1-D Objective Function Testing

Purpose:
Objective function testing of the lower extremity aids in determining functional limitations of the knee joint during sports activities.

Selection of Questions:
Four one-legged function tests comprise the objective function testing:
1. Single hop (distance)
2. Cross-over hop (distance)
3. Triple hop (distance)
4. Timed hop

Materials Needed:
1. One stopwatch
2. One tape measure
3. Standard marking tape

Test Descriptions:

<table>
<thead>
<tr>
<th>Test Description</th>
<th>Details</th>
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</thead>
<tbody>
<tr>
<td>1. Single hop (distance)</td>
<td>The distance a patient travels in one hop on a single leg is recorded. Each patient is allowed one trial for each leg, and then performs two hops per leg.</td>
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<tr>
<td>2. Cross-over hop (distance)</td>
<td>A six meter line six inches wide is marked with tape. The patient performs three hops on one leg, criss-crossing the line with each hop. Each test is completed twice on each leg, with the total distance hopped measured.</td>
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<tr>
<td>3. Triple hop (distance)</td>
<td>The patient performs a series of three hops on one leg, with the total distance hopped measured. The test is performed twice on each leg.</td>
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<tr>
<td>4. Timed hop</td>
<td>Measure a distance of six meters, marking start and finish lines with tape. A technician stands at the finish line to time the subjects with a stopwatch. At the word “go”, the patient begins a series of one-legged hops from the starting line to the finish line. Patients are encouraged to use large forceful hopping motions, not a series of small hops, to complete the course. Each patient completes a slow trial on each leg. A series of two tests per leg are then completed. Two tests are first completed on the non-involved leg, followed by two tests on the involved leg.</td>
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The mean is taken from the two tests performed on each leg. Then, the percent deficit between limbs is calculated.

Source/Verification of Data:
Quantitative data is obtained at the time of testing by a trained technician.

Data Analysis/Reporting of Results:
Results are reported by first calculating averages for each subject for all tests. The resultant deficit is calculated by figuring the difference between the involved and non-involved limbs.