AMA- knee treatments with exosomes Transcript

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Podcast Intro and AMA Kickoff

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 the right place.

We're diving into the latest breakthroughs in telomeres activation, stem cell exosomes, and all the cutting edge science that's shaping the future of healing and longevity.

Let's get started. Hi everybody, this is Dr. Ed Park, the host of Recharged Biomedical Podcast, and today we're doing our monthly Ask Me Anything. I am going to discuss the knees, so without further ado, let's do this.

My intent is really to be more of a doctor training thing for these, but laypeople are welcome as well. So who am I? I went to Harvard for undergrad and residency at OPGYN, Columbia for my master's in public health and my MD degree.

And in 2016, I was consulting for a high net worth individual who wanted to use exosomes for aging. And then soon after, I heard a neurologist, who's my colleague now, talk about his motorcycle accident.

So I wanted to try exosomes on myself. It helped my knee. It was the first thing I did was my torn meniscus. and my shoulder and Achilles. And since then, I've trained doctors done in clinic training.

And there's an online course that is currently broken. I just learned from Dr. Teresa today. But we're working on it now as we speak to fix the login process.

But it usually is working. And it's 12 hours, 20 modules, talking about all the treatment areas. I also wrote a book, Exome Songs of Healing, which is mainly for the lay audience.

And this blurry photo my son took was me lecturing in Spanish in Costa Rica this summer.

Dr. Parku2019s Background and Exosome Journey

We also did a Cancun lecture as well. All right. We have questions already. Let's save those till the end. So what are exosomes? I describe in the book, but if you look from the giant Sequoia down to the hydrogen atom, Exosomes are the size of a coronavirus, 100 nanometers.

That's because they're produced by the same mechanisms. And you can only see them because the limit of light microscopy detection is about 200 nanometers.

So when you thaw an exosome file, it should be clear. Otherwise, you have stuff greater than 200 nanometers. They're bespoke, meaning the cell is a live musician.

It creates these mixtures of proteins, but mainly mRNA and mostly microRNA, which are blockers. So we could talk at length about that, but nobody really understands how they work.

What they do know is that this electron micrograph next to me showed that they would be secreted and people thought they were poop when in fact they're actually the means of cell communication.

That's how your body heals when you get a paper cut or you get hit by a truck. your body gets inflamed, stem cells come and they secrete a bunch of exosomes.

So there's no good, there's no bad, it's just communication. Here I am last year or two years ago in Sydney. Last

year I went to the Vienna International Extracellular Vascular Conference and interestingly I went to the stem cell conference and even though they all will agree that stem cells work with exosomes, only about 5% of the content at the stem cell conference was about exosomes.

which I thought was interesting. So like I said, they have mRNA, a lot of microRNA. There are many kinds of vesicles, as you can see above me in the illustration.

But in general, the ones that we use are the MSC exosomes. And so in the past, when you had PRP, prolotherapy was a question. You're causing inflammation, which brings in stem cells which secrete exosomes.

So now we can just cut out all those middlemen and have highly potent from a newborn placental source, a way of shutting down inflammation, creating new vessel growth, and de-differentiating those local stem cells.

And that's how we think it helps the knee. There are other sort of intricacies about extracellular matrix, the TH2 phenotype of the immune system, the T cell function, M2 regulation or M2 formation of macrophages.

But this is all kind of esoteric. We don't really need to know how they work, but they do work. So in the eight years since I've been doing this, I've had around 689 patients.

1335 encounters, a lot of people repeat, and then 3,355 procedures. These numbers are not exactly accurate above me, but I would say the most common thing I need to update here is adverse events.

What Exosomes Are and How They Work

The pain will go away, so you don't have that reminder that you're injured, and a lot of people will get re-injured during that convalescent process, the first six to eight weeks, so we gotta always warn them.

Pain goes away, don't go nuts. I've had people play beach volleyball, dance for three hours, you know, do their personal best and bench pressing. It's no good.

You need to constantly remind yourself that you're injured still. So what are the procedures that we do? IV, nasal is actually the most popular. The fingers, of course, knees are way up there.

Shoulders, fascia, muscle, ligament tendon, nerves, the face for rejuvenation, arteries, epidural, very popular for low back pain. etc. Even done things on dogs respond just as well as humans and ingested for a couple cases of heptic ulcer and esophagitis.

So it's like a panacea. So what's wrong with the knees? Well this thing above me on the horse shows you that there are lines of force right from the hips the weight above and the feet below and so they can kind of wear unevenly so there's all kinds of variations there.

It's second only to back pain in terms of problems. The knees are inherently kind of an unstable and overworked joint. And of course, if you're heavier, that's a problem too.

But aging is really the common denominator. Consider the humble lint trap. Have you ever done a load of laundry and not seen lint in there? Well, that's what aging is.

We're always losing something, whether it be depletion of stem cells, epigenetic changes with gene silencing. It's a kind of a one-way trip towards entropy.

So one of the acute things, we have injury, we have aging is in the background, arthritides meaning like rheumatoid or just a generic OA or osteoarthritis.

And we have problems with the muscles and ligaments and we have conformational things as I alluded to. So it's really at the end of the line just as in every organ, the depletion and deterioration of stem cell number and function.

Both of the bones and the surface of the bones make the cartilage that line the joints of the knees, the ligaments surrounding and the muscles and possibly nerves and vessels.

So above me, the blue axial skeleton, that's our body, our trunk, torso, yada yada. And attached to that, you have the shoulder girdle and the hip girdle and the upper extremities and the lower extremities.

So the knee joint is the coming together, the femur, the tibia, and that little patella in the front, fibula not so much involved. The extension muscles or the quads on the front of the thigh are the vastus lateralis medialis and in the middle the rectus femoris that goes all the way up to the anterior superior iliac spine and then sandwiched in between is the vastus medialis or intermedius I guess I should say.

The patella increases the torque or the leverage to extend and it also prevents buckling of that joint, right? Because you don't want a hyperextension.

It sits in the femoral groove articulating with it and so the patella, if you have chondromalacia of the patella, this is also accessible by a knee injection.

It's all part of the same joint and that's illustrated well above me. So if you're shooting into the knee joint, you're treating the patella. Now, one thing that I learned eight years ago when I did the in-person ultrasound injection course is they teach this technique of injecting a super telebursa.

But as we'll get into, that's not always in the joint proper 15% of the time. The instructions that they give you to inject that super patella bursa will not get to the knee joint.

So beware. The completeness dictates that we talk about flexing muscles.

Knee Anatomy, Injury, and Osteoarthritis

So the flexing muscles are the hamstrings. You can see here the biceps femoris, long short head, and then semi membranous, semi tendinosis. So what are these bursa?

Bursa are just little gel packets that help cushion and lubricate. If you're on your knees a lot, you can get pre-patellar or in front of the patella bursitis.

Again, see to my left, the super patella bursa is what they teach in the ultrasound. It's a relatively large fluid-built sac you can inject with ultrasound guides.

But again, I don't think that that's a good technique at all. 15% of the time, you're not treating the knee, and so that's no bueno. On the medial side of the knee, we have the pes anserina.

That is the confluence of the sartorius gracilis and semitendinosus. Some people get a little wonky there. It's also known as the goose's foot and you get bursitis there.

If you have a prepatellar bursitis, it doesn't actually restrict the motion of the knee. You get it from kneeling trauma. Whereas if you have bursitis in the super patellar, it does limit movement because again, 85% of the time, that will be part of the knee joint.

So it's inflamed. You can get that from rheumatoid arthritis, trauma, gout, infection, syphilis. So what is OA? OA is just, you know, wearing down on the cartilage.

So the three cardinal radiographic signs are narrowing of the joint space, which you see in the red arrows. You just don't have as much black. on the x-ray and that can be seen well with MRI.

But also OA above me in a literal cadaver specimen will show the pink is the thinning out. It's no longer a thick white hyaline, it's just thinned out.

And you can also see on x-ray bone spurs, which are outgrowths, kind of like bunions, if you will, and then subchondrial cysts. These are all the cardinal signs of osteoarthritis.

The intracapsular ligaments are the anterior cruciate ligament and the posterior cruciate ligament. Anterior, it's just like your hands in your pockets from top lateral down medial.

So hands in the pockets. What does this mean? This is very important because if you're injecting on the medial side, you can get into the anterior cruciate ligament and that hurts.

You don't wanna do that. So my technique has evolved just to be basically always on the lateral between the tibia and the femur above. So why? Again, we don't want to enter the ACL that hurts.

And this guy are like these old bottle cap liners in the metal caps. It helps to keep the bones aligned so they don't slide around like a mortar and pestle.

And of course, when you tear them, this gets the usual thing they do is to cut it off unless you're under 14, in which case you have good vasculature and it can regrow.

In general, they don't regrow. And so I had a patient, twin sister of Dr. Song who really had a bad knee and she convinced the doctor to sew it, it wasn't being absorbed, it was clicking, it was hurting, but luckily the exosomes did enough to regrow that she was able to complete her eagle scout hike with her daughter.

So what are these menisci? They're all kinds of tears, doesn't really matter. What matters is that it clicks, it hurts, it pops. If you stand on one side, one leg with a single twist, that's called the Thessaly sign.

If that hurts, you probably have meniscal tear. So the lateral or the fibular and the medial or tibial side, collateral ligaments are extra-articular.

They're not part of the joint. So injecting in the knee joint is not going to help those. If you're aware of an injury there, you have to inject in and around the actual ligaments assuming that they're not completely a pulse.

So the unhappy triad, you know, we used to have a place in Jackson Hole and my sister and my ex-brother-in-law both had this unhappy triad. What is that?

When you have this motion go down or you're clipped in football, you have these forces illustrate above me, and they usually tear the ACL, partial or complete, the medial collateral can get strained, and then the medial meniscus also torn.

That's the conventional treatment, well rice, rest, ice compression, elevation. That's very medieval. Usually if you tore the ACL all the way, they need to do a cadaveric or an autograft.

I prefer autograft because it doesn't get rejected as much. It will weaken somewhere. Anyway, they anchor it and they recreate an ACL and a lot of people have that in place.

The final common pathway is, of course, above me, the knee replacement. obviously putting exosomes in a painful knee and a third of the people will have pain after knee replacement.

Well, that means two thirds won't. So, but you know, exosomes in there are not going to do much. It's synthetic. It's what metal, silastic, all that jazz.

So in general, the body tries, it gets inflamed, it secretes exosomes through stem cells, but you know, it's kind of hard to regenerate. So exosomes are kind of a cheat.

A lot of people will do steroids. Steroids are known to be toxic, never known to help with this kind of disease, but arguably, it's just whatever we have, we use.

Hyaluronic acid will give you a honeymoon maybe, you know, up to two to three months, but it doesn't really fix the cellular damage, which is the main culprit here, isn't it?

So for you guys, we'll talk about different mixing and matching. But this is the technique. And if you are on the course, I encourage you to download these cheat sheets.

So on the right, you have just the ingredients or the things that the medical system will lay out. But it's just practice. We're practicing this. We're not mastering medicine.

And this just tells you about the steps that I like to do. Really, over the years, I only just do this lateral thing. So if you look at the illustration above, between that patellar tendon and the tendon next to it, or the retinaculi, there's a fat space.

And it's just easy peasy. So you palpate. You just press with your thumb. You can always feel the gap. There's got to be a gap between the femur and the tibia below.

Injection Technique and Course Overview

You feel it. You draw it with a surgical pen and the medial side of the T is the edge of the patellar ligament. Easy. And I like to have them sitting maybe from a bar stool so that the leg is dangling and the orientation doesn't change.

And then you can mark it with the sideways T and even a pen cap. And then you go to town, you numb the skin, and it's pretty painless. Occasionally, you'll angle up, angle down, or it'll be extremely narrow.

And this is illustrated in the video. All the procedures are shown with videos you can watch over and over again in addition to these procedure cheat sheets.

So occasionally you'll be just a millimeter too high or low and it doesn't really hurt that much. You could re-angle and walk it up and down the bone until you get that resistance-less entry.

You have a nice long needle. There's nowhere else you could be but inside the knee joint. So again, the course has all these demonstration videos, these cheat sheets, as well as the pre and post care instructions that you can customize with your letterhead.

So that's it. I've written books about, if you want to learn about stem cells and telomeres, those are the two above. The Exosomes is on Amazon. And if you want to sign up for the course, it's currently broken.

I just found out 45 minutes ago, but we're fixing it now. It was just a login problem that really hasn't occurred in the last three years. So it should be back up by the time you see this.

And for now, we're offering the course at $29.97. Again, that never expires. There's 12 hours, 20 different lessons covering all the different anatomic areas and how to stay out of trouble, how to consent people, what to charge.

It's really like a turnkey kit for you. And you have a never expiring credit towards using that tuition towards buying exosomes. I recommend strongly you try them on yourselves, friends and family.

Then afterwards, if you want to expand it, you know, to your trusted patients, if you need malpractice insurance, I can also make a referral for that.

So with that, I'm going to go big here and stop sharing. And I'm going to, just so I don't forget, I am going to answer some questions that were submitted through the Ask Me Anything portal.

Okay. So the first question, and you can prepare now and put your questions in the chat and raise your hand if you want to be live. First question was from LE who asked, have you seen success with peripheral neuropathy of

unknown origin?

Yes, I have. And one of the most striking was a doctor colleague. She had a facial neuropathy. Well, this kind of answers the second question. But in the book, we talk about Bob.

So yeah, neuropathy. dying or dysfunctional nerves. And we've seen lots of different improvements with that. So we can inject into the nerve sheath. You can easily visualize with ultrasound and inject it into the sheath and it'll blow up like a sausage.

And around the arteries too will support the small vessels supporting the nerves. So yes, we do see that. The second question was from SS. Have you treated oral facial pain?

Yes, my shaman friend was just here and she had terrible pain from a dental accident that was remediated after one shot. And again, my OB-GYN colleague Haka Reinen, she had this like horrible ophthalmic nerve pain which went away after injection into her nose, which must have gotten to her fifth cranial nerve.

So yes, we do see that. And third question from Teresa, Dr. Hupkova asks, What about the use of exosomes in patients who are immunosuppressed?

AMA: Neuropathy, Facial Pain, and Safety

You worry about Valtrex and cold sores? Yes, that's a good question. I don't think there are hard contraindications, but I would say that active untreated cancer, as I said during my lecture with Mark Hyman attending, it just a rising tide lifts all boats, so it could theoretically hurt that.

In cases of macrodegeneration, vascular proliferative, I've kind of softened on that. I've treated people with vascular proliferative. I don't think it hurts.

So the common denominator here is Inflammation, dysfunction, stem cell depletion. I think that's really what's going on. And anytime we can remediate that.

Yeah. If you have active Lyme mold or some kind of viral infection, then it's time to pause. But if you're in kind of a chronic stable mode, the benefits you get from inflammation, vessel health, perhaps lymphatics and immune regeneration, it can help.

But again, it's medicine. You have to be careful. If someone has an active cold or flu, I have seen that get worse and I wouldn't do it. And active cancer, those are the big ones right there.

So I hope that helps. Oh, Dr. Stein's on. Does anybody have a question? You can raise your hand. You can enter it into the chat. Let me see what I got here.

All right. Question. Have you ever nebulized exosomes to heal lungs after someone quit smoking? Yeah, we do use nebulizer. It's a sonic disruptor. It kind of nebulizes the exosomes.

Used it idiopathic pulmonary fibrosis, emphysema. I would say, you know, I can't say that my results are very limited. I have not been a huge game changer thus far.

When you quit smoking, you know, there's permanent damage, but the acute inflammation isn't really there. So because stem cells in particular, but exosomes also will go a lot to the lungs, the spleen, the liver.

I mean, there is a argument that you don't really need to inhale them. Is it better from the outside in, inside out? I guess it would be disease specific, patient specific.

But yeah, my personal experience is not a lot with that, but it should help as well. Good question. Any other questions that people have entered the chat or you can raise your hand?

Oh, Dr. Hukova, I sent you a message. I'm sorry. We're trying to fix the website login. I'm so sorry about Kirsten. But unfortunately, you're talking to the webmaster.

So I have to fix it myself. So we are on it. I know Denise just was able to sign in. So I was working for her two days ago. Denise is taking the course.

So one caveat, you can't use Safari for some reason on Amazon Web Services. So you have to use a different browser to watch the lessons.

Lung Use, Scaffolding, PRP, and Results

OK. All right. So that's it. By the time you get there, the course will be working. You can sign up. You have a never-expiring credit. Every month, I want to do these webinars.

Are there any doctors that have any questions? I want to address one issue. People say you need a scaffolding. I don't think that's true. There's one study in rat mice, something needs where scaffolding helped.

Theoretically, it could help because theoretically, the exosomes could diffuse out of the joint. But in my experience, it's a non-issue. And secondly, combining with PRP, I don't like because it causes inflammation and we're trying to avoid inflammation.

I don't see the synergy unless you're causing inflammation like a week ahead of time PRP or like Eswal shockwave inflammation a week ahead of time. Maybe that could be good, but we just cut to the chase.

We get to the M2-TH2 regeneration, de-differentiation. We don't need all that jazz. And stem cells, I don't know if that's helpful. Again, exomes work.

Stem cells work because of exomes. So what is the benefit other than increasing your margin to adding stem cells? I'm a bit of a Luddite there. I'm a one trick pony, but that's my take on it.

People do peptides too. Maybe some TB, maybe some other jazz, but again, I haven't really been on the peptide bus. Are there any questions that people have.

So the bottom line, I buried the lead, you know, it tends to help maybe 60, 80 percent of time. We actually can see, yeah, new cartilage growth. We can see decreased inflammation.

It doesn't always happen overnight. We just had a patient tell us it wasn't good after a week, but after four weeks, much better. and yeah sometimes you have to repeat if it's a pretty severely traumatized area yeah and sometimes it's just too little too late like they're heading for a knee replacement but in a lot of times it really can help any other questions so again i encourage doctors there to join the course the resources are being updated all time new videos new cheat sheets again your consent for the procedure with all the legal language and all the post-care instructions you can download and customize We'll be doing these monthly webinars to help you.

And my sincere wish and intention is that you all can help your friends and family. If you want to keep it just your friends and family, great. But you can do a lot more and actually have a big impact if you include your patients as well.

Okay, yeah. Even my 21-year-old, he tore his meniscus really bad two years ago. Two shots, boom, he's fine. So again, this is stuff that doesn't really exist in the medical literature other than testing on animals So they'll mess up animals knees and then they'll give them human exosomes and yeah big difference in how they heal so But again, the proof of the pudding is in the eating until you try it until you really see the benefits It's hard to really even Evangelize.

Closing Remarks and Podcast Outro

All right. Dr. Bowles back from Rio or maybe still there Acheena Maybe we'll see you in New York in a couple of weeks. Everybody else, don't forget to like and subscribe to the YouTube channel and our sub stack.

And we just did a great interview today with Dr. William Gale, one of the pioneers of TB 005 for Alzheimer's and Parkinson's. So look for that on our Recharge Biomedical Podcast as well.

All right, everybody have a great day. Happy New Year. If it's not too late to say that and we'll see you next month for another Ask Me Anything. Cheers everyone.

Thanks for tuning into the Recharge Biomedical Podcast. If today's episode got you thinking, you'll love my book Exosomes, Songs of Healing. It's packed with cool analogies, full color illustrations, and all the science you'll need to understand how exosomes are changing the game in aging and regenerative medicine.

You can grab it in paperback, ebook, or audiobook, whatever works for you. Now head over to www.rechargebiomechanical.com to check it out. And don't forget to like and subscribe so you never miss another episode.

See you next time.