Objectives
- Which specific physical examination tests are most reliable for diagnosing isolated meniscal tears in agility-sport athletes.
- Identify when an MRI or arthroscope may be warranted.
- What is the best approach when diagnosing meniscal lesions.

Predisposing Factors
- The medial meniscus is not as mobile as lateral.
- The posterior horns of the menisci are not as mobile as the anterior horns.
- The menisci are more susceptible to injury when the knee is in a flexed position and the athlete is in motion.

Incidence/Prevalence
- The highest incidence of meniscal tears is seen in football, soccer, basketball, and wrestling.
- There are approximately 61 cases per 100,000 people in the U.S. every year.
- The peak incidence in the male population is seen in the third decade of life, for females it is in the second decade of life.
- Medial meniscus tears are 2–5 times more common than lateral tears, depending on the sport.

Mechanism of Injury
- Contact injuries can result from a violent varus, valgus, or hyperextension force combined with femoral tibial rotation.
- Non-contact injuries occur when an axial load is transmitted through a flexed knee that is rotating at the same time.
- The compressive force along with tibial rotation produces a shearing force across the meniscus.

Clinical Practice Guideline
The comprehensive assessment includes subjective, objective, and functional tests and possibly MRI.

<table>
<thead>
<tr>
<th>Test</th>
<th>Author</th>
<th>Sensitivity</th>
<th>Specificity</th>
<th>Quality of research</th>
</tr>
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<tbody>
<tr>
<td>Joint effusion</td>
<td>Solomon et al., 2001</td>
<td>35%</td>
<td>100%</td>
<td>Review</td>
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<tr>
<td>Joint line tenderness</td>
<td>Solomon et al., 2001</td>
<td>79%</td>
<td>15%</td>
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<td>McMurray test</td>
<td>Solomon et al., 2001</td>
<td>51%</td>
<td>83%</td>
<td>Review</td>
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<td>Apley compression test</td>
<td>Solomon et al., 2001</td>
<td>16%</td>
<td>16%</td>
<td>Review</td>
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<tr>
<td>Medial and lateral grind test</td>
<td>Solomon et al., 2001</td>
<td>69%</td>
<td>86%</td>
<td>Review</td>
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<tr>
<td>Payer test</td>
<td>Malanga et al., 1999</td>
<td>40%</td>
<td>70%</td>
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<td>Bounce home test</td>
<td>Malanga et al., 2003</td>
<td>41%</td>
<td>50%</td>
<td>Review</td>
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</tbody>
</table>

Composite exam
- Solomon et al., 2001 (77% (7%)*
- Solomon et al., 2001 (91% (3%)*

Sensitivity, specificity, and accuracy approaching 100%

MRI
- Useful if the clinical diagnosis is indefinite
- Helps guide therapeutic decision-making
- Referral based on severity of individual’s symptoms

Arthroscopy
- Sensitivity, specificity, and accuracy approaching 100%
- Confirms findings