the risk of fracture lies between 10%
In those individuals at moderate risk,
(10-20%)
test results.
medication regardless of their BMD
do require prescription osteoporosis

High Fracture Risk (> 20%)
In those individuals at high risk,
the risk of a fracture over the next 10 years is less than 10%. In other
words, without any osteoporosis
medications, this group of patients does not
need treatment with prescription osteoporosis

Moderate Fracture Risk (10-20%)
In those individuals at moderate risk,
the risk of fracture lies between 10
and 20% over the next 10 years. In
this situation, further assessment
is needed to determine whether
prescription treatment will be
necessary. This is done by taking
into consideration some additional
factors to see if that individual will
be bumped up to the high risk level. These additional factors include:
- An X-ray of the spine to rule
out an asymptomatic (painless)
spine fracture
- A spine BMD measurement
that is very much lower than the
hip BMD measurement
- An unusually rapid loss of BMD
over time
- Frequent falls or poor balance
- Other factors as determined by
a physician

In those individuals who have a
BMD T-score measurement of -2.5
or below at the hip or at the spine,
the fracture risk is automatically
considered to be moderate. A BMD of
-2.5 or below should prompt an
assessment of the above additional factors.

MANAGING BONE health
The goal of Osteoporosis Canada is to
maintain healthy bones and to help
individuals prevent fragility fractures. By successfully identifying individuals
at high fracture risk and treating them with effective medications,
we can succeed in making this goal
a reality. The CAROC and FRAX tools
provide us with accurate estimates of
an individual’s absolute 10-year risk
of fracture. Talk to your physician
or nurse practitioner to see if you
need a comprehensive fracture
risk assessment to keep your bones
healthy, strong and fracture-free.

INTERPRETING THE
CAROC/FRAX RESULTS
Low Fracture Risk (< 10%)
In those individuals at low risk,
the risk of a fracture over the next
10 years is less than 10%. In other
words, without any osteoporosis
medications, there is at least a 90%
chance of surviving the next 10 years
without suffering a single broken
bone. This group of patients does not
need treatment with prescription osteoporosis
medications.

However, osteoporosis treatments
can significantly decrease a person’s
risk of experiencing a fracture. It is
therefore critical that we determine
a person’s fracture risk, because
treatment of high risk patients can
prevent such devastating fractures
before they occur.

The revolutionary concept of fracture
risk
Rather than relying solely on the
results of a bone mineral density
(BMD) test to make treatment
decisions for osteoporosis,
Osteoporosis Canada recommends
combining the results of BMD testing
with some very important clinical
risk factors. This leads to a much
better and more accurate method
of predicting a person’s risk of
fracture. As a result, the treatment
of osteoporosis has now shifted from
just treating BMD test results to
treating people with a high fracture
risk.

If we use the analogy to cholesterol
testing, the risk of a heart attack is
not determined based on cholesterol
level alone. Other important clinical
risk factors, such as the presence of
diabetes, smoking and family history
of heart disease, are all taken into
consideration when a physician
determines a person’s overall risk
of heart disease. One can have a
normal cholesterol level and yet have
a high risk of heart disease if other
risk factors are present.

Similarly, a comprehensive fracture
risk assessment is not based on BMD
test results alone. Some persons who
have a low BMD test result may not
be at high risk of fracture, despite
the low BMD. On the other hand,
there are those who have a fairly
good BMD test result, but because of
other important clinical risk factors,
their overall fracture risk is high.

A comprehensive fracture risk
assessment will lead to a much more
accurate determination of a person’s
need for prescription osteoporosis
medication. BMD testing is just one
element of a comprehensive fracture
risk assessment and does not solely
determine a person’s risk of fracture.
WHO IS AT HIGH FRACTURE RISK?

Some people are at high fracture risk. This is the case for persons over age 50 with one or more of the following criteria:

- have had a spine (vertebral) fracture
- have had a hip fracture
- have had two or more fragility fractures (excluding fractures of the skull, hands, feet and ankles)
- have had one or more fragility fracture AND are also currently taking glucocorticoid drugs (e.g. prednisone)
- are at high fracture risk based on a comprehensive fracture risk assessment utilizing tools such as CAROC or FRAX, which are explained below.

Such individuals should take treatment for osteoporosis regardless of their BMD test results. However, they should still have a BMD test in order to monitor their response to treatment (to see if their treatment is working well).

Canada has two different tools, both of which provide very accurate estimates of fracture risk. They divide patients into 10-year LOW, MODERATE and HIGH fracture risk categories. Having two tools allows flexibility for Canadian doctors to use the tool that works best in their own work environment.

Technically speaking, CAROC and FRAX give a fracture risk estimate for persons who are not taking a prescription osteoporosis medication. For those on prescription medication, the CAROC and FRAX fracture risk estimates may have to be further adjusted by their healthcare provider.

CAROC and FRAX use the hip BMD results because research has shown that the hip BMD is by far a much better predictor of future fracture risk than the spine BMD.

Although CAROC is less comprehensive than FRAX, for the majority of people, the results are the same regardless of which of these tools is used. Therefore the choice of FRAX or CAROC by your doctor will be a matter of personal preference and convenience.

THE SPECIAL CASE OF SPINE (VERTEBRAL) FRACTURES

Many spine fractures are asymptomatic (i.e. painless) and many people are not even aware that they have had one. One important clue that a spine fracture may be present is the loss of height.

Everyone loses a bit of height with age. So, how much is too much? When height is measured on an on-going basis by a healthcare professional, a loss of 2 cm (3/4 inch) or more is significant and could be a warning sign that a spine fracture is present.

For those who have not had their height followed by a healthcare professional, they can compare their current height measurement to their recollection of their height when they were a young adult. If they have lost 6 cm or more (2½ inches), this could be a warning sign that a spine fracture is present.

If you have lost height according to one of the definitions above, a regular X-ray of your spine will help determine whether or not your height loss is due to an asymptomatic spine fracture. If a spine fracture is found on X-rays, you are automatically at high fracture risk and you need osteoporosis treatment regardless of your BMD test results.

WHO NEEDS A BMD TEST?

When used in combination with important clinical risk factors, a Bone Mineral Density (BMD) test can help determine your fracture risk and assist your physician in making decisions about your treatment. A BMD test is safe, painless and accurately measures the density of bones.

WHO SHOULD HAVE A BMD TEST?

- All women and men 65 years or older
- All women and men between the ages of 50 and 64 with any of the following risk factors for fracture:
  - A previous fragility fracture that occurred after the age of 40
  - Current smoker
  - 3 or more alcoholic drinks per day on average
  - A parent who had a hip fracture
  - Rheumatoid arthritis
  - Current use of certain medications (e.g. steroids or prednisone, or some medications used for breast or prostate cancer)
  - A low body weight (less than 132 lbs or 60 kg)
  - A weight loss of more than 10% since the age of 25
  - Other medical conditions that can contribute to osteoporosis such as an early menopause (before age 45), low testosterone levels in a man, celiac disease, gastric bypass surgery, or chronic liver disease. Concerns about secondary causes should be discussed with your doctor.

BMD testing is not usually recommended in younger men or women (under age 50) unless there is a medical condition predisposing them to osteoporosis or when there are unexplained fragility fractures.

If you qualify for a BMD test, then you also qualify for a comprehensive fracture risk assessment using the CAROC or FRAX calculation tools.