



The Technology of Human Performance

Treatment Guidelines – Knee

These guidelines may be applicable to a variety of diagnosis, injuries and dysfunctions. Use your clinical judgment when proceeding on any course of treatment.

Description	The following represents suggested areas of assessment and uses of the PrimusRS for clients' with knee involvement. This assessment focuses on the knee; however you are encouraged to evaluate the client as a whole.
Contraindications	Treatment needs of a knee can vary greatly based on diagnosis and intervention goals. Utilize your clinical knowledge and skills in determining the appropriateness of any treatment plan prior to beginning a program with a client. Always consider client safety a priority.
Early Intervention	There may be ROM deficits that will need to be addressed. Utilize the CPM mode to increase ROM when appropriate for diagnosis and/or surgical procedure.
Establish need	<ol style="list-style-type: none"> 1. Strength – implement an isometric comparison test for the knee to compare injured side to non-injured side. 2. Endurance – to further establish need. 3. Neuromuscular coordination – CPM with target force 4. Effects of repetition, if indicated 5. Work or other functional tolerance (press foot pedal, walking, etc...)
Develop Treatment	<p>Isometric and dynamic strength (endurance) of isolated muscle groups can be measured by performing isolated joint motions and, of combined muscle groups, by performing specific tasks. This will help determine if there is a weak area to focus on.</p> <p>Initiate a treatment program that includes knee flexion/extension for which you have established a need. Set initial resistance at 30% of current strength level. Perform exercise to fatigue. Set new goal based on exercise result for next session.</p> <p>In addition, you may perform a task analysis to determine appropriate exercises based on return to work, ADL or other functional needs.</p>
Primus Attachment Suggestions	<p>#701 - flexion and extension</p> <p>#802 – closed chain leg press (seated or standing)</p> <p>#701 – foot pedal press (machine controls. Brake or clutch pedal)</p> <p>#191 – step and gait training</p>

Positioning Suggestions

Knee Flexion/Extension



Knee Extension - Start Position
Knee Flexion – End Position



Knee Extension -End Position
Knee Flexion – Start Position

Set-up:

Exercise Head Tilt: Number five position

Attachments: 701, Chair Tool

Tool Setup: 701 - Use padded block. Place block in the B position. Adjust tool length to place pad comfortable on clients shin (calf for flexion). A lever length of 10-12 inches (25 -30 cm) is usually sufficient.



Overhead view showing the Chair Tool attachment.

Positioning Chair Setup: Place client in the chair on the right side of the Primus for the right knee, and on the left side of the primus for the left knee. Tilt the seat up so it is at approximately a 30 degree angle above level.

Client: Make sure the knee joint is aligned with the axis of rotation of the exercise head shaft. Perform a repetition without any resistance to check for proper alignment. Adjust exercise head height and client position as needed.

Alternate Set-Up Ideas:

- For knee flexion, place the client in the prone position with the positioning chair set up as a bench.
- Use the 701 or 802 tool with the flat block for a closed-chain leg press.