

# Osteoporosis

The National Osteoporosis Society is the only UK wide charity dedicated to improving the diagnosis, prevention and treatment of osteoporosis. This article reviews some of its current work.

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**S**trong research is essential for making progress in the prevention, diagnosis and treatment of osteoporosis. Since 1994, the National Osteoporosis Society has committed nearly £3 million to research; funding more than 100 projects, studentships and fellowships.

The Charity supports research into any aspect of osteoporosis. We fund a wide range of research projects, all of which helps to maximise benefits for people with osteoporosis. This has included improving the diagnosis, treatment and management of people at high risk of fragility fractures as well as gaining a better understanding of how the disease develops and how it can be prevented. We also fund research that aims to improve public education and understanding.

In addition to research funding, we also have an award for research that meets the charity's aims. The Kohn Prize is a £4,500 award (£4,000 award and £500 cash gift) funded by the Kohn Foundation and administered by the National Osteoporosis Society that recognises the work of a young investigator pursuing research into osteoporosis and/or fragility fractures. Applications for the award are opening this month at [www.nos.org.uk/kohnprize](http://www.nos.org.uk/kohnprize)

Our newest research grants will advance our knowledge in a diverse mix of subject areas including:

## Osteoporosis in men

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We have recently funded Miss Birgit Hanusch's research at the James Cook University Hospital to look at the pathogenesis of distal forearm fractures in men. This project is of high relevance to men with or at risk of osteoporosis as it aims to identify the causes of these low trauma distal forearm fractures. This particular group is currently underdiagnosed and undertreated. Although distal forearm fractures are commonly recognised as "signal" fractures for osteoporosis in

women, this link has not traditionally been made for men. Little is known about the disease mechanism of low trauma fractures in men and this study will help increase the knowledge about why men sustain these fractures. The findings of this study will provide scope for further studies into treatment and prevention. The data may also assist in improving secondary fracture prevention by identifying people at risk of further fractures.

## HIV

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There is increasing evidence that chronic HIV infection (or its treatment) causes serious metabolic consequences that may result in premature ageing and other serious comorbidities such as osteoporosis. We are funding Dr Karen Walker-Bone at Brighton and Sussex University Hospitals NHS Trust to investigate whether infection with HIV can lead to osteoporosis—particularly in men.

HIV infection is increasing among male populations, so that HIV may become an important factor associated with male osteoporosis in the next few decades.

This study seeks to evaluate the prevalence of low bone mass among HIV-infected men, to explore the factors which may cause this (eg. low body mass index, smoking, alcohol, the severity of the virus, effects of specific antiretroviral drugs and effects of changes in fat mass and lean mass associated with antiretroviral therapy). The study also hopes to quantify the risk of fracture associated with low bone mass in HIV-infected men.

## Vitamin K

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We are also funding research to assess the

additive effect of vitamin K supplementation and bisphosphonate treatment on the risk of fracture in post-menopausal osteoporosis. Dr Geeta Hampson from Guy's and St Thomas' NHS Trust are using a novel approach in the UK to provide key information that could form the basis for a larger study in collaboration with other national research teams looking at improvement in fracture rates with the use of different forms of vitamin K.

Vitamin K is thought to be important for bone health because it activates several proteins involved in bone formation. The research group think the benefits of giving vitamin K may be greatest in patients with a poor vitamin K status and osteoporosis. This study focuses on the possible additive beneficial effects of vitamin K supplementation on the skeleton in women receiving conventional treatment with bisphosphonates for osteoporosis.

## Improving osteoporosis identification

Our innovative award is currently with Mr Peter Smitham, Institute of Orthopaedics and Musculoskeletal Science, UCL. His research hopes to provide a Catch Before a Fall for those with fragile bones. We hope this study will improve the identification and subsequent treatment of osteoporotic patients in a general practice environment.

Finding and treating patients who have sustained a fracture in the past presents a challenge to health services. It can require primary care trusts to trawl through medical records to determine if a previous fracture has occurred. This is an ineffective use of time and relies on the accurate recording of information.

The aim of this study is to assess a touch screen computer based in a GP's waiting room to capture this data. This would hopefully reduce the cost and time required to find at risk patients.

Patients in the waiting room can also self-report any height loss and so help to identify missed vertebral fractures.

If this study proves successful it will allow a grant application for a larger study to be undertaken with possible integration into current software and placed into many GP practices.

## The grant process

The National Osteoporosis Society has a rigorous selection process for grant applications to ensure the quality and value of the projects we fund. We have a committee in place to oversee this process. The Research Grant Committee (RGC) is comprised of nine scientific and clinical experts and three non-health professional members.

The research application process starts in the early summer every year, where we ask for scientists to submit their research ideas to us. The initial research application establishes:

- That the application falls within the remit of the Charity's research strategy
- The likely feasibility and scientific merit of the proposed research
- That the research represents "value for money" for the Charity.

Those that meet these criteria submit a fuller application with more detailed information on the research study and the costs involved for consideration. This is then assessed by the RGC and peer reviewers. Using the comments from the peer reviewers, and their own expert knowledge, the RGC then have the very difficult decision of deciding which projects we are going to fund. The key principles guiding the Charity's research programme are scientific excellence and relevance to people with, or who are at risk of, fragility fractures and osteoporosis.

## Conference

These principles also guide the selection of abstracts for our Osteoporosis Conference 2010. The conference is open to all health professionals and scientists with an interest in osteoporosis. It will present an unrivalled opportunity for attendees to increase their knowledge, learn from internationally renowned experts about recent advances, interact and network with a large multidisciplinary audience, exchange ideas and experiences and discover how to tackle complex clinical challenges. The conference will be held in Liverpool from 28 November to 1 December 2010.

For more information visit [www.nos.org.uk/conference](http://www.nos.org.uk/conference)

For information on research visit [www.nos.org.uk/research](http://www.nos.org.uk/research)