

Knee Chondroplasty, what do I do once I am home?

Sometimes during arthroscopy of joints, arthritis or surface defects are discovered. If the patient is the correct age and the lesion or problem is just right for the procedure, a "chondroplasty" is done.

In addition to the other work of removing any uneven surfaces and tears of the menisci or loose fragments from the knee joint itself, the articular surface of the joint can have significant arthritis. The operation that might be performed is to drill holes in this area of arthritis and create tiny little "microfractures" to promote healing and a scar tissue response.

The white shiny cartilage on the end of the bone is called Hylan cartilage. Hylan cartilage is the healthy, fairly normal appearing white shiny surface that allows the surfaces to meld together smoothly while at the same time creating a very low friction surface. Another important component of Hylan cartilage is to be a shock absorber for the knee. The shock absorber pads the bony surfaces so that when you jump, run or twist you have some padding that prevents injury to the bone.

In cases of arthritis or chondral surface injury, the padded surface or white shiny surface that is known as Hylan cartilage, is injured or partially absent. In order to make up for this problem, the surface can be drilled and bleeding can be made to occur. It is important to know that the white shiny cartilage does not have a blood supply so it will not heal on its own. What we do know is that if you create a bleeding "micro fractured" bone just underneath the area of injury, that an excellent healing response can occur. Scar tissue then grows in and around this region and fills in the gap a lot like a "windshield patch job".

Once the scar tissue has grown into the area of surface injury, it is important to grow some cartilage cells within the scar tissue matrix. Imagine that this surface of the bone is filled in with an interwoven fabric-like material called collagen. Some cells can grow inside this interwoven fabric and provide an even better tissue. The synovial fluid is where the cartilage gets its nutrition. The more synovial fluid that presents itself to that surface of the new tissue that is growing, the more cartilage cells will grow inside the soft tissue matrix. The formation of this new scar cartilage or fibrous cartilage as it is more formally known is important in the process of healing of your knee.

We can not change the natural outcome of arthritis, nor can we cure arthritis. What we hope to do by performing with the chondroplasty is to delay progression of arthritis significantly so that the time before you develop profound arthritis is much longer. The way that you can grow fibrocartilage best is to create as much new synovial fluid with new nutrition as possible and present it to the surface of the scar tissue that is growing from the operation that you have. How can we accomplish this?

Synovial fluid is made by the cells that make up the lining of the joint. In order for new synovial fluid to be manufactured there has to be an exit of the old synovial fluid. Synovial

fluid leaves the knee throughout the mechanical motion of the knee moving. Using a stationary bicycle and riding it slowly at 15 minute intervals for at least 2 hours daily is one way to "squish out" the old knee fluid and allow the new knee fluid to present itself to the scar tissue. Joint motion following injury is extremely important in the healing and rehabilitation of the injured extremity. One reason that this is so important is that the joints must move in order to remain healthy and have good nutrition to the end of the cartilage. Good nutrition to the end of the fibrous tissue is also important and new synovial fluid must be remanufactured. This is why you must ride a stationary bike for 2 hours daily at 15 or 20-minute intervals.

It is not important to ride the bike rapidly. In fact, you can ride the bike very slowly while bending and straightening the knee at an extremely slow pace while watching T.V. Just the knee motion that is important and the time of knee motion that is important, not necessarily the muscular action.

Another important thing that you can do to promote healing of your knee is to stay non-weight bearing on crutches for a period of 4 weeks at least. The post operative instructions on weight bearing may vary from patient to patient. We need to understand that the bone has been "micro fractured" and so it will take a period of months to fully negotiate a remodeled tissue complex. It is extremely important to not walk on this joint that has been treated with a chondroplasty for the initial phases because the bone is healing because it has truly been "micro fractured". To walk on this area is to commit the operation to failure so cooperation in a non-weight bearing status is extremely important.

Keeping the muscles pliable and intact by doing the Range of Motion on the bicycle is also important. It is also important to keep the quadriceps muscle strong as possible. Straight leg raising (keeping the knee straight in a sitting position and moving the leg up and down several hundred times 2 to 3 times daily) is also important to keep the muscles from becoming atrophic. Further therapies may be ordered as necessary.

What can you expect with time? What we know about this process is that it may improve your knee significantly to have cartilage fragments and loose fragments removed. It may also delay the progression of arthritis significantly to have an area of chondroplasty. In most cases, the operation is successful and helpful but it usually does not promote the complete healing of knee arthritis. In other words, there is no real cure for arthritis. Furthermore, it is important to realize that this operation of chondroplasty is really a "delay of game tactic". By having a chondroplasty we hope to put off a total knee or other more serious operations until a much later date than would naturally be present had we not done the operation.

What else can you do to improve your knee and help promote a long life of your natural before a new knee is required? It would be important to understand that arthritis is really incurable. There is some evidence to suggest that Glucosamine 1500-mg daily may be beneficial. Non steroidal anti-inflammatory medications will help with the pain and diminish the inflammation but must be monitored carefully with your physician for liver

and kidney problems over the long haul. Unfortunately, nonsteroidal medicines will not cure arthritis either.

We can also administer Synvisc injections, a Hyaluronic acid derivative, which may improve your knee for some period of time.

Multiple options exist for the treatment of the articular surface damaged knee. One operation called "chondroplasty" is one of the goal standards of therapy, but it requires that you do your bicycle exercises and stay non-weight bearing for at least 4 weeks. A brace may or may not be ordered as well. Be sure and check with you doctor to check for any variability in your problem and whether this plan will be good for you.