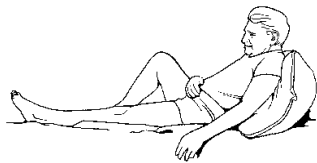


Arthritis Protocol

If after your visit or procedure by Dr. Arnold you have been told you have arthritis you may be given an arthritis protocol. Arthritis is any inflammation in the joint itself. It can occur in any joint throughout the body. Dr. Arnold specializes in arthritis of the knee, shoulder and hip. There are a variety of types of arthritis. The most common is the osteoarthritis which is typically normal wear and tear of the joint. Also there are inflammatory types of arthritis which is made up of such processes as rheumatoid arthritis, psoriatic arthritis, gout as well as a variety of other inflammatory conditions. This type of arthritis can sometimes be treated with medications which a rheumatologist will prescribe. When the patient experiences arthritis, the process that happens to the joint is that the articular cartilage becomes damaged. The articular cartilage is the covering of the joint. This should be nice and smooth like a pearl. The damage can occur early and be very superficial and can progress all the way to the very end stage where there is exposed bone. When someone gets arthritis with exposed bone, this may ultimately result in a joint replacement. There are a variety of treatment options for arthritis of the knee before it reaches the end stage of an arthroplasty. This is what we call our arthritis protocol. The below outline is the various treatment options which Dr. Arnold feels are effective in slowing down the process of the progression of arthritis.

1. **Lifestyle Modification:** Dr. Arnold suggests that patients with symptomatic arthritis of the knee participate in self management educational programs such as those conducted by the Arthritis Foundation as well as incorporate certain activity modifications. Some of the best exercises for the knee include swimming, cycling, using an elliptical machine and walking instead of running. It is important that the patient incorporate these into their lifestyle. One of the biggest lifestyle modifications a patient can do is a weight loss program. A weight loss program should be under the discretion of a supervised trainer or their primary care physician.
2. **Rehabilitation:** Dr. Arnold feels that keeping the knee as strong as possible will protect the knee almost as an internal brace and will help patient's with symptomatic arthritis of the knee to become less symptomatic. He encourages the patient's to do isometric quadriceps exercises as outlined on the figure as well as to continue to stretch the quadriceps and the hamstrings as outlined on the figures as well.



Quad Sets



Hamstring Stretch

3. Mechanical Devices: Patients with symptomatic arthritis can develop an angulation to the knee. This can be treated with some heel wedges to try to recreate the normal angulation of the knee. Dr. Arnold may prescribe a medial or lateral heel wedge which can be taken to a podiatrist or a cobbler. This will help to realign the normal axis of the knee. Sometimes he will prescribe a “unloader” brace. This is a low profile brace which is custom fit to the patient's knee which will open the involved joint space and help to unload the area where there is bone against bone. If somebody has isolated arthritis of the kneecap, he may prescribe a brace specific for the patella.
4. Medications: There are a variety of medications which can be useful in the symptomatic treatment of arthritis. There is no known medication in the orthopedic literature which will reverse arthritis. However, Dr. Arnold encourages his patients to take a combination of Glucosamine and Chondroitin Sulfate of approximately 1,200 mg a day. He feels that this helps as an analgesic and also helps to keep the cartilage which remains in the knee strong. It will not stop the progression of the arthritis but may help to slow it. Dr. Arnold is currently unable to recommend for or against other medications similar to Glucosamine as there have been no long term prospective studies supporting these. Dr. Arnold does like anti-inflammatories. It is important that the patient take only the doses recommended by the prescribing physician and also needs to realize that there can be side effects of anti-inflammatories such as gastrointestinal disorders. Should the patient experience any side effects of blood in the stool, GI distress or other abdominal complaints they should discontinue and seek their primary care physician's opinion. Dr. Arnold does not recommend taking narcotics to relieve arthritic type pain secondary to the abuse potential. He also feels that topical anti-inflammatories are effective as a treatment for the arthritis. He would be more than happy to visit with you about this.
5. Intra-articular Injections: Dr. Arnold feels that intra-articular corticosteroid injections are safe and can provide significant relief for patients with non-end stage arthritis. He uses a steroid which he feels is safe. He will give it every three months but no sooner. There are certain risks of an intra-articular injection including infection, allergic reaction to the medication, change in the systemic blood sugar as well as the pain associated with an injection. Some researchers feel that certain steroids may potentially damage the cartilage cells, though this has not been definitely seen. Approximately 5% of the time, patients may experience a “flare up” after the intra-articular injection. This typically will resolve with anti-inflammatories. If you receive an injection and have worsening pain that persists you should call Dr. Arnold's office immediately. Should you experience any redness, warmth or any signs of any infectious process, you should call Dr. Arnold's office immediately. Corticosteroid injections are generally considered safe as long as they are not given too often. Dr. Arnold also believes in Viscosupplementation. This is an injection which helps to recreate

some of the normal fluid within the knee. There are a variety of brands of Viscosupplementation such as SYNVISIC, Supartz, Euflexxa and Hyalgan. We are currently using Supartz. It is a series of five injections once a week for five weeks. The normal fluid within the knee is very viscous. An arthritic knee loses its viscosity. With the series of five injections it is possible to establish normal joint viscosity; it stimulates the joint to make normal fluid and to provide somewhat of an analgesic effect. This is considered safe. It is good for knees that have arthritis but no bone on bone. Typically knees that have arthritis with bone on bone experience less than a 50% chance of success. The reported success rate and the duration of relief may vary depending on the amount of arthritis as well as the patient's activity level.

6. Surgical Intervention: Dr. Arnold likes his patients to have failed all of the aforementioned before proceeding with surgical intervention. However if it does reach surgical intervention, there are a variety of options. One option is arthroscopy. He does not feel that arthroscopy will benefit patients with arthritic type symptoms. An arthroscopy is designed for a patient who has mechanical problems such as a cartilage tear. A patient who has bone on bone contact and has arthritic symptoms is not a candidate for an arthroscopy. The second option is a cartilage-salvaging procedure. There are a variety of cartilage-salvaging procedures available today such as articular cartilage transplantation and meniscal transplantation. Although Dr. Arnold does perform all of these procedures, it is best designed for the young patient who still has a retained joint space radiographically and has isolated wear in one or two portions of the knee. If a patient has bone on bone, a cartilage-salvaging procedure is not typically an option. The third option is an osteotomy. This is an option for patients who have isolated arthritis of just the inside or the outside joint (medial or lateral). It is a procedure where a wedge of bone is cut from the knee to try to reangle the knee. It typically is a painful procedure. It is not designed for somebody who has isolated arthritis in one of the three compartments of the knee. Patient's need to be nonweightbearing for approximately three months and it is best for younger patients. The fourth option is a unicompartmental arthroplasty. This is an excellent procedure for a patient who has isolated arthritis in one portion of the knee alone. It can be the medial joint, the lateral joint or the patellofemoral joint. A good unicompartmental arthroplasty will typically last approximately 10 years and provide good pain relief. If, however, you have arthritis in two of the three compartments of the knee it will not provide adequate relief. Other patients who are not candidates for unicompartmental arthroplasties are patients with inflammatory arthritis such as rheumatoid arthritis and obese patients. The final option is a total knee arthroplasty. This is the best option for patients who have end stage arthritis. It replaces all three compartments of the knee. It takes Dr. Arnold approximately one to one and a half hours to perform. He currently does them under a general anesthetic but also uses a regional anesthetic such as a femoral nerve block to help control the postoperative pain control. He replaces the entire knee through a less invasive procedure. This is done in an inpatient setting either at Washington Regional Medical Center or Physicians' Surgical Hospital. The day of the surgery the patient will be transported to a private room

and on the day of surgery will be asked to get out of bed and sit in a chair. The following day the patient will be asked to ambulate with the assistance of a physical therapist twice a day. They also will be placed on a continuous passive motion machine for approximately two hours in the morning and six hours in the evening. They will be seen while in the hospital by Dr. Arnold and his staff. They will also be seen by a medical consultant and by a rehab specialist who will help to coordinate the rehab needs and control the pain management. The patient will receive a blood thinner to help prevent a blood clot from forming; will receive prophylactic antibiotics and will be discharged to home once they are medically stable and are independent from the therapy standpoint. The average time from the day of the surgery to discharge to home is approximately 3 to 5 days. At the time of discharge to home, the patient will be sent home with a prescription for physical therapy in an outpatient setting, a home motion machine and a walking device (such as crutches or a walker) as well as a blood thinner. The patient will also use a knee immobilizer until their muscles have recovered well enough to lift the leg up. The patient will be asked to followup with their primary care physician in one to two weeks. They will be asked to start physical therapy 1 to 2 days after discharge to home. Specific instructions will be given about the knee and the signs and symptoms to watch for in regards to any problems. They will make a formal appointment to see Dr. Arnold in approximately four weeks after the procedure. If the right knee is replaced, they are unable to drive until one month after the procedure. If the left leg is involved, they can drive an automatic transmission once they are off the oral narcotics. Patients typically can return to a desk type job at 2 to 4 weeks, manual type labor at approximately 3 months and heavy activity at approximately 4 to 6 months. A total knee replacement is designed to eliminate the patient's pain. It will, however, not make the knee normal. There are certain activities which a patient is unable to do with a knee replacement such as running and jumping. Patients are able to walk, golf, hike, fish and hunt. They can play doubles tennis. They can swim. They should avoid any heavy impact activities such as playing singles tennis, basketball, soccer and running. These will allow the joint to last as long as possible. The average life expectancy for a total knee is approximately 20 years.