



# Knee Treatments

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## Taking Care of Your Knees

Here is a series of articles about taking care of your knees. The available options fall into roughly 4 categories:

1. Prevention - Knee braces, Knee bindings, Strengthening your knees.
2. Nurturing - Dietary supplements, Glucosamine, MSM, Raisins, Hyaluronic acid.
3. Medical procedures - Knee injections, PRP treatments, Stem Cells, etc.
4. Surgical Procedures - Meniscus surgery, Total Knee Replacement, etc.

Always start with prevention and nurturing. Physical therapy can help a lot. When you need more help, stem cell procedures are a promising development, as well as some new upcoming technologies.

Note that stem cells procedures seem to be more helpful if younger stem cells are used instead of your own aging ones.

If all else fails, total knee replacement is the final option. But don't believe those who might tell you that you won't be able to ski with artificial knees. There are many people with artificial knees and/or hips who have continued skiing after successful recovery from surgery.

## Treatments Overview

### A Variety of Knee Treatments

by Gerry Ignatowski

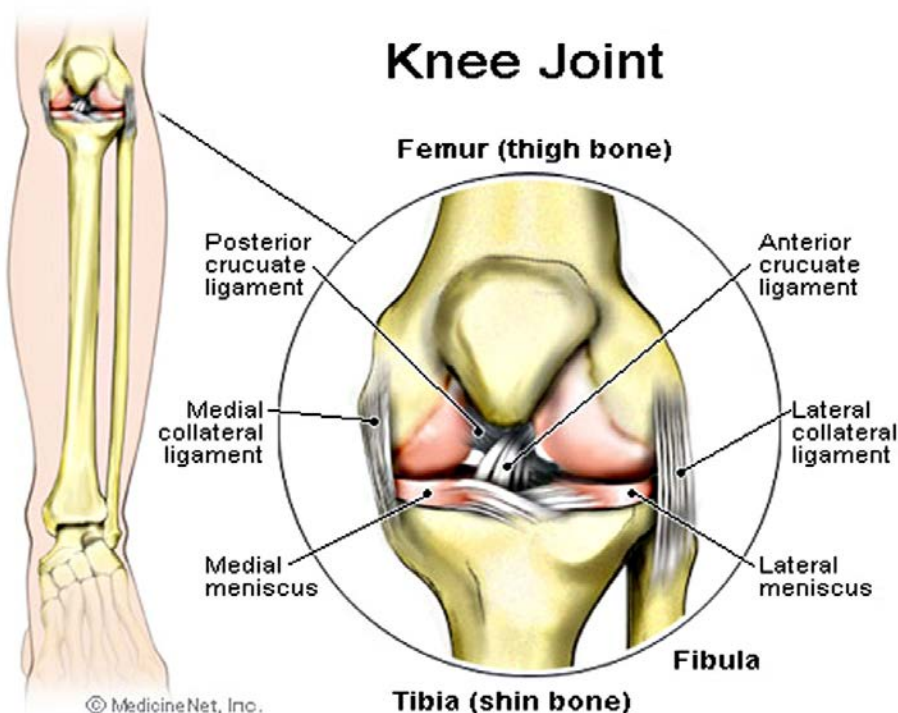
About 10 years ago I broke my leg and didn't realize it and continued to run on it daily...about 3 miles per day. Then, six months of pain lead me to see a doctor and after an x-ray it was determined I broke the crown of my **tibia** (larger of the two lower leg bones). The fracture was healing, but in the process of continued running I damaged my **meniscus**.

About a year later I had knee surgery, then another year later another surgery on the same knee to clean up the torn meniscus. The result of the surgeries and many decades of running left me with **osteoarthritis**, mostly in my right knee; however my left knee was painful too.

I was considering **knee replacement**, but was hesitant because I didn't consider myself to be 'old' only being in my mid 50's. So, I sought other options.

I can't recall how I ended up visiting the **Reflex Clinic** in Portland (near Washington Square) but I made a visit to the clinic. They are proponents of treatments other than surgical. The first treatment was to wear a **knee brace** on the right knee (the most damaged and most painful) for about four months. It worked great and the majority of the pain dissipated.

The next step in the clinic's treatment was **hyaluronic injections**. These are injections derived from the comb of a rooster and injected directly into the knee joint. The injection is a lubricant for the joint. This process worked great also, but lasted only about six months. Then another set of injections was needed.



A few years ago the clinic started doing **PRP (Platelet Rich Plasma) injections**. I started this treatment and have been very pleased with it. PRP is the process of extracting some blood and having it spun down to a plasma which is then injected into the knee. This is a form of stem cell replacement and works to repair the knee joint tissue. I've had this type of injection twice. The treatment lasts about a year however my last PRP injections were about 18 months ago and my knees feel fine. I'm sure I will need further injections but that will likely be after the upcoming ski season.

The injection treatment is not inexpensive.

The hyaluronic injections were about \$700 total for both knees

and were covered by my insurance. The PRP injections are not covered by my insurance and they are \$1800 for both knees.

The newest treatment is **SCT (Stem Cell Transplant)** is derived from taking stem cells from fatty tissue and injecting them in the knee. This the actual stem cell replacement to generate new tissue growth, from what I'm told. I think the treatment cost is about \$9000 and is not covered by insurance.

**Linda McGavin** is getting the SCT treatment, so I'm interested to get her appraisal of the results.

[Editor's note: We will publish Linda's account in a future issue of *Lift Lines*.]



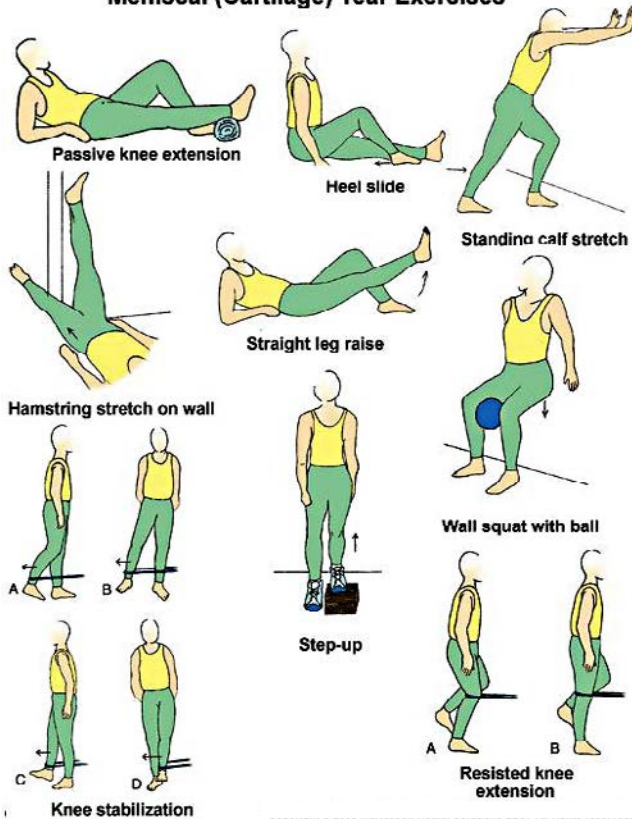
## Treat Achy Joints

### Affordable and Preventative Treatments

by Emilio Trampuz

The most vulnerable part of a skier's body is the knee. We've all heard of ACL ligament tears. But a much more frequent injury is a tear in the **meniscus**. In the December issue of "Lift Lines" (#204), we published an article by **Gerry Ignatowski**. He listed several ever more expensive treatments that he has tried. In a future issue, we will also cover the most expensive of them all, the one based on Stem Cell transplants. But, in the meantime, let's explore what you can do yourself with simple over-the-counter supplements and knee strengthening exercises.

#### Meniscal (Cartilage) Tear Exercises



**Physical therapy.** For minor meniscus problems, don't rush to surgery. It is amazing how much knee strengthening exercises can help.

Stretch your legs and knees. Move your knees in a fluid motion, like riding a bicycle. It's not good for an injured knee to be still for a long time; it tends to stiffen. So, move it gently. Also, strengthen the muscles around your knee. Use a rubber band around your knees or ankles and step sideways. This helps to stabilize your knee.

I injured my knee by accidentally twisting it too much during the summer. With about a month of physical therapy, doing exercises just like the ones depicted in these images, I got to a point where there was no discomfort in my knee any more.

Unfortunately, I then injured my other knee when I fell on some icy moguls at Snoqualmie Central in January. After that, for a while, I felt too weak to exercise some more, especially as I also caught the flu.

Instead, I treated the knee with some inexpensive over-the-counter supplements, which helped enough to carry me through the whole winter and lots of ski trips that I had already signed up for.

**Glucosamine & Chondroitin.** Glucosamine helps to rebuild cartilage and alleviate arthritis. It also has anti-inflammatory properties. Glucosamine occurs naturally in cartilage. The powdered glucosamine in pills is produced from the shells of shellfish. Of the several varieties, Glucosamine Sulfate is the one most promising. Chondroitin is a protein that comes from shark or cow cartilage. Note that Glucosamine can have side effects. It can thin your blood and it can raise your blood sugar level since glucose is part of glucosamine. Discontinue using it if you notice any side-effects.



**Hyaluronic acid** naturally exists in fluids in the eyes, skin and joints. It acts as a lubricant.

Gerry had this acid injected directly into his knees. But you can also buy it in the form of capsules that you can take orally. It is a supplement. No prescription is needed.



**Extra Virgin Olive Oil** has anti-inflammatory properties, and this is good if your joints feel inflamed. It has been shown that 3½ tablespoons of olive oil packs the same anti-inflammatory power as a 200 mg dose of ibuprofen.

You don't have to swallow pure oil. Add it to your salads and soups.

## Treat Achy Joints

### Knee Treatments - additional options



**Physical therapy.** Strengthen the muscles around your knees. It will help to stabilize your knee. Raise your buttocks off the ground as in the picture. First with both legs, and then one leg at a time.

Some pain occurs when some muscles are stronger than others, therefore pulling in one direction. So, developing all your muscles equally can help alleviate the pain all by itself.

It is also important to **move** your legs to avoid stiffness. Walk, squat, ride a bike, dangle your lower leg, pivoting at the knee.



### Raisins soaked in Gin (Drunken Raisins).

Eat a teaspoonful of raisins soaked in gin once a day. Some say to eat exactly 9 raisins. Many people swear by this home remedy. It helps with any painful, arthritic joints, including your hands and fingers. Not a cure, but offers a relief.

Prepare a batch of golden (yellow) raisins by placing them into a large cup or jar and then pouring gin all over them. Drown them in gin

and let them sit for 2 or 3 weeks. The raisins will absorb the gin and some of the alcohol will evaporate. Some claim that this works only with golden raisins, not the brown ones.

Nobody knows exactly why this seems to work. Some think it might be the sulphur used in drying the raisins. Others think it might be that the juniper berries used in flavoring gin might have anti-inflammatory properties.



**Knee Braces.** Don't wait until you get injured to start wearing knee braces. Think of them as a "helmet" for your knees. Use the braces for prevention rather than a cure.

Some braces are simply made of stretchable material that wraps around your knee. But a more sturdy brace also includes metal plates joined by hinges that allow your knee to move forward and back but help stabilize any sideway or twisting movement.

A knee brace can take pressure off the part of your joint most affected by osteoarthritis and help relieve pain. If your knee feels like it might buckle when you put weight on it, a knee brace

can also help you stand and move around with more confidence.

Custom-made knee braces can cost more than \$1,500, but you can buy a brace like the one in the picture at a pharmacy for around \$30 - \$60.

### Summary

We have many options in treating and dealing with knee pain.

**Surgery** is one option, where your knee is scraped clean of obstacles, and some parts of your meniscus may be cut off. But this is invasive and should be considered only as a last option,

In Part 1 of this series of articles, first published in December 2017, Gerry Ignatowski described several treatments he has tried himself, including:

1. **Wearing a knee brace**
2. **Hyaluronic acid injections**
3. **Platelet Rich Plasma injections**

In other articles, we discussed some less expensive treatments and supplements, such as:

1. **Physical therapy**
2. **Glucosamine & Chondroitin**
3. **Hyaluronic acid pills**
4. **Olive oil** (anti-inflammatory)
5. **Raisins soaked in gin**

In upcoming articles, we will also publish people's experiences with the latest treatment involving **Stem Cell and PRP injections**, as well as **Total Knee Replacement**.



You feel good. You ski like a pro. You are on top of the world. Then suddenly: Pain in the knees!

## Knee Treatments

### PRP, Stem Cells, Osteoarthritis, and New Upcoming Treatments

by Jon Waldum  
President, Cascade Ski Club

I have followed the Knee Treatment articles with interest, as I too have knee pain. Mine started in May 2016. I can remember working out in the morning and later that day feeling not so well. Couple of days later, I was limping after spin class having a swollen knee.

Went back to a knee doctor who trimmed the knee's meniscus three years earlier. He drained the knee told me I didn't have gout, basis clear synovial fluid, and gave me a cortisone shot. Advice was it will get well and if not, come back in a week. It didn't, cortisone didn't do anything.



Fast forward to September, I elected to try **PRP (Platelet Rich Plasma)** and **stem cell transplant**. For months thereafter, I continued to limp while trying other treatments like orthotics and braces. Things seems to be getting worse with hip pain developing and all the while suffering stiff muscles, cramping, & rigidity. During this time I saw specialist in Orthopedics, Rheumatology, and Orthotics to no avail.

My diagnosis is **Osteoarthritis** which is caused by inflammation. One surgeon told me that this is problem of chemical imbalance and change in the biomechanics of the joint. It was becoming clear that these specialists had no clear fix. There came a point when I got accepted into a clinic trial for a medical device that I had decided to take. My reasoning was that **Total joint replacement (TJR)** is a major surgery and the best practice from an orthopedic perspective. However, it or medical device implant are both invasive and while they may address the biomechanical issue, there is still the issue of chemical imbalance. While I may someday consider TJR, my decision was to avoid this. My objection to TJR is that there's no going back. You still need exercise to strengthen and provide joint flexibility. Somewhere I read that the rate of success is less than perfect. Check with your doctor for their success rate and what can be expected for your individual case.

The best thing you can do for a joint is **exercise it**. Exercise alleviates rigidity. Learning to rest a joint is also important, but over time, regular exercise leads to improved function. **Natural diet** and **hydration** are important. A huge find, for me, was a **foam roller**; which stretches muscles, breaks up fibrous tissue aiding circulation. Together this eases pain, again, over time muscles strengthen but also immediately my limp and gait improved. **Static weight training** helps to strengthen the knee muscle group without putting repetitive stress on the joint.

So did **stem cell treatment** help? Now 20 months later I can say yes. PRP definitely helped heal soft tissues, in fact I'd say that it had a definite impact on my meniscus. Stem cells may be filling in areas of cartilage damage as I no longer feel the individual site pains that previously existed. While my knee is not perfect, skiing and, once again, snowboarding continue to be enjoyable.

#### **On the horizon:**

The NY Times is an excellent reference point for learning about osteoarthritis, what it's about, personal experiences, and proven and new treatments. For instance, this is where I became aware of **Calibr** (California Institute for Biomedical Research) which studies degenerative disease and regenerative medicine. Web sites like these talk about developments in **DMOAD** (Disease Modifying Osteoarthritis Drugs). The drug **Invossa** turned out to have some regulatory difficulties, the company under investigation. New drugs **KA34** and **SMO4690** seem promising. SMO4690, also known as **Lorecivint**, is in phase 3 clinical trial stage and is reported to improve joint space narrowing.

There are many other developments like "**BioPen**" which is a 3-D printer designed to allow surgeons to draw new cells onto injuries with stem cell ink. While best practice medicine promotes TJR for bone on bone osteoarthritis, perhaps in the not too distance future **re-growing cartilage** and solving the biochemical imbalance will be here.

## Stem Cell Treatment

# Stem Cell Injections Alternative to Knee Replacement

by Robert Leaverton

Reprinted with permission from SeniorsSkiing.com

I am a very active 82 year old skier, former runner. My knees were in pain to the point that I had to consider replacement if I wanted to continue skiing. I live and ski in Utah during the ski season. I ski at least six days a week, seven if the POW is good.

I went to a stem cell seminar in Spring 2018. I listened to the information and decided I should investigate further. I had the exam, some X-rays, and it was determined I was a good candidate for stem cell therapy.

The previous ski season was a painful time. I was taking over-the-counter pain meds to be able to ski all day. If my knees touched while I was sleeping, I would wake up. I knew that if I wanted to continue skiing, I would have to do something. I also knew that there was no guarantee stem cell treatment would work, and I would pay \$4,000 for each knee. I did not want to endure general anesthetic, pain, and rehab. There is a high success for total knee replacements, but no absolute guarantee.

I went to [Wisconsin Stem Cell Therapy](#) for injections in May 2018. The stem cell injections in each knee were painless.

*[Editor's Note: Stem cells are usually extracted from a patient's own bone marrow and injected into worn or injured joints to promote healing. But Robert Leaverton received stem cells extracted from an umbilical cord.]*

I did therapy as suggested, and the results have been way more than I expected. I was being practical, and I would have been happy with 60 or 70 percent improvement. I rate my stem cell therapy as 100 percent success. I waited until I was done skiing for the season to make a final judgement of the SC therapy. After many years of painful skiing, I had a season with NO knee pain.

I have returned from more than two months in Utah. Had great snow and a lot of powder. Wind and visibility made for some difficult conditions (bumps & drifts) that were a real test for the SC therapy. SC therapy has been a huge success for me and will allow me to enjoy skiing for many more years.

Without any hesitation I would recommend stem cell therapy for anyone who suffers from joint pain and wants to continue to be active and enjoy life to the fullest.

Caution: When considering a clinic for stem cell therapy, be sure you investigate the clinic thoroughly. There are some "snake oil salesmen" out there.

I have no idea why this worked for me. I know some people who have had good results, others not so good.

I did not want a total knee replacement (TKR) because there is no guarantee and a lot of pain and rehab.

Some clinics use stem cells harvested from your body. But 80 year old stem cells are not going to do much good, whereas umbilical cord stem cells are brand new. My clinic would not use stem cells harvested from my own body for me.



Most important is to do a thorough investigation of the clinic and be sure you are getting umbilical cord stem cells and you can verify the source.

Stem cell therapy can be a permanent solution to knee and joint pain as well as other problems. Stem cells regenerate. And for seniors, using umbilical stem cells is the only way to go.

I would do this again in a heartbeat.

If it does not work, you can always go for the Total Knee Replacement. Just be aware that TKR usually involves detaching the quadriceps, which causes some of the pain and the need for physical therapy after the surgery.

**NOTE:** Stem cells are undifferentiated cells, found throughout the body after development, that multiply by cell division to replenish dying cells and regenerate damaged tissues. They have the ability to divide or self-renew indefinitely, and generate all the cell types of the organ from which they originate, potentially regenerating the entire organ from a few cells. Stem cells are usually extracted from bone marrow or from umbilical cords.

## Surgery

### Total Knee Replacement (TKR) Surgery

by Cheryl Hinerman  
President, Bergfreunde (Mountain Friends) Club

#### How do you know when you need knee surgery?

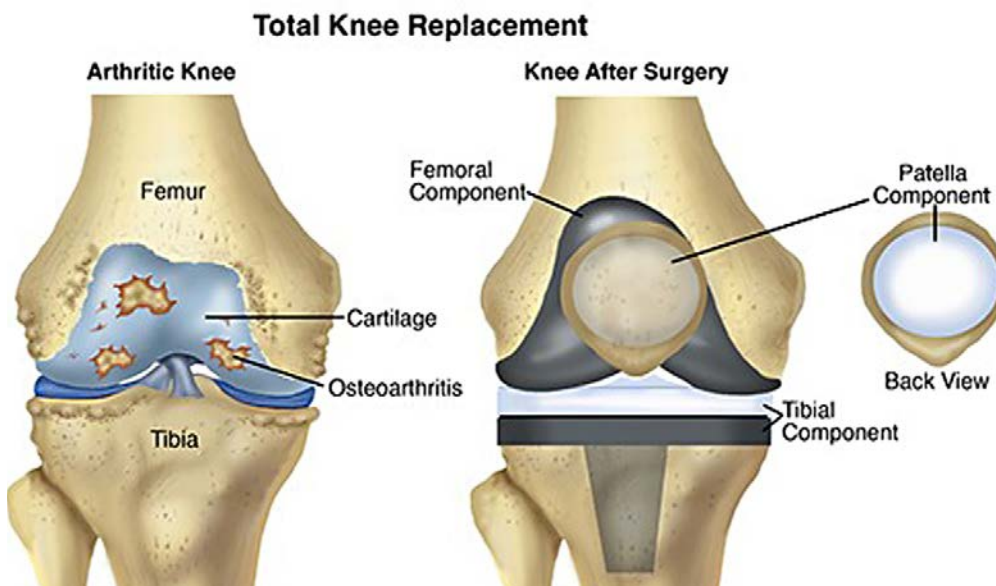
For me, it was after I spent years using NSAIDs (non steroid anti-inflammatory drugs- like Ibuprophen and Aleve) both before and after recreational sports, wore knee braces to hike and ski, and even got cortisone shots from the orthopedic doctors to ease pain and swelling. As the arthritis advanced and the bone on bone contact got closer, it hurt all the time. My legs were nearly always swollen.

The final decision is between you and your surgeon, of course. I can tell you I was highly motivated after my last three years of skiing involved an increasing pain to fun ratio that was way out of whack. Who wants to drive all the way to Sun Valley from Portland, pay for a pricey lift ticket, and come down the mountain in pain and tears after 90 minutes? Not me. I wanted to SKI!

#### What's it like to get a TKR?

**SEE WHAT WILL HAPPEN:** You can find lots of videos on You Tube and the web sites for large surgical practices. **CAUTION:** Don't look if you are faint hearted.

**GETTING READY- MENTALLY AND PHYSICALLY:** Before surgery, it helps tremendously to do pre-physical therapy or work out with a certified trainer at a gym. Good quad strength before surgery makes a huge difference in the healing and recovery after. Trainers can help you build strength with exercises that help without causing more problems. Staying active helps your outlook too. Remember you are getting ready for a healing process. It is a positive step.



ing more problems. Staying active helps your outlook too. Remember you are getting ready for a healing process. It is a positive step.

**THE PARTS:** About two weeks before surgery, I was given a CT Scan so the replacement parts would be custom built to fit my bones. It is fascinating to see the models. The part that fits the end of the femur is shiny chrome! The piece that fits over the top of the fibula and tibia is a strong magnesium alloy. The replacement cartilage is plastic, even the new piece behind the patella! There are lots of us bionic humans

out there with new knees and hips that work great! You will even get an ID card that alerts airport security you have metal parts.

**SURGERY:** The surgeons make a vertical incision about 6-8" long down the front center of your knee. They move aside the muscles and tendons to expose the joint. The most modern techniques involve a resurfacing of your knee joint bones. Surgical tools, including a new robot assisted saw, allow the surgeons to be very precise and remove only the damaged areas preserving the underlying good bone. They glue and hammer the new parts in place. You will be in the hospital one or two nights depending on how you do with anesthetic. The staff will be sure you can manage everyday self-care at home before they release you. You will need someone at home to help for at least a week. Rent or borrow this post op equipment: walker, cane, toilet riser, blue ice packs and/ or an ice water circulating machine that connects to packs that wrap around your legs.

## Surgery

**POST OP PHYSICAL THERAPY:** PT is critical for healing; regaining strength, range of motion, and balance. The therapist will prescribe and teach you the proper exercises. To get the full benefit, you must also do them at home with the reps, weights, and frequency they tell you to. No cheating. Exercises progress and get tougher as you get stronger. Each new level is a satisfying accomplishment, not to mention sweaty hard work!

**PAIN:** Since the surgical incision cuts through nerves, you will experience numbness on one side of the knee and extreme tenderness on the other side. This too shall pass as the knee heals. Elevating the leg so the knee is above the heart and using ice packs frequently help reduce swelling and pain. You will be on both prescription and over the counter pain medications. Use them as prescribed. In the first few weeks it is not at all good to let the pain get away from you. Keep it controlled. Follow the doctor's advice when it is time to ease off the meds; soon you will be free of them.



**PROGRESS:** It takes a few weeks to go from using a walker, to a cane, to being strong and stable on your own. I went on a city-tour trip at six months post op with my first knee. I tired easily. I did not do every activity, but I got to go. The second knee is well healed at four months. Each knee is different. I did mine nine months apart.

**HOW LONG DOES THIS GO ON?** It takes time - almost a year for full recovery. It can be discouraging at times. Keep distracted with good books or Netflix. Others who have been through it can be encouraging cheer leaders.

It is not the end of the world to miss a season of your favorite sport if you can do it better after. You will return to most every day activities much sooner. Sitting still for a long time with your knees bent or long car rides are uncomfortable for a lot longer than you want them to be. Stairs are doable right away but awkwardly slow for many months.

**HELP IS PRICELESS:** It's great to have someone help with grocery shopping and chores for a couple of weeks. Since I was going to be home a lot post op, I hired some big projects done ahead of time. It was worth the money to me to see those big things done when I sat and looked around the house and yard. If not, I would have stewed about it. It's enough to focus on healing. Everyone I talked who had replacement surgery was glad they went through it. It means a lot to get a Reset Button to enjoy your favorite sports and live life with working knees.





## Knee Replacement

### My Knee Replacement Story

by Bob Nesoff

Reprinted with permission from SeniorsSkiing.com

Conditioning Makes A Huge Difference To This Skier's Post-Op Experience.

A lifetime of abusing my body never really bothered me until it did. Coming down a blue trail five miles long at Park City, UT, one of my all time favorites because of the killer views, suddenly posed a problem.

My knees were killing me. The pain traveled into my hips and the last three miles of the slope seemed to be as long as a trip around the world. It was never going to end. My knees seemed to be grinding into each other.

What a new knee looks like when it is all over. Credit: Bob Nesoff

At the base, the skis came off, and I used them as crutches on the way to the lodge. With some help, I made it back to our accommodations and iced my knees. Walking they felt as though the bones were rubbing against each other. Fortunately, this was the last day of the trip, and before the flight home, I called and made an appointment with my orthopedist.

The day after arriving home, he x-rayed my knees and, as I feared, was told my ski season was over. The bones in the joint were actually rubbing against each other and the only realistic course of action was a replacement. The question then became one knee or both at the same time.

The skier's mind went to work. I'm 80 years old and not getting any younger. The surgery won't be any easier when I'm 81 and why do one at a time and then have to come back and rehab all over again.

With a recommendation from my doctor, I made an appointment with Dr. Gregg Klein of the Hartzband Center for Hip & Knee Replacement, Paramus, NJ. Doing due diligence, I looked them up and found out that they arguably do more knees and hips than any other medical facility in the country. That gave me some comfort.

Meeting Dr. Klein for the first time I was pleasantly surprised to learn that he too was a skier and was able to not only answer my questions, but had an understanding of my special desire with regard to skiing.

"Age is not a problem in knee replacement surgery," Dr. Klein said. As long as the candidate is in relatively good health, there is no adverse problem.

"However," he said with a smile on his face, "you won't

be doing moguls any more. You'll be able to ski more comfortably, but stay away from high impact slopes."

Physical conditioning is one of the most important factors both prior to and following the surgery. Dr. Klein prescribed six weeks of physical therapy, three times weekly, both prior to and following the operation. I added another two days of workout at my home gym. That, I was told later, made the operation and recovery go faster.



Three hours after the surgery I was up, standing and walking. No great distance, but there was far less pain that I anticipated. That, according to the nurses was due to my pre-op workout regimen.

After only two nights in the hospital, I was released and the following week a therapist visited daily for two weeks. He called my recovery "absolutely amazing," again due to the workout I had done before surgery.

The two weeks at home were followed up by six weeks of outpatient physical therapy three times a week. Here I threatened the life of my therapist

when he bent my legs into positions God never intended them to go.

Less than three weeks following surgery, I was walking without a walker. For jaunts outside of the house I used a cane but was able to walk comfortably without one at home. Another couple of weeks and things returned to normal.

There is some debate as to whether holding the prosthesis in place with special cement or using one that adheres to the bone is better for sports such as skiing. The cement holds and heals more quickly. Waiting for the bone to adhere to the replacement will take longer. The opinion appears to be that one is not better than the other.

"If you are a good skier and enjoy the sport," Dr. Klein commented, "keep on doing it."

There are a couple of long scars on my knees but they'll fade with time. I won't be doing moguls or extreme blacks, but I don't care. I'm working out on a regular basis and by the time of the first decent snowfall in the fall of 2019, I'll be waxing my boards and heading for the hills. As a prelude to the ski season, I'm also planning on making a parachute jump this summer. Hey, George H.W. Bush ain't the only one who can do that kind of stuff.

## Prevention

# An ounce of prevention ... Protect Your Knees

## Knee braces and Knee bindings

### Knee injuries - the most common ski injury

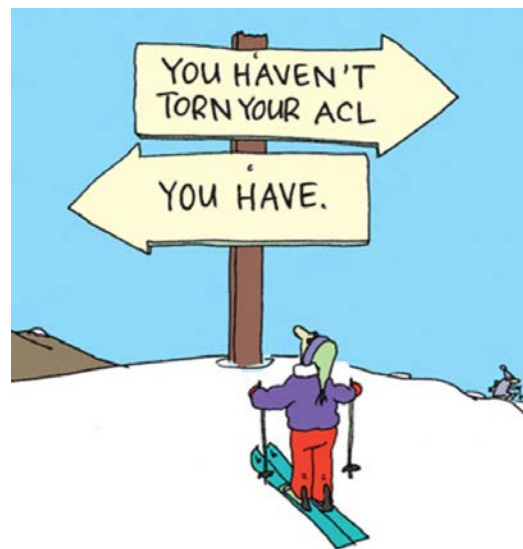


These days, most skiers wear helmets to protect their head. Head injuries account for about 2.6% of all skiers' injuries.

But knee injuries are much more frequent, adding up to 35% of all snow sport injuries. You are 13 times more likely to injure your knees than your head. So, why not wear knee braces for prevention?

Knee braces are like helmets for your knees. They are made of soft materials with only a

couple of metal parts, one on each side of your knee, to help stabilize it. They can be worn on top of your long johns (your base layer) but under your ski pants, so they are almost invisible.



### Knee Bindings - the safest!

**Safer** **nee**  
binding



Each year, 70,000 skiers injure an ACL (anterior cruciate ligament) on all alpine bindings except the Knee bindings. ACL injuries are the worst medical epidemic in the history of skiing. Most require surgery, lost work, one or more lost seasons, and months of physical therapy. Over 20% of the injured never ski again.

All alpine bindings release up at the heel and sideways at the toe. These mechanisms help to reduce broken legs, but they do not protect against knee injuries.

Three-fourths (3/4) of all skiing ACL injuries are rear-weighted: the skier starts to fall backwards, bends hips and knees, and catches an inside edge. The leg cannot rotate that way, and the knee is damaged.

But no skier has ever reported this type of ACL injury on Knee Bindings. Knee Bindings do everything that ordinary bindings do, but in addition they also release under a purely sideways pressure. **They are like helmets for your knees.** Why would you want any other binding?

See how Knee Bindings work: <http://kneebinding.com/KB-InformationCenter3.aspx>