The National Back Fitness Test consists of four simple tests that help you determine if your back is strong and healthy or weak and unfit. The results may reassure you that you have little to worry about, but more likely, given the way we live now, they will warn you that your back is vulnerable to injury and strain. The tests look so easy it's hard to believe so many people perform them so poorly. If you have suffered back injuries be prepared to wash out, unless you have undertaken a specific reconditioning program.

These tests are not the same ones a doctor gives you when he's examining your back for disease. The doctor, who is looking for range of movement, muscle strength, and reflex sensations, usually conducts tests while the back is painful. They are of little use in determining if it is strong or weak. The back fitness tests, on the other hand, are performed while the back is asymptomatic or pain-free and are far more valuable in measuring back function. They will demonstrate how much muscle weakness and joint stiffness are contributing to your back problem—or, if you don't have one yet, indicate that chances are you will.

In the past, people who have suffered from backache have not been given guidelines telling them just what shape their backs are in. All anyone with a back problem could do was hope that nothing would go wrong. But the back fitness tests will show you just what shape your back is in so you can determine the level of stress it can withstand.

Perhaps you've never had a backache or only the occasional twinge. Why should you try the tests? Have you thought lately about the ravages of our sedentary style of living? Remember that the first muscles to deteriorate when we are unfit are the stomach and back muscles. If these muscles
are weak, your back is probably not working as well as it should be. The back is a very delicate, balanced, and complex mechanism. It is only as strong as its weakest link.

The tests also show whether you have lost touch with your fitness level. Are you in as good shape as you used to be? You expect to test and tune up your car from time to time. How about your body? Try the tests and see if your back is working as well as it was a few years ago. What’s more the tests are standardized and offer a comparative tool of measurement—you can find out how your back compares with those of people around you.

Once again, the tests look easy but they are actually quite difficult when done properly and with attention to detail. In fact, only about one out of ten people can perform all four tests at grade 1, the excellent level. Remember also that these four tests are not exercises. If you don’t do well on them, read on and learn what back exercises you need and how to pace the reconditioning process. Note: these tests are appropriate only if your back is pain-free. They should not be tried if you are experiencing back pain.

The National Back Fitness Test

Test A — The Sit-up

The major purpose of Test A is to determine the flexibility of the back. Its minor purpose is to determine the strength of the stomach muscles.

Position

1. Lie on your back on the floor.
2. Bend your knees to a 45 degree angle, placing your feet flat on the floor.
3. Place your hands behind your neck.

Procedure

1. Slowly and smoothly try to sit up without raising your feet off the floor.
   If you are unable to sit up without your feet coming off the floor:
2. Place your arms across your chest and try to sit up again.
   If still unable to sit up:
3. Put your arms out straight and try once more to sit up.

Caution

1. Do not jerk yourself up or crank your head up with your arms. This can aggravate a neck problem. For a valid test the effort must be made slowly and smoothly.
2. Do not tuck your feet under something or have someone hold them down. This invalidates the test. It makes it easier to perform because it activates the leg muscles, which pull the back to a sitting position. Pulling yourself up in this way can also harm a weak back.

Figure 1 shows the four performance levels for Test A and the scores assigned to each.

FIGURE 1

<table>
<thead>
<tr>
<th>SCORE</th>
<th>PERFORMANCE</th>
<th>BACK FITNESS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Able to sit up with knees bent and hands behind the neck.</td>
<td>Excellent: adequate spinal flexibility and stomach strength.</td>
</tr>
</tbody>
</table>

- ![Image of Test A - The Sit-up](image)

- ![Image of Test A - The Sit-up](image)

- ![Image of Test A - The Sit-up](image)

- ![Image of Test A - The Sit-up](image)
### Test B — Double Straight Leg Raise

Test B determines the strength of the abdominal or stomach muscles.

**Position**

1. Lie on your back on the floor with your legs straight out in front of you.
2. Place your hands between the hollow of your back and the floor.

**Procedure**

1. Eliminate the hollow between your back and the floor by tightening your stomach muscles and forcing your back tightly against your hands on the floor. There should be no space. Keep your back held tightly against the floor.
2. Firmly hold this position and simultaneously raise both feet ten inches off the floor.
3. Hold the feet up for ten counts keeping the back tightly pressed against the floor.

**Caution**

If your lower back begins to curve after raising your legs or if back pain is felt, do not continue. Back strain may result from lifting the legs when the back is not held in the flat balanced pelvic position. Remember that this is a test and not an exercise. Once you have determined your score, stop the testing. This test can be harmful if it is performed continuously while the back is weak.

Figure 2 shows the four performance levels for Test B and the scores assigned to each.

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**Interpretation**

Many people are distressed when they fail such a simple test. This is particularly true of athletic types who appear quite muscular. What they have forgotten is that flexibility or suppleness of the back is just as important for fitness as strong stomach muscles. People who do quite poorly on Test A often include:

- Older people whose backs have naturally stiffened.
- Muscular individuals who have not maintained suppleness and flexibility. They often feel that they fail Test A because their upper body weight causes their feet to lift up off the ground. However, individuals with good flexibility have an ability to change their centre of gravity, allowing them to sit up despite upper body bulk.
- Individuals who have suffered back problems that have left their backs stiff.

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3 Able to sit up with knees bent and arms held out straight.

Fair: need to improve spinal flexibility and stomach strength.

4 Unable to sit up with the knees bent.

Poor: need a great deal of improvement in both strength and flexibility.

- Individuals with pot bellies, indicating poor abdominal muscle tone and strength.
- In general, women perform this test at a higher level than men because they have better flexibility.
FIGURE 2

<table>
<thead>
<tr>
<th>SCORE</th>
<th>PERFORMANCE</th>
<th>BACK FITNESS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Able to keep the back flat while raising the legs for ten seconds.</td>
<td>Excellent: can demonstrate balanced pelvic position and hold it under extreme stress.</td>
</tr>
<tr>
<td>2</td>
<td>Able to raise the legs for several seconds, but the back curves part way through the test.</td>
<td>Good: can demonstrate balanced pelvic position, but need more stomach muscle strength and training to hold good posture under extreme stress.</td>
</tr>
<tr>
<td>3</td>
<td>Able to lift the legs, but the back curves as soon as the legs are raised.</td>
<td>Fair: need training in balanced pelvic position and increased stomach muscle strength.</td>
</tr>
<tr>
<td>4</td>
<td>Unable to lift both legs.</td>
<td>Poor: need extensive training in balanced pelvic position and increased stomach muscle strength.</td>
</tr>
</tbody>
</table>

Pitfalls

Curling the head off the floor makes the test easier. Your body, including your head, should be held straight out to make the test valid. Lifting the legs too high also makes the test easier and invalidates it. It is most important to keep the hollow of the back flat against the floor because this determines the grade. Most people tend to concentrate, instead, on the effort of raising the legs.

Interpretation

Everyone should aim for Grade 1 on this test. Age is no barrier to good performance provided the stomach muscles are strong enough. This test shows whether the stomach muscles can hold the balanced pelvic position under stressful conditions, such as when you are playing sports or lifting heavy objects. It also shows whether you have the ability to flatten the back and eliminate the hollow in the lower back when your legs are held straight out. If you can't eliminate the hollow, bend your knees and try again. If you can get rid of the hollow when your knees are bent, it indicates that you have short hip flexors and you will do poorly on Test D.

Test C – Lateral Trunk Lift

Test C determines the strength of the lateral muscles of the trunk and legs.

Position

1. You will need someone to assist you in this test. Lie on your right side with your legs straight out and look straight ahead.
2. Fold your arms across your chest.
3. Have your assistant firmly hold your feet down by the ankles so that they do not rise off the floor during the test.

Procedure

1. Slowly and smoothly raise your shoulders and upper body off the floor.
2. Raise your shoulders up as far as possible and hold for ten counts.
3. Return to the starting position.
4. Repeat, testing the other side of your body.
Caution

If there is pain or discomfort stop the test.

Figure 3 shows the four performance levels for Test C and the scores assigned to each.

FIGURE 3

<table>
<thead>
<tr>
<th>SCORE</th>
<th>PERFORMANCE</th>
<th>BACK FITNESS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Able to raise the upper body completely and hold for ten counts.</td>
<td>Excellent: adequate lateral trunk muscles.</td>
</tr>
<tr>
<td>2</td>
<td>Able to raise the upper body up with difficulty and cannot hold for ten counts.</td>
<td>Good: need to improve lateral trunk muscles.</td>
</tr>
<tr>
<td>3</td>
<td>Able to raise the upper body a few inches and unable to hold.</td>
<td>Fair: need improvement in lateral trunk muscles.</td>
</tr>
<tr>
<td>4</td>
<td>Unable to raise the body off the floor.</td>
<td>Poor: need much improvement in lateral trunk muscles.</td>
</tr>
</tbody>
</table>

Pitfalls

Do not jerk or jump the body up; this invalidates the test. So does pushing up from the elbow. Your body must be perfectly straight while lying on your side. Many people substitute other muscle groups by allowing the body to drift forward or backward while they are lifting the upper body.

Interpretation

This test determines the strength of the lateral trunk and leg muscles, which are critical for upright posture. When you are lying on your right side, you are testing the muscles in your left side and vice versa. People who experience fatigue or discomfort in the lower back after jogging, long walks, or forward bending (while sweeping or raking, for example), usually do poorly on this test. It is important to compare the performance on the right and left sides. A poor performance on just one side of the body usually correlates with past injury to the side being tested.

Test D — The Hip Flexors

This test determines the length of the hip flexors (the psoas muscles), which prevent you from falling forward while standing.

Position

1. Wearing loose clothing, lie on the floor with your legs straight out in front of you.

Procedure

1. Bend your right leg, bringing it toward the chest.
2. Grasp the knee and complete the movement by bringing your leg tightly against the chest.
3. Hold your knee to your chest and determine the position of the other leg. Is the entire leg lying flat against the floor? Is the leg partially or completely raised off the floor?
4. Place both legs straight out on the floor and repeat the test by bringing the left leg up against the chest. Now determine the position of the right leg.

Figure 4 shows the four performance levels for Test D and the scores assigned to each.
FIGURE 4

<table>
<thead>
<tr>
<th>SCORE</th>
<th>PERFORMANCE</th>
<th>BACK FITNESS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Able to bring your knee completely to chest and keep the other leg flat on the floor.</td>
<td>Excellent: hip flexors are the proper length.</td>
</tr>
<tr>
<td>2</td>
<td>Able to bring your knee to your chest but the other leg lifts slightly off the floor.</td>
<td>Good: need to slightly stretch hip flexors.</td>
</tr>
<tr>
<td>3</td>
<td>Leg lifts completely off the floor when your knee is pulled to your chest.</td>
<td>Fair: need much improvement in hip flexors length.</td>
</tr>
<tr>
<td>4</td>
<td>Leg flies up into the air when your knee is held against your chest.</td>
<td>Poor: inadequate length of hip flexors — they need a great deal of stretching.</td>
</tr>
</tbody>
</table>

Pitfalls
The head must remain on the floor and the knee must be held snugly to the chest. The critical upward movement of the leg lying on the floor occurs during the last part of the test.

Interpretation
We know that shortness of muscles means weakness. Short hip flexors indicate a vulnerability to back injury because these are the critical anti-gravity muscles used for upright posture, lifting, and bending. Bilateral shortening, or shortening on both sides, usually occurs in athletic individuals. It often causes the "athletic bum", the increased lower back hollow of many athletes and dancers. Normally this condition does not cause backache in athletes, but if the abdominal muscles become weak later in life or a pot belly forms, there will be a tendency to back problems. Unilateral or one-sided shortening often correlates with a serious injury to that side and is associated with a pain down that leg. It is associated as well with a lateral muscle weakness on that side.

Total Back Fitness Score

Use the scoring chart below to calculate total back fitness score. Circle your grade for each test.

<table>
<thead>
<tr>
<th>Test</th>
<th>Excellent</th>
<th>Good</th>
<th>Fair</th>
<th>Poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test A</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Sit-up</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Test B</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Leg Raise</td>
<td>R</td>
<td>1/2</td>
<td>1</td>
<td>1-1/2</td>
</tr>
<tr>
<td>Test C</td>
<td>R</td>
<td>1/2</td>
<td>1</td>
<td>1-1/2</td>
</tr>
<tr>
<td>Lateral Trunk Lift</td>
<td>L</td>
<td>1/2</td>
<td>1</td>
<td>1-1/2</td>
</tr>
<tr>
<td>Test D</td>
<td>L</td>
<td>1/2</td>
<td>1</td>
<td>1-1/2</td>
</tr>
<tr>
<td>Hip Flexors</td>
<td>R</td>
<td>1/2</td>
<td>1</td>
<td>1-1/2</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NOTE: If you are over 45, subtract 2 to reach your total score.
A score of 4 or 5 means your back is in excellent shape.
A score of 6 to 9 means your back is in average shape.
A score of 10 to 13 means your back is in fair shape.
A score of 14 to 16 means your back is in poor shape.