

June 24 - 26, 2009

19th Annual Conference

# Clinical Gait Analysis: A Focus on Interpretation

Three-Day Course

June 24 – 26, 2009

Basic and Advanced Courses



Sponsored by:



Gillette Children's  
*Specialty Healthcare*

St. Paul, Minn.



Connecticut Children's  
Medical Center  
Hartford, Conn.



University Hospital  
Pellenberg  
Leuven, Belgium

Crowne Plaza Northstar (Hotel) – Downtown  
618 Second Ave. S.  
Minneapolis, MN 55402

# Course Objectives

Gillette Children's Specialty Healthcare, Connecticut Children's Medical Center, and University Hospital Pellenberg (Belgium) will offer simultaneous **basic** and **advanced** courses on gait analysis. The **basic** course teaches introductory skills for analyzing gait, interpreting gait data and planning associated treatments. The **advanced** course is tailored to clinicians who have experience in gait analysis. It examines — in greater depth — the complexities of gait interpretation for children who have disabilities.

**Both courses focus on interpreting gait data and planning associated treatments for ambulatory children who have cerebral palsy.**

## Basic Course Objectives

At the completion of the course, participants should be able to:

- Describe the kinematics, kinetics and electromyography (EMG) patterns associated with typical gait
- Identify typical deviations and possible causes for those deviations in gait data of children who have cerebral palsy
- Explain the limitations of, and potential errors associated with, clinical gait analysis
- Demonstrate basic skills in interpreting gait-analysis data
- Describe a corresponding treatment plan based on gait-analysis data

## Advanced Course Objectives

At the completion of the course, participants should be able to:

- Summarize how to use a problem-identification approach to interpret gait-analysis data
- Describe the influence of mathematical modeling on the interpretation of gait data across planes
- Describe lever-arm dysfunction and its effect on gait
- Demonstrate basic understanding of the dilemmas of modeling foot deformities and interpreting data
- Describe the mechanical principles associated with crouch gait and their influence on gait data

# AGENDA

## Basic Course

### Wednesday, June 24, 2009

7:30 a.m.

Registration

8:00 a.m.

Qualitative Description of Normal Gait

Model Basics

Kinematic Concepts and Typical Patterns

Physical Examination for Gait Analysis

Kinetic Concepts and Typical Patterns

Electromyography Data and Interpretation Guides

Influence of the Trunk on Gait

Clinical Evaluation of the Foot

Technical Quality Assurance

Energy Expenditure in Typical and Pathologic Gait

Functional Outcome Tools

Introduction to Clinical Gait Interpretation

Case Study 1

5:00 p.m.

End of Day 1

### Thursday, June 25, 2009

8:00 a.m.

Overview of Pathologic Gait in Cerebral Palsy

Sagittal Plane: Typical Deviations and Possible Causes

Transverse and Coronal Planes: Typical Deviations and Possible Causes

Management of Skeletal Deformity

Management of Soft-Tissue Deformity

Case Study 2

Management of Abnormal Tone

Case Study 3

Evaluation and Classification of Outcomes

5:00 p.m.

End of Day 2

### Friday, June 26, 2009

8:00 a.m.

Joint Kinetic Patterns in Pathologic Gait

Interactions Across Planes

Clinical Aspects of Myelomeningocele

Introduction of Musculoskeletal Modeling

Case Study 4

Avoidable Iatrogenic Complications in the Treatment of Cerebral Palsy

Case Study 5

Understanding Orthotic Function Using Gait Analysis

Functional Model Calibration

Rehabilitation After Single-Event, Multilevel Surgery

Topics in Orthopaedic Surgery

Gait Analysis as a Diagnostic Tool

5:00 p.m.

End of Day 3

# Advanced Course

## Wednesday, June 24, 2009

- 7:30 a.m. Registration
- 8:00 a.m. Kinematics: Review and Data Conventions
- Kinetics: Review and Data Conventions
- Common Patterns in Pathological Gait (Kinematics and Kinetics)
- Kinematics: Interactions Across Planes
- Electromyography: Review and Data Conventions
- Review of Treatment Principles: Bony Problems
- Review of Treatment Principles: Soft-Tissue Tightness
- Case Study 1
- Evaluation and Classification of Outcomes
- 5:00 p.m. End of Day 1

## Thursday, June 25, 2009

- 8:00 a.m. Functional Model Calibration
- Musculoskeletal Modeling and Simulation Overview
- Optimization of Orthotic Function
- Mini Case: Myelomeningocele
- Mini Case: Pitching Principles
- Mini Case: Other Pathologies
- Pathophysiology of Spasticity and Abnormal Tone
- Treatment of Abnormal Tone: Botulinum Toxin
- Treatment of Abnormal Tone: Intrathecal Baclofen Pump
- Treatment of Spasticity: Selective Dorsal Rhizotomy
- Case 2
- 5:00 p.m. End of Day 2

## Friday, June 26, 2009

- 8:00 a.m. Clinical Evaluation of Foot Deformity
- Foot Modeling
- Surgical Techniques for the Foot
- Gillette Gait Indices
- Energy Expenditure in Normal and Pathologic Gait
- Topics in Orthopaedic Surgery
- Gillette Functional Assessment Questionnaire
- Use of Multilevel Botulinum Toxin in Cerebral Palsy
- Introduction of Crouch Gait
- Surgical Treatment of Crouch Gait
- Rehabilitation Following Patellar Tendon Advancement and Distal Femoral Extension Osteotomy
- Case 3 – Crouch
- Gait Analysis as a Diagnostic Tool
- 5:00 p.m. End of Day 3

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Gillette Children's Specialty Healthcare

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Continuing Medical Education Specialist  
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Gillette Children's Specialty Healthcare

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Center for Gait and Motion Analysis  
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Medical Director, Center for Pediatric Orthopaedics  
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Engineer  
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**\*\*Melany Westwell, P.T., M.S.**

Physical Therapist  
Connecticut Children's Medical Center  
East Hartford, Conn.



## Tuition

Tuition for each course (basic and advanced) is \$900. For active full-time students, residents and fellows, tuition is \$650. Fee includes conference materials, lunch for three days and the book, *The Identification and Treatment of Gait Problems in Cerebral Palsy*, third edition, James R. Gage, M.D., editor-in-chief.

**Enrollment is limited to 50 participants for each course.**

## Accreditation

Gillette Children's Specialty Healthcare is accredited by the Minnesota Medical Association to provide continuing medical education (CME) for physicians. Gillette takes responsibility for the content, quality and scientific integrity of the CME activity.

Gillette designates this educational activity for a maximum of 22 hours (basic course) and 22 hours (advanced course) in Category 1 *AMA PRA Category 1 Credits™*. Physicians should claim credit commensurate with the extent of their participation in the activity.

This CME-accredited activity meets the requirements for a maximum of 22 continuing education credits for both the basic and advanced courses for physical therapists. If you have questions, please contact your state board.

On behalf of orthotists, the sponsors of this course have filed a request with the American Board for Certification in Orthotics and Prosthetics, Inc., for 22 hours of professional continuing education credits for both the basic and advanced courses.

## Course Information

If you have questions about course content, call Jean Stout, P.T., M.S., at 651-312-3112 or 800-719-4040 (toll-free). Or e-mail her at [jstout@gillettechildrens.com](mailto:jstout@gillettechildrens.com). For registration information, call Mary Grimm at 651-578-5002 or 800-719-4040 (toll-free). Or e-mail her at [mgrimm@gillettechildrens.com](mailto:mgrimm@gillettechildrens.com). For more information about Gillette, visit our Web site at [www.gillettechildrens.org](http://www.gillettechildrens.org).

## Accommodations

A block of rooms has been reserved at the Crown Plaza Northstar (Hotel) – Downtown at the rate of \$129 per night. When making reservations, be sure to indicate that you'll be attending the Gillette gait analysis conference. Please make reservations by **June 2, 2009**, to receive the group rate.

### **Crowne Plaza Northstar (Hotel) – Downtown**

618 Second Ave S., Minneapolis, MN 55402

For reservations, call 612-338-2288 or 800-556-7827 (toll-free). You also can make reservations online at <http://www.cpmnneapolis.com>. The group booking code is GIL.

The hotel is accessible from the airport via:

- Taxi cab
- SuperShuttle ([www.supershuttle.com](http://www.supershuttle.com))
- Light-rail system ([www.metrotransit.org/rail](http://www.metrotransit.org/rail))

# Clinical Gait Analysis: A Focus on Interpretation

## BASIC and ADVANCED Courses

### Which Course Is Right For You?

The pace of the advanced course is accelerated and depends on a high level of previous knowledge. Advanced course participants must have:

- Previously attended one or more basic-level courses on gait analysis
- A clear understanding of kinematics and kinetics, including graphic outputs
- Significant past experience in gait-analysis interpretation and its incorporation into treatment planning

If in doubt, take the basic course. If you have questions about the courses, call Jean Stout at 651-312-3112 or 800-719-4040 (toll-free).

### CONFERENCE REGISTRATION

Online registration is available at [www.gillettechildrens.org](http://www.gillettechildrens.org).

Name \_\_\_\_\_

Profession \_\_\_\_\_ Specialty \_\_\_\_\_

Institution \_\_\_\_\_ Years of Gait-Lab Experience \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State/Country \_\_\_\_\_ ZIP/Postal Code \_\_\_\_\_

Office Phone (\_\_\_\_) \_\_\_\_\_ Home Phone (\_\_\_\_) \_\_\_\_\_

E-mail Address \_\_\_\_\_

I plan to attend the:     Basic Course     Advanced Course  
(Please select one; participants can't switch between levels.)

Basic/Advanced Course - \$900

Basic/Advanced Course Student - \$650 (active full-time student, resident or fellow)

Credit Card Number \_\_\_\_\_

Expiration Date (month/day/year) \_\_\_\_\_  Visa     MasterCard

Signature \_\_\_\_\_

I choose to pay by check. I've enclosed a check for \$\_\_\_\_\_ (see mailing instructions below).  
Please make check or money order payable in U.S. funds to: Gillette CME.

#### Mail checks and registrations to:

Mary Grimm, Continuing Medical Education  
Gillette Children's Specialty Healthcare  
200 University Ave. E., St. Paul, MN 55101

Phone: 651-578-5002 or 800-719-4040 (toll-free) Fax: 651-628-4484

**Registration deadline: June 2, 2009. Please register early!**