

## Meniscus

**M**eniscus: from the Greek *meniskos*, the diminutive of *mene* (moon).<sup>1</sup> Two of these semi-lunar cartilages occupy each knee. Once described as muscle remnants and ascribed few functions, the menisci are now known to transmit tibio-femoral load, absorb shock, prevent synovial impingement, lubricate the joint and assist the surfaces in gliding over one another.<sup>2</sup>

Meniscal injuries are common in intense athletic activities involving twisting, jumping and sudden deceleration — 2 of the 22 Olympic athletes admitted to Atlanta hospitals during the 1996 Olympic Games had meniscal tears<sup>3</sup> — but can also occur through more benign mechanisms, presumably because of age-related meniscal degeneration.<sup>2</sup>

Symptoms of a meniscal tear can include “popping,” catching, locking and buckling of the knee, mild synovitis and joint line pain. Physical assessment for meniscal damage often includes the McMurray test.<sup>4</sup> On its own, the McMurray test has limited sensitivity and specificity<sup>5</sup> and is subject to a fair degree of interrater variability.<sup>6</sup> In one study, 24 of 200 patients with a positive McMurray test result (12%) had para-

doxical findings: a positive McMurray result on the unaffected side of the knee.<sup>7</sup>

MRI is often used in the diagnosis of meniscal tears, but it is an imperfect diagnostic tool. In one series of asymptomatic adults, MRI findings consistent with meniscal tears were found in 12 of 74 (16%) people.<sup>8</sup>

In 1806 the Lichtleiter, one of the earliest illuminated viewing devices, was invented to inspect vaginas, rectums and bladders.<sup>9</sup> In 1918, Professor Kenji Takagi of Tokyo University used a cystoscope to inspect the knee of a cadaver, and in the 1950s, Dr. Masaki Watanabe, a former student of Takagi, developed the first truly functional arthroscopes.

At the 1964 Tokyo Olympics, Canadian team orthopedic surgeon Robert Jackson started studying Watanabe's techniques and is credited with bringing arthroscopy to North America.<sup>10</sup> Arthroscopy offered reduced pain and healing times in comparison with arthrotomy. In its 40th anniversary issue, *Sports Illustrated* named Jackson as one of the 40 people “who have most significantly altered or elevated the world of sports in the last four decades,”<sup>11</sup> along with such notables as Wayne Gretzky, Muhammad Ali and Michael Jordan.

There were 30 597 arthroscopies in Canada in 1999/2000 (Canadian Institute for Health Information: unpublished data), making it one of the most commonly performed orthopedic procedures in Canada.



MRI of the knee. This coronal view demonstrates a tear (arrow) in the medial meniscus of a 59-year-old jogger. Also seen are the medial femoral condyle (M), the lateral femoral condyle (L) and the tibia (T).

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### References

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Arthroscopic view of the edges of a medial meniscal tear, separated here by a surgical instrument, before their resection.