



**36TH EUROPEAN SYMPOSIUM ON CALCIFIED TISSUES
VIENNA – 23-27 MAY 2009**

PRESS RELEASE

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**INFLAMMATION CLUE TO FRAGILE BONES IN MUSCULAR
DYSTROPHY**

Inflammation could contribute to bone loss in Duchenne's muscular dystrophy (DMD), a discovery made by a group of Italian researchers. Dr Anna Rufo and her colleagues found that levels of an inflammatory molecule, known as IL-6, are high in patients with DMD.

Duchenne's muscular dystrophy is the most common of a group of genetic diseases when muscles become progressively weakened and wasted. It is caused by an abnormality of the dystrophin gene that is involved in the function of muscle cells. One in around 3,500 boys is affected. Little boys under the age of three will find walking, running and jumping difficult, and by the age of 11 they are unable to walk.

"These children have very fragile bones that fracture easily," said Dr Rufo at the European Symposium on Calcified Tissues in Vienna today (25 May). "We thought that this was due to mechanical failure – the load on the bones - but felt sure that other factors were involved," she explained.

The abnormal dystrophin gene causes muscle fibres to degenerate and become inflamed. As well as muscle damage, patients have osteoporosis and therefore a greater risk of fractures.

Dr Rufo's team at the University of L'Aquila found that children with DMD have increased levels of IL-6, a molecule that is also known to reduce bone formation and increase bone removal. In laboratory studies, the bone mass was reduced in dystrophin-deficient mice shown by the reduced bone forming cells (osteoblasts) and increased bone removal cells (osteoclast). When

healthy osteoblasts were treated with sera collected from DMD patients they failed to mineralise the bone matrix and their IL-6 levels were increased. More than 100 other genes linked to osteoblast-osteoclast 'cross-talk' were also affected.

Their work is significant because glucocorticoids may be given to patients to help improve muscle strength and function for a short period of time. "Glucocorticoids are good for muscles in DMD but not so good for bones," said Dr Rufo. "Now we have found that osteoporosis in DMD patients could partly be explained by IL-6, we can try and find new ways to tackle inflammation," she concluded.

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Abstract OP06

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Note to Editors

Calcified tissues are central to a healthy skeleton and to bone disorders, such as osteoporosis, back pain and fractures that make life a misery for countless people. Children, too, can inherit some forms of bone diseases causing bone pain, shortness and deformed limbs.

The mission of **The European Calcified Tissue Society** is to promote excellence in research into the field of calcified tissues within Europe, and to ensure the findings are disseminated to benefit patients with bone disease. www.ectsoc.org

Over 3000 delegates will be attending to hear the latest research and clinical updates at the **36th European Symposium on Calcified Tissues** in Vienna, 23-27 May 2009
<http://www.ectsoc.org/vienna2009/>