



**Warren D. King, M.D.**

*Orthopedic Surgeon Specializing in Arthroscopy and Sports Medicine*

## **CHONDROMALACIA PAIN BEHIND THE KNEECAP**

### **Affiliations**

Oakland Raiders  
*Director of  
Orthopedic Surgery*

San Francisco Giants  
*Orthopedic Surgical  
Consultant*

San Jose Sharks  
*Asst. Director of  
Orthopedic Surgery*

US Soccer  
*National Teams Programs*

US Rugby  
*Director of  
Orthopedic Surgery*

### **INTRODUCTION**

Pain in the front of the knee is a very common complaint. The pain usually originates from the tissue around the kneecap including the tendons, bones and cartilage surfaces. These tissues are put under high forces during many common activities and especially during sports. Running, jumping, hiking, squatting and lunging can place up to six times an individual's body weight through these tissues. Repetitive high loading eventually leads to tissue breakdown and subsequent pain. Women are more susceptible to these problems because their kneecaps are smaller and often "track" abnormally. High forces in a small distribution area leads to painful "**chondromalacia**" (chondro=cartilage; malacia=bad).

### **PATHOLOGY**

The cartilage surfaces behind the kneecap are the thickest in the entire human body and usually begin to wear out after the age of 15. Almost all people have evidence of cartilage damage on kneecap cartilage when we perform arthroscopic surgery. It is interesting to note however that while the pain from chondromalacia is the most common complaint of people between the ages of 15 and 60, these complaints usually disappear after age of 60. In addition, most persons with chondromalacia do not have symptoms.

While the cartilage surfaces do not have any nerve endings, all the tissues around the kneecap cartilage (including the bones) do have nerve endings and can therefore produce pain. The most common finding on examination is tenderness to touch around the kneecap or patella. There can be swelling and often there is grinding with bending or squatting. Often people can hear grinding coming from their knees when squatting and stair climbing.

The most common medical finding is damage to the cartilage behind the kneecap (patella). The cartilage covering, or articular cartilage, that covers the knee cap bone is the thickest cartilage covering in the entire human body. The reason the cartilage covering in this area is so thick is because the knee cap takes more pressure per unit of area than any other joint in the body. With squatting and lunging activities up to six times the body weight is placed into the small bone of the knee cap and the cartilage. With activities this cartilage can begin to breakdown and produce pain.

Palo Alto Medical  
Foundation

Palo Alto Office  
795 El Camino Real  
Palo Alto, CA 94301  
ph (650) 853.2943  
fax (650) 853.6094

Sunnyvale Office  
1195 #2 Arques Avenue  
Sunnyvale, CA 94085  
ph (408) 732.0600  
fax (408) 732.7599