WHY KNEE AND HIP REPLACEMENT MAY NOT BE ALL ITS CRACKED UP TO BE

12 Rarely Discussed Facts About Knee Replacement Surgery

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Knee and hip replacement surgeries come with many risks and complications. Several years ago we queried the National Sampling System for Medicare and found that in the year 2008 alone, there were 17,500 serious complications related to knee replacement surgery resulting in 5,000 patient deaths.

If joint replacement is an option for you, please take the time to read this report. These 12 facts come from the Regenexxx website. Our goal is to provide information that will help you make the right choice for you.

1. Heart Attack Risk Dramatically Increases Following Knee or Hip Replacement

There is an increased incidence of heart attacks seen with knee and hip replacement surgeries. This study shows that among patients 60 and up, those with a hip replacement were 25.5 times more likely to experience a heart attack in the two weeks following surgery. Those with knee replacements were 31 times more likely to have a heart attack.

Why do these heart attacks happen? In our office we call these surgeries “amputation with insertion of prosthesis.” When you completely excise a joint, there is severe trauma to the blood vessels and bone marrow space. This trauma likely leads to a higher risk of blood clots that can travel to the heart and obstruct the arteries. In addition, for some patients the stress of undergoing the joint amputation may be enough to induce a heart attack.

Conclusion: Avoiding a knee or hip replacement lessens your risk of a heart attack.

2. Smoking Can Be a Deadly Decision Following Knee or Hip Replacement

One study shows smokers were at a substantially increased risk of a variety of complications after a knee or hip replacement. Researchers from the University of Alabama at Birmingham assessed the effects of cigarette smoking on 33,336 patients 30 days after elective total knee or total hip replacement surgery. Smokers who have total knee or hip replacement surgeries are at a significant risk of 30-day-postoperative complications and/or death at one year. These statistics were even more surprising: there was a 53 percent greater chance of infection, 161 percent greater chance of stroke, 63 percent greater chance of one-year mortality, and 34 percent greater chance of pneumonia.

Conclusion: If you are a smoker, consider quitting before pulling the trigger on knee or hip replacement surgery.

3. Bleeding Stomach Ulcers Significantly Increase Following Knee or Hip Replacement

One study shows that bleeding stomach ulcers are a significant problem following knee or hip replacement. A Danish knee and hip replacement surgery registry was reviewed, and then matched subjects without surgery were used as controls. There was a staggering six-fold increase in stomach bleeding following a hip replacement and a two- to three-times increase following a knee replacement. The elevated risk lasted 12 weeks in hip patients and 6 weeks in knee patients. Using an acid reducing drug did decrease the risk for hip patients but not for knee patients.

Conclusion: To eliminate your risk of bleeding stomach ulcers due to knee or hip replacement, consider other treatment options besides surgery.
4. Metal Ions in the Blood Caused by Knee Replacement

Our website shares known knee replacement complications surrounding wear particles. Wear particles are microscopic pieces of metal, ceramic, or plastic that break off from the knee or hip prosthesis and irritate the local tissues and/or enter the bloodstream. These issues are more significant now that new partial or resurfacing knee replacements are becoming popular, as these new devices need to be metal to withstand the additional stresses placed on smaller parts.

The research concerning what happens to your body when it’s implanted with metal seems to point in the same direction: patients who receive knee replacements have higher levels of various metals in their bloodstream. For example, researchers from Austria demonstrated that the size of the prosthesis was directly correlated with the blood concentration of metal ions (the larger the knee replacement device, the more metal ions that were found in the bloodstream). One group in Italy found more of these metal ions in knee replacement patients who had a loose prosthesis. Why? In some patients the knee replacement device may not be seated tightly or may not have bound to the surrounding bone. This would cause more wear between the bone and the metal prosthesis thus leading to more metal particles. A group in Germany found that metal ions in the blood increased precipitously after a knee prosthesis was implanted. A different German group also found higher serum levels of chromium and cobalt in knee replacement patients than patients without knee replacements.

While the trend toward computer-assisted mini-knee replacements, partial knee replacements, or knee resurfacing may represent smaller surgeries, the increased use of metal in these devices likely means more of these metal ions. There seems to be no getting around the fact that metal knee replacement devices produce wear particles that lead to metal ions in the blood.

Conclusion: While we don’t know the long-term implications of these higher serum metal concentrations in knee replacement patients, they probably aren’t good for you.

5. Allergy Testing Now Advised for Patients Considering Knee or Hip Replacement

A study demonstrated that two-thirds of knee and hip replacement patients had allergies to some component of their prosthesis. The study focused on common patient allergies to metals. Our website explains the issue of wear particles in knee and hip replacement prostheses and how this is leading to toxicity from heavy metals and to local tissue reactions that can cause medical problems. This makes sense as the biggest issue with wear particles are in metal-on-metal (MoM) hip and knee devices. These devices are most commonly used in “hip resurfacing” procedures; since less of the joint is removed, the prosthesis must be stronger. A limitation of this study is that the allergy testing was performed in only a small group of patients.

What’s very surprising is that two in three knee or hip replacement patients tested positive for one or more allergies to the components used to make the knee or hip device. Are you allergic to the metals used to make your knee or hip replacement prosthesis?

Conclusion: Allergy testing would be a good idea if you're considering knee or hip replacement.
6. Patients with Mild Pain Should Seek Knee Replacement Alternatives

You might think we must know that the knee replacements performed every day work very well; after all we perform 600,000 of these procedures annually, they’re FDA approved, and knee replacement devices are paid for by every insurance company. While there is some data from various studies, a large study that looked at long-term data was very disappointing. In fact, it argues that we should be looking at knee replacement alternatives.

A Lancet article raised some concerns about the wide range of patients who were receiving total knee replacements. Their concern was that there were not only patients who were disabled by knee pain but also patients with only mild symptoms. Our website discusses the issue of joint replacement device manufacturers aiming their advertisements at a younger and more active population with knee pain. The study author noted that the growing number of younger people undergoing knee replacement surgery is something of a mystery. In fact, they noted that an international panel found that surgeons’ recommendations for knee replacement were not correlated with pain, disability, or radiographic severity. The study author commented that only patients with long-standing pain at night or pain with weight bearing (just walking) should undergo the invasive surgery. Finally, the authors noted that knee replacement alternatives that are nonsurgical should receive major research attention.

**Conclusion:** If you are a younger patient experiencing only mild knee pain, seek nonsurgical alternatives to relieve your symptoms.

7. Levels of Activity Lower Than Expected Following Knee or Hip Replacement

Many patients are quite optimistic that once they get a hip or knee replaced, they will return to high levels of physical activity. Ads placed by knee and hip replacement manufacturers show people climbing mountains and generally being extremely active with their new joints. There’s been a lot of criticism of this advertising approach as most patients don’t return to this level of activity.

One study shows that knee replacement patients don’t return to the amount of activity expected by the patient. The study reviewed the expectations of more than 80 knee replacement patients before their surgery and found that the average expectation of returning to high levels of physical activity never materialized after the knee replacement.

**Conclusion:** If you believe you will return to high levels of physical activity after a knee or hip replacement, know that isn’t supported by medical research the same way it’s supported by TV advertising.

8. Severe Persistent Pain Despite Total Knee or Hip Replacement

There is an interesting study on the percentage of patients who continue to experience severe persistent pain despite having their knees replaced. What was really surprising was that 44 percent of total knee replacement and 27 percent of total hip replacement patients continued to experience postsurgical pain of any severity three to four years after surgery. More surprising was that 15 percent of total knee replacement patients reported severe to extreme persistent pain despite invasive knee surgery. The persistent pain was most commonly described as aching, tender, and tiring. In addition, major depression was more common
for patients experiencing pain after knee replacement. This is likely a confounder, as who wouldn’t be depressed if there was still severe knee pain after going through an invasive surgery to get rid of knee pain? More importantly, the study authors stated that pain elsewhere was associated with persistent pain after joint replacement. However, rather than concluding that this may mean the knee or hip may not be the cause of the knee or hip pain in the first place, the authors went in a different direction. They stated, “The association between the number of pain problems elsewhere and the severity of persistent post-surgical pain suggests that patients…may have an underlying vulnerability to pain.” This is an erudite way of saying patients who still have pain after our joint replacement surgeries must be wimps!

This data can be interpreted much differently. We’ve seen many patients with knee or hip pain—their x-rays showing what appears to be arthritis—who have been told they need joint replacement. Many of these patients have pain coming from elsewhere that is referred to the knee or hip as we’ve been able to solve their pain problems without surgery. In these patients, replacing their joints won’t do much good. These concepts of referred pain are discussed in our book, Orthopedics 2.0.

Severe pain despite joint replacement is more common than we would have guessed, and based on our experience, it is often caused by an inaccurate diagnosis of the pain generator before surgery.

Conclusion: If you’re considering a knee or hip replacement, it likely makes sense to insist that someone take the simple step of numbing the joint under imaging guidance to ensure that it’s really the culprit. If this doesn’t take away over 75 percent of the pain, this isn’t the surgery for you. In that case keep searching for a cause (which in our experience is often the low back).

9. Only Half of Arthritis Patients Reported Significant Improvement after Hip or Knee Replacement

Most patients believe that getting a knee or hip replacement is like getting a new part put into their car. This is not the case, as knee and hip replacement surgeries are big and invasive affairs. Some studies have begun to question if the research supporting that these joint procedures work is robust. Now a study questions that efficacy further, showing that only about half of the patients who get a knee or hip replaced have significant improvement in pain and mobility after the surgery.

The authors of the study looked at 2,400 patients with both common and inflammatory arthritis. Nearly 480 of these patients had a knee or hip replacement, and of the 202 patients included in the study, only half reported a meaningful improvement in their overall hip and knee pain and disability one to two years after surgery. What’s more, researchers found that the patients who had worse knee or hip pain to begin with but fewer general health problems and no arthritis outside of the replaced joint were more likely to report benefits. However, nearly 83 percent of study participants had at least two troublesome knees and/or hips. In general, an estimated 25 percent of patients who undergo a single joint replacement will have another joint replacement within two years. This fits with what we see in the clinic as most of our patients have pain in multiple areas.

Conclusion: These very invasive surgeries often fail to satisfy the clinical expectations of patients. If you have pain in multiple areas, the results of a knee or hip replacement surgery may be disappointing.
10. Persistent Pain and Numbness During Knee and Hip Replacement Recovery

Most patients believe that the vast majority of their pain will go away after a knee replacement. So what’s reality? Regrettably, we haven’t had good research showing how patients fare after knee replacement. However, this study is very scary if you’re contemplating a knee replacement, as the pain data after this huge surgery doesn’t look pretty.

What does knee replacement recovery look like? A study that looked at 100 patients paid strict attention to patients’ pain complaints right around the time most surgeons claim you should be getting your maximum improvement from the surgery—four to six months after the procedure. Regrettably, this study showed that 67 percent of hip replacement patients and a whopping 89 percent of knee replacement patients were still in pain. How much pain? Look at the graph above, taken from the article and annotated. The bars numbered 0 to 10 represent postoperative pain scores that the patients reported, and the y-axis (height of the bar) represents how many patients have that pain score. For the hip replacement patients, while many patients still have significant pain, at least the bar is highest on the 0/10 pain (no pain) side. However, for the knee replacement patients, the bar is actually highest at 5/10, which is still moderate pain (not that much different from what most patients would describe before the surgery). The annotations show where the bars should be if the pain data actually matched what most patients believe (a very tall 0/10 bar with maybe a smaller 1/10 bar—blue line) versus what’s actually reported (red line). This data is also consistent with other studies showing continued pain after knee replacement.

Why would so many patients still be in significant pain after the knee joint was removed? There’s a clue in the data. For 77 percent of the knee replacement patients, their pain was described as numbness. This means that their knee pain was likely coming from a pinched nerve and not the knee joint itself. This is consistent with data showing that nerve issues lead to pain and arthritis and not the other way around (structural changes don’t cause pain—pain is caused by bad nerves). Where could this pinched nerve be? Given the average age range for knee replacement patients, it’s most likely to be in their low back.

This data is frightening if you’re considering a knee replacement and, therefore, the resultant knee replacement recovery. This is a huge surgery with huge risks, and ending up with 5/10 pain isn’t what most patients signed up for. In addition, the fact that most of the residual pain is described as numbness means that our medical care system is missing patients with knee pain primarily caused by nerve, not joint, issues. Having seen patients in this boat, this seems to happen when the decision to operate and replace the knee joint is based on a cursory exam and the results of a knee x-ray without ever investigating if the source of the knee pain is really the knee.

Conclusion: If you are experiencing numbness with your knee pain, the source of your pain might not be your knee. Make sure the source is found before considering a knee replacement that could be unnecessary.
11. Arthritis Study Shows X-rays Predict Need for Knee Replacement—Maybe

By 2015 1.4 million of knee replacements will be performed annually due to a 45 percent lifetime risk of knee arthritis. As a result early detection is important, which is what one study sought to better understand. The authors took knee x-rays of more than 500 patients every five years. Women in their 50s with mild to moderate arthritis on x-rays (KL grade 1 or 2) had about a fifty-fifty chance of needing a knee replacement 15 years later. Women in their 50s with no arthritis on x-rays only had about a 1 in 100 chance of needing a knee replacement 15 years later. Heavier patients were more likely to progress. Other studies have shown that heavier patients also have worse outcomes after knee replacement surgery.

While all of this seems to make sense, what was really interesting is that the majority of the women who actually got a knee replacement by year 15 didn’t actually have mild or moderate arthritis at the time the study began—indicating, yet again, that images like x-rays are a poor surrogate for pain. This last point is very important, as we often see patients who are transfixed by their MRI images. This study, and many others like it, show that the pain you experience and what’s seen on images are often two different things, so take any x-ray or MRI result with a grain of salt. In addition, don’t forget about the 15 percent of patients who have their knees replaced and still have pain despite the surgery.

**Conclusion:** The pain you are experiencing doesn’t always relate to what you see on x-ray images. Follow up with additional tests to find the true source of your pain.

12. Knee Replacement Prices Soar as Outcomes Drop and Complications Mount

What does a knee replacement cost? There was a great New York Times article that reported that patients without insurance (and some with insurance) were being priced out of knee or hip replacement surgeries. One of the issues brought up is that the cost of a knee or hip device is controlled by monopolistic pricing—basically, a “cartel” of five companies manufacturing these devices. The sales rep and hospital mark up these devices so that the final cost to the insurance company can be anywhere from $25,000 to $40,000. Unlike other areas of the economy where having five companies all manufacturing the same thing would mean low prices, a combination of financial ties to surgeons, anticompetitive behavior, regulations, and health insurance has kept these prices very high. Even if you decide to pay cash, the story points out that an implant that costs $150 in Asia will cost $13,000 in the United States.

The story also compares US and European prices for knee and hip replacements. Many patients travel to Europe where the socialized-medicine system pushes down cash prices. The New York Times article compares the cost of a hip replacement surgery in Belgium ($13,600) to a knee replacement in the United States ($125,000).

Even if you can get a new joint in Europe or Asia for $10,000 to $20,000, why would you want a knee or hip replacement? As discussed on our website, they are associated with wear particles that can spike metal levels in the blood, huge increases in heart attack and stroke risk, and wearing out at fast rates in active people, and the outcomes aren’t as good as usually advertised.
US healthcare is very expensive. As a country we have missed a huge opportunity to fix our cost problem by not turning the healthcare market into a consumer-driven model. This New York Times article highlights that issue.

**Conclusion:** Why pay huge amounts in co-pays, deductibles, or cash for invasive and risky surgeries that have huge side effects and so-so outcomes? Instead, consider treating your arthritis through a simple stem cell injection. Review how the Regenexx-SD stem cell procedure compares to knee and hip replacements. For knees, the same-day stem cell procedure held its own based on the same standardized orthopedic measures used in both groups. For hips, the stem cell procedure, considering it was an injection versus a joint amputation, also did well.

**Conclusion**
Complications due to knee and hip replacement are numerous, as these are big surgeries. Some of the possible complications you must consider include increased risk of heart attacks, local irritation of the tissues and higher concentrations of toxic metal ions in the blood due to metal-on-metal hip resurfacing implants, and severe knee pain despite knee replacement. We also know age impacts knee and hip replacement complications, and the odds of perishing from a hip replacement are 13 times higher for patients age 80 and over. In addition, heavier patients also do poorly after hip or knee replacement when compared to their lighter counterparts.

With so many possibilities for complications due to joint replacement, consider the alternative—Regenexx stem cell injections.

Regenexx is considered the world leader in orthopedic stem cell procedures. We were the first musculoskeletal stem cell clinic in the United States. Since our beginning in 2005, more than 5,500 Regenexx procedures have been performed across the United States and in two other countries. We track the largest number of patient’s results in the Regenexx professional research Registry. Our work is backed by research and we continue to lead the field in physician driven published studies and ongoing laboratory research. These facts set us apart from others offering similar procedures.

At Regenexx we take our work seriously so we can provide you the most experienced, researched and personalized stem cell procedures available today.
The Regenexx-Family™ of Knee Surgery Alternatives are breakthrough, nonsurgical stem cell treatments for people suffering from knee pain due to common injuries or other degenerative problems.

If you have encountered an injury to the knee meniscus, ACL or MCL, or cartilage or have chronic knee pain due to a past injury or osteoarthritis (also known as degenerative joint disease or wear-and-tear arthritis of the knee), you may be a good candidate for the Regenexx procedure.

Traditional options for patients suffering from these issues include arthroscopic knee surgery to repair ligament tears or total knee replacement. With both surgeries months of rehab are required, and the patient must be aware of and prepared to take on the risks.

As a knee surgery or knee replacement alternative, the Regenexx-SD procedure may help alleviate knee pain and the conditions that cause it with a simple office injection procedure. Patients are encouraged to walk the same day, and most experience little to no downtime from the procedure.
The Regenexx SD outcomes for knee arthritis

Patient Demographics

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<thead>
<tr>
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<th>Regenexx-SD</th>
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<tbody>
<tr>
<td>N</td>
<td>539 patients</td>
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<tr>
<td>Male</td>
<td>353 (65.5%)</td>
</tr>
<tr>
<td>Female</td>
<td>186 (34.5%)</td>
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<tr>
<td>Age</td>
<td>53.6 (13-85)</td>
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<td>Height</td>
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<td>Weight</td>
<td>176 (100-300) lbs.</td>
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<tr>
<td>BMI</td>
<td>26.5 (16-45.3)</td>
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What's important here? The patient results detailed on this infographic are mostly men who are middle aged and only slightly overweight (BMI>25).

Caution! This is registry data, which is not the same as a controlled trial. This means it was collected as patients were treated.

This data analysis is part of the fall 2013 data download of patients who were tracked in our advanced registry. For the 2012 version (with fewer patients included), click here. For example, in 2012 we reported on data for 48 patients at 12 months while the 2013 version includes 122 patients at that time point (lower graph to the right). In 2012 (upper graph to the right) we reported any improvement from baseline (0-100%) and this year we have changed that to a more clinically meaningful >25% improvement (percentage of patients who reported 25-100% improvement).

The comparison between 2012 and 2013 shows that as more patients were tracked, all trends improved or stayed solidly in the positive direction. In addition, the number of patients became robust enough to begin to analyze various parameters like (click on links below):

- Should a patient get a second knee stem cell procedure?
- Does arthritis severity matter?
- Is being overweight an issue?
- Is age important?

Regenexx-SD is a same day stem cell procedure where cells are harvested in the morning and placed back in the afternoon.
The Regenexx SD outcomes for knee arthritis

What do these two graphs mean? The graph above represents the percentage of patients who reported >25% relief at various time points after the procedure. For example, at 12 months almost 80% of patients who responded to our outcome questionnaires reported more than 25% relief. For the graph below, this is the mean reported relief at these same time points. For example, patients at 12 months may have reported anything from no relief, to 50% relief, to 90% relief and the mean of all of those reports was 53% improved.

For demographics, n for age calculation was 538, for BMI 477, for weight 479, for height 482. For the graph above, left y-axis is % Likert Improvement from -100% to +100%. N’s were 145 at 1 mo, 127 at 3 mo, 126 at 6 mo, 98 at 1 yr, 49 at 18 mo, 30 at 2 yrs, 11 at 3 yrs. For the graph below, left y-axis is % Likert Improvement from -100% to +100%. Patient n’s for each time point are 1 month-224, 3 months 183, 6 months 162, 12 months 122, 18 months 63, 24 months 42, 36 months 12. The 36 month or other late time points may represent selection bias in that the drop out of responders due to non-responding patients seeking other care could artificially inflate the outcome.
How does Regenexx SD compare to joint replacement surgery?

Regenexx SD vs Knee and Hip Replacement

This comparison data was compiled by Dr. Mitch Sheinkop, MD, orthopedic surgeon who has done hundreds of total joint replacement and is now a part of the Regenexx Network. Dr. Sheinkop used the same data collection methods to compare these two groups.
Appendix

► The Impact of Age on Joint Replacement Complications
► More Knee Replacement Problems Surface: Those with the Most Severe Arthritis Have Poorer Outcomes
► Ankle Replacement Complications: How Long do Ankle Replacements Last?
► Largest Knee Arthritis X-ray Study Shows Bone Spurs Predict need for Knee Replacement-Maybe...
► Knee and Hip Joint Replacement Surgeries Dramatically Increase Heart Attack Risk
► Activity after Knee Replacement-Lower than Expected
► Smoking with a Hip or Knee Replacement: Deadly Decision
► More on Metal Ions in the Blood as a Result of Knee Replacement
► What predicts which patients will need a knee replacement?
► Severe Persistent Knee Pain Despite Total Knee Replacement
► More Problems with Knee and Hip Replacements: Allergy Testing Now Advised
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