

New 3D Printing Technology Helps Surgeons Correct Birth Defect In Utero

Lifelike fetal models show anatomical details that help surgeons prepare and predict challenges for delicate and complicated surgery

Orlando Health

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NEWS PACKAGE

SUGGESTED TEASE	COMING UP HOW NEW 3-D PRINTING TECHNOLOGY IS HELPING SURGEONS CORRECT BIRTH DEFECTS BEFORE A BABY IS BORN.
ANCHOR LEAD	THERE'S A LOT TO THINK ABOUT WITH A BABY ON THE WAY, BUT THEIR HEALTH IS ALWAYS NUMBER ONE. IMAGING AND GENETIC TESTING CAN NOW IDENTIFY BIRTH DEFECTS IN DEVELOPING BABIES AND SURGEONS HAVE DEVELOPED STATE-OF-THE-ART PROCEDURES TO INTERVENE AS EARLY AS POSSIBLE, WHILE BABIES ARE STILL IN THE WOMB. BARB CONSIGLIO HAS THE DETAILS ON HOW NEW CUTTING-EDGE 3-D PRINTING TECHNOLOGY IS HELPING SURGEONS PERFORM THESE COMPLICATED PROCEDURES AS SAFELY AND EFFECTIVELY AS POSSIBLE.
(PACKAGE START) ----- CG: Courtesy: Orlando Health Winnie Palmer Hospital for Women & Babies Photo of gender reveal Shots of Jocelyn and Jared walking by lake CG: Jared Rodriguez Expecting first child Shots of ultrasound Shots of fetal surgery	(Nats - Sound) :02 AS JOCELYN AND JARED RODRIGUEZ PREPARED TO WELCOME THEIR FIRST CHILD, THEIR EXCITEMENT QUICKLY TURNED TO CONCERN WHEN IMAGING REVEALED THEIR BABY HAD SPINA BIFIDA. :08 <i>"When you get that diagnosis, your just immediate thought is, 'How do we fix this?'" :04</i> SPINA BIFIDA OCCURS WHEN THE SPINAL COLUMN FAILS TO CLOSE NORMALLY, WHICH CAN CAUSE A LIFETIME OF NEUROLOGICAL DISABILITIES INCLUDING AN INABILITY TO WALK. BUT SURGEONS AT THE ORLANDO HEALTH WINNIE PALMER HOSPITAL FOR WOMEN AND BABIES ARE ABLE TO CORRECT THE SPINAL DEFECT BEFORE THE BABY IS BORN, ESSENTIALLY PERFORMING SURGERY ON TWO

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CG: Samer Elbabaa, MD Orlando Health Shots of 3D printer creating model Shots of 3D printer designing model CG: Jack Stubbs Digital Anatomy Simulations for Healthcare Shots of 3D models Shots of surgeons talking to parents before surgery Dr. Elbabaa (CG'd earlier) Shots of parents holding models Jared Rodriguez (CG'd earlier) CG: Jocelyn Rodriguez Expecting first child Shots of Jacelyn going into surgery (PACKAGE END) ----- ANCHOR TAG	PATIENTS SIMULTANEOUSLY — THE MOTHER AND THE FETUS. :20 <i>"Most of the surgeries are done around 24 to 25 weeks. After we do the surgery, we hope to continue the pregnancy as long as possible."</i> :12 (NATS - 3D printer) :02 TO PREPARE FOR THIS COMPLICATED PROCEDURE, SURGEONS PARTNERED WITH 3-D PRINTING EXPERTS WHO DEVELOPED TECHNOLOGY THAT ENHANCES M-R-I AND ULTRASOUND IMAGES TAKEN THROUGHOUT THE PREGNANCY TO CONSTRUCT CURVES AND EDGES AND PRINT AN INCREDIBLY TRUE-TO-LIFE MODEL. :09 "They can see through to see where the nerves propagate through the defect 01:05:21 so that they know where to make an incision and where to stay away from nerves." :11 THESE PRECISE DETAILS HELP SURGEONS LEARN MORE ABOUT THE DEVELOPING BABY'S CONDITION AND PREPARE FOR SURGERY, REDUCING THE AMOUNT OF TIME THE FETUS IS EXPOSED AND ALSO PREDICTING POTENTIAL CHALLENGES OR COMPLICATIONS. :11 <i>"It's much easier to do it by looking at a 3D printed model, rather than looking at a picture like an ultrasound or an MRI."</i> :08 THE MODELS ALSO HELP EXPLAIN THE PROCEDURE TO PARENTS. THAT'S HOW THE RODERIGUEZES LEARNED THE MODEL THEY HELD IN THEIR HANDS WAS MADE SPECIFICALLY FOR THEIR CHILD. :07 <i>"It shows the brain, it shows the spine, it shows the lesion. And then he just looked at us. He was like, 'By the way, that's the 20-week MRI of your little girl.'"</i> :09 <i>"Every appointment we go to, we just keep getting more good news and she's already showing how strong she is."</i> :06 AT THE WINNIE PALMER HOSPITAL FOR WOMEN AND BABIES, THIS IS BARB CONSIGLIO REPORTING. :03 SURGEONS ARE SEEING SUCCESSFUL
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	RESULTS FROM AN IN-UTERO PROCEDURE FOR SPINA BIFIDA. MOST BABIES WHO RECEIVE SURGERY EXPERIENCE SIGNIFICANTLY FEWER HEALTH CONCERNS AND BETTER FUNCTIONALITY, WITH SOME OF THEIR FIRST PATIENTS NOW LEARNING TO WALK ON THEIR OWN. EXPERTS HOPE TO EXPAND THE PROGRAM TO MODEL OTHER TYPES OF BIRTH DEFECTS IN UTERO THAT MAY BE TREATED THROUGH FETAL SURGERY IN THE FUTURE.
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SOCIAL MEDIA

 Share it! Suggested tweet:	New 3D printing technology is helping surgeons at @OrlandoHealth prepare for complicated fetal surgeries that can repair spinal birth defects while babies are still in the womb. https://bit.ly/3eGgNEF
 Suggested post:	Imaging and genetic testing can identify birth defects in developing babies and surgeons at Orlando Health Winnie Palmer Hospital for Women & Babies are performing state-of-the-art procedures to intervene as early as possible while babies are still in the womb. Now, new 3D printing technology is helping surgeons perform these complicated procedures as safely and effectively as possible. https://bit.ly/3eGgNEF

EXTRA BITES

CG: Samer Elbabaa, MD Orlando Health	Elbabaa says the 3D model helps predict challenges and complications: <i>"The 3D printing for fetal surgery models prior to surgery not only mimics the anatomy of the spinal defect, but also educates the surgeon about potential challenges or intraoperative complications."</i> :18 Elbabaa says the model helps because they can't see the defect before surgery: <i>"We've never seen the condition. So the 3D printing allows the surgeon to have almost the real anatomy in a printed model, lets the surgeon get prepared and be ready to tackle any challenges during surgery."</i> :21 Elbabaa says this is the first time a model truly represents the anatomy of the fetus: <i>"Finally, we're able to see a model that truly represents the actual condition of the baby and helps the surgeon achieve the surgery safely and effectively."</i> :13
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CG: Samer Elbabaa, MD Orlando Health	Elbabaa says they've seen improvements after the babies are born: <i>"We're very pleased with their outcomes in terms of minimal need for brain surgery in most of them, as well as most of them are seeing improvement in the function of their legs, and a good portion of them are learning to walk."</i> :18
CG: Jack Stubbs Digital Anatomy Simulation for Healthcare	Stubbs says showing the model to parents instills confidence: <i>"When the surgeon can show, this is your baby, this is the defect. This is how I am going to go in and do the surgery. And everything is going to be good because I know what I am doing. There is just a huge confidence and relief level that is there."</i> :13 Stubbs explains what surgeons can see on the model: (nats) <i>"You can see how the brain is forming the brain compartments in there. The blue is the spinal cord. The vertebrae in the spinal column, going into the defect in the red is showing where the nerve is coming out into the defect."</i> :14 Stubbs shows the details on the transparent fetal model: (nats) <i>"This one is the transparent model that shows all the internal skeletal structure of the spinal nerve, the brain cavities, and then the spina bifida defect right there."</i> :13
CG: Jocelyn Rodriguez Expecting first child	Jocelyn explains why it's helpful to do the surgery before the baby's born: <i>"So normal babies go throughout their pregnancy and they form the way they're supposed to. Well, this was basically just intervening, making her back to where she was supposed to grow, and then allowing her to grow like a normal baby would in the third trimester."</i> :14 Jocelyn explains her reaction to seeing the model of her baby: <i>"I actually didn't grab it right away because I was watching him hold the model. And I was just like, 'Wow,' it just made it that much more real for me because it's like you're pregnant and you feel it, but you don't see it. So to see it and visually hold it, that was awesome."</i> :17 Jocelyn says it's amazing that these models help surgeons prepare: <i>"It's just amazing. For them to be able to visually see what they're going to be dealing with before they even open me up and see her, is I think just a big benefit to fetal surgery overall."</i> :12

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CG: Jared Rodriguez Expecting first child	Jared describes the moment they received the spina bifida diagnosis: <i>"We're looking at the sonogram and thinking... Picking out parts and pieces, just having a good time. And then they came in and I don't want to say we were caught off guard, but it was definitely a shock when we got the diagnosis."</i> :14
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