



Quit knee pain - Osgood Schlatter

AALBORG SYGEHUS
ÅRHUS UNIVERSITETSHOSPITAL

At the information session with the physiotherapist, you received an explanation about why might have pain in your knee, and advice and guidance on what you can do to improve it. This leaflet sums up the tips and exercises, so you have the information in one place in case you don't remember it all.

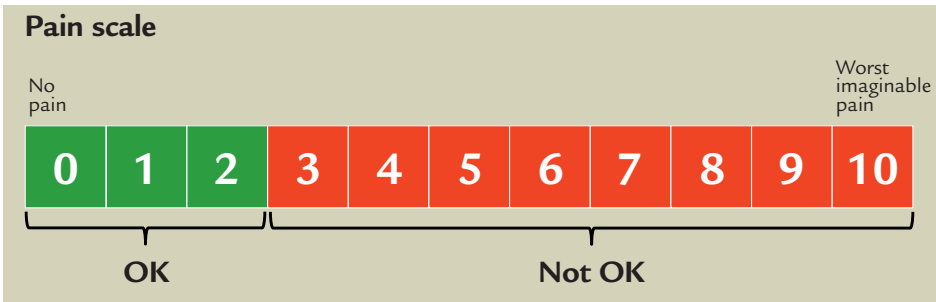
Why does your knee hurt?

The reason for your knee pain (Osgood Schlatter) is not yet fully understood. It is thought that knee pain can be caused by too much force/load on your knee compared to what it can tolerate. Typically, these problems start during periods of growth, because the force/loads experienced by the knee during sports and physical activity also increase due to growth. Some people are fortunate and can tolerate a lot of force/load on the knee without getting pain, while for many reasons others cannot tolerate the same amount of loading. Loading can stem from too much running, too many jumps or other activities where the knee is strained. Normally, knee pain can disappear after a short break from sport, but sometimes knee pain can continue for a longer time. One of

the reasons why knee pain can sometimes persist is when people continue with the activity that triggered their knee pain.

How can you safely return to sports?

After the first 4 weeks of reducing the activities that aggravate your knee, it is important that you start back slowly. You should follow the guide below with the Activity Ladder, and only proceed to the next step on the Activity Ladder when you no longer have knee pain during, or the next morning after the activity when you wake up (max. 2 out of 10 on the pain monitoring tool). If you suddenly experience worsening of your knee pain, go one step down. Activity Steps can only be started once you can do certain Exercise Steps.



Activity ladder



1. Light walking/cycling

2. Faster walking/medium to hard cycling

3. Slow running

4. Stairs

5. Running in medium pace

6. Skipping

7. Jumping

8. High speed running, turning and jumping

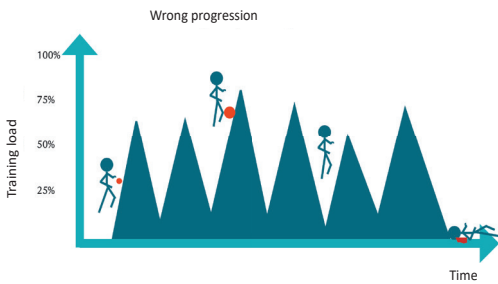
9. Warm-up + $\frac{1}{2}$ training

10. Warm-up + 1 training

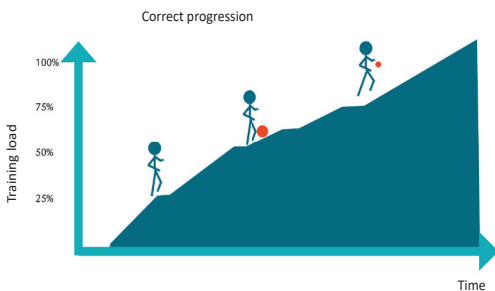
11. Match/competition

When you are able to perform Step 8 “Running at high speed, turns and jumps” with minimal or no pain (max 2 on the pain monitoring tool during, immediately after, and the morning after the activity) you can start participating in sports again. You should start by taking part in the warm-up, and half the training session. The next step is the warm-up and a full training session.

However, you should only increase to full training/competitions if you do not experience a worsening of your knee pain. When you are able to participate in the full training without knee pain for two weeks in a row, you can return to full sports participation (including matches/competition) again. If you experience a worsening of your knee pain, you should go back a step on the ladder.



The figure below shows how to slowly increase your training to return to your sport safely. To get better, you need to increase the load gradually. Above, you can see what happens if you go too fast. If you increase your training load too much over a short period of time, you may unfortunately have to stop the activity completely, because your knee was not ready for this.



Sports and activities in your daily life

It is important to listen to your body and monitor your pain response. For example, if it hurts your knee during running, you can try to alternate between running and walking. Another example could be that you get knee pain when you walk for long distances. Then, you could try to shorten the distance and cycle part of the way instead. Remember, it is always better to try to continue being active (e.g. biking or walking) than taking the bus all the time.

The important thing is to continue doing the activities you are able to, so long as they don't cause pain greater than 2 on the pain monitoring tool during the activity, or for your knee pain to be aggravated the next day. You might get sore muscles, but that is just a positive sign that you have exercised them.

Exercises are important

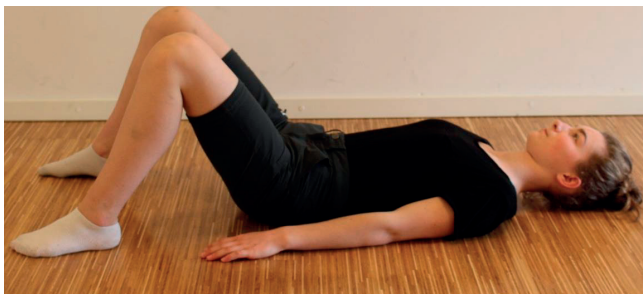
During the first 4 weeks, you should do pelvic lifts and static holds of the thigh muscles. This helps keep your muscles strong without straining your knee. After the 4 weeks, continue with these exercises and start with Exercise Step 1-3. The purpose of doing the exercises is to make your knee stronger, so your knee can tolerate the forces/loads without getting sore. This is done by strengthening the muscles around your knee. It is very important to do the exercises as often as the physical therapist has told you.

Week 1-4

You need to do the pelvic lifts every other day. 3 sets of 10 repetitions when you do the pelvic lifts. The static holds of the thigh muscle should be performed every day.

The pelvic lifts should be done with both feet on the ground and performed every other day. When lifting the body, it is important to push down into your heels. Take care not to lift yourself too high and arch in the back. You should perform 3 sets of 10 repetitions.

Static holds of the thigh muscle should be made against a wall. You should push your heels into the floor, while the thigh muscle is contracted. These should be performed with 10 sets of 30 seconds each day, for each leg.



From week 5 onwards:

Exercises with own body weight.

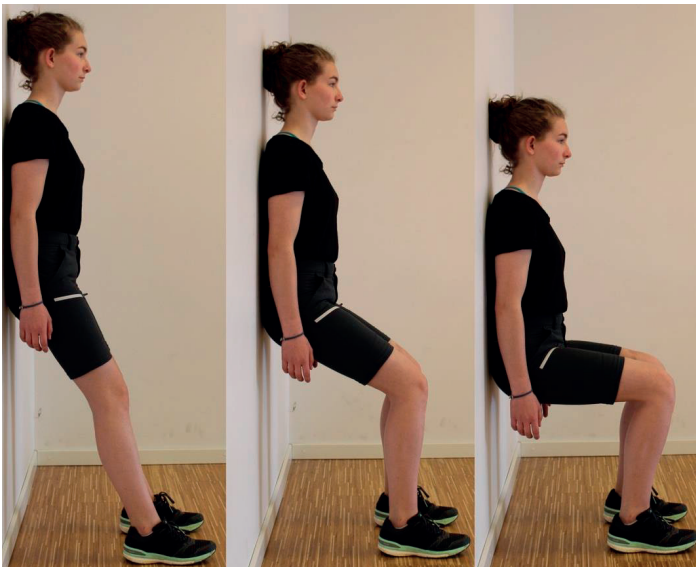
The purpose of these exercises is to strengthen the muscles around your hip and knees.

Exercise Step 1 - Wall squat.

Should be performed every other day

How to perform: You should stand leaning your back against a smooth wall wearing shoes. You should stand 1½ foot-lengths from the wall where your feet should be in shoulder width pointing straight ahead. You then slowly lower yourself, as far as your pain allows (max 2 on the pain monitoring scale). Here, the posture is held for up to 20 seconds or as long as possible without increasing pain more than 2 on the pain monitoring scale (but no longer than 20 seconds).

Progression: When you can perform 5 repetitions with a 90 degree knee bend (see image), increase the hold at the bottom up to 20 seconds. When you can perform 20 seconds of 90-degree knee flexion in all 5 repetitions, a repetition is added to the next workout. This is repeated until 10 repetitions can be performed. Then Exercise Step 2 is started.



Exercise Step 2- Squat

Must be performed every other day

How to perform: Your feet should be placed shoulder width apart, pointing straight ahead. With your arms stretched out in front of your body, bend your knees to 90 degrees (or as far as the pain permits) in the speed of 3 seconds down, 10 seconds hold and 3 seconds up again.

Progression: When you can perform 10 repetitions at 90 degrees bend without knee pain exceeding 2 on the pain monitoring scale, add a set during the next workout until you can perform 4 sets of 10 repetitions.



Exercise step 3 - Lunges and squat

These exercises should be performed every second day

In exercise step 2, you will end up doing 4 sets of 10 repetitions of squat. You should continue these while adding the lunges.

How to perform the exercise: With one leg, take one large step in front of the other leg. This is the training leg. From here, keep your upper body upright and lower yourself straight down, in the tempo: 3 seconds down, 2 seconds hold at the bottom, and 3 seconds back up. Your knee shouldn't touch the ground and should point straight over the foot.



Progression: When you can perform a set without aggravating your knee pain to greater than 2 on the pain monitoring tool, add a set to each workout until 4 sets can be performed. The four sets are then continued, as well as adding regular squats (4 sets of 10 repetitions at 90-degree knee bend).

When you have completed Exercise Step 3, you can then begin with skipping (Activity Step 6 on the activity ladder). You should continue to carry out the exercises while increasing your activity level with the Activity Steps at the same time.



Exercise levels

	Set	Repetitions	Seconds	Knee angle		
3 Continue exercise level 3 until activity level 11						
3 Lunges and normal squat	1	10	2	-	level 1	3
	1	10	2	90°	level 2	
	4	10	2	90°	level 3	
	4	10	10	90°	level 4	3
2 Normal squat	1	10	10	-	level 1	
	1	10	10	90°	level 2	
	4	10	10	90°	level 3	
1 Wall squat	1	5	-	-	level 1	2
	1	5	-	90°	level 2	
	1	5	20	90°	level 3	
	1	10	20	90°	level 4	1
Isometric holds			10	30		
Bridges	3	10				

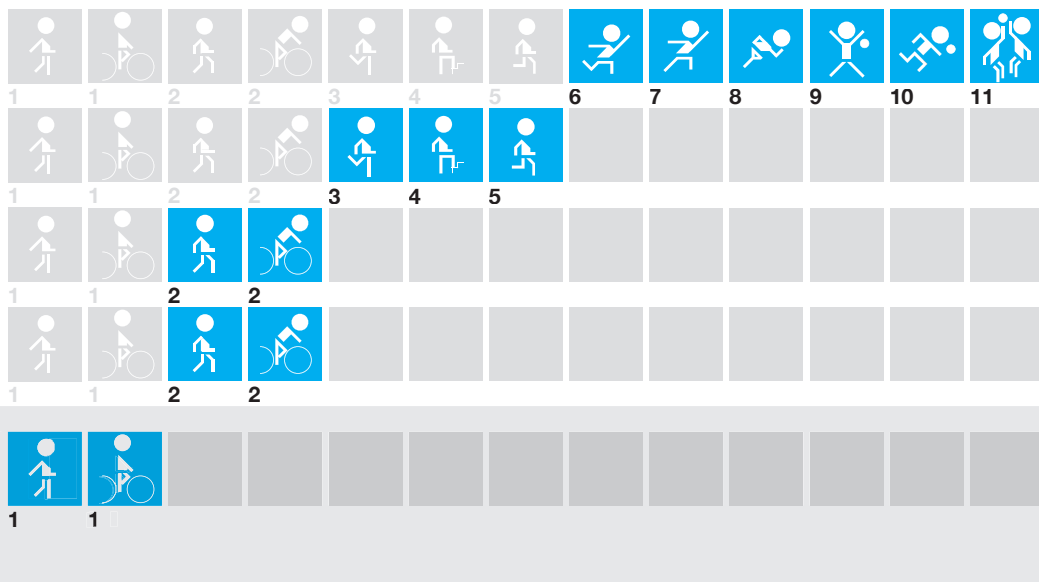
Block 2

Block 1

Here is an overview of Block 1 and Block 2 (more information can be found in the leaflet and training diaries). You can only increase a level in the exercises or activities if your pain is in the OK zone (below) immediately after, and the morning after completing an exercise/activity. Some activities can only be started after you complete the specific exercises.



Activity levels



- | | | | | | |
|--|---|---------------------------------------|--|----|---|
| | 1 | Light walking/cycling | | 6 | Skipping |
| | 2 | Faster walking/medium to hard cycling | | 7 | Jumping |
| | 3 | Slow running | | 8 | High speed running, turning and jumping g |
| | 4 | Stairs | | 9 | Warm-up and 1/2 training |
| | 5 | Running in medium pace | | 10 | Warm-up and full training |
| | | | | 11 | Match/competition |

Key things to do

Week 1-4

- Activity Modification (avoid activities that aggravate your knee pain)



- Static holds of the thigh (10 repetitions of 30 seconds, every day)



- Pelvic lifts (3 sets of 10 repetitions, every other day).

From week 5 and onwards

- Exercises with body weight



- Gradual increase in knee loading activities using the activity ladder



1. Light walking/cycling



2. Faster walking/medium to hard cycling



3. Slow running



4. Stairs



5. Running in medium pace



6. Skipping



7. Jumping



8. High speed running, turning and jumping



9. Warm-up and 1/2 training



10. Warm-up and full training



11. Match/competition



NORTH DENMARK REGION

Aalborg Universitetshospital
Ergo og Fysioterapi
Hobrovej 18
9000 Aalborg