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What's New With 3D Visualization in Glaucoma Surgery?

#### Announcer:

Welcome to CME on ReachMD. This episode is part of our MinuteCE curriculum.

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#### Dr. Petrakos:

Have you ever had those long surgical days where at the end of the day your back is hurting, your neck is hurting, maybe you go home with a bad headache?

#### Dr. Singh:

All the time, Paul. Those are the days that are the worst. But did you know there's a better way to operate?

#### Dr. Petrakos:

Really? I'd say sign me up right now.

#### Dr. Singh:

3D heads-up displays in the operating room can really help save our backs and our necks while giving us a beautiful view, a surgical view for surgery.

This is CME on ReachMD, and I'm Dr. Paul Singh.

#### Dr. Petrakos:

And I'm Dr. Paul Petrakos.

I've heard that back pain is one of the most common reasons that surgeons consider early retirement. How do these heads-up displays and systems combat this?

#### Dr. Singh:

Yeah, it is a significant issue. In fact, Paul, there was a survey back in 2005 that showed us that about 15% of doctors had to curtail their work because of their back and neck issues as well. And about 70% of patients, or rather, doctors, have had significant pain while performing surgery. So not only do we see a lot of doctors having pain, it actually has caused some doctors to retire earlier as well. And so what 3D systems can do is really allow us to be more free from the ocular, sit up straight. We're not beholden to where the position of the oculars are. So especially in MIGS procedures, we can turn the head of the scope and, again, still keep our body the most relaxed that we want it to be as well and not flex our neck where we cause a lot more tension. For every inch that we flex our neck forward, it's 10 pounds of weight on our cervical spine, as well. So from a glaucoma perspective, when we're turning our head, our scopes, it is so nice to not have to worry about trying to reach forward to get our eyes onto the oculars. We can just look up straight ahead on 3D heads-up and feel as comfortable and have a beautiful 3D view.

#### Dr. Petrakos:

Yeah, I've used the NGENUITY heads-up system and I found that it can be a great addition to the operating room. It's really, overall, improved my ergonomics, especially, like you were saying, those MIGS procedures where we're turning the scope and turning the patient away from ourselves. It's also really helped for those combined cases that we're doing with cornea and retina, making sure everyone has the same view. And since we're at academic institutions – I'm teaching residents, fellows, and medical students are there – they've been great to really teach the residents and make sure they're on the same page.

Can you tell the audience about the NGENUITY system and what other types of systems there are available for us?

**Dr. Singh:**

Yeah, I've used the NGENUITY systems and there's actually a number of companies that are creating and have made 3D heads-up alternatives to our scopes as well. Alcon does have the NGENUITY which does attach to their LuxOR scope, but also other scopes as well, and has a beautiful screen.

And it does, again, decouple yourself from the ocular. So a beautiful 3D view, and I think also improves, I think, magnification and also depth perception, which I really enjoy a lot.

We also have used, in our centers, the ARTEVO. We have the new 850 now, ARTEVO, which also has a digital camera which allows us also to have intraoperative OCT to, again, create a beautiful view, especially in those mixed procedures, retina procedures, as well as, again, decrease the need for us to have that flexion with the ocular scopes as well.

And the third one is the company called Beyonics that creates a headset where everything is in your headsets. So you're not looking at a 3D screen separate; you're actually looking in your headset. So no matter how you turn your head, your screen is always in front of you as well. And these are all different technologies that have a little different nuances to them but all can, again, help decouple us from the oculars, give us a beautiful view, and allow us to maintain our posture and our ergonomics as best we can.

**Dr. Petrakos:**

Yeah. As surgeons, we definitely have some great options with 3D heads-up systems. Currently, I would say it's been helpful overall for those long OR days going home with less neck pain. My headaches haven't been as bad, and it's been really helpful with those combined cases and teaching the residents and medical students and fellows that we have.

**Dr. Singh:**

Yeah. Absolutely. And I would say, my advice to all these young'uns out there, is pay attention to your ergonomics. It just takes time. I had neck surgery many years ago. I had ACDF, anterior cervical discectomy and fusion, back in 2018, and it's because of spinal stenosis. And my dad also is an ophthalmologist and had the same thing. It catches up with you. So pay attention to, not just in the OR, but in the clinic where you're doing lasers. Every once in a while, I take my chin and do a chin tuck, put my chin against the back of a wall like this. Put it back. It aligns your spine. Pay attention now when you're young so that you don't have those issues later on. And these 3D heads-up display systems can really be a significant benefit to you, not just in terms of the view, but really to your longevity of your practicing.

**Dr. Petrakos:**

That's great advice, Paul. Thank you so much for joining me today.

**Dr. Singh:**

It was great to be here, Paul.

**Dr. Petrakos:**

And thank you to our audience. This has been CME on ReachMD.

**Announcer:**

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