Preliminary Program

BRUSSELS INTERNATIONAL SYMPOSIUM
ADVANCES IN TENDON LESIONS,
INJURIES AND REPAIR
A meeting sponsored by the
European Society of Biomechanics

Brussels, Belgium
April 2-3, 1999

Program Director
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Meeting place
Château du Lac
Avenue du Lac, B-1332 Genval, Belgium
Tél. +32 2 655 71 11 - Fax +32 2 655 74 44
AIMS AND FORMAT

Over the last decades, there has been a dramatic increase in tendon lesions, injuries, and disorders. These problems have now become a major health question in our countries.

Overuse injuries related to repetitive tissue microtrauma and to stress accumulation are expressed clinically by various conditions such as enthesopathy (also called tendinitis, insertion tendinitis, apophysitis), tenosynovitis, tendinous bursitis or as partial or total tendon ruptures. Overuse injuries affect not only athletes, but also many overweight individuals with poor overall fitness, especially those performing repetitive movements. The anatomic sites of sports-induced overuse tendon injuries are more common in the lower than in the upper extremities. There has been a dramatic increase in these lesions during the last 30 years, due to general increase in sporting activities. Apophysitis, especially Osgood-Schlatter’s disease, is frequent in adolescent athletes. In runners, the incidence of overuse injuries (affecting mainly the knee and Achilles tendons) has been reported to be around 10,000 hours of running. Achilles tendon and rotator cuff sports injuries affect mainly athletes over 50 years old. In contrast to lesions related to sports activities, work-induced overuse tendon injuries concern the upper extremity in over 90%. According to recent statistics, repetitive strain injuries affect the upper extremity of 6 to 53% of manual workers (mainly packers, meat cutters, workers in the food industry and textile workers), and up to 76% of musicians. The most common form of overuse injury is humeral epicondylitis, but subacromial impingement, de Quervain’s tenosynovitis, carpal tunnel syndrome and trigger finger are also quite common.

Tendon degeneration may also be observed in collagen or elastin diseases. Diabetes mellitus, frequent in our countries, also affects tendons, possibly owing to compromised tendinous microcirculation with tissue anoxia. Inflammatory tenosynovitis is usual in rheumatoid arthritis and related disorders. Tendon imbalance and rupture are among the principal factors leading to the joint deformations observed in these diseases.

On the other hand, tendon lacerations are quite common, especially after glass or knife injuries to the hand or foot, and cause significant problems, particularly concerning the flexor and extensor tendons of the hand. Tendon adhesions are usual after repair of the flexor tendons in the fingers. Early mobilization is frequently recom-

mended, but may be complicated by secondary suture rupture. Optimal repair, resistant to the high forces applied to the tendon and allowing early active mobilization, does not yet exist.

The goals of this symposium are to summarize the current scientific knowledge on tendon lesions, injuries, and repair, gathering experts on tendon anatomy, biomechanics, histology, and healing processes and highly qualified clinicians treating tendon injuries and degenerative disorders.

The symposium is sponsored by the European Society of Biomechanics, as close cooperation among clinicians and basic scientists is essential for improving the care of patients presenting tendon lesions.

SPECIFIC AIMS

1. To summarize current scientific knowledge on tendon lesions, injuries and repair,
2. To discuss unsolved clinical problems and potential solutions based on current scientific knowledge,
3. To formulate conclusions and recommendations, including those for the prevention and treatment of tendon lesions and injuries,
4. To explore future directions of investigations.

INTERNATIONAL FACULTY

P. C. Amadio, Rochester, MN, USA
A. A. Amis, London, United Kingdom
K. N. An, Rochester, MN, USA
Y. Andrienne, Brussels, Belgium
A. Banes, Chapel Hill, NC, USA
F. Burny, Brussels, Belgium
B. Coessens, Brussels, Belgium
S. de Fontaine, Brussels, Belgium
J. C. Guimberteau, Bordeaux, France
P. Hoang, Brussels, Belgium
J. Kumagai, Sendai, Japan
U. Lanz, Bad Neustadt, Germany
J. P. Moermans, Brussels, Belgium
M. Remmelink, Brussels, Belgium
J. J. Rombouts, Brussels, Belgium
M. Rooze, Brussels, Belgium
F. Schuind, Brussels, Belgium
P. N. Soucacos, Ioannina, Greece
J. Van Geertruyden, Brussels, Belgium
A. Zyluk, Szczecin, Poland

ORGANIZING COMMITTEE

K. N. An, Rochester, MN, USA
F. Burny, Brussels, Belgium
W. P. Cooney, Rochester, MN, USA
F. Schuind, Brussels, Belgium
A. Zyluk, Szczecin, Poland
## Daily Program at a Glance

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<td>Structure and Function of Normal Tendons and Pulleys - Healing Potentials, Adhesion Formation (2)</td>
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<td>Degenerative and Inflammatory Tendon Disorders: Basic Concepts</td>
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<td>Overuse Injuries, Upper Extremity</td>
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## Program

### Thursday, April 1, 1999

- **08.00**  Registration  
- **16.00-19.00** Registration  
- **18.30-20.00** Welcome reception

### Friday, April 2, 1999

- **08.00**  Registration  
- **08.30-10.10**  
  **Session 1:** Introduction - Structure and Function of Normal Tendons and Pulleys - Healing Potentials, Adhesion Formation (1)  
  (Moderators: F. Schuind, K. N. An)  
- **08.30**  Opening Address  
  F. Schuind (Brussels, Belgium)  
- **08.40**  Anatomy of Tendons and Synovial Sheaths  
  M. Rooze, C. Debouck (Brussels, Belgium)  
- **08.55**  The A3 Pulley  
  P. C. Amadio, C. Zhao, K. N. An (Rochester, MN, USA)  
- **09.10**  Discussion  
- **09.20**  Anomalies of the Flexor Digitorum Superficialis Muscle  
  M. Kulkarni, A. Khandwala, D. Elliot (Woodlands, United Kingdom)  
- **09.30**  Blood Supply of the Synovial Sheaths and Pulleys of the Flexor Tendons in the Human Hand  
  C. Fontaine, S. Gajisini, C. Chantelot, J. Fasel (Lille, France and Geneva, Switzerland)  
- **09.45**  Collagen Distribution in the Tendon Insertion into Bone  
  J. Kumagai (Sendai, Japan)  
- **10.00**  Discussion  
- **10.10-10.40**  Coffee-break and visit of the commercial exhibition  
- **10.40-12.20**  
  **Session 2:** Structure and Function of Normal Tendons and Pulleys - Healing Potentials, Adhesion Formation (2)  
  (Moderators: M. Rooze, C. Fontaine)  
- **10.40**  Clinical Biomechanics of the Tendon  
  K. N. An (Rochester, MN, USA)  
- **11.10**  Discussion
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<td>Histological Lesions in Overuse Tendon Affections</td>
<td>Primary Repair of Quadriceps Tendon Rupture: Results of Treatment</td>
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<td>M. Remmelink, J. L. Pasteels (Brussels, Belgium)</td>
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<td>14.35</td>
<td>Collagen Fascicle Damage in Disrupted Tendons: an Electron Scanning Microscopic Study</td>
<td>Surgery in Achilles’ Chronic Tendinopathy</td>
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<td>P. Prowans, A. Zyluk, Z. Deskur (Szczecin, Poland)</td>
<td>R. Maes, G. Copin and the TALUS group</td>
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<td>14.50</td>
<td>The Effects of Steroid Injection on Achilles Tendon Endurance: an Experimental Study in Rats</td>
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<td>Discussion</td>
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<td>14.50</td>
<td>Tendon Rupture in Rheumatoid Arthritis</td>
<td>Achilles’s Tendon Rupture: A Prospective Study of a New Operative Technique for Functional Postoperative Treatment</td>
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<td>J. J. Rombouts, O. Barbier (Brussels, Belgium)</td>
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<td>15.15</td>
<td>Coffee-break and visit of the commercial exhibition</td>
<td>Percutaneous Tenosynthesis of Achilles’ Tendon Ruptures</td>
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<td>R. Maes, G. Copin and the TALUS group</td>
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<tr>
<td>15.50</td>
<td>Session 4: Overuse Injuries, Upper Extremity</td>
<td>(Illkirch-Graffenstaden, France)</td>
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<td></td>
<td>Moderators: J. J. Rombouts, J. Kumagai</td>
<td>Treatment of Recent Ruptured Calcaneus Tendon via a Percutaneous Approach</td>
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<td>15.50</td>
<td>Adult Trigger Finger: Clinical and Pathological Features</td>
<td>P. Delporte, P. Diebold, J. Y. Coillard, P. de Poulpiquet (Châteauroux, France)</td>
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<td>K. Drossos, N. Nagy, M. Remmelink, J. L. Pasteels, F. Schuind (Brussels, Belgium)</td>
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Saturday, April 3, 1999

08.10-08.50  Session 7: Flexor Tendon Lacerations: Healing Potentials, Adhesion Formation
(Moderators: J. P. Moermans, P. N. Soucacos)
08.10  Forces Applied to the Flexor Tendons of the Hand
F. Schuind (Brussels, Belgium)
08.25  Discussion
08.30  Gilding Characteristics of Tendon Repair in Partially Lacerated Canine Flexor Digitorum Profundus Tendons
P. C. Amadio (Rochester, MN, USA)
08.45  Discussion
08.50-09.55  Session 8: Flexor Tendon Lacerations: Epidemiology, Principles of Emergency and Delayed Treatment, Rehabilitation (1)
(Moderators: S. de Fontaine, P. C. Amadio)
08.50  Epidemiology of Flexor Tendon Lacerations
J. P. Moermans (Brussels, Belgium)
09.05  Discussion
09.10  Experience with Early Active Mobilization with the Technique of Mantero-Brunelli
U. Lanz (Bad Neustadt/Saale, Germany)
09.25  Flexor Tendon Repair in Zone I
N. S. Moiemen, D. Elliot
(Woodlands, United Kingdom)
09.35  Anchor Reinseration of the Flexor Profundus Tendon: Technique, Advantages, and Drawbacks
L. Obert, L. Jeunet, H. P. Corral, V. Grelet, G. Gérard, P. Garbuió, Y. Tropet
(Fougères, Grenoble, France)
09.45  Discussion
09.55-10.25  Coffee-break and visit of the commercial exhibition

10.25-10.40  Session 9: Flexor Tendon Lacerations: Epidemiology, Principles of Emergency and Delayed Treatment, Rehabilitation (2)
(Moderators: J. Van Geertuyden, J. C. Guimberteau)
10.25  Flexor Tendon Lacerations in Zones I and II: Which Tendon should be Repaired?
J. P. Moermans (Brussels, Belgium)
10.40  Venting of the A2 and A4 Pulleys after Repair of Zone II Flexor Tendon Injuries
I. Kwal-Ben, D. Elliot
(Woodlands, United Kingdom)
10.50  Early Active Mobilization of Primary Repairs of the Flexor Pollicis Longus Tendon
M. Sirotakowa, D. Elliot
(Woodlands, United Kingdom)
11.00  Discussion
11.10  Flexor Tendon Repair in Zone V
N. W. Yii, M. Urban, D. Elliot
(Woodlands, United Kingdom)
11.10  Discussion
11.20  A Comprehensive Approach for Rehabilitation after Tendon Injuries
B. Coessens, A. Puttemans, M. Greuse
(Paris, France)
11.25  Recording Exercise Behaviour after Flexor Tendon Surgery in Zone II of the Hand
N. I. van Trommel, M. J. P. F. Ritt, K. E. Bos
(Amsterdam, The Netherlands)
11.40  Discussion
12.00  Rupture of Flexor Tendon Repairs in Zones I and II of the Fingers
S. B. Harris, D. Harris, A. J. Foster, D. Elliot
(Woodlands, United Kingdom)
12.10  Discussion
12.20  Efficacy of the Hyaluronic Acid in the Excruction Resistance of the Flexor Tendon: a Biomechanical Study in a Canine Model in Vitro
(Morioka, Japan and Rochester, MN, USA)
12.25  Discussion
13.30-15.00 Session 10: Flexor Tendon Lacerations: Epidemiology, Principles of Emergency and Delayed Treatment, Rehabilitation (3) (Moderators: B. Coessens, U. Lanz)

13.30 Thirty-five Cases of Vascularized Island Flexor Tendon Transfers
J. C. Guimberteau (Bordeaux, France)

13.45 Discussion

13.50 Two-Stage Flexor Tendon Reconstruction using Silicone Rods: Technique, Results and Complications
P. N. Soukias (Ioannina, Greece)

14.05 Zone II Flexor Tendon Injuries: Management with Two-Stage Reconstruction using Silicone Rods and Panneva Technique
A. E. Beris (Ioannina, Greece)

14.15 Problems with Staged Tendon Reconstruction
P. Hoang (Brussels, Belgium)

14.30 Discussion

14.40 New Active Flexor Tendon Prosthesis
G. A. Brunelli (Orme, Italy)

14.50 Discussion

15.00-15.50 Session 11: Flexor Tendon Lacerations: Panel Discussion – Ten Questions to the Floor and the Faculty
(Moderators: F. Schuind, A. Zyluk)

15.50-16.00 Summary and Conclusions
F. Schuind, K. N. An
(Orme, Belgium and Rochester, MN, USA)

16.00-17.00 Health Break (sports or access to the center of fitness)

17.00 Social Program: visit of the famous monastery-farm of La Ramée (Jauchelete, Brabant-Wallon), concert of flutes, cocktail and banquet in the abbey.

Congress Information

Venue
Château du Lac, avenue du Lac
B-1332 Genval, Belgium
Tel.: + 32 2 655 71 11 - Fax + 32 2 655 74 44.

Language
English.

Information for Presenters
The allocated time of presentation should be strictly respected (10 min. for most free papers). Slides: single or double projections are available (Kodak carrousels). Use 35 mm slides in 50 x 50 mm plastic mount. Overhead projection is also available.

The preview room is open on April 2 from 07.00 to 19.00, and on April 3 from 07.00 to 17.00. Each presenter should check with the technician in the preview room and introduce himself to the moderators of his session.

Accommodation
At the quiet and beautiful 'Château du Lac', 15 km outside Brussels. Sports facilities (tennis, swimming pool) will be available during leisure time.

Free access available at the "John Harris Fitness Centre" for participants accommodated at the Château.

When contacting the hotel, please state that you are attending the "Tendon Symposium" to receive the reduced rate for the dates April 1 through April 4.

Indicative rate: SINGLE 18 000 BEF – included: 3 nights bed and breakfast, Château du Lac or Manoir du Lac (same location), access to sports facilities.

Address: Château du Lac, avenue du Lac,
B-1332 Genval, Belgium
Tel. + 32 2 655 71 11 - Fax + 32 2 655 74 44.

Continuing Medical Education Credit
Belgian Accreditation Council, 120 points
(2948.0001, accreditation type 4, 120 U.F.C./N.E.).
A certificate will be provided to interested participants.

Travel Information
The Brussels International Airport has flight connections from many major cities in Europe and overseas. Coach transport from and to the airport is organized on April 1 and April 4. One of us will meet you 15 min prior to the departure of the bus, at
Genval may also be reached by car (15 min from Brussels on highway E111 Brussels-Namur-Luxembourg).

Social Program
The welcome reception of April 1 will be held at the Villa du Lac, close to the Château du Lac, 8, avenue des Merisiers, B-1332 Genval (tel. 655 63 11).

On April 3, 1999, before the banquet, a historical visit of the famous monastery-farm of La Ramée (Jauchelette, Brabant-Wallon, tel. 010/88 02 22) is organized. A concert of flutes will then be offered in the abbey, followed by a traditional cocktail and by the fine banquet. Participants will be driven to La Ramée and back to Genval (around 11.30 p.m.) in a luxury coach. Please join us!

Upon request, paying excursions may be organized for accompanying persons.

Registration Fees
Before Dec. 1, 1998 360 EURO (1)
After Dec. 1, 1998 400 EURO (1)
Resident/Student/Physiotherapist/Nurse 180 EURO (2)
Optional : Banquet (April 3) 70 EURO (3)

(1) Fees include meeting attendance, book of abstracts, lunches, welcome reception on April 1, and transport by coach from and to the airport on April 1 and April 4. Not included: hotel accommodation, meals except 2 lunches, access to sport facilities. Acknowledgement of registration and receipt of fees will be sent soon after the registration form and full payment are received. Upon request, a letter of invitation will be sent. Payments should be made net of all bank charges and commissions. A 4% commission will be added to all payments made by credit card. Invoices will be expressed in Belgian francs (up to Dec. 31) and in EURO later on. The organizers cannot be held responsible for any personal injury, loss, damage, accident to private property, or additional expenses incurred as a result of delays or changes in air, rail, sea, road or other services, strikes, sickness, weather, war, sports and other causes. Luggage is at owners risk throughout unless insured. The symposium is organized by the 'Groupe pour l'Etude du Membre Supérieur', ASBL, Brussels.

(2) Please include a certificate signed by head of department.

(3) Included: coach transport Genval-La Ramée-Genval, visit of the famous monastery-farm, concert of flutes, cocktail and banquet in the abbey.

Bank : CGER Erasme, 808 route de Lennik, B-1070 Brussels, Belgium on account 001-2343991-62 (GEMS).

Cancellation
In the event of cancellation, a full refund (less EURO 100 as a handling fee) of the registration fees may be obtained provided that a written notification is received by December 15, 1998. A 50% refund will be made for cancellations received by January 15, 1999. No refunds will be made thereafter.
REGISTRATION FORM
To be filled in and returned as soon as possible

Name .............................................................
First name ....................................................
Speciality .....................................................
Title .............................................................
Institution ....................................................
Address ....................................................... 
City ........ Country .................. Zip ...........
Phone ...................... Fax ......................
E-mail : ...................................................... 
Arrival date ................... Departure date ........

Special requests (dietetics, etc.) ................................

Please fill in below as appropriate.

☐ I will participate in the Tendon Symposium (please note that participation will be considered only after payment of the registration fees; the number of participants is limited; if some participants cannot be accepted, the fees will be reimbursed at no charge).

☐ I like also to attend the cocktail on April 1 (free).

☐ I like also to attend the banquet and historical visit of April 3.

☐ Please send me more preliminary programs.

☐ My registration fees are paid as follows :
  ☐ Enclosed check
  ☐ Money order to Belgian account
    GEMS 001-2343991-62
  ☐ Credit card (Euro/Master, Visa)
    Card type : ........................................................
    Card account number : ...........................................
    Cardholders' name : ..............................................
    Expiration date (mo./yr.) : ....................................

________________________________________________________________________

SIGNATURE DATE