

Simple tools predict whether people will suffer from osteoporotic fractures

Accurate, non-invasive clinical tools can help doctors to quickly and easily make informed treatment decisions for their osteoporosis patients.

INTRODUCTION

Most people lose bone density as a normal part of ageing. Osteoporosis is a condition where a person's bone density is reduced, making their bones fragile and more likely to fracture (break). Hip, wrist and spine (back) fractures are the most common types of fracture in people with osteoporosis.

There are several tools available to help doctors to work out whether people are at risk of developing osteoporotic bone fractures. These evaluate a person's risk factors without the need for laboratory tests. Risk factors may include age, weight, family history, caffeine and alcohol intake and whether they smoke or not, as well as what other health conditions they have and what medicines they may be taking.

WHAT DID THE AUTHORS HOPE TO FIND?

The authors hoped to find out how accurate the different tools to predict osteoporotic fractures are, and which are the easiest to use. They also wanted to know whether including the results of a bone mineral density examination could improve the accuracy.

WHO WAS STUDIED?

The authors looked at studies that had already been published. These all reported on the use of tools to predict osteoporotic bone fractures.

HOW WAS THE STUDY CONDUCTED?

A systematic review aims to identify all the published evidence on a particular topic and draw it together into one summary. This paper also included a meta-analysis, which means that statistical analyses were performed on the results in order to be sure that the conclusions being drawn are meaningful.

The authors used major electronic databases and clinical trial registries to search for trials and studies that reported on the quality of tools for predicting osteoporotic fractures in individuals. The search gave a long list of 4806 articles. Of these 45 had the correct type of information and were included in the review, and 20 articles were combined into the meta-analysis.

WHAT WERE THE MAIN FINDINGS OF THE STUDY?

The authors found that the tools currently available can predict with a high level of accuracy whether people will go on to suffer from osteoporotic fractures. Most of these tools could be used in clinical practice as they are simple to access and use.

The three tools that have been studied the most are called FRAX, QFracture and GARVAN. These are questionnaires that take personal details, such as age, height, weight, smoking status, family history and information about living arrangements, other diseases a person might have or medicines they might be using. A computer program then uses the answers to calculate the risk of developing a fracture.

All three of these tools provide information that can help a doctor to decide whether a particular patient needs treatment to prevent them from developing fractures.

ARE THESE FINDINGS NEW?

Although this study used previously published data, it was the first time that such an analysis has been performed for currently available tools for predicting fracture risk in the general population. Additionally, the authors provided calculations for both men and women with or without bone mineral density examination results wherever possible, which had not been done before.

HOW RELIABLE ARE THE FINDINGS?

These types of studies can only provide a combined view of what is available and published in the literature, and there may be some limitations arising from the definitions used in different studies, or from different ways of collecting or recording data. For example, the definition of "major osteoporotic fracture" is not the same for all the tools, and so this limits the comparison that can be made. However, the authors are confident that their findings are reliable.

WHAT DO THE AUTHORS PLAN ON DOING WITH THIS INFORMATION?

Osteoporotic fractures are a big problem, especially in countries with an ageing population. They can cause a lot of suffering and cost the health system a lot of money. The authors hope that these findings will help to raise awareness and to prevent fractures in people with osteoporosis.

WHAT DOES THIS MEAN FOR ME?

These findings may mean that it is possible for your doctor to use a tool to estimate how likely it is that you will suffer from an osteoporotic fracture in the future. This will mean that your doctor can then decide what treatment is best to help prevent fractures, and you can take measures to look after your bone health. Small lifestyle changes may help to prevent fractures – for example, avoid smoking, taking regular exercise, and eating a healthy diet with plenty of calcium and vitamin D which are both good for your bones.

If you are concerned about your bone health, you can also freely access some of the tools online: <http://www.garvan.org.au/bone-fracture-risk> <http://www.qfracture.org/>

These tools will help you to assess your own risk of fracture and decide what steps to take. If you are concerned, you should speak to your doctor.

Disclaimer: This is a summary of a scientific article written by a medical professional (“the Original Article”). The Summary is written to assist non medically trained readers to understand general points of the Original Article. It is supplied “as is” without any warranty. You should note that the Original Article (and Summary) may not be fully relevant nor accurate as medical science is constantly changing and errors can occur. It is therefore very important that readers not rely on the content in the Summary and consult their medical professionals for all aspects of their health care and only rely on the Summary if directed to do so by their medical professional. Please view our full Website Terms and Conditions. <http://www.bmj.com/company/legal-information/>

Date prepared: November 2015

Summary based on research article published on: 6 August 2015.

From: Marques A, *et al.* The accuracy of osteoporotic fracture risk prediction tools: A systematic review and meta-analysis. *Ann Rheum Dis* 2015;74:1958–67. doi:10.1136/annrheumdis-2015-207907

Copyright © 2015 BMJ Publishing Group Ltd & European League Against Rheumatism. Medical professionals may print copies for their and their patients and students non commercial use. Other individuals may print a single copy for their personal, non commercial use. For other uses please contact our Rights and Licensing Team.