

## INTRODUCTION

The European Federation of NeuroRehabilitation Societies and the Italian Society of NeuroRehabilitation are pleased to invite you to attend the European Summer School on gait and balance rehabilitation in neurological diseases.

Balance and gait rehabilitation represent one of the most relevant fields of interest in the NeuroRehabilitation spectrum.

This international five-days course intends to update the participants (Specialist PMR, Neurologists and Physiotherapists, in particular) about basic and advanced knowledge in this field. The venue of the Summer School is the historical College "Fratelli Cairoli", founded in 1781 ([www.collegiocairolit.it](http://www.collegiocairolit.it)).

The programme will include several sessions of practical training on rehabilitation techniques and new technologies, which will be held at the "C. Mondino" Foundation and "S. Maugeri" Foundation research institutes.

## DIRECTORS

**G. Sandrini** (Pavia, Italy)  
**V. Homberg** (Dusseldorf, Germany)  
**L. Saltuari** (Innsbruck, Austria)  
**N. Smania** (Verona, Italy)

## FACULTY

**G. Abbruzzese** (Genova, Italy), **Ole K. Andersen** (Aalborg, Denmark), **H. Binder** (Wien, Austria), **S. Clarke** (Lausanne, Switzerland), **C. Cisari** (Novara, Italy), **E. Dalla Toffola** (Pavia, Italy), **V. Dietz** (Zurich, Switzerland), **E. Fazzi** (Brescia, Italy), **M. Franceschini** (Rome, Italy), **V. Homberg** (Dusseldorf, Germany), **J. Jacinto** (Lisboa, Portugal), **M. Molinari** (Rome, Italy), **F. Molteni** (Costa Masnaga, LC, Italy), **D. Muresanu** (Bucharest, Romania), **A. Nardone** (Veruno, Italy), **C. Pistarini** (Pavia, Italy), **T. Platz** (Greifswald, Germany), **L. Saltuari** (Innsbruck, Austria), **G. Sandrini** (Pavia, Italy), **M. Serrao** (Rome, Italy), **N. Smania** (Verona, Italy), **C. Tassorelli** (Pavia, Italy), **P. Thumie** (Paris, France), **C. Werner** (Berlin, Germany), **J. Wissel** (Berlin, Germany)

## SCIENTIFIC SECRETARIAT

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CRRNC Neuromotor and Cognitive Rehabilitation Research Centre  
University of Verona, Azienda Ospedaliera Universitaria Integrata

## GENERAL INFORMATION

### Conference venue

Collegio Fratelli Cairoli - Aula Magna  
P.zza Cairoli, 1 - 27100 Pavia, Italy  
web site: [www.collegiocairolit.it/en/](http://www.collegiocairolit.it/en/)

### Max participants allowed: 30

Admission to the course will be based on participants' curriculum and order of application.

Please, send Your complete CV to Bquadro Secretariat (CV in EU format is highly recommended) e-mail: [info@bquadro-congressi.it](mailto:info@bquadro-congressi.it)

### ECM (Educazione Continua in Medicina)

The following professional roles will receive Formation Credits upon attending to the course: **MDs** (Neurology and Psychiatry), and **Physiotherapists**

### Registration: Deadline july, 25

All participants are required to register using the "online form", which can be found on [www.bquadro-congressi.it/index\\_eng.php](http://www.bquadro-congressi.it/index_eng.php) and to pay via wire transfer.

### Registration fee: € 500,00 + 22% VAT (total € 610,00)

The fee includes:

- Participation to scientific programmes
- Accommodation in single room B&B in september 8 out september 12 (n. 4 nights) at Collegio Cairoli
- Buffet light lunches and dinners for the whole duration of the Course
- ECM Certificate and Certificate of attendance
- English guided tour of Pavia on Thursday 11th September
- Social Dinner on Thursday 11th September

### Payment: Deadline august, 06

**Bank Transfer only.** The wire transfer must be headed to:

(account holder) **Bquadro Congressi S.r.l.**

Via S. Giovanni in Borgo, 4 - 27100 Pavia

Bank INTESA SAN PAOLO - FILIALE PAVIA 2

C.so Garibaldi 52 - 27100 PAVIA

**IBAN: IT39E 03069 11304 1000 0000 3103**

**Codice BIC Swift: BCITITMM**

In "Cause" box please write: name, family name and "2014 Summer School fee"

ALL WIRE TRANSFER CHARGES ARE ON THE PARTICIPANT.

### Organizing Secretariat

**Bquadro Congressi srl**

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[www.bquadro-congressi.it](http://www.bquadro-congressi.it)

### Coordinamento ECM

**Ufficio Formazione e Informazione Mondino**

[ecm@mondino.it](mailto:ecm@mondino.it)



# EUROPEAN SUMMER SCHOOL ON GAIT AND BALANCE REHABILITATION IN NEUROLOGICAL DISEASES

*Collegio Fratelli Cairoli*  
**8th-12th September, 2014, Pavia (Italy)**



*Promoted by:*

**European Federation of Neurorehabilitation Societies (EFNRS)**

**Società Italiana di Riabilitazione Neurologica (SIRN)**

*In collaboration with:*

Alumni Association of the Collegio Fratelli Cairoli

University of Pavia

IRCCS C. Mondino Foundation

IRCCS S. Maugeri Foundation

Scuola di Formazione SIRN



# PROGRAMME

**Monday 8/09/2014**

## GAIT DISORDERS AND REHABILITATION

- 12.15 Participants registration
- 12.50 **Welcome**  
*G. Sandrini* (EFNRS President)  
*N. Smania* (SIRN President)  
*A. Giannetti* (President of the Alumni Association of the Collegio Fratelli Cairoli )

*Chairmen: V. Homberg, G. Sandrini*

- 13.00 **Neuroprotection and neurorehabilitation**  
*D. Muresanu* (Bucharest, Romania)
- 13.30 **Postlesional plasticity: the role of cognitive representation**  
*S. Clarke* (Lausanne, Switzerland)
- 14.00 **Influence of drug treatment in neurorehabilitation**  
*V. Homberg* (Dusseldorf, Germany)
- 14.30 **Assessment of gait disorders**
  - Clinical scales  
*C. Geroin* (Verona, Italy)
  - ICF and gait disorders  
*C. Pistarini* (Pavia, Italy)
  - Instrumental assessment  
*M. Serrao* (Rome, Italy)
- 15.30 *coffee break*
- 16.00 **Special lecture:**  
**Pathophysiology of spasticity and therapeutic approach**  
*J. Wissel* (Berlin, Germany)

*Chairmen: L. Saltuari, J. Wissel*

- 16.30 **Robotic devices for gait rehabilitation**
  - The exoskeleton device: what is the evidence?  
*L. Saltuari* (Innsbruck, Austria)
  - End-Effector  
*N. Smania* (Verona, Italy)
  - FES and FES cycle  
*F. Molteni* (Costamasnaga-LC, Italy)
- 17.30 **Theoretical basis of gait rehabilitation strategies**  
*N. Smania* (Verona, Italy)
- 18.00 **Cues in Gait rehabilitation**  
*C. Tassorelli* (Pavia, Italy)
- 18.20 **Body-weight-supported gait training**  
*M. Franceschini* (Roma, Italy)
- 18.40 **Neuromodulation and gait**  
*G. Sandrini* (Pavia, Italy)
- 19.00-19.30 **Discussion**

**Tuesday 9/09/2014**

## BALANCE DISORDERS AND REHABILITATION

*Chairmen: C. Cisari, A. Nardone*

- 8.45 **Postural control: from physiology to rehabilitation**  
*A. Nardone* (Veruno-NO, Italy)
- 10.00 **Assessment of balance disorders**
  - Clinical scales  
*M. Gandolfi* (Verona, Italy)
  - Instrumental assessment  
*M. Bartolo* (Pozzilli-IS, Italy)
- 11.00 **Balance rehabilitation**  
*I. Springhetti* (Pavia, Italy)
- 11.30 **Bedside vestibular evaluation**  
*M. Versino* (Pavia, Italy)
- 11.50 **Risk factors and outcome in falls**  
*C. Cisari* (Novara, Italy), *A. Baricich* (Novara, Italy)
- 12.10 **The influence of cognitive factors on balance and gait**  
*V. Varalta* (Verona, Italy)
- 12.30 **Strategies to prevent falls**  
*G. Morone* (Rome, Italy)
- 12.50 **Discussion**
- 13.00 *light lunch*
- Chairmen: M. Serrao*
- 15.00 **Special lecture:**  
**Gait rehabilitation by NWR-based functional electrical therapy**  
*Ole K. Andersen* (Aalborg, Denmark)
- 15.30-18.30 **Training (video-session)**

**Wednesday 10/09/2014**

## GAIT AND BALANCE DISORDERS IN SPASTICITY AND DYSTONIAS

*Chairmen: H. Binder, N. Smania*

- 9.00 **Gait analysis and botulinum toxin**  
*J. Jacinto* (Lisbon, Portugal)
- 9.30 **Robotic and Botulinum Toxin**  
*C. Werner* (Berlin, Germany)
- 10.00 **Rehabilitation procedures in the management of spasticity**
  - Neuromotor techniques, physical treatments and orthosis  
*A. Picelli* (Verona, Italy)
  - Intrathecal infusion  
*L. Saltuari* (Innsbruck, Austria)
  - Epidural stimulation  
*H. Binder* (Wien, Austria)
- 11.30 **Axial and foot dystonia treatment**  
*C. Tassorelli* (Pavia, Italy)
- 12.00 **Functional surgery and post-surgery rehabilitation**  
*P. Zerbinati* (Castellanza-VA, Italy)
- 12.30 *light lunch*

*Chairmen: E. Dalla Toffola*

- 14.30 **Special lecture:**  
**Normal and impaired control of locomotion: impact in neurorehabilitation**  
*V. Dietz* (Zurich, Switzerland)
- 15.00-18.30 **Training (video-session)**

**Thursday 11/09/2014**

## INTEGRATED APPROACH TO GAIT AND BALANCE REHABILITATION OF NEUROLOGICAL DISEASES

*Chairmen: G. Abbruzzese, P. Thoumie*

- 8.45 **Parkinson's disease**  
*G. Abbruzzese* (Genova, Italy)
- 9.30 **Stroke**  
*N. Smania* (Verona, Italy)
- 10.15 **Ataxias**  
*M. Serrao* (Rome, Italy)
- 11.00 **Peripheral neuropathies**  
*P. Thoumie* (Paris, France)
- 11.45 **Discussion**
- 12.00 *light lunch*
- 15.00-17.00 **Training (video-session)**
- Social events**
- 17.00 **Tour of the City of Pavia**
- 19.30 **Social Dinner**

**Friday 12/09/2014**

## INTEGRATED APPROACH TO GAIT AND BALANCE REHABILITATION OF NEUROLOGICAL DISEASES

*Chairmen: C. Pistarini, G. Scivoletto*

- 8.45 **Multiple sclerosis**  
*MG. Grasso* (Rome, Italy)
- 9.30 **Spinal cord injury**  
*G. Scivoletto* (Rome, Italy)
- 10.15 **Mild and severe brain injury**  
*G. Maggioni* (Pavia, Italy)
- 11.00 **Cerebral palsy**  
*E. Fazzi* (Brescia, Italy)
- 11.45 **Discussion**
- 12.15 **Final remarks**

The programme of the training (video-session) performed at the Collegio Fratelli Cairoli, IRCCS C. Mondino and IRCCS S. Maugeri Foundations will be included in the final version.

**TOPICS:**

- |   |                                     |
|---|-------------------------------------|
| - gait analysis                                 | - lokomat                           |
| - erigo   | - gait trainer                      |
| - FES / FES cycle                               | - rewalk                            |
| - treadmill and BWS                             | - balance rehabilitation techniques |
| - gait rehabilitation techniques                | - stabilometric platform            |
| - vestibular rehabilitation                     | - Botulinum toxins                  |
| - perceptual rehabilitation and balance control | - neuromodulation                   |
| - foot mechanical stimulation                   | - VRT                               |
| - Nordic walking                                |                                     |