it's not your cellular signature.

So that's an important thing to do. They'll rob Peter to pay Paul and take it from somewhere else and put it in your knee. Now, one thing I really warn people on the take-home instructions is just because you feel good, don't go exercise.

Why? Because the cement must harden. And to be more literal about it, the tendons are comprised of fibular collagen, which is wrapped in these helices and then bundles and bundled of bundle like garlic above me, cloves.

And this is not strong until the type 1 collagen is replaced. I mean, we can get into the nitty gritty, but it's disorganized like wet pasta. So one very important thing I learned, I had a patient who said, oh, my knees are great.

And he went out and played three hours of beach volleyball at 56, and then he ended up injuring them more. Just because the pain is gone, it doesn't mean you're functionally good.

Arguably, 8 to 12 weeks is probably the maximum benefit. And so be cool, even if the pain is gone. So what do the MSCs do? They go in, they secrete their exosomes, which tries to coat the local cells to make more collagen or act more stem-like.

That's about all we really know. You can do a literature search. Here's one that talks about using exasomes from stem cells with Wharton's jelly or A-cellular extracellular matrix.

And as you can see, the benefits were best with a combination of exosomes and extracellular matrix. So what they did was they shamed surgery to see how the natural healing was and they compared it to exoomes, and exosoams with matrix were better.

And I personally do not use Wharton's Jelly, again, more costs, risk of infection, but there's a good reason to think it might help. Some people do combine that.

Here's another study where they damaged pygmies and they used, they always use human exosomes because they're readily available and were closely related, if not identical biochemically.

Anyway, again, more evidence that it helps. Here is another one showing that, you know, exasomes help. Last night I found, oh, here's one another showing exasoams help when you do surgery to damage them.

This Chinese group looked at the literature for 10 years and they captured at least 163 articles showing exfilms helping. If you don't know, the reason These are done is because labs need to justify their existence by publishing.

And then they look at one or two factors discoverable in the exosomes and they'll say, oh my God, there's this micro RNA that inhibits breakdown or one that promotes stem cell differentiation or neobascularization.

I mean, There's a million ways it's working. It's. Working. So the literature shows that it is working, but people say why don't companies in the FDA approve this?

Well, that is a very different, different question. So they are not FDA approved. There's no one that could really articulate why they wouldn't work because this is how the body heals.

And if you get them from a newborn source, you'll feel like a new born. And so, don't hold your breath for someone to apply for this because who knows if you can even own an X cell, it's like a product like blood or milk.

It's not even a cell and you really can't own a products of a sell like, blood and milk, so. Great case here of a gentleman I knew in Hawaii when I was living there, 61 year old martial artist at the time.

He would kick the heavy bag, squat a thousand pounds. When I saw him one time, he was running up a 20 degree hill to his home with his dog. Just a monster.

And he's having knee pain. So when first met him, I said I'm going to do an experiment. I'll put stem cells from this doc. Right leg and on left leg. I'll try your stuff.

We'll see and the left-leg got buried So he's like, oh, I'm convinced I am a believer and I gave him a good friends and family prize So even after the pain went away the first shot he did one, two, three, four, five more treatments And so the thinking which is not wrong.

It's just a little Autistic but totally right is if a lil is good a lot is better I mean I grow more cartilage, right so good on him. So let's move on.

If you get the provider class and the videos, you'll see me doing the technique. The important thing is you got to examine the knee, see where the tenderness, the stability is.

A lot of times where people perceive to be knee could be ligaments around the need or tendons. You can do that single leg Desley sign for meniscal stability.

But I like to do this on a stool or somewhere where the leg is dangling, yeah? Because the anatomy can change a lot if they're lying down or moving. Again, I no longer do the medial.

Sorry, Claude, because I don't want to get into the ACL. So I always go lateral to that patellar tendon in that little fat pad that you can see there.

Of course, it's all sterile prep. Arguably, I had a patient who was quite corpulent, so I maybe could use a spinal needle, which is approaching three inches.

But usually a one and a half is great. The 27 gauge is perfect. If you numb the skin, it's painless. Unless and until you hit the bone. But if you mark it correctly, like this above me, the beta dye and the sideways T, then you really won't be much but a couple degrees north or south.

And it doesn't really hurt if we just tap and not scrape the bones. So you'll get in there easily. And again, don't inject into resistance. You could be in the actual meniscus or the ligament.

But with this length of needle, no. If you have to go through a vein, people have veiny knees. Sometimes you got to through the vein. That's okay. And so you're going to be okay, sometimes they get pain relief right away because you wash some obscure protein off the pain receptors, but you are not putting lidocaine into the knee.

I no longer put hyaluronic acid either. Yeah, you can inject the other areas, the quad tendon, MCL, PCL. Sometimes the PES and serinus, which we didn't talk about, but it's a confluence of three muscle tendons on the side of the front of knee.

Oftentimes these are involved too. So usually what happens day three or four, they get a heaviness, a slight achiness and that's good sign. I don't know what it is.

Maybe it neobascularization or increased healing or Qigong. But yeah, it tends to work. And I just was contacted by a patient through his provider, hey, can you help an ACL with a cyst on it?

Yeah, we probably can. The cyst is a result of inflammation just like I have one here in my Trigger finger, the third, so we do sometimes inject these and the swelling will go down.

The cyst is a reactive sort of tendinosis and then it will stop clicking if I do that. So I actually treated myself yesterday to a mango allergy experiment.

I didn't actually react. so I had these two triple strength vials, I gave myself a nasal. Had the most productive five hours of my life today. And also we had eight cc's of IVs so hopefully that'll maybe even melt this tendon on its own So yeah, that's pretty much all I want to talk about the most important pearl is again forget the super patellar Forget the medial side go lateral and you cannot spend enough time just putting your thumb perpendicularly into this space and sometimes it's hard because they're heavy, but you're just looking for the space between The femur above and the tibial plateau below feel for it press for you always be there And then that's the key just draw sideways T and your off to the races.

So If you want to get these videos, you can join our provider newsletter. Every month we do a specific topic. We share our insights. The book I wrote is about exosomes.

That'll go deeper. If just want be in contact generally, then the RBMC newsletter, Recharge Biomedical Clinic newsletter talks about our weekly podcast.

So we've done 71 podcasts. One we did yesterday was amazing. Dr. Warter talked about psychedelics, his spirit, reincarnation wishes, meeting entities.

It was really great. Not an unserious presentation either. He has deep knowledge since the 70s, having met the inventor of LSD, Albert Hoffman, and has done thousands of trips.

So that was a very rich and entertaining one. Enlightening, if you might say. Add Dr. Park at rechargebiomedical.com to your contacts and then your newsletter won't get spam filtered.

This is a video I'm going to post on YouTube. If you like it, then you can like and subscribe to my channel, DRPRK65. And if you're interested in learning about the masterclass where you get the full tuition back as credit towards purchasing exomes, you can treat your own meniscus, your trigger finger, and your face with cosmetics.

So learn more at that link, rechargebiomedical.com master class. And If you ever want to ask a question, do so at

the link next to me. You can also schedule a complimentary 20 minute zoom consultation.

And that is what I want to talk about. So we will stop sharing and see if there's any questions. Okay, everybody. Thanks for listening. We're going to edit and repost.

Are there any question? You can raise your hand. You could type them into the Q&A and or the chat. I'd be happy to answer. Chuck Hartz in Key Largo slash South Carolina asks, what would you do for bone on bone arthritis in the submitted question?

And the answer to you is the same. We're just going to put some exosomes, usually the triple strength, into the knee joint. And over the course of the next three to six weeks, oftentimes, well, almost always inflammation goes down, but then you can regrow some of that cartilage by tricking those stem cells to acting more young.

And yes, I do believe that. Yes, there's evidence from mice and no, even though people know it works, we're not there in terms of an FDA approved product.

In fact, ironically, last year we treated a gentleman whose daughter is a doctor and he had an amazing improvement. You can look at Parkinson's and she was saying that her ex-husband, who's an orthopedic surgeon, said that at the conference they were all talking about how exosomes work.

I mean, they're seeing it in their practice. But again, billing for something, charging for it, not wanting to get in trouble, that's a totally different thing.

But when I go to these ex-sum conferences, everyone's like, yeah, why wouldn't it work? But you know, you have to take that leap of faith because this is what your body is doing.

The FDA has not approved hog sleeping, yoga, and yet they somehow have benefits as well. Okay. Are there any questions? The anonymous attendee says, my knee is deformed.

It locks, and I am getting a knee replacement. Can the knee be regrown? I mean, it might be too little, too late. You might have some patellar dysfunction if it's locking, which would be patella chondromalacia.

It's not performing that function of preventing hyperextension. But yeah, I can give it a shot. More often than not, It does help, but is it going to be a little too later?

That I honestly can't say. All right, we have a question. Let's see if I can help Nancy to talk. Hey, Nancy. Good evening. How do you hear me? Yes, ma'am.

I just want to say thank you. I'm tremendously pleased with my stem cells from Dr. Walraven accompanied by your exosomes. And I am the one that actually was texting you that evening and you were so kind to text me back.

So I was just so, so thankful to be a part of your. No, that's awesome. Yeah, I think Dr Walravin or maybe it was another provider as well. They downloaded the forms to give their patients, but they didn't change their phone number from mine.

So I'm like, who are you? I know you were so nice. Thank you. And I will be on anything you allow me to be answered. Okay. You look great in your golf outfits.

What's your low round this year? What do you, we don't keep score. I'm grateful like to be able to biomechanically swing a club uninhibitedly joyfully.

So thank you. Thank you thank. You. Yeah. It's not about the score yet score really the fun. And I am out there swinging with more freedom of motion and less pain because of you sir.

Thanks Nancy. All right. We have a question. Dr. Rachel asks, if someone has a Baker's cyst, do you train it first

and treat? So let's talk about that.

Baker cyst is a outpouching of the usually on the backside of a knee joint. So the Snowville capsule is inflamed. It feels like an out-poutching cyst.

I've only had two patients out of probably almost 400 knee treatments that were unhappy. One got a knee infection, which of course can happen with any knee injection with hyaluronic acid or even steroids.

So that was bad. And the second was, you know, a friend of a friends, I mean, she very graciously brought me back these medical out of production backpacks that I love.

and I treated her and she did have a Baker's cyst and for some unknown reason it lit up and it caused pain so she was one of the very few people who didn't benefit and i don't know if that is related to the Baker cyst or not but yeah theoretically it should decrease the inflammation in the synovial lining and help the baker cyst but again in this one out of 396 patients she So I don't know if that's standard treatment to drain a bigger cyst.

I Don't think that it is but yeah Just again, it's not the mastery of medicine. It's the practice of medicines. So We have dr. Gardner here Question was what about hips?

Yes hips I did a hip yesterday ultrasound is one of the things that is great for hips You can watch the needle go right in the patients love to see that and feel it right on the head, see the fluid go in the joint space.

You know, hips are often troubling because it's such a weight-bearing thing. They often come very late. But I'd still say more often than not, we do get improvement.

That's one of the few reasons that I talk about in ultrasound section of course, when to use an ultrasound. The others would be specific nerve localization.

It's great for that. Facets. Something tricky like a quadratus lumborum so you don't want to puncture the kidney. And intraperitoneal, we'll be doing that next week for a patient with GI problems.

Intraperineal. Definitely easy peasy with the ultrasound. Question. All right, so yeah, Nancy had a great result from her doctor who took the online course.

Got some confidence from that. But we're all just learning and teaching each other. I mean, the question of whether to use a scaffolding based on that one and there's another study.

Yeah, I think theoretically it's good, but that's a hill that people will die on and I'm not really too convinced. As a former OBGYN, I don't like amniotic products and I try to stay away from that.

We have a question here. Is there a recording for this? Yes, sir. If you came in late, we will be editing this. Just make sure you're on that recharged biomedical newsletter list and or the provider newsletter and then yeah.

Anita asks, is injecting the nose as effective as using an atomizer? I mean, just did this last night and tell you I've had like My to-do list was just decimated today.

I was so productive, even cleaning my apartment, doing laundry, everything. So I will edit that rambling video down and I fully expect, hopefully, if the exosomes work as the immunology founder of Chimera Exosome said they do.

And he says he's cured a couple of very severe food allergies. So we'll see if I'm mango tropical fruit allergy free now. But if you do a thought experiment or just think it out, like if your trying to get to the brain through the olfactory nerves, and you have to absorb it through the mucosa, then how could a dart or a nebulizer possibly be the same dose as injecting it?

So even though you'll see me squirm quite painfully last night as I self-injected, I do think it's probably a higher

dose to use a 32 gauge at the inferior turbinates than an atomizer.

But, you know, again, as Armin Nikugoshin has shown, it can help the kids. It gets to the brain. But the kids are not going to usually tolerate a needle injection.

Although, I would say 8 out of 10 people say, hey, that wasn't that bad. Because we have many tricks to distract you during the slow injection, so most people would rate it as 1 out 2 of pain.

And if it does hurt, we just slightly adjust the angle, and it's quite tolerable, actually. OK. So thank you, everybody. We'll be doing every month a provider webinar.

Love to hear more about what you guys are doing. And again, trying to build a community. Nobody has all the answers, but yeah. For me, for my son, from my mom didn't help Armaniscus.

And I think it can help with partial terrorism, ACL and arthritis. So something that even if you don't want to get the malpractice insurance and worry about all this, that, and the other, you can do quietly for yourself without telling anybody.

Always a good thing. Yeah. Learn about the provider online course. We do have one question. Yes, Rachel. Dr. Nambusi has a question. Go ahead. Yes sir.

Thank you so much again. This was a great presentation. My last question, when I'm advising, for example, airmen or flyers, what's the downtime? I should say, don't say run a two mile run.

Oh, I see. Yeah, you could still exercise. It's really more of like you're dealing with wet cement. I just tell them to do the same or less, much less.

Baby it for up to six to eight weeks. And now you keep them out of trouble. Again, the problem is that people feel good. They think they're totally healed and it takes a little time.

So yeah, I try and read them the riot act, but most people don't listen. It's okay. But three hours of beach volleyball is definitely not what the doctor ordered.

Okay, but they can be able to, say, climb up into a jet and be expected to be about to eject if needed? Yeah, yeah, that shouldn't be a problem. It's just the repetitive stress injury, the heavy load bearing, twisting.

That's fine. But yeah. As far as, you know, once things settle out, again, day three or four, as we talk about in the post-treatment care that Nancy was given with my phone number on, Weirdly, and nobody talks about this, but I've noted that a lot of people date through for there's a heaviness or an inflammation and they can put hot or cold compress or ibuprofen and whatnot and it goes away.

It's usually a good sign. And it does away after 24 hours. But yeah, it's some weird increased healing. Sometimes it happens sooner, sometimes it happen later.

So perhaps if someone was to get their injection earlier in the week, say on Monday, so by, you know, Fridays when we expect that heaviness and they'll be good.

It doesn't always happen, but if it does happen usually day three or four. I've usually seen it earlier or not at all. But day 3 or 4, something has happened in biochemistry and the gene expression and in vasculature and white cells.

That's handy. Thank you, Mitch. My pleasure. Thanks for joining. OK. All right, everybody, thanks for joing. This is Dr. Ed Park completing a live provider webinar.

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