

backrackTM
Innovative technology in spinal care and pain relief
spinalbackrack.com

Operating Instructions

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IMPORTANT INFORMATION

Before using the backrack™ please read the following information carefully.

Contraindications

In general, the backrack™ can be used by anyone. However, the backrack should *not* be used if you have one of the following conditions:

- A vertebral fracture (that is not healed).
- Severe scoliosis (Cobb angle > 45°).
- A malignant, spinal tumor.
- A spinal infection (e.g. meningitis).

Note: in medical terms, these conditions are referred to as contraindications.

Cautionary advice

In addition to this, the following advice should be noted:

- You should *not* use the rack if you are pregnant (beyond 6 months).
- You should not use the backrack if it is either damaged or broken.
- The elderly or infirm may find it difficult to use. This is due to the fact that most of the exercises are performed on the floor.

Height restrictions

The following height restrictions should also be observed:

- The *small* backrack™ is suitable for anyone between 1.55m and 1.75m tall (5' 1" to 5' 9").
- The *large* backrack™ is suitable for anyone between 1.75m and 2.00m tall (5' 9" to 6' 6").

Professional advice

If you are in any doubt as to whether the backrack is appropriate for you, please consult your doctor.

Storage

The backrack™ should be stored and used in a cool, dry environment. The ambient temperature should not exceed 40°C.

Maintenance

There are four external screws in the backrack™. If necessary, these can be tightened to prevent distortion. The backrack™ can be cleaned using a damp cloth. Afterwards, remove any moisture using a dry towel.

1 The backrack™

1.1 Introduction

The backrack™ is a clinical device designed to treat the *causes*, and hence the symptoms, of chronic back (and neck) pain. It is based on sound medical science and will successfully treat most forms of back pain. The inventor (Mr. B.M. Luklinski) is an expert in spinal rehabilitation, with almost 40 years of clinical experience. He now practices orthopaedic medicine at his Back Pain Clinic in Harley Street, London.

The rack itself is constructed from high-quality wood. It consists of a number of lateral spindles, each of which carries two nodules. When viewed together, the nodules effectively lie on either side of a central channel.



Depending on your height, you will either need a large backrack™ (top), or a small one. Please refer to the Height Restrictions (page 1) for more details.

1.2 What does it do?

Patients are instructed to lie on the rack, in a central position, with their knees bent. The spine rests in a neutral position (as shown).



In this position, the spine is physically suspended in the channel (mentioned above). The nodules push up under the joints of the back, and this allows the spine to lengthen. In effect, the spine is decompressed, reversing the effects of gravity (as well as injury, bad posture, and old age). The backrack™ therefore treats the causes of back pain; *as a result*, the symptoms, such as stiffness and muscular pain, are also treated.

The backrack™ is based on the principles of **Orthopaedic Medicine**; as a result, the spine is decompressed in a safe and reliable manner. The spine is *not* subjected to any sudden movements. The backrack™ can be used at home and without supervision.

1.3 How do I use it?

To begin with, patients should lie on the rack as relaxed as possible in a basic central position, with knees bent (as shown, and mentioned earlier).

Achieving this position is actually very easy. For more details, please refer to our section on **Getting On** (pages 7-10)



Once in the Starting Position (shown above), patients are encouraged to perform a series of exercises. These have been carefully developed from long experience to mobilise the facet joints of the spine and to reduce as required, back, neck, and hip pain.

When you first lie on the backrack™, you may have a stiff spine and pain/back spasms, because your spine is not accustomed to the pressure. There are no side effects but your spine will react to the upward force of the nodules with your symptoms certainly improving over the space of about 5 days. You may feel sore the first few days.

In view of this predictable (and necessary) response, the spine needs to be decompressed in stages. To begin with, a low-moderate pressure will be sufficient to lengthen the spine (and provoke a reaction). However, as your spine adapts to the backrack™, you will need to increase the pressure, using more advanced techniques.

For this reason, we have designed a comprehensive range of movements, designed to increase the pressure in stages.

The **Basic Exercises** (pages 11-14) decompress the spine using low-moderate pressure. They are suitable for everyone (barring a few exceptions, or **Contraindications** - page 1).

The **Advanced Exercises** (pages 18-31) will decompress the spine using moderate-high pressure (two of them will also help to strengthen the deep, stabilising muscles that support the spine). The Advanced Exercises should *not* be attempted until you are comfortable with the basic manoeuvres.

Note: if you are in any doubt as to whether the backrack™ is appropriate for you, please consult your doctor.

1.4 How often should I use it?

The backrack™ can be used as frequently as your body will allow. After each session (possibly the day after) you should expect to feel sore.

Note: this reaction is *not* the same as back pain. It is simply a natural response from joints that are currently stiff and dysfunctional. It is also a necessary response (without it, you will not get better).

This reaction actually provides a very useful feedback mechanism. When you return to the backrack™ and repeat the exercises, you may find that your back feels uncomfortable and too sore. In this case you should rest. Use the backrack™ on the following day instead.

Alternatively, you could use the backrack™ every day, but perform different exercises on different days. For example, on day 1 you could focus your attention on the lower back using the **Single (or Double) Leg Raise**; however, on day 2 you could switch your attention to your neck using the **Backwards Tilt**.

You can use the backrack™ as frequently as you like (and for as long as you like) provided that you can tolerate the amount of soreness. To start with, however, we recommend that you use it every other day, and for relatively short periods of time (perhaps 5-10 minutes per session).

Note: after a while you should be able to regulate your own treatment. If you use the backrack™ on a frequent basis, you should find that the soreness disappears. When this happens, you should progress to a more advanced exercise.

2 Getting On

Getting on to the backrack™ is actually very easy. The recommended way is given below. There are other ways to do it, but please follow our instructions. They will help to minimise the strain on your back (this is very important if you have a particularly bad back).

2.1 Kneeling Down

Place the backrack™ on the floor. Kneel down at the bottom, left-hand corner of the rack (as shown).



Note: in this context, bottom left is defined looking down the backrack™, from top to bottom. Ideally, the floor should be carpeted: this will help to cushion your knees (it will also help when **Getting Off** the rack). Alternatively, place the backrack™ on an exercise mat.

2.2 Sitting



Put your left hand down on the floor, towards the top end of the rack. Put your right hand down, towards the bottom end. Next, lower yourself gently onto the end of the rack (as shown). Adjust your weight, so that you are sitting at the end of the rack, in a central position, with your knees bent. Your legs should be on either side of the centerline.

2.3 Sliding Back

Now, slide, or roll yourself backwards along the rack, until you are sitting in the central curve (as shown):



Note: the lateral spindles are designed to roll. This will help you in this maneuver.

2.4 Rolling down

Now, begin to roll down the rack towards the bottom. *At the same time*, lean back into the upper curve of the rack (as shown):



As you continue to roll down, allow your spine to move progressively into the upper curve. It should be supported at all times.

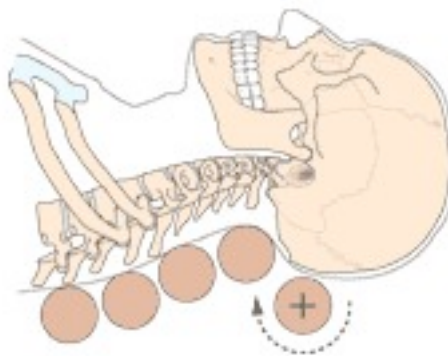
Note: keep your knees bent at all times. Do *not* straighten your legs (this will strain your lower back).

2.5 Starting position

At the end of this maneuver, you should be lying on the rack, with your knees bent, and your spine resting in the central channel (as shown). You should be lying in a central position, with the wooden nodules running down either side of your spine.



Note: the nodules on the last roller should *not* be in contact with *any* part of your body. The nodules on the penultimate roller (second down from the top) *should* be in contact with your upper neck, just below the back of the head. As a result of this, the last spindle should rotate freely (as shown).



When you are in the starting position, you can check this by placing your hands behind your neck, and trying to rotate the last spindle. If it will not rotate, you need to move down the rack. If you are too far down the rack, the nodules on the penultimate roller will push into your skull (you will know if this happens). To correct this, you need to slide back up the rack.

3 Basic Exercises

The basic exercises will decompress your spine using low-moderate pressure. They are suitable for everyone (barring a few exceptions, or **Contraindications** - page 1).

Note: the exercises appear in order of ascending difficulty (and/or pressure). We therefore recommend that you are comfortable with each maneuver, before trying the next one. If you are in any doubt as to whether the backrack™ is appropriate for you, please consult your doctor.

3.1 Starting position

The neutral, or starting, position is suitable for people with moderate-severe back pain. Achieving this position is actually very easy. For more details please visit our **Getting on** section (pages 7-10).



A small amount of pressure is applied to the spine, and you are not required to move (the spine rests in a neutral position).

Note: if you have a bad neck, you can rotate your head to one side. This will shift the weight of your head over the corresponding side of your neck, increasing the amount of pressure in this region. If you need to reduce the amount of pressure, place a folded towel behind your neck.

3.2 Single Leg Raise

When you feel comfortable with the starting position, bring up one of your legs towards your chest (as shown).



This will shift the weight of your leg over the corresponding side of your lower spine, increasing the amount of pressure in this region. It will also help to stretch your hamstring muscle: this runs down the back of your upper leg.

After holding this position for a short period of time (perhaps 30 seconds), return your leg to the floor and raise the other leg.

Note: please make sure that you grasp your leg behind the knee (as shown). This will prevent the knee from being squashed. You can alter the exact point of pressure by varying the angle of your leg, bringing it closer to your chest, as and when you feel comfortable. If you have had a bad (lower) back for a long period of time, your hamstring muscles will be tight. You should therefore approach this exercise carefully. Bring your leg towards your chest in small increments.

3.3 Double Leg Raise

The double leg raise will increase the pressure on your lower spine. It shifts the weight of both legs over your lower back. Again, please make sure that you grasp each leg behind the knee.



After holding this position for a short period of time (perhaps 30 seconds), bring your legs further towards your chest (as shown).



Again, hold for 30 seconds, and repeat until your legs are as high as possible.

Note: if you have had a bad (lower) back for a long period of time, your hamstring muscles will be tight. You should therefore approach this exercise carefully. Bring your leg towards your chest in small increments.

3.4 Backwards Tilt

The backward tilt will increase the pressure on your neck. The diagram below is largely self-explanatory.



Note: you can alter the exact point of pressure by varying the angle of your legs. If you have had a bad (lower) back for a long period of time, you may find that you have weak knees. You should therefore approach this exercise carefully. Do not hold the position for too long. It is better to hold the position for a short period of time, and to do a larger number of reps (or repetitions). Finally, remember to keep breathing throughout the exercise.

4 Getting Off

Getting off the backrack™ is actually very easy. The recommended way is given below. There are other ways to do it, but please follow our instructions. They will help to minimize the strain on your back (this is very important if you have a particularly bad back).

4.1 Starting position

Return to the starting position (as shown). Both feet should rest on the floor, no more than shoulders' width apart.

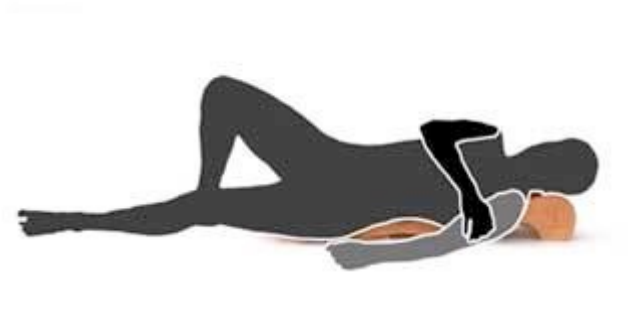


Next, extend your left leg, with the heel of your foot resting on the floor (as shown). Keep your right leg bent.



4.2 Pivot

Using your right leg, push into the floor. *At the same time*, rotate your head and upper body towards the left hand side of the rack.



Complete this part of the maneuver by rolling onto the floor. Your legs should now be together and bent (as shown).



4.3 Lift

Using your right hand, lift yourself up so that you are resting on your *left forearm* (as shown). At this stage, your legs should still be together.



Next, push yourself up with your forearm until you are resting on your left hand (as shown). The sole of your right foot should rest on the floor.



Finally, put your right hand on the floor in front of you. Push off with your right foot and both hands. As you do this, swing your left leg under your body so that you rest on your left knee (and the sole of your right foot). Push up with your right leg until you are standing.

5 Advanced Exercises

The Advanced Exercises will decompress your spine using moderate-high pressure. They are suitable for everyone (barring a few exceptions, see **Contraindications** - page 1).

Note: you should not attempt the advanced movements until you have partially mobilised (or decompressed) your lower spine. In order to do this, you will need to perform the **Basic Exercises** for *at least* three months. During this time, the backrack™ should be used on a regular basis (3-4 times a week), for at least 20 minutes per session.

The advanced movements are as follows:

1. The **Double Leg Raise With Tilt** is a variant of the basic, double leg raise (please refer to the Basic Exercises for more detail). This exercise will apply maximum pressure to your lumbar spine.
2. The **Stomach Crunch** will strengthen the deep, abdominal muscles that stabilise the spine. Moderate pressure is applied to the lower back.
3. The **Lean Back (with Tilt)** applies maximum pressure to the mid-upper back, or thoracic spine. It requires a certain amount of strength and flexibility from your abdominal muscles; for this reason, we recommend that you feel comfortable with the Stomach Crunch before you attempt this maneuver.
4. Finally, the **Reverse Leg Raise** strengthens the lower back muscles. It is actually performed without the use of the backrack™, but it will help to strengthen your spine and prevent further injury. It will also help to balance the strength of your abdominal muscles (developed using the Stomach Crunch).

Note: all movements for the back should be carried out while lying down.

5.1 Double Leg Raise with Tilt

This exercise is a variant of the basic **Double Leg Raise** (please refer to the Basic Exercises for more detail).

Begin by lying on the rack in the neutral position (as shown). For more details on how to get to this position, please visit our section on **Getting On** (pages 7-10).



Next, bring up both legs towards your chest (as shown). This will shift the weight of both legs over your lower back.



Finally, tip yourself over to one side; this will shift your weight onto one side of your lumbar spine. The increase in pressure will be substantial. After holding this position for a short period of time (perhaps 30 seconds), bring your legs further towards your chest (as shown).

Note: you should remain tilted.



Again, hold for 30 seconds, and repeat until your legs are as high as possible. Next, return your legs to the starting position (*second* picture) and lean over to the other side of your spine. Repeat the instructions given above.

Note: please make sure that you grasp each leg behind the knee.

5.2 Stomach Crunch

This exercise will strengthen the deep, abdominal muscles that help to stabilise the spine. Moderate pressure is also applied to the lower back.

Note: if you are in any doubt as to whether this exercise is appropriate for you, please consult your doctor.

The whole movement can be broken down into a series of distinct phases:

Preparation

Lift

Return

Preparation

You should warm up before attempting this exercise. Decompress your spine by using the backrack™ and then go for a brief walk (10 minutes).

Begin by lying on the rack in the neutral position (as shown; for more details on how **Getting On** the backrack™ please visit the relevant section).

After positioning yourself correctly:



Place your hands behind your head.

Locate and isolate your lower abdominal muscles; draw them up, and in, towards your spine. This will support your back, prior to lifting. Do not tense your neck muscles, or over-arch your lower back. These are common mistakes.

Before you lift, take a deep, slow breath, fill your lungs as much as possible (within reason), breathing in through your upper *and* lower chest.

Lift (Stomach Crunch)

Please refer to the diagram below.



Lift your upper torso (upper back, shoulders and neck) off the rack.

Use your hands to support the weight of your head. As you can see from the diagram, you do not need to lift very far.

Do not use your arms to lift: this will stop you from targeting your abdominal muscles. Do *not* tense your neck (supporting your head will help).

When you lift, focus your eyes on the ceiling: this will help to keep your neck (and back) as straight as possible. You should try to avoid bringing your head towards your chest: this will round your neck and upper back too much (it will also encourage you to lift using your arms).

As you lift, keep your lower abdominals tensed (up and in), and breathe out slowly. Exhale, until you come to the end of your breath: this will help you to keep the tension in your abdominal muscles in a safe and reliable manner.

Note: some people hold the tension by *not* breathing: this is very bad for you.

Return

As you lower your torso, breath in slowly (keeping your abdominals tensed). Again, support the weight of your head using your hands. Do *not* tense your neck.

Do not use your arms to lower yourself down, and try to avoid bringing your head towards your chest. You should aim to finish inhaling just as you return to the starting position.

Additional Advice

To start with you should:

Limit the number of repetitions (perhaps to as little as five or ten).

Perform the exercise every other day.

When you feel comfortable with this exercise, you should begin to strengthen your back (using the **Reverse Leg Raise** exercise).

Note: both muscle groups (abdominal and back) play an important role in stabilising the spine. However, these groups oppose each other: one sits in front of the spine, and the other behind it. You therefore need to balance your strength by doing *both* exercises (otherwise, you may experience problems).

If you have had back pain for a reasonable length of time (whether the pain is intermittent, or constant) you will probably have weak, and tight, abdominal muscles. You therefore need to decompress your spine *before* you attempt to strengthen your back. And you need to build up your strength and stamina gradually (as with any other exercise).

If you feel that you have strained your muscles (at any stage) you should stop. This probably means that your lower spine is too stiff, and your muscles are too tight. Continue to use the backrack™ until you feel ready to try this exercise again.

5.3 Lean Back (with Tilt)

The Lean Back (with tilt) applies maximum pressure to the mid-upper back, or thoracic spine. It requires a certain amount of strength and flexibility from your abdominal muscles; for this reason, we recommend that you feel comfortable with the **Stomach Crunch** before you attempt this maneuver.

Note: if you are in any doubt as to whether this exercise is appropriate for you, please consult your doctor.

The exercise is best done en-route to the starting position, when getting on to the backrack™ (please refer to the maneuver entitled **Rolling Down** in the **Getting On** section - page 9).

When you begin to roll down the rack stop halfway down (as shown). Continue to breathe and do not strain your neck.



Next, put your hands behind your head and lean back into the upper curve of the rack. This will increase the pressure on your thoracic spine.



After holding this position for a short period of time (perhaps 30 seconds), roll down the rack a *short distance*. This will allow you to target the next vertebra along your back. Again, hold for 30 seconds and repeat until the pressure on your spine begins to fade (or until you feel your abdominal muscles tiring).

Note: you can increase the pressure still further by tilting over to one side. This will shift your weight onto one side of your upper spine. Please continue to breathe throughout the exercise. Do not tense your neck or over-arch your lower back. These are common mistakes.

5.4 Reverse Leg Raise

This exercise strengthens the lower back muscles. It requires a certain amount of strength and flexibility from your abdominal muscles; for this reason, we recommend that you feel comfortable with the **Stomach Crunch** before you attempt this maneuver.

Note: you should not attempt this exercise until you have mobilised (or decompressed) your lower spine. You will need to use the backrack™ in order to do this. When your back is sufficiently decompressed, you should have little or no back pain, and you should be reasonably flexible.

Do *not* attempt the exercise until you have used the backrack™ on a regular basis for at least three months.

Note: if you are in any doubt as to whether this exercise is appropriate for you, please consult your doctor.

The whole movement can be broken down into a series of distinct phases:

Preparation

Lift

Return

Preparation

You should warm up before attempting this exercise. Decompress your spine by using the backrack™ and then go for a brief walk (10 minutes).

Sit on the edge of your bed. Lie down, bringing your knees up towards your chest at the same time: this will prevent strain on your lower back.

Roll over, and straighten out your legs so that they hang off the edge of the bed (as shown). If possible, your toes should touch the floor.



After positioning yourself correctly:

Place your arms on the bed in front of you, so that your hands touch just in front of your head.

Locate and isolate your lower abdominal muscles; draw them up, and in, towards your spine. This will support your back, prior to lifting. Do not tense your neck muscles, or over-arch your lower back. These are common mistakes.

Before you lift, take a deep, slow breath; fill your lungs as much as possible (within reason), breathing in through your upper *and* lower chest.

Lift

The Reverse Leg Raise can be made as easy (or as difficult) as you wish. This flexibility is useful, as you can vary the exercise according to the strength of your back.

Note: the variants are listed below, progressing from the easiest form of the exercise through to the most difficult.

1. Single Leg Raise (Bent)
2. Double Leg Raise (Bent)
3. Single Leg Raise (Straight)
4. Double Leg Raise (Straight)

Please make sure that you are comfortable with each maneuver, before trying the next one. Each lift should be followed by a return to the starting position (shown previously).

Return

After each lift, return your leg (or legs) to the floor, breathe in slowly keeping your abdominals tensed. Do not tense your neck. You should aim to finish inhaling just as you return to the starting position.

Note: some people hold the tension by *not* breathing: this is very bad for you.

Lift 1: Single Leg Raise (Bent)

Please refer to the diagram below:



Lift one of your legs, so that your toes leave the floor.

If possible, try to lift your leg to the same height as the bed. Bending your leg (as shown) will help to lower the strain on your back. Do not tense your neck.

As you lift, keep your lower abdominals tensed (up and in), and breathe out slowly. Exhale, until you come to the end of your breath: this will help you to keep the tension in your abdominal muscles in a safe and reliable manner.

Lift 2: Double Leg Raise (Bent)

This variant of the single lift is largely self-explanatory: lift both of your legs, whilst keeping them bent. Again, keep your lower abdominals tensed (up and in), and continue to breathe throughout the maneuver. Do not tense your neck.

Lift 3: Single Leg Raise (Straight)

Please refer to the diagram below:



Lift one of your legs, so that your toes leave the floor.

If possible, try to lift your leg to the same height as the bed (as shown). This time, however, keep your leg straight: this will increase the strain on your back. Do not tense your neck.

As you lift, keep your lower abdominals tensed (up and in), and breathe out slowly. Exhale, until you come to the end of your breath: this will help you to keep the tension in your abdominal muscles in a safe and reliable manner.

Lift 4: Double Leg Raise (Straight)

Please refer to the diagram below:



This is the hardest form of the exercise. Lift both legs off the floor (as shown), whilst keeping them straight.

Again, keep your lower abdominals tensed (up and in), and continue to breathe throughout the maneuver. Do not tense your neck.

Additional Advice

To start with you should:

Limit the number of repetitions (perhaps to as little as five).

Perform the exercise every other day.

As mentioned above, we recommend that you feel comfortable with the **Stomach Crunch** before you attempt this maneuver.

Note: both muscle groups (abdominal and back) play an important role in stabilising the spine. However, these groups oppose each other: one sits in front of the spine, and the other behind it. You therefore need to balance your strength by doing *both* exercises (otherwise, you may experience problems).

If you have had back pain for a reasonable length of time (whether the pain is intermittent, or constant) you will probably have weak (and tight) abdominal and back muscles. You therefore need to decompress your spine *before* you attempt to strengthen your back; and you need to build up your strength and stamina gradually (as with any other exercise).

If you feel that you have strained your muscles (at any stage) you should stop. This probably means that your lower spine is too stiff, and your muscles are too tight. Continue to use the backrack™ until you feel ready to try this exercise again.

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