

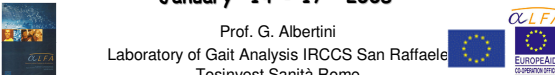
TRAMA *TR*aining in *M*otion *A*nalysis

**Second Course "Motion Analysis and clinics:
why to set up a Motion Analysis Lab ?"**

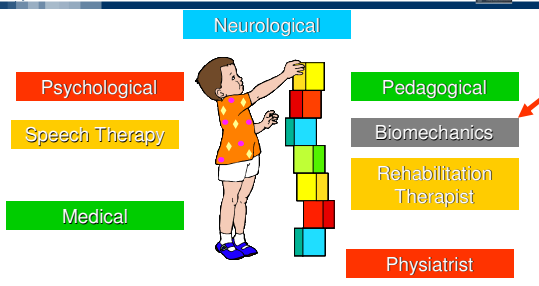
TRAMA Project

January 14 - 17th 2008

Prof. G. Albertini
Laboratory of Gait Analysis IRCCS San Raffaele
Tosinvest Sanità Rome




Evaluation



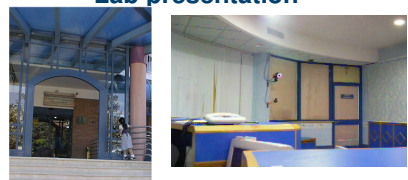
Psychological
Speech Therapy
Medical
Neurological
Pedagogical
Biomechanics
Rehabilitation Therapist
Physiatrist

Course "Motion Analysis and c Paediatric on Analysis Lab ?"
TRAMA Project - January 14 - 17th 2008




Introduction

**The Pediatric Dept and the Gait Analysis
Lab presentation**




Course "Motion Analysis and clinics: why to set up a Motion Analysis Lab ?"
TRAMA Project - January 14 - 17th 2008



The Gait Analysis Lab

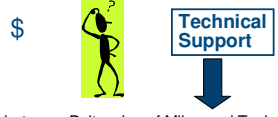
•The lab is the result of a scientific collaboration signed in 1997 between Bioeng Dept of Politecnico of Milan and IRCCS San Raffaele Hospital in Rome.



Course "Motion Analysis and clinics: why to set up a Motion Analysis Lab ?"
TRAMA Project – January 14 – 17th 2008

The history

Prof Albertini of IRCCS San Raffaele Pisana was looking for the possibility to buy a gait Lab for his pathological children .



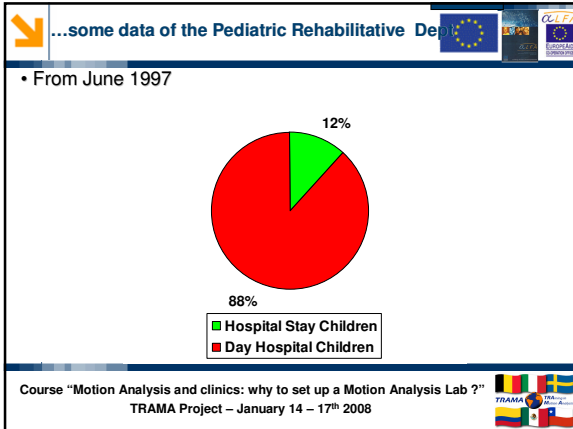
Official collaboration between Politecnico of Milan and Tosinvest group.
The request : a bioeng, already trained on the use of Movement analysis for clinical applications, able to supervise all technical aspect of the gait Lab.

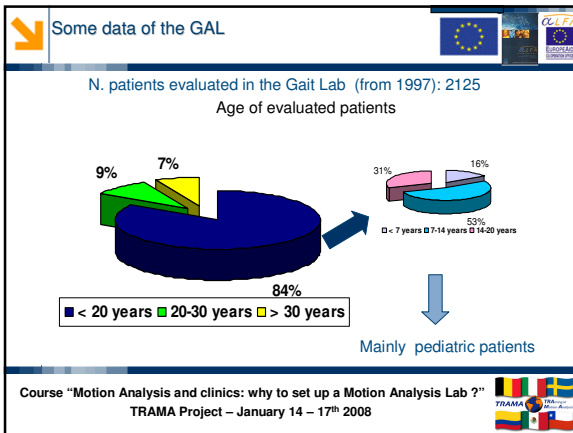
Course "Motion Analysis and clinics: why to set up a Motion Analysis Lab ?"
TRAMA Project – January 14 – 17th 2008

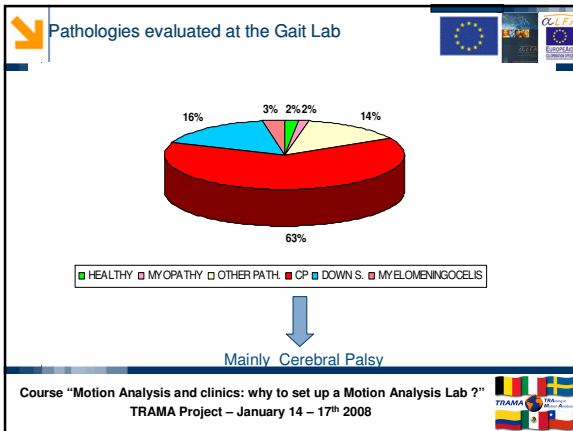


University, research and clinic

Course "Motion Analysis and clinics: why to set up a Motion Analysis Lab ?"
TRAMA Project – January 14 – 17th 2008







The staff of GAL

- ✓ **Director**
Prof Giorgio Albertini , Neurologist
- ✓ **Technical director**
Eng., PhD , Manuela Galli , Researcher
Bioeng Dept, Politecnico di Milano
- ✓ **Tecnician**
Mr. Nunzio Tenore, Physiotherapist
- ✓ **Physicians**
Dr Gabriella di Girolamo,
Dr Claudia Condoluci,...
- ✓ **Orthopedists**
Dr. Reinal Brunner, Dr Francesco Costici,...

Course "Motion Analysis and clinics: why to set up a Motion Analysis Lab ?"
TRAMA Project – January 14 – 17th 2008

The equipment of GAL

- ✓ 12-camera optoelectronic system (ELITE2002, BTS, Italy)
- ✓ 2 force platforms (Kistler, CH)
- ✓ 2-camera video system (BTS, Italy)
- ✓ 2 telemetric EMG units (16 channel) (Poket EMG, BTS, Italy)
- ✓ Baropodometric system (FScan system)

Used protocol
Helen Heyes Marker Set

R. B. Davis. "A gait analysis data collection and reduction technique,"
Hum. Mov. Sci., vol. 10, pp. 575-587, 1991.

Course "Motion Analysis and clinics: why to set up a Motion Analysis Lab ?"
TRAMA Project – January 14 – 17th 2008

The Tosinvest Gait Lab network

IRCCS San Raffaele Pisana
Rome

San Raffaele Cassino
Cassino

San Raffaele
Ceglie Messapica

**BIOENG.
DEPT. MILAN**

San Raffaele
Sulmona

Institute of Basic Research
NY




Course "Motion Analysis and clinics: why to set up a Motion Analysis Lab ?"
TRAMA Project – January 14 – 17th 2008











Research activity


Course "Motion Analysis and clinics: why to set up a Motion Analysis Lab ?"
 TRAMA Project – January 14 – 17th 2008
 





Research in Cerebral Palsy



-  To monitor the patient locomotor alterations
-  To evaluate decision making
-  To evaluate treatment outcome


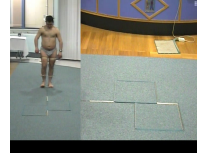




Evaluation of 2500 patients with CP


Course "Motion Analysis and clinics: why to set up a Motion Analysis Lab ?"
 TRAMA Project – January 14 – 17th 2008
 


Research



Movement analysis in children with Down syndrome

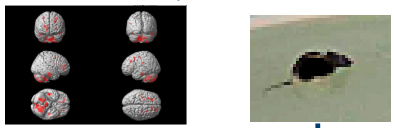



Evaluation of 350 patients with Down syndrome

Course "Motion Analysis and clinics: why to set up a Motion Analysis Lab ?"
 TRAMA Project – January 14 – 17th 2008
 

Research in Down syndrome

DOWN Syndrome studies



VBM

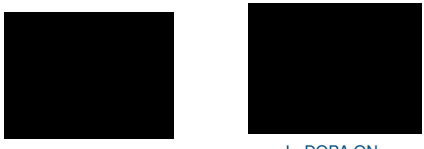
Mouse model with DS
In collaboration with Institute
of Basic Research NY

Course "Motion Analysis and clinics: why to set up a Motion Analysis Lab ?"
TRAMA Project – January 14 – 17th 2008

Research

Posture and movement analysis in elderly
(risk of fall).

Gait analysis in subject with Parkinson
disease.



L- DOPA OFF L- DOPA ON

Course "Motion Analysis and clinics: why to set up a Motion Analysis Lab ?"
TRAMA Project – January 14 – 17th 2008

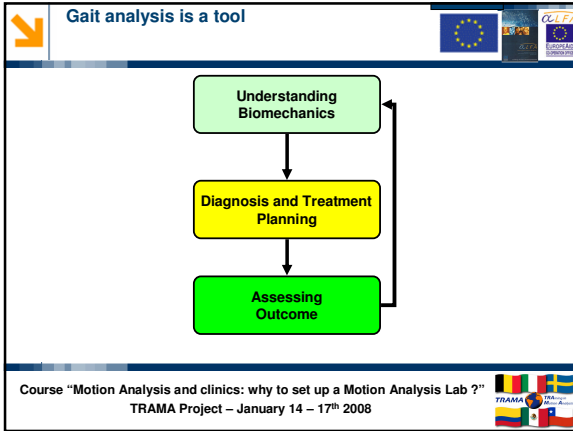
In our experience

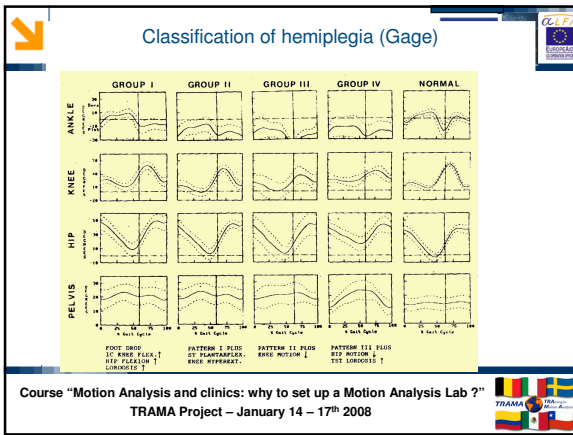
Gait analysis is a tool

Before treatment After treatment

Better evaluation of
functional limitation
and the joint involved Optimal treatment outcome
evaluation

Course "Motion Analysis and clinics: why to set up a Motion Analysis Lab ?"
TRAMA Project – January 14 – 17th 2008





Gait analysis pre and post.....

Course "Motion Analysis and clinics: why to set up a Motion Analysis Lab ?"
TRAMA Project – January 14 – 17th 2008

Main treatments of Cerebral palsy

REVERSIBLE

PERMANENT

GENERAL

FOCALIZED

Oral therapy

SDR

Exercise

ITB

Orthoses

BTA

Orthopaedic Surgery

Course "Motion Analysis and clinics: why to set up a Motion Analysis Lab ?"
TRAMA Project – January 14 – 17th 2008

Thank you

Course "Motion Analysis and clinics: why to set up a Motion Analysis Lab ?"
TRAMA Project – January 14 – 17th 2008
