*DR. ARNO SMIT,* **M.D., F.R.C.S.(C)**
**ORTHOPAEDIC SURGERY**

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Date:

Name:
DOB:

You are scheduled for **anterior cruciate ligament (ACL)** reconstruction. This document summarizes the discussion that you and I had about the benefits and risks associated with this procedure. Please read this document carefully, then acknowledge your understanding and agreement by initialling on lines provided before the various points. This will help ensure that you fully understand the implications of the decision to undergo this operation.

Please review the following points:

_____**1/ Purpose of operation.** The purpose of this procedure is to reduce instability in the knee, due to the absence of a well functioning ACL. Hopefully, this will allow you to resume pivoting activities without fear of giving way of the knee. The original ligament cannot be repaired. Instead, hamstring tendons will be harvested and used to reconstruct a ligament. Tunnels will be drilled in the lower leg (tibia) and thigh (femur), to approximate the attachments of the original ligament. I will aim to obtain rigid fixation, using metal fixation devices. If it turns out that the hamstring tendons are not suitable, part of the patella tendon or quadriceps tendon may be used instead. This scenario is very rare. On occasion, fixation is not firm with the standard fixation devices. This may lead to a slower rehab régime, to protect the fixation, or alternatively to a different mode of fixation. I would make this decision intraoperatively based on my surgical judgment. Again, this scenario is rare. In addition to reconstructing the ACL, the remainder of the joint will be examined arthroscopically. It is not uncommon to find torn shock absorbing cartilages (menisci). This will be dealt with as well, either through removal of the torn part (arthroscopic partial meniscectomy), or through arthroscopic meniscal repair. The purpose of repair is to optimize the amount of shock absorbing cartilage, in an attempt to avoid or delay development of osteoarthritis. The success rate of this part of the operation is 60-80%, depending on the anatomy of the tear and your age. If this fails, later meniscectomy will be performed. Again, this is a judgment call. It is important for me to know how you feel about this, please indicate below:

- _____YES, if possible, please repair meniscal tears if present, to hopefully minimize the risk of later osteoarthritis.
- _____NO, even if repair is possible, please remove meniscal tears if present, to avoid re-operation for failed repair.

**2/ Risks of operation.** It is not difficult to see how this operation may be beneficial to you. However, all of surgery carries inherent risks. Risks pertinent to this operation include the following:

_____-*Risk of anesthesia*, you will receive a general or spinal anesthetic. You will have the opportunity to discuss this further with the anesthesiologist .

_____-*Risk of infection*. The infection risk is approximately 1:500. Superficial infection can be managed by antibiotics, and/or washout of the wound and surgical site. On occasion, infection in the knee joint itself can occur. In this scenario, repeat arthroscopy and washout will be performed. Very rarely, the new ligament remains infected. In this situation, it may be necessary to remove the ligament. This could be followed by repeat reconstruction after the infection has conclusively settled. It must be emphasized that this is a grave complication, which fortunately is very rare. It is possible that infection cannot be controlled. This may lead to joint destruction, possibly followed by replacement surgery or knee fusion ('stiff leg'), even amputation. Death from uncontrolled infection is extremely rare, but possible. The risk of infection is increased in the presence of smoking, diabetes, rheumatoid arthritis, and other conditions affecting the immune system.

_____-*Injury to the neurovascular structures.* Important nerves and blood vessels are located around the surgical site. Great care is taken to during the operation to avoid damage to these structures. However, on occasion damage to nerves can occur, possibly leading to numbness and/or weakness, possibly paralysis. This is very rare. Damage to the blood vessels is very rare as well. However, such injury could lead to rapid blood loss, and may lead to blood transfusion during surgery. As well, vascular repair could be necessary, ordinarily performed by a vascular surgeon on an emergent basis. This would require emergency transfer to a hospital providing vascular surgery. Fortunately, major vascular injury is extremely rare. In this scenario, the ligament reconstruction may not be completed: preserving viability of the leg takes precedence.

_____-*Deep venous thrombosis/pulmonary embolism.* This operation can lead to development of a blood clot in the deep veins of the operated and/or non-operated leg. This can impair the circulation in the legs. Furthermore, part of this blood clot can be released into the bloodstream, these can reach the heart and lungs and cause severe shortness of breath, even sudden death. Fortunately, the risk of this occurring after ACL reconstruction is extremely low, and no form of blood thinning will be necessary. However, it is paramount that you start walking immediately after surgery, to enhance the blood circulation. If a blood clot develops in the legs, this may lead to prolonged treatment with a blood thinner. If heart/lungs become involved, intensive care treatment may be required. These complications would ordinarily be treated by an internist. Of note, I have seen in my practice one instance of development of deep venous thrombosis after ACL injury, without any surgery performed.

_____-*Possibility of difficulty with fixation of the new ligament.* As outlined above, occasionally difficulty is encountered with proper fixation in the right location of the new ligament. This may necessitate alternative fixation or choice of graft tendon.

_____-*Possibility of loss of range of motion/stiffness.* Great care is taken throughout the procedure to place the ligament in such a way that it does not impede range of motion. However, the swelling associated with the procedure can lead to stiffness. The primary focus of rehab in the first six weeks is to restore range of motion. In individuals who are able to hyperextend the knee (' double-jointed'), a subjective feeling of lack of extension may be noted, although the operated leg is completely straight. This is, in my opinion, preferable over allowing hyperextension in the operated leg, to minimize the forces on the ligament. From a functional point of view, this has no implications.

_____-*Possibility of failing to restore adequate stability*. The new ligament is constructed out of tendon. This is not the same material as the original ligament, and is initially susceptible to stretch. Furthermore, the anatomy of the original ACL is much more complex than can be reconstructed. As a result, a few millimeters of increased laxity may remain, regardless of surgical technique. It is more important to avoid stiffness, than to aim for zero laxity. **A stiff knee is worse than a 'loose' knee.** However, with the use of current surgical techniques, in the vast majority of cases sufficient stability is achieved to return to pivoting sports.

_____-*Possibility of residual discomfort/numbness.* Initially, residual discomfort and swelling are common. Numbness may be present, usually over the anteromedial aspect of the lower leg. This may be permanent, as a small nerve branch crosses this area, and may be damaged during graft harvest. There is no reliable way to avoid this. Usually, over time (6-12 months), this becomes less and less noticeable. It does not influence the final level of function achieved. On occasion, as with all of surgery, a complex pain syndrome (RSD) may develop, which may prove very difficult to deal with. The risk of this complication is increased in the presence of smoking, possibly in the presence of mood influencing medication. If it turns out to be necessary to harvest the patella tendon, it is common to experience ongoing discomfort over the front of the knee cap. This may be sufficiently painful to make kneeling impossible. As well, risk of fracture of the knee cap is associated with choice of this graft.

**3/ Expected postoperative course.**

_____-Mobilization early after surgery is important to prevent complications. Usually, full weight-bearing is allowed, as tolerated. A cane or crutches will initially be necessary. Very rarely, wearing a brace for six weeks maybe recommended, based on the intra-operative assessment of the strength of the new ligament construct.

_____-This operation is performed as daycare surgery. Discharge from the hospital or clinic will be the same day. A prescription for pain medication will be provided. I may utilize an indwelling catheter, which will deliver local anesthetic into the knee joint for 48 hours. This will be removed, usually by myself, at 48 hours. Icing will be helpful.

My office has available a motorized cooling unit, which will significantly help reduce postoperative pain and swelling.

_____-Arrangements for staple removal and initial assessment are made for the two-week mark. Formal physiotherapy will then be started.

_____-Rehabilitation after surgery will be individualized. Guidance by a physiotherapist is usually helpful. In general, the following ***'brace free, rapid recovery'*** protocol is followed:

-*Week 1 & 2.* Phase of wound healing. Walking as tolerated may use crutches or a cane. No formal exercises.

-*Week 3-6.* Phase of preliminary ligament fixation by bone in the tunnels. Gentle range of motion exercises, swimming (no whip kick), light cycling.

-*Week 7-12.* Phase of preliminary ligament maturation. Increased cycling intensity as tolerated, swimming, elliptical stepper, deep water walking/running. May start light weight training, focus on hamstring strengthening.

-*Week 12-16.* May start controlled jogging on a treadmill.

-*Week 17 onward.* May start exploring agility exercises to return to desired sport.

_____-As discussed above, I explained that, initially, residual discomfort and swelling are common. Numbness may be present. These issues usually settle in the course of six months, occasionally a year. Rarely, these can persist.

_____-Further standard follow-up will be at eight weeks (no X-rays), 4 months (incl. X-rays), one year (incl. X-rays), with further follow-up as needed.

If after reading this, you fully understand the issues and wish to proceed, your signature on this document will confirm the consent obtained using the hospital/clinic form.

Patient's signature:

Sincerely,

Arno Smit, M.D., F.R.C.S.C.

CC: chart
OR