

ONESTEP PATIENT SUCCESS CASE STUDY

How Digital Physical Therapy with OneStep Helps
Post Operative Patients Recover Better



OneStep



OVERVIEW

OneStep is an app-based digital physical therapy service that pairs expert physical therapists with clinical-grade motion-sensor technology to help patients achieve health on their own terms. Our science turns any smartphone into a 24/7 motion analysis lab, whose results are translated by our physical therapists into personalized recovery plans and ongoing feedback. Our program is designed to break down the traditional physical therapy session into small, daily actions that our patients can do anytime, anywhere, ultimately turning routines into results.

Until now, gait analysis involved wearables and devices limited to lab settings and specific use-cases, while only covering specific measurements. This reality is changing.

OneStep is the only platform in the world that provides comprehensive gait analysis using smartphone sensors only (through a mobile app). This allows patients and providers to continuously measure motion and in the patient's natural setting.

At OneStep, we believe that rehabilitation should fit seamlessly into your life - and that small, consistent, daily actions result in big outcomes. By breaking your recovery into smaller steps, doing a little bit every day, we create a journey that pays off in the long run.

Our holistic approach to chronic pain (including one-on-one physical therapy sessions, regular gait analysis, reports, and daily exercise) leads to proven results and pleased patients. In this case study, you'll learn about one of our many patients, John, who recovered using the OneStep app and continues to use it to this day.



FROM OUR USERS



Using the OneStep app, I'm able to see immediate feedback after adjusting my walk. This helps me focus and gives me confidence while I walk. Now, I can walk around the house without a cane.

- JOHN, 66 -

Meet the Patient: John

John, a 66-year-old male patient, reached out to us one year after his second hip replacement. John told us he had a relatively smooth recovery following the hip replacement. However, due to his preoperative hip condition, the rehabilitation process was slower than usual.

John underwent hip replacement surgery in 2018 because of a condition called AVN that was detected at a very late stage. In addition to significant pain and decreased mobility, John suffered from severe muscle atrophy as a result of the late diagnosis. Due to the same condition, he had to have his left hip replaced one year later (2019). John did, however, recover more rapidly from his left hip injury since the AVN on its left side was discovered earlier.

The risk of sedentary behavior

John was a regular gym-goer prior to his hip surgery. But with COVID-19, John found himself stuck at home, with limited ability to exercise or get professional instructions and guidance. Consequently, he felt his recovery process was halted just when it was



most critical. John became increasingly concerned that this stalling would negatively impact his recovery.

Additionally, due to what became a relatively sedentary lifestyle, he began complaining about excessive knee pain, swelling, and limited range of motion. For example, walking up the stairs in his own home was painful and any activity that involved bending his knee was uncomfortable or even made impossible by the pain.

John used a walking aid at the time he downloaded the OneStep app, his muscle strength was limited (4/5), and his balance was off. John could not go up and down the stairs steadily, and he was unable to do most of his house and garden chores. As a result, he became frustrated, and he lost the confidence he used to have while walking, working out, or even doing his daily activities.

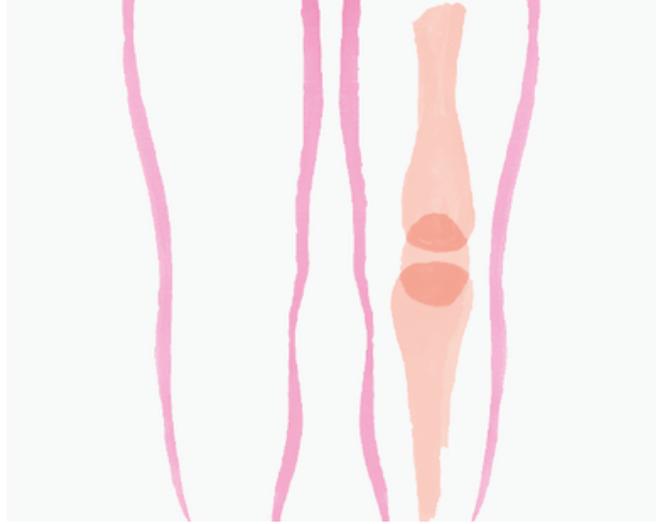
Meet the PT: Hila

John was matched with Hila, one of OneStep's physical therapists.

"When treating John, my mission was clear to me: help him regain his confidence and get back to doing the activities he used to do, such as walking long walks, going up and down stairs, working in the garden, and even traveling.", says Hila.



A 30-second walk marked John's first step as a OneStep patient. " I received his OneStep Walk Score and gait analysis using OneStep's motion sensor technology. He was walking at 89 steps per minute (2.7 km/h), had short strides (90cm), had limited hip flexion (15cm), and could only walk about 200 meters. Given his poor balance and his difficulty navigating stairs, he was understandably insecure.



Based on the quantifiable parameters of his gait, we were able to customize our remote care plan to his needs and goals."

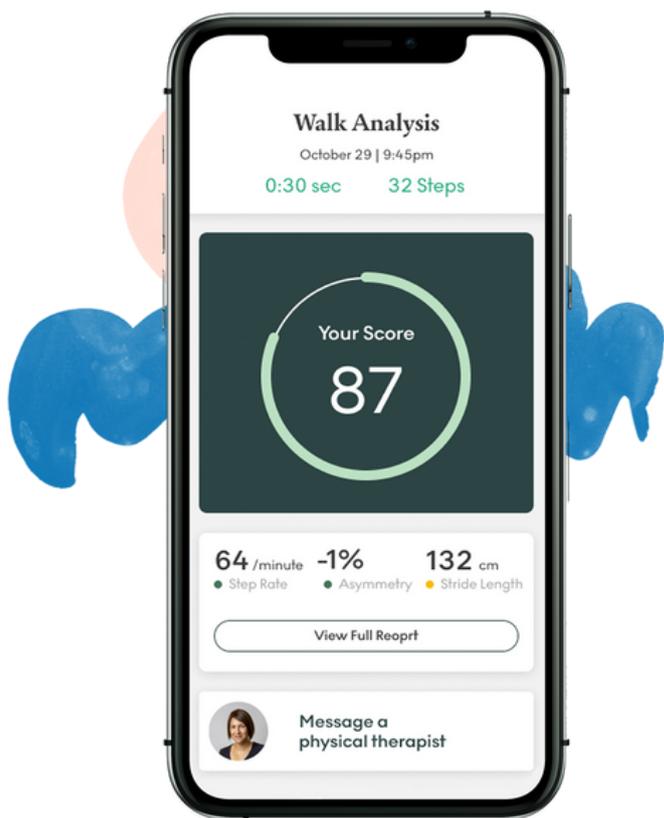
Recovering with OneStep

OneStep provided John with a personalized recovery plan to match his recovery goals and his medical condition.

John's recovery plan included one-on-one meetings, a personal exercise plan, walking assignments, constant correspondence, and feedback to assure that John continued to push himself to get stronger while also ensuring he didn't overdo it.

The exercise plan focused on hip and knee muscle strengthening, proximal muscle and core strength, stretching, and exercises that aimed at improving range of motion, stability, and balance.

John's personalized exercise plan continuously adapted as he improved his Walk Score and his balance, asymmetry, and stability parameters.



"Seeing my progress makes me believe I can improve even more if I stick to my exercises and follow the guidance I receive."

Climbing upstairs was the most challenging part of recovery. However, on his last update, John reported that he could climb up four flights of stairs using a railing for safety only. John reports that the swelling decreased and he no longer feels any pain in his knee.

How is John fairing today?

Today, John continues using the OneStep app on a daily basis for receiving progress reports from his walk analysis and his daily dose of exercise.

A few weeks into recovery John's walking had already improved. "Using the OneStep app, I'm able to see immediate feedback after adjusting my walk. This helps me focus and gives me confidence while I walk. Now, I can walk around the house without a cane.", says John.

John's constant access to his progress report encouraged him to keep working and not give up.



John's walking parameters have improved dramatically: his walking pace is 40% faster (115 steps/minute on average), and his strides are longer (150cm on average). This has a positive impact on his confidence and balance while walking.

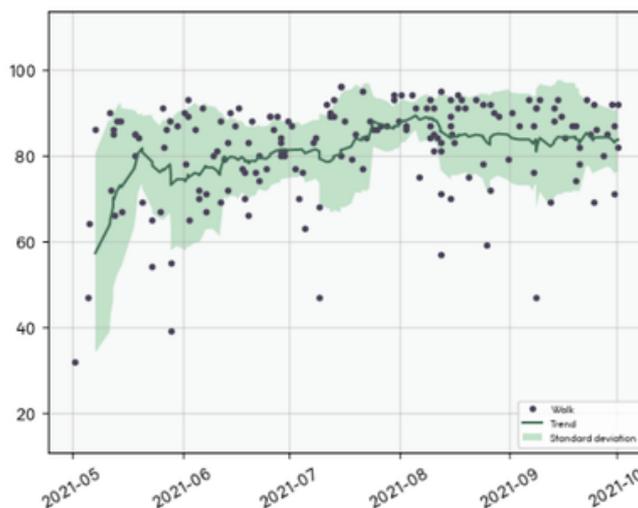
In addition, John's hip range of motion (flexion as well as extension) is healthy. He walks several kilometers per day freely with no walking aid or pain, and he's back to his household chores, including tending to his garden.

Exercise can relieve common knee discomfort, restore freedom of movement, and allow you to live pain-free.

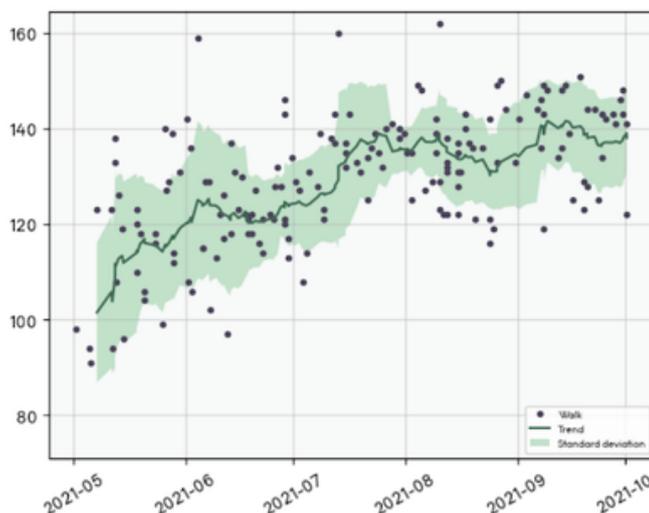
OneStep makes it easy to recover, letting you move along your rehabilitation journey on your terms. We offer patients a personalized recovery plan that includes daily adjustable daily exercise plans, 24/7 support from licensed physical therapists, a clinical grade motion analysis lab and educational resources - all only a tap away.

If you'd like to learn more or get started with your own recovery plan, reach out to us for more information.

Your consistency score rates how similar your steps are to one another. We evaluate this on a scale of 0 to 100%, in which 100% means that all of your steps are exactly the same.



Stride length is the measured distance between two successive heel contact points of the same foot. The average stride length for adult men is 146cm; for adult women it's 120cm.



(The graphs above demonstrate a positive trend of parameter improvement by describing stride length and consistency.)

Walks	Active Days	Steps	Duration (Hours)	Walk Score Avg
173	113	69,920	17:24:26	88
Parameter	Avg	Max	Min	
Step rate (/minute)	99.9	1170	89.0	
Asymmetry (%)	0.9	6.0	0.0	
Stride length (cm)	129.9	171.0	91.0	
Speed (km/h)	3.9	5.7	2.7	
Hip range (°)	36.2	49.0	21.0	
Double Support (%)	34.8	40.0	26.0	
Consistency (%)	80.9	96.0	0.0	
Base Width (cm)	12.4	36.0	10.0	
Step Length (cm)	64.2	92.0	45.0	
Step Length Asymmetry (%)	11	20	0.0	
Double Support Asymmetry (%)	0.9	4.0	0.0	
Stance (%)	67.2	72.0	63.0	
Opp Stance (%)	671	71.0	62.0	
Walk Score	88.7	98.0	56.0	

OneStep

OneStep is an app-based physical therapy service that puts a licensed physical therapist by your side and a motion analysis lab in your pocket. We're here to help you move your body with health, with freedom and with confidence.

For inquiries concerning this case study, contact us at:
info@onestep.co