



# Knee Injuries While Working On Ladders, Squatting & Kneeling

April 2006

For some reason, I have received numerous knee injury claims this past year related to members working on ladders. Many have been denied by WSIB. Often times, the worker did not sustain an accident or trauma in the traditional sense, but nonetheless, experienced a work injury while working on a ladder. For instance, one member felt something let-go in his knee when he was climbing the ladder, an activity which recruits significant mechanical pressure on the knee(s) as a person ascends or descends. Another situation involved a member who misstepped a rung while dismounting a ladder. Finally, another member was working off a ladder and in the process of shifting his weight while on a rung, felt a minor tweak in his knee. These claims were denied because no injury mechanism was supposedly identified.

***"even a minor tweak of your knee while working on a ladder or squatting is considered to be a chance event or accident under law"***

The union has also filed appeals involving members who injured a knee after arising from a squat or crouch. Once again, the WSIB denied these claims on the basis that there was no medical association between a knee injury and the activity of getting up from a squat even though this activity creates tremendous pivotal and mechanical stress on the knee. WSIB viewed these as routine physical activities, even though two different members noticed a pop or snap in their knee while getting up. Complicating these claims is a coincidental proof of accident dispute, because the member failed to tell someone or properly document the injury.

In preparing these member cases for appeal, I have noticed that during the investigation phase of an injury claim, sophisticated employer H & S reps can shift the members attention away from a minor accident scenario. The member, perhaps out of ignorance concurs there was no accident, and fails to identify a tweak or minor strain while working on a ladder or squatting, sometimes making adverse and detrimental statements against their interests. This usually takes place when an employer strongly advocates their position in a private meeting with the worker, and without union representation, the member gives in, no longer able to resist the employers version of events to limit the amount of controversy in the employment relationship.

Under the ***Workplace Safety and Insurance Act***, there are two branches of injury entitlement. The first, a ***chance event***, is defined under sec 2(a), as an injury *occasioned by a physical natural cause*. This means an accident.

The second is ***disablement***, which is defined under sec 2(c), as a *disablement arising out of and in the course of employment*. Disablements tend to be injuries that emerge gradually over time, which are by their nature more controversial to

adjudicate, and decided on the basis of medical compatibility. In other words, a doctor rules on the medical relationship between an alleged physical work activity and the area of injury (eg., repetitive kneeling & squatting or overhead work).

**E**very member must be cognizant that even a minor tweak of your knee while working on a ladder or squatting is considered to be a chance event or accident, particularly if the symptoms emerged shortly afterwards such as swelling, pain and the need for medical attention. Common sense dictates there is a proximate cause/effect relationship to the work. It is not an injury which emerged gradually over time.

In 2002, the WSIB coordinated an ergonomic site visit to assess the job of electrician and analyzed the duties and commented on the compatibility of a knee injury with the electrician position. This was a case where there was no traditional accident, and the member developed a knee condition diagnosed as patellofemoral syndrome. The findings of the WSIB Ergo were:

- **Kneeling/crouching**
- **Heavy Lifting**
- **Ladder climbing/stairs**

### **Kneeling/crouching**

The act of kneeling causes many problems biomechanically and physiologically. First off, in prolonged instances, this crouching represents a static muscular effort to prevent the body from tipping over while bringing the body lower towards the ground (lowering the centre of gravity). Grandjean & Kroemer (1997) define a static muscular effort as:

- 1. a high level of effort maintained for 10 seconds or more;**
- 2. a moderate effort persists for 1 minute or more;**
- 3. A slight effort (about one third of maximum force) lasts for 4 minutes or more.**

### **Ladder Climbing**

Another requirement of the job is ladder climbing, which can be highly stressful on the knees. The worker places pressure on the knees when climbing and carrying tools or other heavy items. Also, stabilization of the knee is important because the worker performs wiring above the head and shoulder level on a constant basis. The worker must also climb stairs on occasion, while lifting heavy components. This also place extreme pressure on the knees.

**Conclusion:** It is the opinion of this Ergonomist that the job demands of Electrician are compatible with the area of injury (knees). The level of risk for developing MSD's as an electrician in this job description is moderate to high. Significant risk factors for the development of musculoskeletal disorders are present for the knee. This worker experiences excessive pressure on the knees from crouching and kneeling on a constant basis. On occasion, the worker must carry or lift extremely heavy items.

**A**s you can see, there is a strong need for members to think intelligently concerning knee injuries and the association between ladder and low level work. Also be sure to obtain union representation (steward, Bus Rep) when you are asked to meet with the employer Health & Safety officials.

