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*Integrated Programme for Research into the Pathogenesis of Bone and Musculo-skeletal Disease*

## **MAJOR ABERDEEN TRAINING INVESTMENT IN TOMORROW'S EXPERTS IN BONE AND JOINT DISORDERS**

Specialists in bone and joint disorders at the University of Aberdeen have been awarded more than £500,000, creating an outstanding opportunity for five highly talented young students to receive advanced scientific training in rheumatic disease research.

The University of Aberdeen is one of just five UK centres to receive this prestigious award from the Oliver Bird rheumatism programme, which supports research into the prevention and treatment of rheumatism. The money will enable Professor David Reid and his colleagues in the department of medicine and therapeutics to implement a comprehensive four-year training programme that will give their students experience ranging from genetics and stem cells, through to bone mass and nutrition assessment in the university's new state-of-the-art laboratories.

"The University of Aberdeen already has a well established group in bone research," said Professor Reid. "The Oliver Bird rheumatism programme allows us to broaden our interests by bringing together basic laboratory science and clinical research that is directly relevant to our patients."

The research programme for the students will focus on understanding the most common rheumatic diseases: osteoporosis, osteoarthritis, rheumatoid arthritis and Paget's disease. They will build on previous successful studies into the genetics of these diseases and the complex interactions between genes, diet and exercise that influence bone mass and bone loss shortly after menopause. Students will use the latest imaging technology at the university to study the progressive destruction of bones and joints in arthritis and

osteoporosis. Imaging will also be an essential feature in visualising how drugs called bisphosphonates act in cells to prevent bone loss.

Stem cells - 'master' cells that generate new cells - are attracting worldwide scientific interest and students will carry out research into how a disturbance in the growth of these powerful cells could cause osteoarthritis.

In the UK today, rheumatic disorders, which cover over 200 different diseases, are extremely common and affect over eight million people of all ages and the numbers are rising each year. Over three million adults are physically disabled and one in every thousand children suffers from arthritis. At a personal level, arthritis is devastating, particularly for young people in their 20s and 30s. Around 50% of people of working age who are diagnosed with rheumatoid arthritis cannot work after five years due to chronic pain and fatigue, depriving them of their independence and self-esteem.

The research theme Professor Reid has designed for the students creates a collaboration between internationally-recognised researchers spanning the entire field of bone and joint disorders. It provides a stimulating environment for students with the aim of setting them on a career path in rheumatic disease research.

"The newly formed Oliver Bird Collaborative Centre is a phenomenal opportunity for students to play an important part in the translation of science into the care of patients," said Professor Reid.

## **LIVING WITH RHEUMATOID ARTHRITIS**

**Mary Mitchell, Aberdeen**

“Your attitude has a lot to do with how you cope,” says Mary Mitchell who has rheumatoid arthritis. Mary, who is 54 years old, had very sore hands but put it down to the cold in the winter of 1991. A blood test, however, presented the diagnosis.

It became worse. Her hands stiffened and she could not grip things. Then her feet became painful making it difficult for her to walk. All her joints swelled up. Mary has had two operations on each foot, which has helped. But her doctor advises against having her hands operated on as she could end up in a worse state than she is now.

Mary gets frustrated by not being able to do normal things. “I am my own worst enemy and I often push myself too hard,” she admits. She wishes she could still do the Highland Fling! She has gadgets around the house: a long handled shoehorn, an adaptor for taps and for jars.

There is always plenty to do on the farm where Mary lives. When she was ill first of all, her daughter simply took over and although Mary can no longer do manual work, she deals with the paperwork and the books.

Mary feels that even though so many people suffer from arthritis, people generally do not recognise how serious it is. “Nobody can understand what the pain is like,” she says. Arthritis is debilitating and just goes on and on. It is distressing being woken in the night by the pain of turning over and then not being able to get back to sleep. “It drags you down,” she says – but refuses to be beaten.

## **LIVING WITH ARTHRITIS**

**Anne from Aberdeen**

Anne from Aberdeen has learned to live with psoriatic arthritis over the last 20 years. She first noticed strange pains in her toes and feet when she was just 30 years old. “It just gradually crept up on me,” she says as she describes how the disease progressed to her knees and hips, making it difficult for her to walk.

Psoriatic arthritis causes pain and swelling in joints and skin and is related to the skin disorder, psoriasis. Anne needed cortisone injections to relieve the pain and inflammation, which helped for a while, but then the disease would take hold again. “It travels around your body,” she says. It can move from the hip to the shoulder to the hands. “It always likes to remind you that it is there.

The worst time for her was in the mid-1990s when even her jaw was affected which made eating a distressing daily problem for her. Life generally took on a whole new challenge as she battled with the disease. An active person, Anne was no longer able to play tennis or go for long walks. It made an impact on her social life as well: friends would go dancing or to keep fit or yoga but she couldn't join in.

Treatment for arthritic conditions has changed over the years and now disease modifying anti-rheumatic drugs help to delay the progress of the disease and preserve the function of the joints by suppressing the immune system. Anne started taking these drugs in low doses at first, increasing the dose until her illness had stabilised. “I started as someone who did not like even taking as aspirin and am now regularly taking very powerful drugs,” she says.

The drugs are effective and, compared to the way she was Anne says she lives a full life but she knows her limitations. “You do miss out and you don't have all the choices – but you've just got to get on with it, haven't you?” she says, bravely.