

Centre for Sports and Exercise Medicine

Nicola Maffulli

Tendon problems around the knee

Pathoanatomy

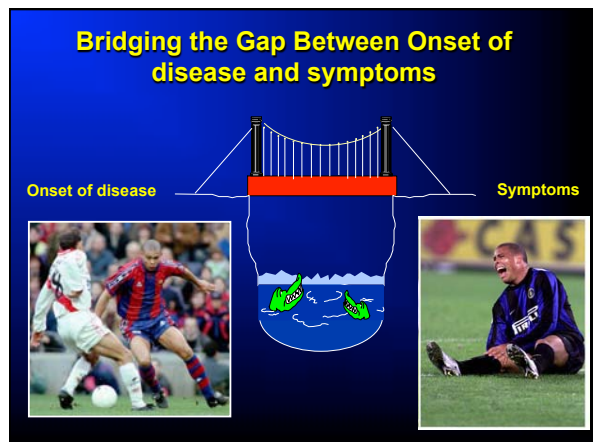
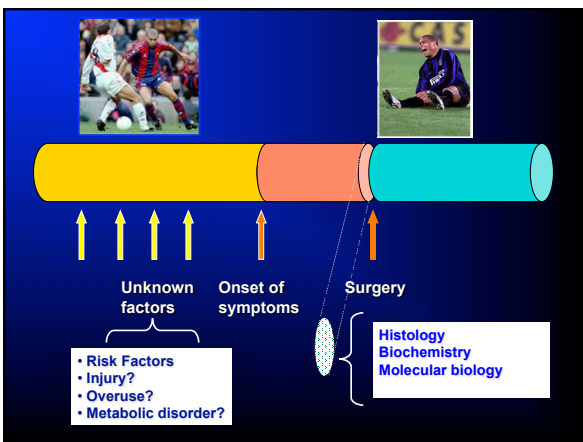
 

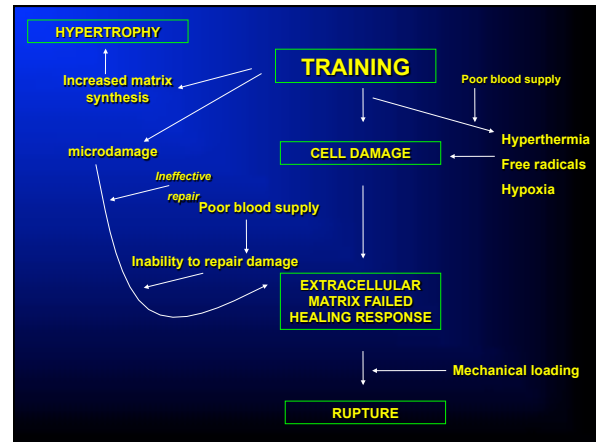
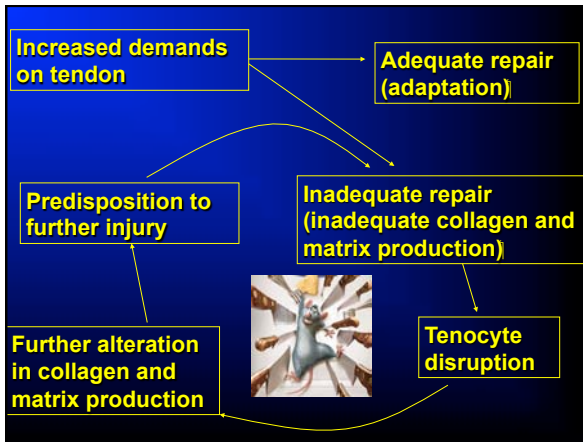
 



Could this have avoided?

Do we truly understand the details of the pathology?





Inflammation in Overuse Tendon Injuries

Lucy Battery, BSc, Hons and Nicola Maffulli, MD, MS, PhD, FRCS(Orth)

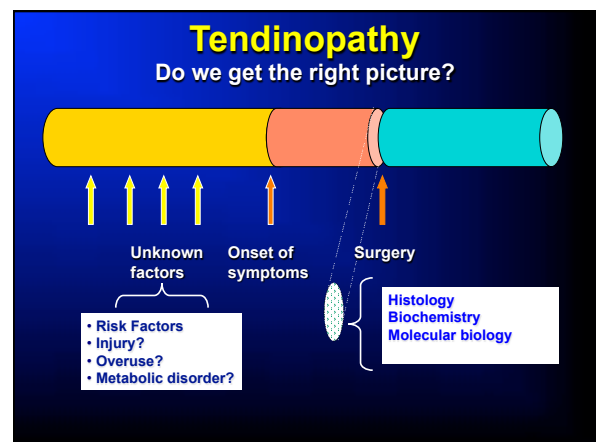
Sports Med Arthrosc Rev 2011

CONCLUSIONS

A prolonged state of systemic, low-grade inflammation, such as in obesity and states of impaired insulin sensitivity, may act as a risk factor for a "failed healing response" after an acute tendon insult, thus predisposing affected individuals to the development of chronic overuse tendinopathies. In association, simple measures, such as lifestyle alterations and disease-specific interventions, could make real differences with regard to both the prevention and treatment of tendinopathy. However, the potential also exists for a "double benefit" pharmacological approach, through the use of agents already used in the treatment of obesity and diabetes, but also known to have anti-inflammatory effects.

- ## Tendon problems terminology
- ◆ Tenalgia
 - ◆ Tendinitis
 - ◆ Tendinosis
 - ◆ Paratendinitis
 - ◆ Peritendinitis
 - ◆ Tendonitis
 - ◆ Paratendonitis
 - ◆ Peritendonitis
 - ◆ Peri/para ... itis with tendi/tendo ... itis
 - ◆ Partial rupture

- ## Tendon terminology
- ◆ Tendinopathy of the main body of the tendon
 - ◆ Tendinopathy of the surrounding tissues
 - ◆ Pantendinopathy
 - ◆ Insertional tendinopathy
 - ◆ Ruptures
- Maffulli N, Khan KM, Puddu G. Overuse tendon conditions: time to change a confusing terminology. Arthroscopy 1998; 14 (8): 840-843.



Metabolic Syndrome: does it all lie with glucose?



What about lipids?



Effect of Dihydrotestosterone on cultured human tenocytes from intact supraspinatus tendon

V Denaro, L Ruzzini, UG Longo,
F Franceschi, B De Paola, A Cittadini,
N Maffulli, A Sgambato



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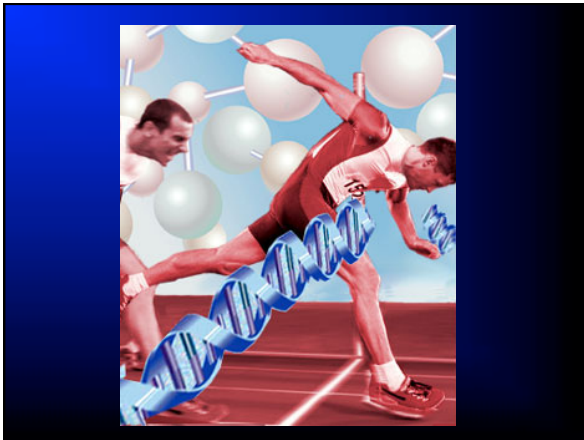
We discussed about biology...



But tendon is more than biology

Is synonymous of strength, tension and other biomechanical qualities...





Genetics and sports

Giuseppe Lippi¹, Umile Giuseppe Longo², and Nicola Maffulli^{1,3}

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British Medical Bulletin 2010; 93: 27–47

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EDITORIAL

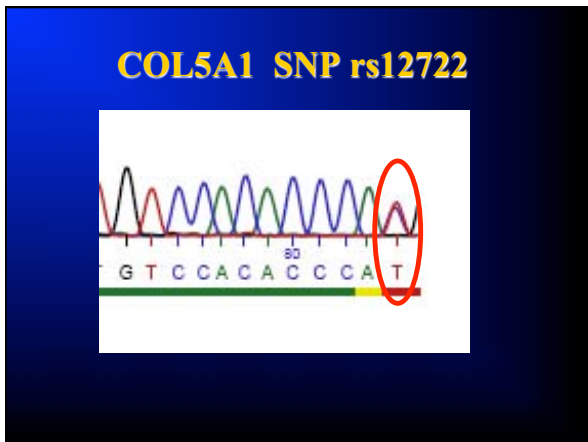
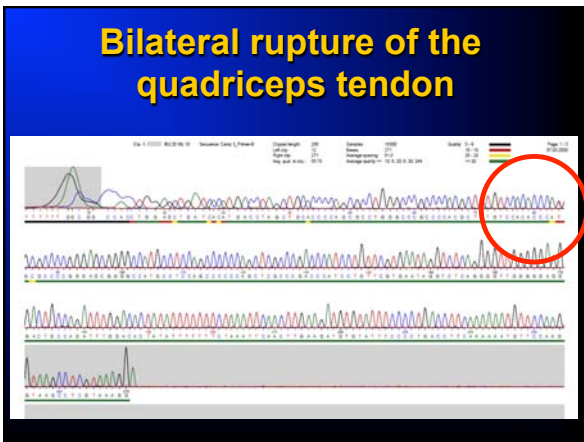
Genetics: Does It Play A Role in Tendinopathy?

Merzesh Magru, MRCS and Nicola Maffulli, MD, PhD

Clin J Sport Med • Volume 17, Number 4, July 2007

Tendinopathy may well be polygenic, involving complex interactions between multiple genes, and could possibly run in families.

Further investigations should determine the exact role played by genetic influences in maintaining tendon homeostasis and pave the way for gene transfer therapy to be developed for the management of tendinopathies.



VOCC **TREK**

M. Magra, S. Hughes, A. El Haj, N. Maffulli.
 VOCCs and TREK-1 ion channel expression in human tenocytes.
American Journal of Physiology 292: C1053-1060, 2007

Genetics and sports

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? Genetic predisposition

- ✦ Achilles tendon rupture increases risk of contralateral rupture x 174
- ✦ Variants to tenascin-C gene associated with 6-fold risk of developing symptoms
- ✦ Certain variants highly protective

Thank you
 Thank you

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Tendon Injuries
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 Editor

The Achilles Tendon
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