Supplementary Appendix to

Quadriceps or Hip Exercises for patellofemoral pain? A randomized controlled equivalence trial
Rudi Hansen, Christoffer Brushøj, Michael Skovdal Rathleff, Stig Peter Magnusson, Marius Henriksen
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Supplemental figure and tables

Figure S1. Graphical illustration of the study design
Table S1. Sensitivity analysis 1 (per protocol)

Primary and Key Secondary Outcomes at week 12 and 26 in the per protocol population. Based on repeated measures linear mixed models, where missing data is assumed to be missing at random.

<table>
<thead>
<tr>
<th></th>
<th>QE (n=75)</th>
<th>HE (n=80)</th>
<th>Estimated treatment difference</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Primary outcome – week 12:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change in AKPS questionnaire – score (0 to 100); equivalence test*</td>
<td>7.6 (5.5 to 9.6)</td>
<td>7.1 (5.1 to 9.1)</td>
<td>0.5 (-2.4 to 3.4)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Change in AKPS questionnaire – score (0 to 100); superiority test*</td>
<td></td>
<td></td>
<td></td>
<td>0.734</td>
</tr>
<tr>
<td><strong>Key Secondary outcomes – week 12:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change in KOOS Pain – score (0-100)</td>
<td>9.5 (6.7 to 12.2)</td>
<td>6.6 (4.0 to 9.3)</td>
<td>2.8 (-1.0 to 6.7)</td>
<td></td>
</tr>
<tr>
<td>Change in KOOS Function – score (0 to 100)</td>
<td>6.4 (4.2 to 8.6)</td>
<td>5.1 (3.0 to 7.3)</td>
<td>1.3 (-1.8 to 4.4)</td>
<td></td>
</tr>
<tr>
<td>Change in KOOS Quality of life – score (0 to 100)</td>
<td>11.7 (8.0 to 15.5)</td>
<td>11.9 (8.3 to 15.6)</td>
<td>-0.2 (-5.4 to 5.0)</td>
<td></td>
</tr>
<tr>
<td><strong>Primary outcome – week 26:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change in AKPS questionnaire – score (0 to 100)</td>
<td>9.5 (7.4 to 11.6)</td>
<td>9.0 (7.0 to 11.1)</td>
<td>0.5 (-2.5 to 3.5)</td>
<td></td>
</tr>
<tr>
<td><strong>Key Secondary outcomes – week 26:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change in KOOS Pain – score (0-100)</td>
<td>10.6 (7.8 to 13.4)</td>
<td>11.7 (8.9 to 14.4)</td>
<td>-1.1 (-5.0 to 2.9)</td>
<td></td>
</tr>
<tr>
<td>Change in KOOS Function – score (0 to 100)</td>
<td>6.8 (4.5 to 9.1)</td>
<td>7.9 (5.7 to 10.2)</td>
<td>-1.1 (-4.3 to 2.1)</td>
<td></td>
</tr>
<tr>
<td>Change in KOOS Quality of life – score (0 to 100)</td>
<td>16.7 (12.9 to 20.5)</td>
<td>20.2 (16.4 to 23.9)</td>
<td>-3.5 (-8.8 to 11.9)</td>
<td></td>
</tr>
</tbody>
</table>

*Primary outcome was analyzed using both a test for equivalence and a test for superiority.
AKPS: Anterior Knee Pain Scale
KOOS: Knee injury and osteoarthritis outcome score.
### Table S2. Sensitivity analysis 2 (inverse probability weighting)

Primary and Key Secondary Outcomes at week 12 in the ITT population. Based on generalized estimating equations (GEE) approach, where missing data is handled by inverse probability weighting.

<table>
<thead>
<tr>
<th></th>
<th>QE (n=100) Mean (95% CI)</th>
<th>HE (n=100) Mean (95% CI)</th>
<th>Estimated treatment difference Mean (95% CI)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Primary outcome:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 12: Change in AKPS questionnaire – score (0 to 100); equivalence test*</td>
<td>7.7 (5.9 to 9.4)</td>
<td>7.1 (5.4 to 8.8)</td>
<td>0.6 (-1.9 to 3.0)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Week 12: Change in AKPS questionnaire – score (0 to 100); superiority test*</td>
<td></td>
<td></td>
<td></td>
<td>0.642</td>
</tr>
<tr>
<td><strong>Key Secondary outcomes:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 12: Change in KOOS Pain – score (0-100)</td>
<td>9.4 (7.1 to 11.7)</td>
<td>6.2 (3.6 to 8.9)</td>
<td>3.1 (-0.4 to 6.6)</td>
<td></td>
</tr>
<tr>
<td>Week 12: Change in KOOS Function – score (0 to 100)</td>
<td>6.0 (4.5 to 7.4)</td>
<td>4.8 (2.3 to 7.2)</td>
<td>1.2 (-1.6 to 4.0)</td>
<td></td>
</tr>
<tr>
<td>Week 12: Change in KOOS Quality of life – score (0 to 100)</td>
<td>10.7 (7.4 to 13.9)</td>
<td>11.8 (8.6 to 14.9)</td>
<td>-1.1 (-5.6 to 3.4)</td>
<td></td>
</tr>
</tbody>
</table>

*Primary outcome will be analysed using both a test for equivalence and a test for superiority.
AKPS: Anterior Knee Pain Scale
KOOS: Knee injury and osteoarthritis outcome score.

### Table S3: Sensitivity analysis 3 (multiple imputation)

Primary and Key Secondary Outcomes at week 12 in the ITT population. Based on analysis of covariance adjusted for the baseline value with missing data handled by multiple imputation (100 multiply imputed datasets).

<table>
<thead>
<tr>
<th></th>
<th>QE (n=100) Mean (95%CI)</th>
<th>HE (n=100) Mean (95%CI)</th>
<th>Estimated treatment difference Mean (95%CI)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Primary outcome:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 12: Change in AKPS questionnaire – score (0 to 100); equivalence test*</td>
<td>7.4 (5.6 to 9.3)</td>
<td>6.9 (5.1 to 8.8)</td>
<td>0.5 (-2.1 to 3.1)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Week 12: Change in AKPS questionnaire – score (0 to 100); superiority test*</td>
<td></td>
<td></td>
<td></td>
<td>0.706</td>
</tr>
<tr>
<td><strong>Key Secondary outcomes:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 12: Change in KOOS Pain – score (0-100)</td>
<td>8.5 (5.9 to 11.1)</td>
<td>6.4 (3.8 to 9.1)</td>
<td>2.1 (-1.6 to 5.8)</td>
<td></td>
</tr>
<tr>
<td>Week 12: Change in KOOS Function – score (0 to 100)</td>
<td>5.3 (3.2 to 7.3)</td>
<td>4.4 (3.5 to 5.3)</td>
<td>0.9 (-2.1 to 3.8)</td>
<td></td>
</tr>
<tr>
<td>Week 12: Change in KOOS Quality of life – score (0 to 100)</td>
<td>9.9 (6.3 to 13.5)</td>
<td>11.0 (7.4 to 14.7)</td>
<td>-1.1 (-6.2 to 3.9)</td>
<td></td>
</tr>
</tbody>
</table>

*Primary outcome will be analysed using both a test for equivalence and a test for superiority.
AKPS: Anterior Knee Pain Scale
KOOS: Knee injury and osteoarthritis outcome score.
Exercise programs for participants in the trial

This document describes the details of the two exercise programs (Hip Exercise; HE, and Quadriceps Exercise; QE) that are compared in the COMPETE trial.

**General considerations**

Both exercise programs are initiated at an individual clinical visit. An experienced physiotherapist introduces the trial participant to the exercise program that the participant has been allocated to (HE or QE) and provides instructions to the individual exercises.

Both exercise programs run for 12 weeks, with exercise sessions 3 times per week. Each training session is scheduled to last approximately 30 minutes. The exercise programs are home based with monthly supervision visits at the department of Physical and Occupational Therapy at Bispebjerg-Frederiksberg Hospital, Copenhagen, Denmark.

Focus of the exercises is on the quality of the performance – not quantity. It is considered very important to do the exercises with correct technique in order to gain as much as possible from the exercises. This is emphasised to the participants during the instruction session.

During the instruction session, the participants should be able to do at least one set of each exercise with satisfying quality (judged by the physiotherapist) before the participant is sent home to do the exercise program on him/her own.

Both programs consist of 3 resistance training exercises. The overall principles of the programs are based on the guidelines for strengthening exercises from the American College of Sports Medicine (1). The aim of the exercises is to gain muscular strength and through numerous neuromuscular mechanisms to enable greater force generation. Muscular strength is defined as the ability of a muscle or muscle group to exert a maximal external force.

The individual exercises in both exercise programs include concentric and eccentric muscle actions. Participants are instructed to perform the exercises in a moderate velocity, i.e. 1-2 seconds in the concentric movement and 1-2 seconds in the eccentric movement.

Recommended load is 60-70% 1RM (repetition maximum (RM)), i.e., 8-12 repetitions. The recommended volume is 3 sets with recommended rest between sets of 1½ - 2 minutes (1).

The exercise descriptors are summarized in Table 1.

**Important note on RM estimation**

Since we use elastic bands, free weights, and body weight as exercise resistance, it is not possible to estimate the exact repetition maximum. However, we inform the participants to approximate muscle fatigue within 8-12 repetitions in each set. An increase in resistance is recommended when the participant is able to perform 2 repetitions more than the desired number (i.e. 14 or more) (1) with satisfying quality (progression principals are specified in the exercise description).

**Exercise equipment**

Elastic bands with different resistances are used for progression. In addition, it is recommendable to use a training mat or alternatively a large towel to lie on when necessary. For exercise QE-1 it is recommended to use a solid table or a high stool as a normal chair is typically too low for the legs to move freely.
Knee pain monitoring
The participants are instructed to consider their current knee pain on the day of exercise. A 0-10 numeric rating Scale (NRS, 0 equals no pain and 10 equals worst imaginable pain, figure 1) is used by the participant to assess their knee pain before, during and after each training session. If the participant experiences knee pain of an intensity of 6 or more before or during a session, the participant is instructed to decrease resistance and/or number of repetitions in that session. The pain ratings are recorded in the participants exercise diary at each session.

![Visual numeric rating scale for pain monitoring ranging from 0 (no pain) to 10 (worst imaginable pain) with safe, acceptable, and risk pain zones indicated.](image-url)

Both groups are instructed not to perform other activities that cause knee pain of 3 or more on the 0-10 NRS (figure above), except from when performing the exercises in which knee pain up to 5 is acceptable. If pain intensity exceeds 3 on the NRS, the participant is recommended to stop the activity. Participants are recommended to maintain daily activity level in the trial period to the extent that the pain is kept below this limit.

General instructions to participants in both groups
During activities of sports or daily life, participants are instructed to focus on good alignment. Good alignment is defined as keeping the anterior superior iliac spine (ASIS), the knee and the second toe in a straight line when moving, e.g. when ascending or descending stairs, bicycling, running, etc.

In the leaflet “Managing my patellofemoral pain” (Danish title: “Håndtering af mine forreste knæsmerter”), information regarding alignment and malalignment is explicated in an easily read form.
THE HIP EXERCISE PROGRAM (HE)

The exercises used in the HE-group program (exercises HE-1, HE-2, and HE-3) have been chosen due to their documented activation of the hip abductors, external rotators, and hip extensors (2-5), are widely used in clinical practice, and because they do not strain the knee or patellofemoral joints that are painful in PFP patients. The exercises are easy to conduct and are easily progressed.

Warm up
Participants are instructed to warm-up by performing 20 repetitions of exercise HE-1 (see below) without external load.

HE-1 – SIDELYING CLAM-SHELL
Purpose: To progressively strengthen the hip abductors and external rotators.

Exercise description: Lay on the side with hips flexed approximately 30 degrees and knees flexed approximately 90 degrees. The pelvis should be kept stable and in neutral position throughout the exercise. Lift the upper knee as high as possible without pelvis tilt and any compensatory movements. Lower the knee again until the starting position. Load can be applied by placing an elastic band between the knees.

Focus: Main focus is on stabilizing the pelvis in a neutral position without tilting backwards when performing the exercise. In addition to make sure, that exertion is felt primarily in the gluteal muscles and not in the tensor fascia latae muscle, hamstrings or any other potential accessory muscle.

Progression: Progression is made by applying elastic bands with more resistance and/or applying more bands.
HE-2 SIDELYING HIP ABDUCTION

**Purpose:** To progressively strengthen the hip abductors

**Exercise description:** Lay on the side with the upper leg in full knee and hip extension (neutral position). The lower leg is kept with a slight hip flexion and above 90 degrees knee flexion during the exercise. The pelvis should be kept stable and in neutral position throughout the exercise. Lift the upper leg upwards and slightly backwards as high as possible without pelvis tilt and any compensatory movements. Lower the leg again until the starting position. Load can be applied by placing an elastic band between the legs. Progression is made by applying elastic bands with more resistance and/or applying more bands.

**Focus:** Main focus is on stabilizing the pelvis in a neutral position without tilting backwards when performing the exercise. In addition to make sure, that exertion is felt primarily in the gluteus medius muscle and not in the tensor fascia latae muscle, hamstrings or any other potential accessory muscle.

**Progression:** After 4 weeks of training the exercise is progressed to standing as described in the following:

**Exercise description:** Stand on one leg with the pelvis and upper body in a neutral position and the knee on the stand-leg slightly flexed. The pelvis and upper body should be kept stable and in neutral position throughout the exercise. Lift the training-leg leg outwards and slightly backwards as far as possible without pelvis tilt and any compensatory movements. Return again to the starting position.

**Focus:** Main focus is on stabilizing the pelvis in a neutral position without rotating or tilting when performing the exercise. In addition to maintain good alignment between the feet, knees and anterior superior iliac spine in the weight bearing extremity (see patient information and guidelines).

**Further Progression:** Load can be applied by placing an elastic band between the legs. Progression is made by applying elastic bands with more resistance and/or applying more bands.
HE-3 PRONE/STANDING HIP EXTENSION

**Purpose:** To progressively strengthen the hip extensors

**Exercise description:** Lie on your stomach on a table top, positioned with your legs off the end of the table and hips flexed to approximately 90 degrees with the knees flexed and the feet placed on the floor. Extend one leg at a time, maintaining flexion of the knee. Do not allow the leg to abduct during hip extension. Return again to the starting position.

Emphasis is placed on extension at the hip, avoiding extension of the spine. The lower back should be kept in neutral position with a slight lordosis and the pelvis should be kept stable without tilting or rotating throughout the exercise.

Alternative exercise set-up: If it is not possible to find a suitable table to lie on, you can do the exercise standing in a bend over position equal to the above description. Instead of lying on a table top, you can support the upper body by holding on to a chair or table.

**Focus:** Main focus is on maintaining a natural posture with a slight lordosis in the lower back and to avoid compensatory movements in the spine or pelvis.

**Progression:** Load can be applied by placing an elastic band between the legs from under the standing foot to the knee of the moving limb. Progression is made by applying elastic bands with more resistance and/or applying more bands.
THE QUADRICEPS EXERCISE PROGRAM (QE)

The exercises used in the QE-group program (exercises QE-1, QE-2, and QE-3) are also widely used in clinical practice. The exercises have been shown effective in recruiting the quadriceps muscle and are effective in treating PFP. Since two of the exercises (QE-2 and QE-3) are multi-joint exercises, several muscles are recruited when performing the movement. In the weight bearing squat (QE-2) and lunge (QE-3), the quadriceps muscles are activated in concomitance with primarily the hamstrings and the gluteal muscles. Nevertheless we chose these exercises because they are widely used and thus fit well into the pragmatic nature of the COMPETE trial.

Warm up
Participants are instructed to warm-up by performing 20 repetitions of exercise QE-1 (see below) without external load.

QE-1 SITTING KNEE EXTENSION

**Purpose:** To progressively strengthen the knee extensors (open kinetic chain).

**Exercise description:** Sit on a table or similar with the knees bended and the lower extremity hanging freely. The upper body must be in an upright or slightly reclined position. Extend the knee from 90 degrees of knee flexion until full knee extension. Lower the leg again until start position. Keep the foot in a dorsiflexed position throughout the exercise. Load can be applied by placing an elastic band between the feet and fixing the untrained leg in knee flexion.

**Focus:** Main focus is on stabilizing the pelvis in a neutral position without retroverting when performing the exercise. In addition to make sure, that the exercise is performed in the desired range of motion, i.e. from 90 degrees of knee flexion until full knee extension.

**Progression** is made by applying elastic bands with more resistance and/or applying more bands.
QE-2 SQUAT

Purpose: To progressively strengthen the knee extensors, hamstring muscles and gluteal muscles involved in the squatting movement.

Exercise description: Stand with a shoulder width distance between the feet. Flex the knees while maintaining good posture in the upper body and good alignment in the lower extremities until 90 degrees of knee flexion. Straighten the knees again until the starting position. Load can be applied by adding weight in a backpack (e.g. sand, flour, bottles of water) or by holding dumbbells in the hands.

Focus: Main focus is on maintaining good alignment between the feet, knees and anterior superior iliac spine (see patient information and guidelines). In addition to make sure, that the lower back is kept stable in a slight lordosis throughout the movement.

Progression is made by adding weight. Regression is made by flexing the knees less than 90 degrees, e.g. 45 degrees or 70 degrees.
QE-3 FORWARD LUNGE

**Purpose:** To progressively strengthen primarily the knee extensors, hamstring muscles and gluteal muscles.

**Exercise description:** Stand with one foot in front of the other with the distance of a large step between the feet. The heel of the back foot is kept slightly raised throughout the exercise. Bend the knees so that the back knee touches or almost touches the floor and the front knee is in a 90 degrees flexion. Extend the knees again until the starting position.

**Focus:** Main focus is on maintaining good alignment between the front foot, knee and anterior superior iliac spine (see patient information and guidelines). The front knee is not allowed to exceed the vertical line from the first toe. In addition to make sure, that the lower back is kept stable in a slight lordosis and the upper body is kept in an upright position throughout the movement.

**Progression:** Load can be applied by adding weight in a backpack (e.g. sand, flour, bottles of water) or by holding dumbbells in the hands. Progression is made by adding weight. Regression is made by flexing the front knee less than 90 degrees, e.g. 45 degrees or 70 degrees.
### TABLE 1. EXERCISE DESCRIPTORS

<table>
<thead>
<tr>
<th></th>
<th>HIP EXERCISES</th>
<th>QUADRICEPS EXERCISES</th>
<th>QUADRICEPS EXERCISES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HE-1</td>
<td>HE-2</td>
<td>HE-3</td>
</tr>
<tr>
<td>1. Load magnitude</td>
<td>8-12 RM.</td>
<td>8-12 RM.</td>
<td>8-12 RM.</td>
</tr>
<tr>
<td>2. Number of repetitions</td>
<td>8-12 reps.</td>
<td>8-12 reps.</td>
<td>8-12 reps.</td>
</tr>
<tr>
<td>3. Number of sets</td>
<td>3 sets</td>
<td>3 sets</td>
<td>3 sets</td>
</tr>
<tr>
<td>4. Rest in between sets</td>
<td>1 min. 30 sec. – 2 min.</td>
<td>1 min. 30 sec. – 2 min.</td>
<td>1 min. 30 sec. – 2 min.</td>
</tr>
<tr>
<td>6. Duration of the experimental period</td>
<td>12 weeks</td>
<td>12 weeks</td>
<td>12 weeks</td>
</tr>
<tr>
<td>7. Fractional and temporal distribution of the contraction modes per repetition and duration of one repetition</td>
<td>1-2 s concentric, 1-2 s eccentric</td>
<td>1-2 s concentric, 1-2 s eccentric</td>
<td>1-2 s concentric, 1-2 s eccentric</td>
</tr>
<tr>
<td>8. Rest in-between repetitions</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>9. TUT</td>
<td>2-4 s/repetition</td>
<td>2-4 s/repetition</td>
<td>2-4 s/repetition</td>
</tr>
<tr>
<td>10. Volitional muscle failure</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>11. Range of motion</td>
<td>See exercise description</td>
<td>See exercise description</td>
<td>See exercise description</td>
</tr>
<tr>
<td>12. Recovery time in-between exercise sessions</td>
<td>48 h</td>
<td>48 h</td>
<td>48 h</td>
</tr>
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</table>
REFERENCES

Educational leaflet: Managing my Patellofemoral Pain

**VIGTIGE FAKTORER OG BEHANDLINGSMULIGHEDER**

(Se nærmere detaljer inden)

**VIGTIGE FAKTORER SOM MAN SELV HAR EN KONTROL OVER**
1. Frekvens af og niveau af fysisk aktivitet.
2. Frekvens af og niveau af fysisk aktivitet.
3. Efterfølgende træning.

**VIGTIGE REPLANSMULIGHEDER**
2. Topperring af knækædet for at redusere smerten på kort sigt.
3. Indlægsklarer med sugestraffe hvis der finder meget intakt på inden (fritag for hyperkontrafæksjon).

**HÅNDTERING AF MIKE FORRESTE KNAESMERTER**

Patellofemorale smerte, også kaldet patellofemoro smertes (smertes omkring eller bag knækæden) er meget hyppig og ses hos mænd og kvinder på både akuttevis og kroniskvis. Patellofemorale smertes resulterer i knæsmertes under almindelige daglige aktiviteter såsom almindeligt gå, løb, når man sidder, samt når man går på sko.

Eder er mange årsager til patellofemorale smertes, og derfor mange forskellige behandlingsmuligheder. Informationen i denne fælde kan hjælpe dig med den mest henstillede behandling for dine knæsmertes. Det anbefales at du tager kontakt til en sundhedsfaglig professionel for yderligere information om behandling af dine knæsmertes.

**HÅNDTERING AF MIKE FORRESTE KNAESMERTER**

*Håndtering af mine forreste knæsmerter – et beretning af mine praktiske erfaringer*.

**DE BEHANDLINGSPRINCIPIER**

1. Reduktion af og niveau af fysisk aktivitet.
2. Topperring af knækædet for at redusere smerten på kort sigt.
3. Indlægsklarer med sugestraffe hvis der finder meget intakt på inden (fritag for hyperkontrafæksjon).

**BEHANDLINGSMULIGHEDER (Gennemsnitligt er nøjagtig til god genoptræning)**

**TÆNING**

1. Reduktion af og niveau af fysisk aktivitet.
2. Topperring af knækædet for at redusere smerten på kort sigt.
3. Indlægsklarer med sugestraffe hvis der finder meget intakt på inden (fritag for hyperkontrafæksjon).

**ANDRE BEHANDLINGER**

1. Reduktion af og niveau af fysisk aktivitet.
2. Topperring af knækædet for at redusere smerten på kort sigt.
3. Indlægsklarer med sugestraffe hvis der finder meget intakt på inden (fritag for hyperkontrafæksjon).

**HÅNDELIGE KONTRAÆKSES**

1. Reduktion af og niveau af fysisk aktivitet.
2. Topperring af knækædet for at redusere smerten på kort sigt.
3. Indlægsklarer med sugestraffe hvis der finder meget intakt på inden (fritag for hyperkontrafæksjon).

**HÅNDELIGE KONTRAÆKSES**

1. Reduktion af og niveau af fysisk aktivitet.
2. Topperring af knækædet for at redusere smerten på kort sigt.
3. Indlægsklarer med sugestraffe hvis der finder meget intakt på inden (fritag for hyperkontrafæksjon).

**KANAALISHERINGEN AF MIKE BEHANDLINGER**

1. Reduktion af og niveau af fysisk aktivitet.
2. Topperring af knækædet for at redusere smerten på kort sigt.
3. Indlægsklarer med sugestraffe hvis der finder meget intakt på inden (fritag for hyperkontrafæksjon).

**KANAALISHERINGEN AF MIKE BEHANDLINGER**

1. Reduktion af og niveau af fysisk aktivitet.
2. Topperring af knækædet for at redusere smerten på kort sigt.
3. Indlægsklarer med sugestraffe hvis der finder meget intakt på inden (fritag for hyperkontrafæksjon).

**KANAALISHERINGEN AF MIKE BEHANDLINGER**

1. Reduktion af og niveau af fysisk aktivitet.
2. Topperring af knækædet for at redusere smerten på kort sigt.
3. Indlægsklarer med sugestraffe hvis der finder meget intakt på inden (fritag for hyperkontrafæksjon).

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