

# BIONIC BEATS

*A Monthly Publication*



## A new prosthetic leg that senses touch reduces phantom pain.

*By Laura Sanders via sciencenews.org*

A prosthetic leg that can feel helped two men walk faster, more smoothly, and with greater confidence. The artificial leg, outfitted with sensors that detect pressure and motion, also curbed phantom pain that came from the men's missing legs, researchers report online September 9 in *Nature Medicine*. Restoring these missing signals may greatly improve the lives of people who rely on prosthetic limbs.

Neuroengineer Stanisa Raspopovic of ETH Zurich and colleagues tested the device in two men, both of whom had a leg amputated above the knee. Their new prosthetic legs were outfitted with seven sensors that detect foot pressure on the ground and one sensor that decodes the angles of the knee joint. Electrodes implanted on the sciatic nerve, just above the amputation site, then stimulated the nerve with signals from the sensors on the prosthesis.

"If you close your eyes, you will think that you have your own leg," volunteer Savo Panic said in Serbian in a translated video released by the researchers.

When those sensory signals were present, the two men walked faster and more confidently, even over difficult sandy terrain. What's more, unpleasant feelings of pain from their missing leg lessened. After about a month of use, one of the men reported no pain at all, and the other man said his pain was sporadic. As part of the study, the electrodes were removed after about three months. Longer trials with more people will let researchers fine-tune the device.

### IMPORTANT NEWS, UPDATES, AND IDEAS

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*Live Well, Work Well*





## The Bionic Difference: Reynaldo Morales

"I was always an active kid." Reynaldo has a hard time not smiling as he recounts the story. Seldom will you meet someone as genuinely and instantly likable as Rey. "I used to do backflips as early as 2nd grade and I went to Lisa's Gymnastics in 3rd to really sharpen my skills...but basketball was my true sport."

Even after Rey got his GED and joined the Laborer's Union Local 41, his love for the game continued. Rey was making a good living and shooting hoops at the YMCA whenever he could, while attending Apprentice School in Logansport, IN. That's when everything changed."

I flipped my pickup truck on a sudden curve in the road," Rey says. "I thank God that I'm alive, because the vehicle flipped multiple times, and I fell out the passenger door. My leg felt like I had a cramp and the doctor said blood was flowing down to my feet, but not back up."

The result was a transfemoral amputation. "It's wild. I was playing basketball at the local Y in Logansport that week. Then, boom."

Reynaldo was not about to be slowed down by his accident - but before finding Bionic Prosthetics & Orthotics, his prosthetic results were mixed. He healed quickly and was soon working with a nearby clinic to be fitted with his first above-knee prosthesis.

"It was a good starter leg, but I quickly outgrew it," Rey says. "It's been 15 years now that I've been walking with a prosthetic leg, and I have noticed that the most important factor is the socket fit. I have some horror stories about how some prosthetists made my socket so big that I could put my whole arm inside."

With Bionic's industry-leading technology, clinicians at the Merrillville, Indiana, location were able to use 3D-scanning and design software to create a detailed model for Rey's prosthetic socket and employed 3D printing technology to test it until it was just right. The socket design he is currently utilizing is a subischial BioDesigns High Fidelity (HiFi) socket. The (HiFi) socket is focused on lowering the proximal trimlines of the socket and maintaining control of the limb by strategically compressing tissue around the femur. This, coupled with the adjustability of the ClickMedical Revo socket, has enabled Rey to have less restriction at the hip and improved comfort. Overall, this has allowed him to continue to increase his activity without compromising his limb comfort. This allowed the Bionic team to build a durable socket that fits perfectly for Reynaldo, and in less time than it would have taken with traditional methods.



For Rey, the difference is pronounced: "I must say, Bionic is by far the best experience I've had thus far. Tony, Shawn, Jignesh, and Emily have always gone above and beyond!"

Reynaldo is thrilled to be back on the court at his local YMCA. Bionic's prosthetic leg and socket fit Rey's athletic needs and allow for greater comfort and mobility in both layups and laps around the pool.



**Reynaldo Morales loves basketball.** Growing up in Gary, Indiana, taught him a love for the court and the community that forms around it that has followed him for his entire life. But on the morning of April 12th, 2007, a car accident threatened to take that away. Now, Reynaldo is back on the courts and still flashing his winning smile.

# MARCH 2022

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
		1 Mardi Gras 	2	3	4	5
6	7	8	9	10	11	12
13 Daylight Saving 	14	15	16	17 St. Patrick's Day 	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

## Vegetarian Pad Thai:

Via: [tasteofhome.com](https://www.tasteofhome.com)



- 6 ounces uncooked thick rice noodles
- 2 tablespoons brown sugar
- 3 tablespoons reduced-sodium soy sauce
- 4 teaspoons rice vinegar
- 2 teaspoons lime juice
- 2 teaspoons olive oil
- 3 medium carrots, shredded
- 1 medium sweet red pepper, cut into strips
- 4 green onions, chopped
- 3 garlic cloves, minced
- 4 large eggs, lightly beaten
- 2 cups bean sprouts
- 1/3 cup chopped fresh cilantro
- Chopped peanuts, optional
- Lime wedges

1. Prepare noodles according to package directions. Drain; rinse well and drain again. In a small bowl, mix together brown sugar, soy sauce, vinegar and lime juice.
2. In a large nonstick skillet, heat oil over medium-high heat; stir-fry carrots and pepper until crisp-tender, 3-4 minutes. Add green onions and garlic; cook and stir 2 minutes. Remove from pan.
3. Reduce heat to medium. Pour eggs into same pan; cook and stir until no liquid egg remains. Stir in carrot mixture, noodles and sauce mixture; heat through. Add bean sprouts; toss to combine. Top with cilantro and, if desired, peanuts. Serve with lime.



# New Hires

MARCH 2022



Thomas Gavin - Clinic Manager & Orthotist,  
Chicago IL



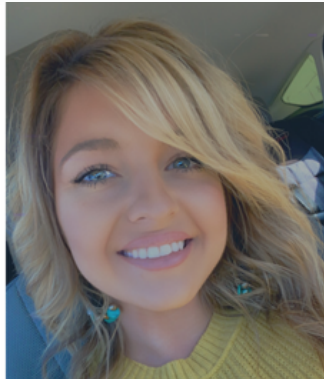
Jo Ann Ortiz - Billing Specialist,  
Business Center



Jeffrey Crowe - Maintenance Tech,  
Business Center



Kyle Wilson - Lab Technician,  
Cincinnati OH



Shayland Potts - Patient Advocate,  
Evansville IN



Aalinah Castleberry - Clinic Office Admin,  
Merrillville IN



Lynda Durand - Billing Specialist,  
Business Center



Christine Fields - Billing Specialist,  
Business Center



Layn Hill - Certified Orthotist,  
Mishawaka IN



Jason Warne - Marketing Manager,  
Business Center



Samantha Cuthbert - Clinic office Admin.,  
Tinley Park IL



# Live Well, Work Well

March 2022

## The Science of Snacking

Snacking has a bad reputation, but it can be an important part of a healthy diet. It comes down to choosing healthy snacks and watching portion sizes. Nutrition is key to a healthy lifestyle. Snacking on healthy bites during the day offers the following benefits:

- Healthy snacking increases energy. It can provide midday energy boosts and fuel for exercise.
- Healthy snacking provides nutrients. It can meet your daily nutrient needs. The best snacks consist of nutrient-dense foods like fruit, vegetables, whole grains, low-fat dairy and nuts.
- Healthy snacking keeps your blood sugar levels steady. It can keep your blood sugar levels even if you eat consistent carbs at each meal or snack. Remember that your blood sugar dips three to five hours after eating.
- Healthy snacking prevents overeating. It can decrease your hunger and the odds of overeating at mealtime. Don't snack right before a meal, and only eat a snack if you are truly hungry.

Try incorporating the five healthy desk snacks below into your meal plan:

### 5 Healthy Workday Snacks

				
<b>Almonds—</b> 1.5 ounces or about 35 nuts	<b>Greek yogurt parfait—</b> 1 cup yogurt with ½ cup berries	<b>Berries and cheese—</b> ½ cup berries with low-fat string cheese	<b>Apple and nut butter—</b> 1 apple with 1 Tbsp. nut butter	<b>Veggies and hummus—</b> About 8 baby carrots with 4 Tbsp. hummus

## Employee of the Month:



## Erika Haynes

A shout out to Erika Haynes, our Employee of the month for March! Erika received her WIP training on January 10th to help clean up the WIP in her office. She took the initiative to help another office with their WIP and also trained additional team members, all in just a few weeks' time.

Erika loves enjoying walks in nature, cooking and baking (especially chicken parmesan and yellow cake), and relaxing with Grey's Anatomy or a Marvel movie!

Erika embodies the values that we strive to display at Bionic, and we are so glad that she is part of the Bionic Family.