The following practice guidelines were developed through the consensus of the therapists that work with patients with bleeding disorders and edited by the National Hemophilia Foundation’s Physical Therapy Working Group. The information contained in the practice guidelines is not intended in any way to be used as primary medical advice or to replace medical advice. They are intended to guide the physical therapist caring for individuals with bleeding disorders in the important factors and elements of quality care.

### Signs and Symptoms

- Muscle guarding in shortened position
- Swelling/edema
- Hematoma
- Heat/Erythema
- Pain
- Skin changes (color, etc.)
- Decreased strength/muscle inhibition
- Movement asymmetry
- Peds: decline in developmental milestones/motor patterns
- Neurovascular compromise
- Limited weight bearing
- Decreased ROM in associated joints

### Differential Diagnosis

- Fracture
- Myositis/pseudotumor
- Tumor
- Soft tissue injury
- DVT/blood clot
- Joint bleed
- Compartment syndrome
- Internal derangement
- Musculoskeletal ultrasound (if available) can be used to determine if a bleed is present in the muscle tissue

### PT Intervention

**Acute Stage:** pain present at rest and with all activity
- Factor replacement per medical team orders, consider prophylaxis prior to PT
- Avoid use of affected muscle
- Do NOT use elastic bandage/compression with presence of neurovascular signs/symptoms

#### LOWER EXTREMITY

- No active movement until bleeding stops
- Non-weight bearing until bleeding stops
- Splinting if needed to limit activity
- Consider bed rest for severe bleed
- Opposite limb ROM
- Ice/elevation
- TENS

#### UPPER EXTREMITY

- Immobilization
- Rest in position of comfort
- No active movement until bleed stopped
- Ice/elevation
- Splint/slings when indicated
- TENS
**Subacute Stage:** Activities of Daily Living (ADLs) do not increase pain from baseline level
- Factor replacement per medical team orders, consider prophylaxis prior to PT

<table>
<thead>
<tr>
<th>LOWER EXTREMITY</th>
<th>UPPER EXTREMITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Splinting and assistive device to limit activity</td>
<td>Splinting if needed to limit activity</td>
</tr>
<tr>
<td>Progress to TTWB without pain</td>
<td>Progress to use with ADLs without pain</td>
</tr>
<tr>
<td>Isometric/AAROM without pain</td>
<td>Isometric/AAROM without pain</td>
</tr>
<tr>
<td>Positioning: progress to increased muscle length without pain</td>
<td>Same as LE</td>
</tr>
<tr>
<td>Continue to do therapeutic exercises with uninvolved side</td>
<td>Same as LE</td>
</tr>
<tr>
<td>TENS</td>
<td>TENS</td>
</tr>
</tbody>
</table>

**Chronic Stage:** pain-free with ADLs
- Factor correction per medical team orders, consider prophylaxis prior to PT

<table>
<thead>
<tr>
<th>LOWER EXTREMITY</th>
<th>UPPER EXTREMITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Progress to FWB, wean assistive device</td>
<td>Progress to unrestricted lifting/use for ADLs</td>
</tr>
<tr>
<td>Pain-free stretching</td>
<td>same</td>
</tr>
<tr>
<td>Continue positional stretch/avoid over-stretch</td>
<td>same</td>
</tr>
<tr>
<td>Progress to AROM/PRE</td>
<td>same</td>
</tr>
<tr>
<td>Teach patient to avoid overstretch</td>
<td>same</td>
</tr>
<tr>
<td>Re-eval by PT, consider outpatient PT referral</td>
<td>same</td>
</tr>
<tr>
<td>Address any compensatory shortening problems</td>
<td>same</td>
</tr>
</tbody>
</table>

**Treatment Considerations**
- Electric stimulation
- Sport specific muscle stretch and exercise
- Work closely with hematologist for adequate factor coverage
- Education on activity modification
- Kinesiotape®
- Treatment duration will vary based on individual needs and may require a longer duration than what is recommended for individuals without bleeding disorders.

**Precautions/Contraindications**
- Inhibitor patients: Please contact the physical therapist at your regional Hemophilia Treatment Center (HTC) for more information on these complex patients
- Splinting –monitor for neurovascular compromise
- Caution with use of compression on affected muscle
- Use of heat modalities including ultrasound: refer to MASAC Guideline #130 at www.hemophilia.org
- Must have full, pain-free ROM and strength before safe return to any sport

Please visit NHF’s website @ [www.hemophilia.org](http://www.hemophilia.org) for HTC contact information and PT references. Additional information is also available through NHF @ 1 800 42-HANDI
References:


