



*Lehigh University Sports Medicine
Knee Brace Position Statements*

Knee Brace Use in Varsity Athletics at Lehigh University

Lehigh University Sports Medicine is often called upon to diagnose and treat injuries to the knee joint in its Varsity Athlete and accordingly continues to review the effectiveness of knee braces in the prevention and treatment of knee injuries. Knee braces available in the United States can be classified into three types:

1. **Prophylactic Knee Braces** - those which are designed to attempt to prevent knee injury.
2. **Rehabilitative Knee Braces** - those which have been used to allow protected motion of injured knees or knees that have been treated operatively.
3. **Functional Knee Braces** - those which have been used to provide stability for the potentially unstable knee during functional activity.

Position on Prophylactic Knee Braces

Routine prophylactic knee bracing is **not** recommended since these braces have not been proven effective in consistently reducing the number or severity of injuries. Some studies suggest that prophylactic bracing of normal knees may actually **increase** the chances for certain ligament injuries.

Position on Rehabilitative Braces

Rehabilitative braces are recommended in the immediate treatment of some injured and post-operative knees to aid in the healing process. These braces have a structural design which is different from that of the prophylactic knee brace. They provide for a compromise between protection and motion; the knee motion is controlled within specific parameters. These braces especially protect against excessive extension and flexion as opposed to anterior-posterior motion.

Position on Functional Knee Braces

Functional knee braces are recommended in the injured or post-operative knee to aid in control of present or potential instability. These braces have a structural design which differs from both the prophylactic and rehabilitative knee braces. They are designed to not only prevent excessive

flexion and extension, but also to prevent excessive motion in the anterior-posterior direction. We believe that under the higher loading conditions that occur under athletic activities, a properly fitted brace in conjunction with a properly designed and supervised rehabilitation program can help in the management of knee instability

Position on Post-Operative ACL Bracing

There are specific considerations regarding knee bracing for the post-operative ACL reconstructed knee:

1. The underlying basis for regaining stability remains the properly reconstructed and rehabilitated knee. Reconstruction must take into account both graft strength and isometric placement within the knee. The rehabilitation program must consider the specific ligament reconstruction and meniscus surgery, be adhered to by the athlete, and be followed by static and dynamic testing.
2. Student athletes with ACL reconstruction are strongly recommended to utilize a functional knee brace for athletic activities during the **first 18 months following the reconstruction. This time frame must include a full competitive season in their sport.** Research suggests that although the ACL graft has reached a point of revascularization consistent with strength needed for return back to sport, the additional remodeling, the increased “limb confidence”, and the proprioceptive training the knee receives during the 6-12 months following full return requires additional brace protection and continued rehabilitation. Functional bracing for the ACL reconstructed knee enhances the proprioception during rehabilitation, psychological and mechanical support to protect the graft (with on-going healing occurring at 12 months and longer) in functional progress for complete return to competition.
3. Factors which may require consideration for **prolonged bracing** during athletic activity include:
 - a. The specific sport and position played in that sport.
 - b. Playing surface (release co-efficient of surface).
 - c. Re-injury of ACL graft.
 - d. Clinical findings such as recurrent swelling or laxity that may indicate a reconstruction at risk.
 - e. Findings of static testing (i.e. Biodex testing) for a strength, power, and endurance comparison.
 - f. Findings of dynamic testing (i.e. functional agility testing from basic agility moves to sport specific drills).

Each case will be reviewed on a yearly basis with the above considerations in mind. A decision will then be made by the Sports Medicine staff in conjunction with the Team Physician as to the need for continued bracing.