let’s talk exercise for people with haemophilia

Always consult your healthcare professional before commencing an exercise programme, including the activities described in this leaflet.
Why be active?
Exercises for people with haemophilia
‘Dos’ and ‘Don’ts’
Your exercise plan
Exercises for flexibility
• Knee
• Ankle
• Shoulder
• Elbow
• Wrist
Exercises for strength
• Hamstring
• Thigh
• Ankle and calf
• Elbow
• Wrist
Exercises for balance/joint stability
• Lower body
• Calf muscle and ankle joints
• Tandem walking
• Upper body
Further resources

Always consult your healthcare professional before commencing an exercise programme, including the activities described in this leaflet.
why be active?

People with haemophilia are at risk of bleeding into joints, particularly into the knees, elbows and ankles.\(^1\),\(^2\) Over time, repeated bleeds can lead to joint damage, such as stiffness, weakness and pain.\(^2\)

People sometimes avoid physical activity, thinking that it may cause bleeds.\(^3\) In fact, when carried out properly, regular activity can help prevent bleeds and joint damage.\(^3\) Being physically active offers a number of benefits for people with haemophilia such as:

- Helping to preserve and protect joints\(^4\),\(^5\)
- Improving joint stability, strength and range of motion\(^5\)
- Helping to maintain a healthy weight,\(^6\),\(^7\) so reducing stress on the joints\(^6\)
- Helping you to carry out activities of daily living\(^3\) such as dressing, eating and shopping
- Allowing you to participate in activities with friends\(^6\)
- Helping you get mobile again after a bleed\(^8\)
- Improving general health and wellbeing.\(^6\)

Talk to your healthcare professional about which physical activities are right for you, and which specific exercises can help you reach your goals.\(^6\),\(^8\) Knowing what you want to achieve from physical activity – from ‘moving around the office more easily’ to ‘taking part in organised sport’ – will help you and your healthcare professional design an exercise programme that is right for you.\(^6\)

Always consult your healthcare professional before commencing an exercise programme, including the activities described in this leaflet.
exercises for people with haemophilia

This booklet includes examples of exercises that can be carried out by people with haemophilia, as recommended by a group of specialist haemophilia physiotherapists and nurses. They include exercises for stretching, for strength and for balance/joint stability. In addition to descriptions of each exercise, each page includes tips on what to be aware of when carrying out the exercise, and a ‘functional application’ which suggests when the exercise might be useful. A detailed description of exercises for people with haemophilia has been published by the World Federation of Hemophilia. ³

Always follow your healthcare professional’s advice about which activities to undertake. ⁸

‘Dos’ and ‘don’ts’

Keep these ‘dos and ‘don’ts’ in mind when undertaking physical activity.

Always listen to your body; some degree of discomfort may be expected when trying out a new exercise, but if you experience a pain that is increasing, it’s important to slow down or to even stop completely. ³

Always consult your healthcare professional before commencing an exercise programme. ⁸

<table>
<thead>
<tr>
<th>DO</th>
<th>DO NOT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use an exercise plan developed with a healthcare professional. ⁸</td>
<td>Exercise a joint during an active bleed. ⁹</td>
</tr>
<tr>
<td>Be vigilant for joint or muscle bleeds. ³ Treat any bleeds immediately with clotting factor, ideally within 2 hours. ⁷</td>
<td>Avoid physical activity, as it can help prevent joint bleeds. ³</td>
</tr>
<tr>
<td>Start with low intensity exercises and few repetitions, and gradually progress to more advanced exercises as recommended by your healthcare professional. ³</td>
<td>Continue to exercise if you feel pain. ³</td>
</tr>
<tr>
<td>Set functional goals that are meaningful for you. ⁸</td>
<td>Overdo things or try to progress too quickly – stick to the exercises recommended by your healthcare professional. ³</td>
</tr>
<tr>
<td>Incorporate a range of exercises including flexibility, strength and balance. ⁵, ⁸</td>
<td>Start a sport/activity following a bleed without discussing with your healthcare professional. ³</td>
</tr>
<tr>
<td>Measure progress. ⁸</td>
<td>Do high-impact sports or power lifting that may precipitate a bleed. ⁷, ⁹</td>
</tr>
</tbody>
</table>
General instructions for stretching:
• Hold in a tolerable position, feeling some tension in the muscle\textsuperscript{9}
• Hold the stretch for 15–30 seconds for each repetition\textsuperscript{8}
• Avoid bouncing/ballistic stretching as it can cause damage.\textsuperscript{8,9}
<table>
<thead>
<tr>
<th>Flexibility/stretching</th>
<th>F1</th>
<th>F2</th>
<th>F3</th>
<th>F4</th>
<th>F5</th>
<th>F6</th>
<th>F7</th>
<th>F8</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of repetitions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of sets</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of times/week</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of weeks</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other instructions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Always consult your healthcare professional before commencing an exercise programme, including the activities described in this leaflet.
<table>
<thead>
<tr>
<th>Strength</th>
<th>S1</th>
<th>S2</th>
<th>S3</th>
<th>S4</th>
<th>S5</th>
<th>S6</th>
<th>S7</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of repetitions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of sets</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of times/week</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of weeks</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other instructions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Always consult your healthcare professional before commencing an exercise programme, including the activities described in this leaflet.
<table>
<thead>
<tr>
<th>Balance/Joint stability</th>
<th>B1</th>
<th>B2</th>
<th>B3</th>
<th>B4</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of repetitions</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of sets</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of times/week</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of weeks</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other instructions</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Exercises for flexibility

Flexibility/stretching – Lower body

**F1 Joint: knee**<sup>3</sup>
A version of this exercise is also good for strengthening muscles around the knee – see **S2** on page 12.

**Basic**
Lie with the thigh supported (on a cushion or rolled towel) and the knee bent in a comfortable position. The knee is then straightened and the heel slowly lifted off the surface.

**Advanced**
For an advanced stretch, use the hands or a strap to lift the leg and hold it in position.

**Comments**
Avoid ‘locking’ the knee or ankle; do not keep the leg too rigid.
Ensure the back, particularly the lower back, is flat against the floor.
Make sure the head is supported properly with a cushion to prevent strain to the neck.

**Functional application**
Useful where there is difficulty getting out of bed; carry out the stretching exercise in bed before rising.

Flexibility/stretching – Lower body

**F2 Joint: knee**<sup>3</sup>
A version of this exercise is also good for strengthening muscles around the knee – see **S1** on page 12.

**Basic**
Lie on the stomach and, keeping hips as flat as possible, bend the knee towards the bottom.

**Advanced**
To increase the stretch, reach back and grab the foot, gently pulling it as far as it will go towards the buttocks. If preferred, stand facing a wall or table for this exercise, balancing with one hand on the wall. Pull the foot towards the buttock while keeping the hip extended. A towel can be used as an aid to stretch.

**Comments**
Important not to overflex the knee. Use gentle pressure that feels comfortable on the front of the knee.
Try to ensure the hips both remain on the floor and do not tilt to the left or right with the weight of the leg.
For the standing version, be careful to stand up straight rather than leaning to one side or another.

**Functional application**
Good to maintain movement of the knee and to improve movement after a period of immobility (such as after a bleed or injury). The lying-down version also stretches the hip muscles and can help improve posture.

Always consult your healthcare professional before commencing an exercise programme, including the activities described in this leaflet.
**F3 Joint: knee**

Lie or sit with both legs straight out. Bend the hip and knee and slide the heel towards and away from the body in a slow, controlled movement.

**Comments**
It is important to support the back in this exercise, so tilt the pelvis slightly backward, so the lower back does not become arched, and pull in the abdominal muscles.

**Functional application**
Useful for people who want to work on the range of motion of the knee to progress to activities such as cycling, either outside or on a stationary bike at the gym.

Having proper amounts of knee bending makes it more comfortable to sit in a stadium seat/theatre seat.

---

**F4 Joint: ankle**

Lie in a comfortable position and move the foot up and down and in and out.

**Comments**
If it is more comfortable, lie on a bed or sofa and extend the legs over the end.

**Functional application**
Useful where there is difficulty getting out of bed; carry out the stretching exercise in bed before rising.

Useful where walking distance is limited because of stiffness in the ankles.
Flexibility/stretching – Lower body

**F5 Joint: ankle**

Sit in a chair with the feet flat on the floor and slowly raise the front of the foot while keeping the heels down.

Can also be done lying or standing.

**Comments**

Sit towards the edge of the chair, in a comfortably upright position, and think about using the abdominal muscles to support the trunk. In this sitting position tilting the pelvis slightly forward will help to activate the trunk muscles.

**Functional application**

Useful where walking distance is limited because of stiffness in the ankles.

An advantage of this exercise is that it can be done at school or work, or on the train, bus or plane.

---

Flexibility/stretching – Upper body

**F6 Joint: shoulder**

Stand slightly closer than arms-length away from a wall. Then raise the arm to shoulder level and gently ‘walk’ the fingers up the wall as high as possible.

Hold for a few seconds, and then walk the fingers back down.

**Comments**

Be careful not to overstretch but gradually increase how high over time.

**Functional application**

A good range of shoulder motion is useful for activities of daily living such as washing and dressing.

---

Always consult your healthcare professional before commencing an exercise programme, including the activities described in this leaflet.
Sit or lie with the elbow supported and slowly extend the elbow letting the weight of the arm assist.

**Hold the arm out as straight as possible.** Use the other hand to gently apply pressure to the palm of the hand to pull it back.

**Apply gentle pressure to the front of the hand to stretch the wrist in the opposite direction.**

**Comments**
Be careful not to over-flex or overextend the joint: never stretch into the straight position far enough to elicit ‘crunchiness’ or ‘grinding’ in the joint.

**Functional application**
A good range of elbow motion is vital to activities of daily living such as washing, dressing, eating, shaving etc.

---

**F7 Joint: elbow**
A version of this exercise can also be used to strengthen muscles around the joint – see **S5** on page 14.

---

**F8 Joint: wrist**

**Comments**
Do not lock the elbow while doing this stretch.

**Functional application**
A good range of wrist motion is vital to activities of daily living such as washing, dressing, eating, shaving etc.
Exercises for strength

**S1 Hamstring muscle**

The prone version of this exercise also serves as a stretch for the knee joint – see **F2** on page 8.

**Basic**

Lie on the stomach and bend the knee slowly through 90 degrees, then slowly lower the foot to its resting position.

**Advanced**

This exercise can be performed while standing and holding on to a wall or furniture for support.

The most advanced version involves standing and using a weight attached to the ankle for additional resistance.

**Comments**

The standing version of this would not be recommended if there is an active problem with the ankle or if ankle pain prevents standing on one foot.

If done in a standing position, ensure that the weight is evenly spread across the ball and heel of the foot on the floor.

**Functional application**

Useful if the hamstring muscles have become tight:

- In people who spend a lot of time sitting
- Following a bleed or a period of pain in the knee joint.

**S2 Thigh (quadriceps) muscle**

A version of this exercise – without the weights – is good for stretching the knee joint – see **F1** on page 8.

Lie on the back with a roll support under the knee. The knee to be exercised should then be extended and the heel lifted. Additional resistance can be added to the exercise by adding weights at the ankle.

**Comments**

Do not keep the leg too rigid.

Ensure that the back is flat against the floor.

The head should be well supported comfortably on a pillow or cushion.

**Functional application**

Maintaining good strength in the quadriceps helps reduce the risk of injury or pain in the knee.

---

Always consult your healthcare professional before commencing an exercise programme, including the activities described in this leaflet.
Elbow extension strengthening exercises can be performed at a number of different levels.

1. From a bent position, push the arm down into the other hand, holding the position for 5-10 seconds.

2. In a sitting or lying position, begin with the elbow bent (hand near the shoulder) and extend the hand towards the ceiling, straightening the elbow.

3. Weights can be added for further resistance. Start with a low weight, and combine movements with ‘palm up’ and ‘palm down’ movement.

In a standing position, lift both heels and stand on the toes.

Aim is to go straight up and down – imagine a string at the top of your head, pulling you up. Make sure the knees are kept straight and keep the speed slow and controlled.

Comments
Best done following ankle flexibility exercises.
The feet should be comfortably hip width apart.
Hold on to a chair or wall, or raise the arms for additional balance.

Functional application
Ankle strength is useful for numerous functional activities, including walking and climbing stairs.
This exercise can also aid improvements in balance in the ankles.

Comments
Avoid sustained ‘locking’ of the elbow.
Keep the shoulders relaxed and avoid tensing. Before beginning the exercise, shrug then relax the shoulders.
Keep the speed slow and steady.

Functional application
Practical applications of elbow strength include being able to push up out of a chair, open doors and carry shopping bags.
Helps with the flexibility and range of motion of the elbow joint.
**S5 Elbow (biceps)**

*Basic*
Start with the arm down, palm facing forward, then lift up to the shoulder and back again.

The exercise can be done in either a standing or sitting position.

*Advanced*
Using weight to increase the resistance.

**Comments**
Keep the body still, and the back straight avoiding rocking back and forth. The quality of the exercise is more important than the quantity of repetitions.

Be careful not to lock the elbow when the arm is extended.

**Functional application**
Practical applications of elbow strength include being able to push up out of a chair, open doors and carry shopping bags.

---

**S6 Elbow**

Stand facing a wall with arms as straight as possible.

Lean in towards the wall, allowing the elbows to bend. Return to upright position by pushing with arms and straightening elbows.

**Comments**
Avoid if there are shoulder or active elbow problems.

Start with only small amounts of bending and progress gently.

Wear non-slip shoes or bare feet to reduce the risk of slipping.

**Functional application**
Practical applications of elbow strength include being able to push up out of a chair, open doors and carry shopping bags.

---

*Always consult your healthcare professional before commencing an exercise programme, including the activities described in this leaflet.*
**Strength – Upper body**

**S7 Wrist**

*Basic*

Sit supported on a chair with the forearm resting either on a table or along the arm of the chair. Holding a small weight in the palm of the hand, alternate between palm up to palm down.

*Advanced*

The exercise can be progressed to starting with the forearm still supported and the hand hanging over the edge of the table. Do the exercise with the weight through the full range of movement.

**Comments**

Do not try to overextend the wrist. Remember to relax the shoulders.

**Functional application**

Wrist strength is required for tasks such as turning a door knob, or using a kitchen spatula while cooking.

---

**Balance/stability**

**B1 Lower body**

*Basic*

Perform the exercise first with the eyes open then closed. Progress from holding on to a chair or wall to standing unsupported.

*Advanced*

Progress to balancing on an unstable surface, such as a pillow or block of foam.

**Comments**

Start by holding on to a wall or chair until balance improves.

Start by placing weight on the ball of the foot, and then the heel, moving between these two extremes to find a point where the weight is balanced across the whole of the sole of the foot.

Use with caution if there are problems with the ankle joint.

Keep shoes on if it is more comfortable or orthotics are worn.

**Functional application**

Useful where balance is a problem.
B2 Calf muscle and ankle joints

Raise toes as high as possible so that body weight rests on the heels. Walk for around 10 feet/3m.
Repeat walking on the toes.

Comments
May need to start by holding on to a wall when attempting this exercise until balance improves.
The arms can also be raised or placed on the hips for additional balance.

Functional application
Maintaining good strength in the quadriceps helps reduce the risk of injury or pain in the knee.

B3 Tandem walking

Place one foot in front of the other so that the heel of the forward foot touches the toes of the rear foot.
Walk as if on a tightrope with the heel of one foot touching the toes of the other.
Walk for around 10 feet/3m.

Comments
Carry out this exercise on firm flooring e.g. without carpeting or on a low-pile carpet.

Functional application
Useful where balance is a problem.
Basic Start with the hands and knees on the floor; knees under hips and wrists under shoulders. The back should be flat and the neck straight. Raise one leg backwards, balance should be maintained on both arms. Do not raise the leg too high; the back should not dip.

Advanced Raise the affected arm and the opposite leg and maintain balance. Try to raise and lower the arm and leg at the same time. Always bring the knee and wrist back to the original position.

Comments
Should only be attempted if there are no active elbow, knee or shoulder problems.
Must be confident and able to get down on the floor and kneel as well as being able to get off the floor unaided.
May need to cushion the knee and under the foot if the ankle has limited plantarflexion (pointing down movement).
The exercise should be done slowly and in a controlled way.

Functional application
Useful for improving posture.

Further reading

Reference list
“let’s talk exercise” is part of the TalkingJoints® programme to encourage better understanding of how physical exercise can help look after the body and joints of patients with haemophilia.