

Brace Yourself – Minimally Invasive Surgery for Pectus

Thanks to years of experience, the Children’s Mercy Center for Pectus is getting children feeling better faster. The center is the oldest in the nation and sees more patients yearly than almost every other hospital. The center offers the “Nuss technique” of minimally invasive surgery with a 99 percent success rate for children with pectus excavatum. For pectus carinatum, the center corrects nearly every patient case without surgery through the dynamic compression device (DCD) bracing system.

Listen in as George ‘Whit’ Holcomb III, MD explains the “Nuss technique” and that Children’s Mercy is the region’s only authorized bracing system provider.



Featured Speaker:

George ‘Whit’ Holcomb III, MD

George ‘Whit’ Holcomb III, MD, is certified in general surgery and pediatric surgery. He is Surgeon-in-Chief and Senior Vice President of Children’s Mercy Hospital. He is the director of the Center for Minimally Invasive Surgery, The Katharine B. Richardson Endowed Chair in Pediatric Surgery and a professor of Pediatric Surgery at the University of Missouri-Kansas City School of Medicine. He received his medical degree from Vanderbilt University Medical School where he also completed his residency in General Surgery. He is fellowship trained in pediatric surgery from the Children’s Hospital of Philadelphia and double certified in general surgery and pediatric surgery.

[Learn more about George ‘Whit’ Holcomb III, MD](https://www.childrensmercy.org/FindADoctor/Details/1789)

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Transcription:

Dr. Michael Smith (Host): Alright, so our topic today is Brace Yourself: Minimally Invasive Surgery for Pectus. My guest is Dr. George ‘Whit’ Holcomb, III. He is the surgeon-in-chief and senior vice president of Children’s Mercy Hospital. He’s also the director of the Center for Minimally Invasive Surgery. Dr. Holcomb, welcome to the show.

Dr. George ‘Whit’ Holcomb III (Guest): Thank you, it’s a pleasure to be here.

Dr. Smith: So, let’s talk first about, in a more broad sense, Children’s Mercy. How or what sets Children’s Mercy apart for treating pectus from other hospitals on a regional level?

Dr. Holcomb: Well, we developed a specialized center for pectus excavatum and carinatum in 2011, and we did that to focus our expertise on managing both pectus excavatum and pectus carinatum. We have dedicated personnel: doctors, nurse practitioners, occupational therapists, and the like who staff this clinic as opposed to just every surgeon – every general surgeon doing it – so we have a specialized group who have an interest and expertise in managing both of these anomalies.

Dr. Smith: So, what was the inspiration for the center? Is the different types of pectus -- are we seeing these cases more often? What was really the – was the need to have such a center like this?

Dr. Holcomb: We've always had a large volume of patients with excavatum, but over the past 15 or so years we're seeing more and more patients with pectus carinatum, that is an outward protrusion of the breastbone, and we changed the techniques for managing the carinatums in 2011 from an operative approach to a non-operative approach with bracing, and we began to utilize a dynamic compression brace that is individualized for each patient's anomaly, and we started that in July of 2011, and since then, we've just seen a really exponential growth in patients with carinatum, and we've continued to see a large number of patients with excavatum, so the impetus was to showcase our expertise at managing both, but we also changed the management approach for carinatum from an operative to a non-operative approach.

Dr. Smith: Yeah, so, let's talk about the carinatum first. Why do we – what's your opinion – why are we seeing an increase in the number of cases?

Dr. Holcomb: Well, I don't think we're necessarily seeing an increased number of cases with the establishment of our dedicated pectus center; I think patients now have a resource to go to --

Dr. Smith: Ah, ok.

Dr. Holcomb: – and they know that they're experts who take care of this and also referring pediatricians or family practitioners know that there's a dedicated center for this. So, I think that it's probably a similar amount of patients, but there's now a place to go to and that's why we're seeing more and more of these patients.

Dr. Smith: Right—so before you were using the compression device, surgery was the treatment for carinatum. Was that part of it? Maybe you have a general practitioner who has a patient with maybe a slight carinatum, doesn't really think that the patient needs to go to surgery, so they just kind of managed the patient at the clinic, but now that there's something new out there, there's, you know, maybe the compression device is appropriate for all cases of carinatum, is that part of it? So, you're getting simply more referrals because of this new compression device?

Dr. Holcomb: Yes, I think that of all of what you said is true. I think that – that if you had a mild carinatum then the child might live with it as opposed to having a relatively complicated operation and now that we can manage them non-operatively, and in fact, we've just – we're presenting a paper in Europe on our experience over the last five years in which we've evaluated over 500 patients with carinatum, and we braced over 300 patients. So, anytime you can go from an operative management strategy to a non-operative one, I think you're going to be seeing more and more patients.

Dr. Smith: Yeah, so tell me a little bit about the dynamic aspect of this compression device? What does that really mean? Are we able to little by little increase or decrease the compression and that's what's really helpful?

Dr. Holcomb: Right, so with an orthotic brace that's not dynamic, it just exerts the same pressure against the carinatum in one patient as another. With the dynamic one, we're able to measure the pressure of correction for each individual patient, so one patient might need a pressure of correction of 3 psi, that's pounds per square inch, another one might need a pressure of correction of 7, and so we're

able to tailor the amount of pressure that's exerted against the carinatum based on each individual's needs and not just a one-size-fits-all approach.

Dr. Smith: So, let's move the conversation over then to the excavatum, which I do think is more common, right? So, tell us a little bit about the Nuss technique that you practice at Children's Mercy.

Dr. Holcomb: Right, well, Dr. Donald Nuss is a pediatric surgeon in Norfolk, Virginia, and he published his approach in 1997, and it really revolutionized the operative management for excavatum, and we began to utilize the technique in late 1997, and we've made a little modification of it, and it's a minimally invasive approach as opposed to again, a rather complicated operation that was used before - it's so called Ravitch procedure -- and recently, we presented our experience of over 550 of these repairs in children since 1999.

Dr. Smith: And, so, yeah, I see her 99% success rate for children with excavatum, so that's pretty impressive. I want to ask you something more related to this idea of minimally invasive surgery. Obviously, you're the director at Children's Mercy for minimally invasive surgery. Where do you see us going with this in the future? Where's the technology taking us? What do you hope to see in the future for this kind of an approach to surgery?

Dr. Holcomb: Well, I think that it will continue to progress. There are advantages other than just a cosmetic advantage of a smaller incision— there's less discomfort, which means less pain, which means less hospitalization, and, therefore, faster return to regular activities, and in the adult world, that's getting back to work. In the pediatric world, that's getting back to school or routine activities for the child, and I think there is a corresponding economic benefit for the adults because if the child gets back to their routine activities, then the parents get back to their routine activities which is often work. So, there are advantages of using a minimally invasive approach.

The incisions are quite small now. Whether we can reduce the incisions much more is going to be hard to say, but I think that that's the way things are progressing, and we're trying to get smaller and smaller incisions which leads to these operations. At some point, there may be the need for a robotic component to it, but right now, we don't really need that, but who knows in 10 or 15 or 20 years, maybe there will be a robotic component to the management strategy.

Dr. Smith: Right, well, Dr. Holcomb, I want to thank you for the work that you're doing at Children's Mercy, and I want to thank you for coming on the show today. You're listening to Transformational Pediatrics with Children's Mercy Kansas City. For more information, you go to childrensmercy.org. That's childrensmercy.org. I'm Dr. Mike Smith, thanks for listening.