



Enormous Machine Beams Protons into Tiny Tumor Cells

Breakthrough technology offers new treatment for patients with hard-to-reach tumors

UF Health Cancer Center - Orlando Health

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SUGGESTED TEASE	STILL TO COME, A HIGH TECH BREAKTHROUGH THAT'S GIVING PATIENTS WITH HARD TO REACH TUMORS NEW HOPE. THE MIND-BOGGLING ABILITIES OF THIS MACHINE, NEXT IN HEALTH NEWS.
ANCHOR LEAD	A PERSON IS DIAGNOSED WITH A BRAIN ¹ OR SPINAL ² CORD TUMOR ABOUT EVERY SIX MINUTES IN THE U.S. FOR MANY, THE TUMORS ARE INOPERABLE BECAUSE THEY GROW TOO CLOSE TO CRITICAL PARTS OF THE BODY. BUT REMARKABLE TECHNOLOGY IS GIVING THOSE PATIENTS NEW HOPE. WITH MORE ON A FASCINATING APPROACH CALLED PROTON THERAPY, HERE'S CLARK POWELL.
	(Nats -Mom with baby) :01
CG: Courtesy: UF Health Cancer Center - Orlando Health Shots of Rhea holding baby Close up of Rhea's eyes Close up of baby	JUST A FEW MONTHS AGO, RHEA BIRUSINGH (REE -uh be- YUR -sing) WASN'T SURE SHE WOULD GET TO SPEND QUIET MOMENTS LIKE THESE WITH HER SON. SHORTLY AFTER GETTING PREGNANT, RHEA BEGAN HAVING BLURRY VISION. SHE KNEW CHANGES LIKE THAT ARE COMMON DURING PREGNANCY, BUT AS A DOCTOR, SHE SUSPECTED SOMETHING WAS WRONG. :14
CG: Rhea Birusingh Diagnosed with brain tumor	"I pay particular attention to my eyes, and I noticed that my left eye was not moving left, as the way it should be." :07
Graphic showing tumor position	SCANS SHOWED RHEA HAD DEVELOPED A TUMOR, SITUATED BETWEEN HER EYE AND A CRITICAL PART OF HER BRAIN. :05
CG: Naren Ramakrishna, MD, PhD UF Health Cancer Center - Orlando Health	"Nothing could be done during the pregnancy of course, and after pregnancy no surgery was possible because of the critical location of the tumor." :08
Still photo of mom and baby-zoom in Shot of Rhea walking by sign Graphic showing x-ray damage	AFTER DOCTORS INDUCED LABOR TO SAVE RHEA'S BABY, THE RACE WAS ON TO SAVE HER SIGHT. SO, RHEA CAME TO UF HEALTH CANCER CENTER - ORLANDO HEALTH. NORMALLY DOCTORS WOULD USE X-RAYS TO RADIATE A TUMOR LIKE RHEA'S - BUT THAT CAN DAMAGE

Shot of Rhea in therapy	SURROUNDING TISSUE. SO, SHE UNDERWENT A TREATMENT KNOWN AS PROTON THERAPY. :17
Dr. Ramakrishna (CG'd earlier)	“It's a big burst of energy right inside the tumor and then there's actually no protons beyond the tumor so there's no radiation dose. So it's a dramatic difference.” :10
Shot of therapy - CG: 3-story 200,000 pound machine 402,000,000 miles per hour	AND IT'S REMARKABLE TECHNOLOGY. A 3-STORY, 200-THOUSAND POUND MACHINE SPEEDS UP PROTONS UP TO 402-MILLION MILES PER HOUR. THEN, BEAMS THEM PRECISELY INTO TUMOR CELLS. :13
Dr. Ramakrishna (CG'd earlier)	“And the energy that we give them determines the depth to which they penetrate the body and at which depth they release their energy.” :08
Graphic showing proton therapy Shots of Rhea in therapy	IT'S A BREAKTHROUGH IN TREATMENT FOR THOSE WITH TUMORS IN SENSITIVE OR HARD TO REACH AREAS. WITHOUT IT, RHEA MAY NEVER HAVE BEEN ABLE TO WATCH HER CHILD GROW. :08
Rhea (CG'd earlier)	“All of the negative things you could think about, it could be a lot. But you think about all the positives, it's phenomenal.” :05 / 1:30
Shot of Rhea holding baby	“That's an incredible blessing.” :01 / 1:31
Shot of Rhea holding baby	AT UF HEALTH CANCER CENTER - ORLANDO HEALTH, THIS IS CLARK POWELL REPORTING. :02 / 1:33
ANCHOR TAG	IRONICALLY, RHEA'S TUMOR FED OFF THE HORMONES HER BODY PRODUCED DURING PREGNANCY, SO AS HER BABY GREW, SO DID THE TUMOR. ONCE HER BABY WAS DELIVERED, THE TUMOR STOPPED GROWING, AND NOW DOCTORS ARE USING THE PROTON THERAPY TO SHRINK IT. THERE ARE ONLY ABOUT 60 OF THESE PROTON THERAPY MACHINES IN THE WORLD.
 Share it! Suggested tweet:	Doctors @UFHealthOH zap tiny tumor cells with massive, 3-story proton machine. Details: bit.ly/24anuG4
 Suggested post:	Every 6 minutes someone is diagnosed with a brain or spinal tumor, many of which are considered inoperable because they grow too close to critical parts of the body. Treatment options are often limited for those patients, but remarkable technology at UF Health Cancer Center - Orlando Health is changing that. Doctors are using a massive, 3-story, 200,000 pound machine to zap tumors that are only a few centimeters wide. See this fascinating technology at work here: http://bit.ly/24anuG4
References -	¹ <i>Brain Tumor Statistics, American Brain Tumor Association.</i> Online: http://www.abta.org/about-us/news/brain-tumor-statistics/?referrer=https://www.google.com/

	<p>²<i>Spinal Tumors</i>, American Association of Neurological Surgeons. Online: http://www.aans.org/Patient%20Information/Conditions%20and%20Treatments/Spinal%20Tumors.aspx</p>
	<p>Extra Bites</p>
<p>CG: Naren Ramakrishna, MD, PhD UF Health Cancer Center - Orlando Health</p>	<p><i>Ramakrishna talks about the development of proton therapy -</i> “The proton therapy machine represents an advancement over conventional radiation treatment that we’ve used for treatment really over the last century.”</p> <p><i>Ramakrishna talks about uses for proton therapy in children -</i> “It’s also extremely important in pediatric patients who have developing tissue, it could be the growth plate of a bone, or it could be apart of a developing brain that is spared radiation.”</p> <p><i>Ramakrishna talks about the size of proton therapy machine -</i> “We have a 3 story building to hold the synchrocyclotron which is suspended by these large arms and it rotates above and below the patient so that the beams can be directed at any angle that you need to strike a tumor. “</p> <p><i>Ramakrishna talks about the precision of the therapy -</i> “The precision of the beam is within less than a millimeter in accuracy.”</p> <p><i>Ramakrishna talks about the rarity of these machines -</i> “There are only 60 centers in the world doing this type of treatment right now. So it does put us as quite elite company.”</p> <p><i>Ramakrishna talks about the advent of this technology -</i> “If you ask me, proton therapy represents really one of mankind's great achievements. Taking a fundamental force of nature using protons, directing them, giving them energy, putting them to good use, and I think that that's something really special.”</p>
<p>CG: Rhea Birusingh Diagnosed with brain tumor</p>	<p><i>Rhea talks about the location of her tumor -</i> “The tumor, unfortunately, even with just that one image, we knew it was in the worst location possible.”</p> <p><i>Rhea talks about her treatment options -</i> “It’s not chemo sensitive. So, chemo, chemotherapy was not an option. So, it’s only one option, and that’s radiation.”</p> <p><i>Rhea talks about the fact that her hormones fed the tumor -</i> “Being pregnant, I fed the tumor. And the tumor grew rapidly.”</p> <p><i>Rhea talks about the dangerous location of her tumor -</i> “My tumor is actually pushing on my short-term memory centers close to all the areas that control all my hormones in my body.”</p> <p><i>Rhea talks about having access to this new technology -</i> “It’s huge. And to minimize the side effects so that I can function as</p>

	a normal human being, and I don't have to leave my home, it's incredible.”
Producers & Reporters:	To download scripts, video and photos go to: http://www.multimedianewsroom.tv

For viewer information on this story contact:

UF Health Cancer Center - Orlando Health: 407.242.0305

mediarelations@orlandohealth.com

Produced by:



1800 West 5th Ave.

Columbus, Ohio 43212

Phone: (614) 932-9950 Fax: (614) 932-9920

www.mediasourcetv.com

**Video content provided by: UF Health Cancer Center - Orlando Health
Media Relations Department: 407.242.0305**