



# Failed Knee Replacement Recovery Maria's Case Study



# MEET MARIA

Thank you for downloading this overview of all the treatments we did for “Maria.” I put her name in quotes because this is not her actual name. We are keeping her anonymous so that we could also keep the doctors and physical therapists that worked with her private.



We treated **Maria** for 3 months from late February 2019 to early May 2019.

At that time Maria was in bad condition in her left knee. She was desperate to find something to bring her relief from the constant pain, swelling and disability she was beginning to have.

She had a left total knee replacement done in the summer of 2016. She did 3 months of physical therapy to get her knee motion and strength back. She said she got to about 80% by the time physical therapy ended for her.

The surgeon and physical therapist told her she’d get the last 20% of her strength as she got back to normal life.

Maria diligently did her physical therapy routine for months after ending treatment. She did standing leg raise exercises forward, backward, and to the side. Some days she did leg raises in those same directions while lying down. Almost every day she would take a 30 minute walk in the neighborhood or the park down the street. And if the weather was not good or it was too dark, she would ride her reclined stationary bike at home for at least 30 minutes.

In the summer of 2017, about one year after the knee replacement, Maria began to notice a popping and clicking sound that came from her knee at times when doing exercise. It wasn’t painful, just uncomfortable. She said it worried her that something might be wrong with her knee replacement.

The pop would happen unexpectedly throughout the day while doing chores. It would also happen consistently when getting out of her car.

As the summer went on, she gradually did less exercise to avoid the popping and clicking sounds.



Then in August 2017 her left knee started to swell and hurt while on the way back from a road trip to visit family out of state. She had been sitting in the car for 12 hours while her husband drove. They had to make a few extra stops so that Maria could get out and move her leg in an attempt to get relief.

This prompted her to visit her knee surgeon to get checked out. Her surgeon told her that everything looked normal in her knee replacement but that another round of physical therapy might be helpful. Her surgeon sent her back to the physical therapy clinic that helped her right after surgery and told her to come back in a month.

The therapist got Maria going slow on the bike and then had her go through exercises similar to what she had done right after surgery the year before. This time the exercises did not feel good. Maria was in more pain after therapy and the popping did not improve.

Her therapist told her that it was normal and that she needed to go through this to get stronger.

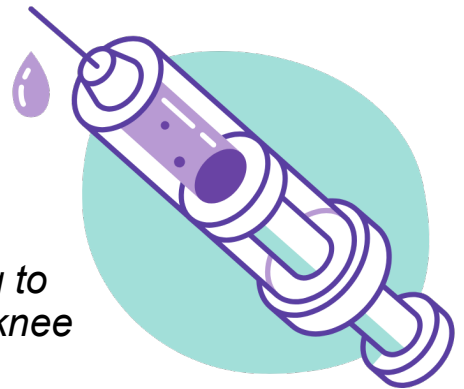
So Maria toughened up and decided to muscle through this to make sure she did her part and make the most out of the treatment to get her knee better again. She attended physical therapy twice a week for 4 weeks. Each visit she worked with the assistant and the techs that took her through stretches, exercises, and lots of bike riding. She tried walking on the treadmill but that hurt her, so she preferred using the bike.

Maria would head home right after therapy to ice her knee and recover on her recliner for two or three hours. Then she would take 2 days for the swelling to go down and the pain to become more manageable. She would have to take pain medication at night to avoid missing sleep because her knee would throb, ache and burn every night.

Finally, a month later, she returned to the knee surgeon for her follow up and the doctor was very surprised to see that Maria was no better. In fact she was worse than before going to physical therapy. X-rays were done again and the surgeon confirmed that everything looked normal in the knee. The hardware was fine and the next option was to try an injection for pain relief.

The surgeon suggested trying another PT clinic, but Maria was traumatized and didn't want to make her situation even worse than it was. She was starting to limp and was trying to hide it.

The injection helped the pain tremendously. After a month, she went back to the surgeon and he expressed relief about her improvement. Maria was glad that she was no longer in pain. However, she told the surgeon that the uncomfortable popping was still there. The surgeon told her, *"These parts eventually wear out so that's probably what's starting to happen. If we need to we can look at doing another knee replacement when it gets worse."*



Maria told me she didn't say anything to the surgeon during that appointment, but went home after and cried the rest of the day because of the thought that she might have to go through ANOTHER knee replacement sometime in the future, while still suffering with knee problems in the meantime.

She was depressed throughout the fall and winter seasons in 2017. She stopped exercising, no longer walked, and the stationary bike in her home was now primarily used for hanging wet clothes that are too delicate for the dryer.

When the knee swelling and pain would flare up every few months, she would go visit her surgeon's office and the nurse practitioner would give her a steroid shot. It would help, but Maria knew that she was wearing down her artificial knee parts.

She said she had a sleepless night every so often because she was thinking that she might have a failed knee replacement. She had a friend from her Bible study who had her knee replaced more than 10 years ago and has not

had a single problem with it. And her friend's husband had the same great outcome when he had his knee replaced a few years before that.

Meanwhile, her knee replacement seemed to have gone the complete opposite way. It was ruining her life right now. This was not what she expected. She had only heard good things from people that had a knee replacement done. The surgeon said this knee replacement would last 10 to 20 years but she was barely coming up on 2 years.

The year continued and Maria had gained 25 pounds from being depressed about her knee and not being able to exercise like she would before. She carried Tylenol and ibuprofen in her purse now and her surgeon's office was suggesting that she needed to switch over to seeing a pain management doctor. She hated that she was already relying on pain medicine to get through every week, even though she tried to take as little as possible. So she really did not like the idea of going to a doctor that was just going to give her different pain medication options. That didn't settle well with her so she never went.



Over the holiday season of 2018, her knee pain had become worse than ever in her life. It was even worse than it was before she had knee replacement surgery.

Maria spent 2 days cooking for the family Thanksgiving get-together. She had children and grandchildren coming in from out of town that she hadn't seen in over a year (since that road trip in summer 2017). Maria and her husband helped cook at her son's house. After preparing a feast for 32 people, she said she was in so much pain on Thanksgiving Day that she couldn't enjoy any of the food because she felt nauseous from the knee pain.

She barely enjoyed her time with family because she was so distracted with the pain. Since she was at her son's house, she had to ask to go lie down on her grandson's bed for a bit after dinner. The Friday after she spent in bed and on the recliner at her home with ice on her left knee missing out on more family time.

At this point Maria was certain that her knee replacement was a failure. She started looking up knee pain relief information on the internet and somehow came across our clinic and saw that we might be able to help her out.

Maria said she felt much better about going to a clinic that wasn't going to push her to take more medications or get another surgery, but she had her reservations about whether or not anything could be done for a failed knee replacement.

At the first visit, Maria shared her whole story with me. I gave her ample time to get it out and made sure to get all the details about the dates of treatments and exactly what was done in each treatment.

## MARIA'S MISSED DIAGNOSIS

I had seen many cases similar to this so I was able to spot Maria's problem a mile away. She had a MASSIVE muscle imbalance in her hip and thigh. She also had an imbalance in her foot that was contributing to the problem. Her mild limp showed me right away that at that time she was not strong enough to be walking around without a cane.

My observations combined with her story and a detailed assessment I did on the treatment table all solidified my diagnosis.

I then explained the following to Maria about her situation:

"The reason you've had progressively worse knee pain is NOT because of a failed knee replacement. After all, the surgeon has confirmed multiple times now that the surgery looks fine on the X-ray.

The problem is that you've got severe muscle imbalances that are creating bad pressures and tension in the tendons, ligaments, nerves and other parts of your knee that were not replaced.

This also explains the popping sounds and discomfort you've been experiencing. When the muscles are not balanced in strength, they cause the joint to move in a way that it is not supposed to so the joint slides off center.



When a joint moves off the center of motion from where it's supposed to be moving then you get unexpected friction that can make a noise. Over time, this will absolutely loosen the attachment of the hardware to your bones. The surgeons call that an instability and they like to replace the knee joint again with even larger parts.

This off-center movement due to the muscle imbalance also causes the artificial parts to wear out faster, but it has not been long enough for you to wear it out so much that it needs to be replaced.

There are some weak muscles in your foot that need to be addressed too. The small bunions are a sign that you've had chronic weakness, and the bunion is larger on the left side. You're lucky that bunion isn't hurting you right now, but there's a chance it can become a problem at any time. We need to take care of the toe strength so that you can help your knee pain AND protect your foot from future problems.

The bottom line is this Maria, this knee replacement can be saved! There's some work ahead of you, but I'll guide you through it so you don't have to worry. I've helped many, many people in your situation and so far, not one has gone back to the surgeon for another knee replacement. In fact, in the ones that were thinking of getting the other knee replaced, their arthritic knee benefitted from doing this treatment.

Not to mention all the back, hip, and foot problems we helped along the way. Treatment has to include fixing ALL the problems so we do right by your knee replacement and it keeps healthy for the rest of your life. I'd like this to be the last surgery you ever had.

In order to fix ALL the problems, we'll have to start with getting the weakest muscles to first activate on your command. Then I have to train you to use those muscles when they should be used, and after that we need to strengthen them a bit beyond what you need so that you have a reserve of muscle strength that will keep your left knee replacement healthy for the long term.

*Maria, would you allow me to work with you to help save your knee replacement?"*

Maria deflected my question with a question of her own.

She asked if treatment would be painful. She was worried about that since the last time she did exercise, she had to deal with more pain and swelling.

"The exercises we do should not hurt your knees, especially your left knee. In fact, you should feel better in your knee right after doing the first progression of exercises that I'll introduce to you in the beginning.

The only 'pain' I expect you to have is if you over-do it by not stopping when you should. I'll explain more about that as I guide you through each exercise. Besides that you'll definitely feel muscle soreness from exercising. I don't count that as pain since it's a good thing. It means that you're going to gain strength."

## THE PLAN

"Maria, I think that we'll need 14 weeks of treatment with you coming in once per week. The first 4-6 weeks will be focused on getting your knee pain under control and setting the stage for strengthening. The next 4-6 weeks will focus on strengthening and coordination. You'll need the coordination to make sure you learn how to use your muscles at the right time. You can have lots of strength, but it does you no good if you don't put it to use at the right time during activity.



The remaining part of your treatment plan will focus on SAFELY pushing your strength a bit past what you'll need for your normal activities. You have the potential to be lifting small weights by the end of your treatment plan. And if you can get to doing that, it would be good for you to keep up some weight lifting as a part of your weekly workout routine to maintain your strength in the right balance.

*That's what you would be signing up for if you work with me Maria. How does that sound? Would you like to proceed?"*

Maria had a look of surprise on her face because of her raised eyebrows. She explained that the thought of lifting weights in a few months seems impossible because of how bad she's felt in her knee for over a year now.

She said that she'd rather give this treatment a chance instead of going through another knee replacement. The worst that could happen would be that she would get worse in her knee from this treatment and then she would have to get the knee replacement anyway. But at least she would be able to say she gave this a chance and cross it off the list of things she tried before resorting to another surgery.

Once she agreed, I asked her to lie on the table so we could start freeing up some stiff muscles.



# MARIA'S TREATMENTS

## Treatment #1 - Monday, February 18, 2019

### Specialist treatment:

- 20 minutes of specialist massage to the left quadriceps, hip flexor, and calf muscles to treat stiffness. Instruction on how to self massage at home with hands and with a massage gun.
- Thorough instruction to begin to use a cane in the right hand to offload her left knee when walking. Practiced walking with cane for 15 minutes and figured out exactly how much weight to lean onto the cane to make walking pain-free and limp-free. Reassured that she has the potential to easily stop using the cane after she gains strength, but we need to get her pain under control first in order to get to strengthening exercises.

### Objective result of the treatment:

- Increased knee flexion by 8 degrees. (Extension was not limited)
- Tension in the muscles worked on was dramatically reduced.

### Maria's report after treatment:

"Wow, my knee hasn't felt this loose and my leg muscles this relaxed in about a year. I can't believe I got this kind of relief with 20 minutes of massage. No one told me I could use a cane to take pressure off my knee, I just thought I wasn't supposed to use a cane anymore since I was done with rehabilitation from the knee replacement. I'll start using the cane now."

## Treatment #2 - Monday, February 25, 2019

### **Maria's report since last visit:**

"I've been using the massage gun on my left leg and it's been a game changer. I feel more mobility and less stiffness in my knee. I only took pain medication once over the past week after a full day of errands where I was on my feet a lot. I have not been able to tolerate being on my feet as much but using the cane has really helped me.

I can be on my feet about 30 minutes before I need to sit whereas before it was less than 10 minutes. It's another thing to carry, but it's really nice to not be in pain in my left knee at the end of the day. I am so happy with the improvements so far! Especially because I've noticed there's less popping in my knee."

### **Specialist treatment:**

- 20 minutes of specialist massage to the left quadriceps, hip flexor, and calf muscles to treat stiffness. Review of how to self massage at home with hands and with a massage gun.
- Review on cane walking technique.
- Glute activation exercises - 10 second holds while lying on back with knees bent. Instructed her to do 10 reps of this exercise for 10 seconds each rep, every waking hour of the day if possible.

### **Objective result of the treatment:**

- Maria could not tighten her glute muscles on command. It took her 15 minutes while lying on her back flat and then with knees bent to get the glute muscles to begin to activate on her command.
- Leg muscle tone was so much more relaxed after hands-on treatment. Reassured Maria that she won't always need hands-on treatment from me. She'll feel great once her muscles are balanced as she gets to strengthening.

### **Maria's report after treatment:**

"Your massage is so much better than the massage gun, I'm so glad I'm coming in every week for this. I hope I can stop taking pain medicine completely. I can't believe I struggled so much to tighten my butt muscles, but

honestly I haven't thought about doing that in many years. I'm surprised the physical therapist I was seeing didn't have me do this, I guess they were just focused on gaining more knee motion right after surgery."

### **Treatment #3 - Tuesday, March 5, 2019**

#### **Maria's report since last visit:**

"It's been about 10 days since I've had any pain medication! I think I might take it out of my purse soon. I've been using the massage gun twice a day for about 10 minutes each time. I love how I feel after, so I use it for 20 minutes at a time on some days. I'm still using the cane and can take up to 30 minutes on my feet.

I can stretch it out to 45 minutes if I lean on a shopping cart while at the store. I think I'm firing my glutes better now. That's been my biggest struggle. I couldn't lie down every hour to do the exercise like you showed me, but I still tightened the muscles while sitting in the car and I did it while standing up too."

#### **Specialist treatment:**

- 20 minutes of specialist massage to the left quadriceps, hip flexor, and calf muscles to treat stiffness.
- Advanced glute activation - tightening glute muscles without allowing the quadricep or hamstring muscles to also work. Practiced holding for 10 seconds in standing, sitting and lying on back.
- Introduced using glutes while walking. Slightly tighten the glute on the side that you put pressure on when walking.

#### **Objective result of the treatment:**

Leg muscles were very relaxed after hands-on treatment.

Maria improved a lot in her ability to tighten the glutes on command.

She struggled with tightening the glutes without using thigh muscles but demonstrated that she could do it 1-2 times out of 10 reps.

The walking with glutes technique was too advanced for her at this time, but she should be ready to master it in 1-2 visits.

### **Maria's report after treatment:**

"I can't believe this is working. I'm actually spending more time on my feet and not in so much pain afterward. I can tell this is going to work. This is what was missing. I see it now that the surgeon and physical therapist would not have known to tell me to do this. It's not their specialty."

### **Treatment #4 - Tuesday, March 12, 2019**

#### **Maria's report since last visit:**

"I overdid it this weekend. I decided to do some gardening since I haven't done it in years because of my knee problems. I had been feeling so good I thought I'd give it a try. Between going to the garden supply store, lifting and carrying a few heavy bags of potting soil, and then getting up and down from the ground over about 4 hours, I was done.

I had to ice my knee and spend the rest of Saturday and Sunday on the recliner. I held out from taking pain medication, but I was close. My knee got a little swollen and it kept me awake for 2 or 3 hours on Saturday night. I won't do that again, but my flowers look really pretty! Besides that, I kept using the cane and was squeezing my butt muscles a lot. I'm getting pretty good at it!"

#### **Specialist treatment:**

- 20 minutes of specialist massage to the left quadriceps, hip flexor, and calf muscles to treat stiffness (the stiffness was expectedly worse this week compared to last week).
- **Bridge holding** - making sure to primarily use glutes and avoid using quads, hamstrings, and back muscles. 10 second holds for 10 repetitions. This is to be performed at home. Work up from 40-50 reps per day to the goal of 100 reps per day. (*Now we're doing real strengthening, before it was just muscle activation.*)
- Reviewed using glutes while walking. Slightly tighten glute on the side that you put pressure on when walking. She got it better this week than last week, and will practice it at home.

### **Objective result of the treatment:**

- We were able to relax her leg muscles after hands-on treatment.
- Thanks to all the glute activation practice, Maria was able to do the bridge hold exercise appropriately using the glutes. It was a challenge for her as she had to concentrate immensely, start, stop, then start over multiple times each rep at first, but then she got it.
- Key sign of future success: she felt her glutes get very tired after doing 10 reps of the bridge hold.
- Walking with glutes technique improved, but she was a bit tired from the bridge hold exercise. If she can continue to work on the bridge, she should have enough strength to do this walking pattern much more successfully next week.

### **Maria's report after treatment:**

"I'm really disappointed in myself because I overdid it. I know I should have spread out the gardening over a few days, but I was enjoying it so much I just kept going. I know my limit now and honestly, it's much more than I've been able to do in a long time. I'm especially grateful that I feel like I'm over the pain and swelling already and back to where I was last week. Before I'd be paying for it for a week or more and it's only been a few days.

Treatment today made me feel so much better in my knee. I'm excited to do the bridges and use my butt muscles while walking. My knee doesn't hurt when I do these exercises."

### **Treatment #5 - Tuesday, March 19, 2019**

### **Maria's report since last visit:**

"I did a lot better this week. I didn't take on any new projects like gardening. But something great happened while walking. I figured out how to use my glutes when I walk like you said. And you know what? I barely even need to use the cane anymore. I was leaning on the cane to take pressure off my knee and it worked to take away the pain.

But once I started to use my glutes better, I didn't even need the cane anymore! I still used the cane at times, but I'd say I'm only using it about 40% of the time when I'm walking. I take it with me when I leave the house, but I pretty much quit using it at home and am just squeezing my butt muscles instead. The popping in my knee is almost gone. It hasn't happened while walking anymore, just about once per day when getting out of the car. But there is zero knee pain!"

### **Specialist treatment:**

- 10 minutes of specialist massage to the left quadriceps, hip flexor, and calf muscles to treat stiffness (Less was needed because muscles are the least stiff they've ever been. Tender spots are nearly gone).
- Bridge holding - of course making sure to primarily use glutes and avoid using thigh and back muscles. This time Maria was challenged to lift her hips slightly higher without creating a stretch in her thigh muscles. 10 second holds for 10 repetitions. She said she consistently did 50 reps each day at home and didn't really want to do more because it made her butt muscles burn. I challenged her to push her way to 100 reps.
- Reviewed using glutes while walking. I told Maria she was okay to begin to wean off the cane as long as she felt comfortable. I cautioned her to come back to using it if she began to have knee pain again because she could then off-load the knee. She just needs to gain more strength to be able to consistently be off the cane. The bridge holds and other upcoming strengthening exercises will help her get that strength.

### **Objective result of the treatment:**

- Her leg muscles were the most relaxed they've ever been so far.
- Maria began to sweat just a little bit while doing the harder version of the bridge hold exercise. She was appropriately targeting her glute muscles.
- Getting more glute strength will correct the muscle imbalance and allow her to be more active without over stressing the knee joint.
- The walking technique was more successful now that she's been able to strengthen her glutes consistently for a week with the bridge exercise. We couldn't do the bridge holds until she first went through activating the glutes for a time. Now she's getting more normal forces through her knee joint and there is no more pain. That means we'll

need to progress strengthening more to build a solid base of strength for Maria.

### **Maria's report after treatment:**

"I can't believe how weak my glutes are! I struggled so much to even use them at first and now strengthening them is a chore! I can tell that doing 100 bridges like this is going to make me sore. But I'm going to do it because I feel better in my knee. I was certain I had a failed knee replacement, but it feels much healthier now."

### **Treatment #6 - Tuesday, March 26, 2019**

### **Maria's report since last visit:**

"I've had so much soreness in my butt muscles! I didn't like you very much this week because you made me do so many reps. Honestly, I didn't even get to 100 reps ever. The most I did one day was 90 reps. The rest of the week I did 70 or 80 reps, but that was enough! My knee began to hurt just a bit one day. Nothing that made me lose sleep or stop what I was doing, but I got a bit concerned. I was glad that you told me that might happen once I started working on strength because I would have thought you were hurting me like the last time I was in physical therapy."

### **Specialist treatment:**

- 10 minutes of specialist massage to the left quadriceps, hip flexor, and calf muscles to treat mild stiffness.
- 5 minutes of specialist massage to hip muscles on sides and back to help with muscle stiffness from soreness.
- **Toe curl holds.** Introduced this exercise to begin working on foot strength. 10 second holds for 10 repetitions. Instructed Maria to do 50-100 reps at home.
- **Added toe muscle activation while walking.** Maria had to slightly press the toes down when bearing weight onto a leg while walking. Now she must activate glutes and foot muscles at the same time during walking. She got it but had to concentrate a lot and looked very uncoordinated when doing it.



**Objective result of the treatment:**

- All muscles were relaxed after hands-on treatment.
- Maria's toe curling muscles were so weak that she cramped a few times. Instructed her to only work as hard as she can without causing cramping. The cramping should improve within a week. She was only able to curl her toes to about 50% of her full available motion.
- Key sign of future success: she was able to activate her toes and glutes at the same time about 25% of the time while walking. It was obviously making her think a lot, but she understood how to do it and just needs to practice to make it easier.

**Maria's report after treatment:**

"I never imagined I would have to think so hard about how I walk. No one ever told me that I needed to use certain muscles when walking, but it makes such a difference in my knees. I feel more stable and secure in my left knee. It's just tiring right now, but I know I can get stronger and better at it."

**Treatment #7 - Tuesday, April 2, 2019****Maria's report since last visit:**

"I had no idea my feet were so weak! I've done the toe curling exercise every day since last week and I can tell I'm using my foot muscles much better now. I am able to curl my toes farther. I cramped at times the first two or three days, but after that I was able to make my toes curl all the way down without cramping anymore. I'm getting to 100 bridges every day now, thankfully that's getting easier.

Now walking is the most challenging for me. I'd say I am using both the butt and foot muscles about 60% to 70% of the time. I'm able to use the glutes always now, that feels normal. It's just the foot muscles that are having to catch up now. But it sure feels good not to have to use a cane and not to have to sit down after 10 minutes. I can be on my feet as long as I want now!"

### **Specialist treatment:**

- Specialist massage for 30 minutes to hip muscles, quads, hamstrings, calves, foot muscles.
- Reviewed toe curls 10 sec holds x 10 reps.
- Reviewed walking while using glutes and foot muscles.
- **Progressed bridges to squat holds.** In standing, mini squats with a focus on using glutes more than thigh muscles. She only dipped 1-2 inches from standing. I told Maria to stop doing bridge holds so that she can do squat holds instead. Aim to do 100 reps at home, holding each rep 10 seconds.

### **Objective result of the treatment:**

- All muscles were relaxed after hands-on treatment. She especially enjoyed the foot massage. The joints that have mild bunions were especially stiff and so I gave more attention to those.
- She was able to curl her toes to 100% of full available motion, whereas last week it was 50%.
- Maria is finally ready to successfully do squat hold exercises now that she's built up her strength from doing bridge holds for 3 weeks. Squat holds would not have been possible for her early on since she could not even activate her glutes and she then had to build strength for a time.
- Walking is improving tremendously. Based on her progress so far, she should be able to return to long walks next week. She should remain pain free as long as she's using her glutes and foot muscles.

### **Maria report after treatment:**

“Gaining more foot strength has made a very noticeable difference in the feeling of my knees. I already felt much improvement from working on using my butt muscles better, but my left knee feels especially good and supported when I am using my foot muscles while I walk. This has all been incredible.

I would be happy stopping treatment here, but I'm excited to see if it's really possible for me to lift weights like you told me you had planned back on the first visit. I think that will help my balance and my ability to use stairs. I don't have stairs at home, but I'm always a bit scared when I have to use stairs, especially coming down stairs.”

## Treatment #8 - Tuesday, April 9, 2019

### Maria's report since last visit:

I love the squat exercise! It's so much more convenient to do than the bridges and they actually make my glutes more tired! I still haven't been able to do 100 reps in a day, but I've gotten to 80 over the past 2 days. I was doing between 50 and 70 reps before that. It makes such a difference in targeting my butt muscles when I push my knees out and bring my hips forward during the squat. I can even go much lower now than last week! I think I'm able to drop down close to a foot. I haven't been able to squat like this in ages!

I can't believe I'm doing it with a replaced knee. I guess I thought I would never squat like this ever again after having a knee replacement surgery. Squatting exercises were very painful even before surgery. The best part so far though has been that I don't get anymore popping when getting out of my car. I can tell that my muscles are in better balance now so that seems to have fixed the popping!"

### Specialist treatment:

- Specialist massage for 30 minutes to hip muscles, quads, hamstrings, calves, foot muscles.
- Walking review - glutes and foot muscles are working well at the right times. She is looking fantastic! I cleared her to walk for exercise now (no cane needed of course). She expressed she would like to start walking 1-2 miles at home and at the park.
- **Big toe abduction exercise** - worked on activating the muscle in the foot responsible for pulling the big toe into the right alignment to correct the bunions. 10 second holds x 10 reps, then practiced it while walking and tightening the glutes and toe curling muscles.
- **Comprehensive squat hold progression** - reviewed the squat technique to make sure she can use her muscles properly at the lower squat position. Added toe curls and big toe abduction to the squat holds. I reminded Maria to modify the exercise by not squatting so low and doing less reps if she begins to have discomfort or pain that isn't related to the muscles getting tired and sore.

### **Objective result of the treatment:**

- All muscles were relaxed after hands-on treatment.
- Walking looks high quality now that she is coordinated and strong. Unless she is walking for more than 3-4 hours, she should be able to stay out of pain. That time frame should expand as she gains more strength as planned.
- Maria's squat technique is progressing every visit. At this pace, she should be able to add a small weight to her squat on the next visit.
- Adding the big toe abduction is a long-term play. The bunions likely won't go away completely, but strengthening the right muscle (abductor hallucis) should give her a chance at keeping her bunions from getting worse. This is especially important to protect from compensations as we move into weight lifting exercises.

### **Maria's report after treatment:**

"I'm so happy to get back to walking again, especially with the beautiful spring weather right now. I only used the cane for about a month with you. I really thought that I would be on the cane the rest of my life. I've seen all my friends one by one start using canes over the years and they never stop using them. But I know now that they just need to get more strength and fix muscle imbalances like I'm doing with you. I can't wait to tell them about your clinic."

### **Treatment #9 - Tuesday, April 16, 2019**

### **Maria's report since last visit:**

"I've been walking at least a mile everyday! I feel GREAT! Thank you so much Dr. David! I was telling my husband that I have officially told myself that I no longer have a failed knee replacement. It felt especially easy to say that after the fifth day in a row of walking and never feeling anything bad in my knee. It feels pretty normal! Only the scar reminds me of the surgery now! I've been doing 100 squat holds barefoot at home every day.

I can see that I'm using the right muscle for my toe every time. It takes me about 30 minutes with breaks to finish, so it's not too bad. I get them out of the way in the morning, then walk with my husband near dusk. During the day, I've been able to do all my normal things around the home. My husband even said to me, 'I forgot how busy you like to be around the house since you'd been dealing with that knee.' I feel about 10 years younger right now."

### **Specialist treatment:**

- Specialist massage for 30 minutes to hip muscles, quads, hamstrings, calves, foot muscles.
- **Weighted squat holds** - started by adding a 5 pound weight. Maria held a partial squat position for 10 seconds. She asked to try the 10 pound weight. Then went on to complete 39 more reps holding for 10 seconds each time. She took breaks every 10 reps. I instructed her to work up to doing 60-70 reps at home once per day.
- **Calf raises** - standing touching wall for balance. Distributed weight evenly between both legs. Started by gripping with toes and using abductor hallucis, then raising heels as high as possible on both sides then slowly coming down without hitting the ground hard. No holding. 50 reps in the clinic. Instructed to do 50 to 100 reps with breaks as needed at home.

### **Objective result of the treatment:**

- Maria's squat form is perfect. She understands how to keep her glutes working throughout the squat hold. The extra weight will challenge her glute and foot strength. I told her that the chances of injuring her knee replacement with these exercises at this point are slim to none. She's progressed incrementally in a way that has proven safe for her so far. The only risk she runs is if she does too many reps or too much weight. She'll know she's doing too much because she'll feel she cannot keep her exercise technique anymore OR pain begins to develop. If either of those situations happen, she needs to try one or a combination of the following: reduce weight, not go as low on the squats, do less reps, or take longer breaks.

### **Maria's report after treatment:**

"Holy cow, I haven't tired out my legs this much in a really long time, but I am so excited that I am weightlifting now! It didn't hurt my knee at all, I just felt it

in my glutes and in my calf and foot muscles. But it actually feels really good. I don't know if my surgeon would approve of this, but I'm trusting that you know what you're doing. So far, you've given me just what I needed each visit with you."

## Treatment #10 - Tuesday, April 23, 2019

### **Maria's report since last visit:**

"I was so sore in my glutes, my calves and even my feet! I didn't know I could get sore in my feet! After about 4 or 5 days I stopped getting sore and it was much easier to finish 70 reps of the squat holds. I actually have been doing 100 reps the past 2 days. I've also been doing 100 reps of the heel raises. Those really burn, but I take my time to do them just right. I look forward to waking up to do my exercises because I feel so great the rest of the day.

I'm still walking, except for Saturday night. We attended a wedding for a friend's son from church, they're good family friends. I have to confess that I actually danced for about an hour. It felt so good! I danced mostly with my husband, but I did do the dollar dance with the groom. All my church friends there were surprised to see me dance after they had seen me at my worst with my knee last year."

### **Specialist treatment:**

- 30 minutes of hands-on massage to free up the hips, thighs, calves and foot muscles.
- **Weighted squat reps (no holding)** - 100 reps with breaks as needed using a 10 pound weight carried between both hands. Emphasis on using glutes to push up from the bottom of the squat and then tighten the glutes well for a moment at the top of the squat. More weight can be used as long as the technique is good and there is no knee pain during or after. This is to be done every other day.
- Discussion about joining a gym, exercise class, or doing an exercise video at home so she can begin to use glutes more dynamically while

getting a cardio workout at the same time. Specifically discussed that she would need to make sure all the leg exercises she does are glute focused rather than thigh muscle focused. At this time, it would be okay to feel the thigh muscles get a good workout too as long as the glutes are still primarily working during the exercise.

**Objective result of the treatment:**

- Maria's progress is such that she should be able to work her way into a consistent fitness routine that will allow her to maintain her strength and endurance while keeping the muscles in balance for the long term.
- She demonstrates a healthy caution about not overdoing it. The dancing story goes to show that she had the self confidence to try it while feeling OK to stop when she needed to.
- I expect her to have minor flare ups of knee pain as she continues to explore her abilities with better strength and coordination. This was communicated to her so that she isn't worried or caught off guard if she encounters knee pain or swelling soon.

**Maria's report after treatment:**

"OK, I'll go see what gyms I like and try some out this week. I think I'll like it. I'm pretty good about listening to my body, so I'll be okay. See you next week!"

**Treatment #11 - Tuesday, April 30, 2019**

**Maria's report since last visit:**

"I went to 2 places to exercise. The first one was a water aerobics class. I did not like it because it was actually too easy. Everyone there had a hip replacement or knee replacement or were talking about getting surgery some day and I just felt like I needed to be around different people.

The second place I visited was a women's only gym that does a lot of classes. I did one called body pump. I really liked it! I plan on going back and signing up at that gym. There were just 2 exercises I struggled with but it was

because I had to be on all fours. My left knee didn't like it, but other than that I was able to do everything else. I even used the smallest weights they had. There were some ladies there younger than me that had to do some exercises without the weights. Can you believe that! I'm not doing as bad as I thought I was!"

### **Specialist treatment:**

- 30 minutes of hands-on massage to free up the hips, thighs, calves and foot muscles.
- **Overhead squats** - Progressed squats to include an overhead press on the up part of the squat. The weight comes down when going down on the squat, then she lifts the weight over head as she's coming up from the squat. Used a 5 pound weight for the first 20 reps, then used a 10 pound weight for the next 30 reps. Short rest break every 10 reps. This is to replace the squat reps at home. Goal is to do 100 reps at home or gym every other day.

### **Objective result of the treatment:**

- Maria's normal squat is now that she goes down to just above where her thighs are parallel. If she dips about 3 inches lower, she'll be at parallel. We discussed how it will never be necessary to squat lower than she goes right now to gain more strength. She has enough range of motion in her squat to progress as much as she wishes to.
- Adding the overhead part of the exercise was intended to strengthen her upper body while challenging her strength with a balance variable in the exercise now.

### **Maria's report after treatment:**

"I've done 20 pounds on a normal squat, but I think I need to stay at 10 pounds for this overhead press squat because it was harder! They did an exercise similar at the ladies gym, so I'll definitely get to practice it there. I'm glad I went over all the technical details with you today about using my glutes and feet muscles. I would have thought this was an arm exercise and would have forgotten about using my glutes and feet. My neck was hurting a bit before, but that overhead press took the pain away."



## Treatment #12 - Tuesday, May 7, 2019

### **Maria's report since last visit:**

"I went to the ladies' gym 3 times since I last saw you. I absolutely love it. I even bumped into one of the younger ladies from church there. She's in her 50s, so that's younger than me. She said she had seen me at church with a cane earlier this year and was worried about me. But now she was stunned that I was keeping up with her in class. She asked me what my secret was. I told her that it was just simple, old-fashioned strength training exercises that I got from you. I shared you and your clinic's name.

I told her about my muscle imbalance and how I might have even been able to avoid a knee replacement if I had found you earlier. It's in the past now, and I don't have any bad feelings about any of the doctors I saw. They just didn't have the specialty that I needed to fix the root of my knee problem. I still walk a mile just about everyday with my husband and I am excited to call myself a gym goer in my late years!"

### **Specialist treatment:**

- 30 minutes of hands-on massage to free up the hips, thighs, calves and foot muscles.
- **Gym workout review** - Maria showed me all the exercises she's done so far at the gym so that I can analyze them for her and make sure she's doing them in a way that is helpful and not harmful for her knee replacement.
- Lunges were a concern. She's not strong enough to do weighted lunges just yet, but she was instructed to do a partial lunge (focused on using glutes) without weight in the meantime.
- Exercises that required her to be on hands and knees. I tried using padding under her knees to see if it helped but it did not. We decided to just do alternate standing exercises. She chose to do the overhead squat press exercise during that time so that she wouldn't have to do them later.

### **Objective result of the treatment:**

- Maria is ready to exercise on her own now! Her muscle imbalance was resolved about halfway through the treatment, but then we added more strength to her so that she has a buffer in case she loses strength.
- Taking time off from exercise during a vacation or illness will likely cause her to lose strength, but having a buffer of strength will allow her to still remain in a good muscle balance. There are other added benefits like protecting against osteoporosis and having better balance to avoid falls.

### **Maria's report after treatment:**

“I am so grateful that I found this clinic and that you were able to save my failed knee replacement! I hope you enjoy the cake I made for you and your staff. I'm so happy that I'm walking and exercising. I was certain that I would need to re-do my knee replacement sometime this year. I was regretting ever having the surgery to begin with, but now I know that I needed to fix the muscle imbalance. Thank you!”

# **CLOSING**

I hope that sharing Maria's story was helpful for you.

The biggest takeaway I got from her story was that it did not take her a long time to fix the muscle imbalance. When you put it in perspective, she dealt with knee arthritis for years before having the knee replaced, then she struggled with knee pain for over a year after that. She had been dealing with knee pain every year for the past 10 years.

Then once she went through the right treatment, she was feeling tremendously better in 1-2 months. And in 3 months, she was in the gym lifting weights with people 20 years younger than her.

That is astonishing!

And this is not abnormal. Maria's results are common for her type of knee pain.

You can get results like Maria's by following our treatment approach. And you don't have to travel to my clinic, I've packaged my treatment approach for you in the **Failed Knee Replacement Recovery Program**.

There are about 25 videos that add up to several hours of me teaching and guiding you through what to do so that you can get your knee pain under control and then fix the muscle imbalances that are causing you chronic pain.

You can access these videos any time as long as you have a smartphone, tablet, or computer and an internet connection.

This program is not just a routine of exercises, it's education on how to properly take care of your knee replacement so it serves you well for the rest of your life.

Don't wait to register for the Failed Knee Replacement Recovery Program and start fixing your chronic knee pain. The longer you wait, the more you'll have to undo!

**Sign up right now!**

Cheers to your knee health!

- Dr. David Middaugh, PT, DPT,  
FAAOMPT

