Bio-feedback system applied in Poland & Europe

全身运动反馈系统在波兰和欧洲的应用

Self introduction

Małgorzata Golik

Physiotherapist,
certified, master's degree physiotherapist,
neurological disorders specialist

Graduation:
Warsaw Academy of Physical Activity and Education, Poland

Poland


Orange
RYCKO

Workplace

Certification – methods

- PNF
- NDT BOBATH
- KINESIO TAPING
- ACTIVE RELEASE TECHNQUE
- MANUAL THERAPY
- VOJTA METHOD

Services:

- Providing a individual healthcare services dedicated to:

CENTRUM TERAPII

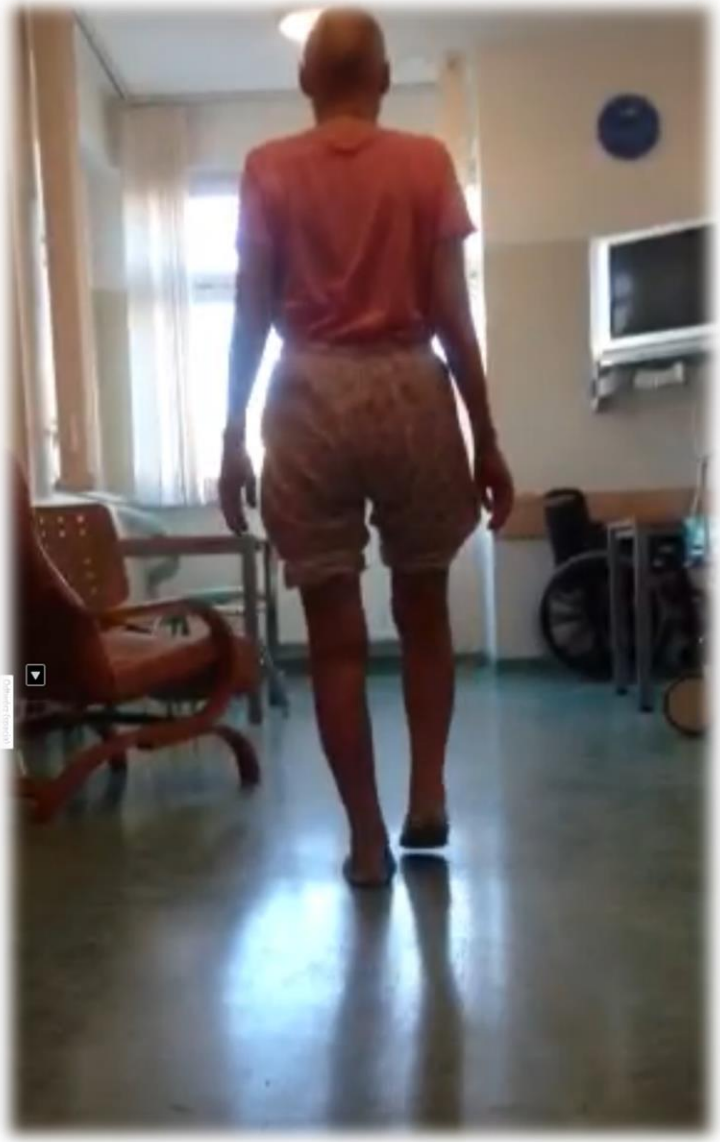
PROMITIS

Dr Vaclav Vojta method

Stroke patients

Outsourcing for hospitals without rehabilitation services

– stroke rehab programs



Emergency treatment for stroke patients

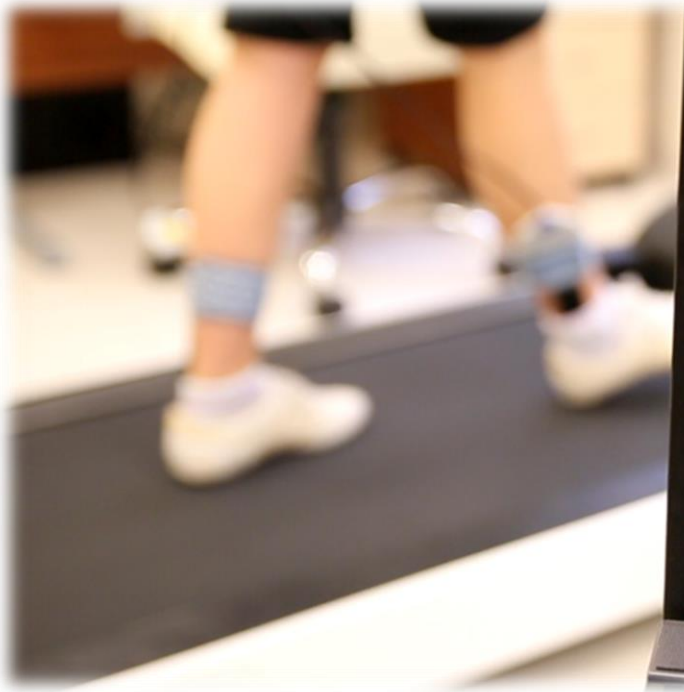
Parkinson's desease

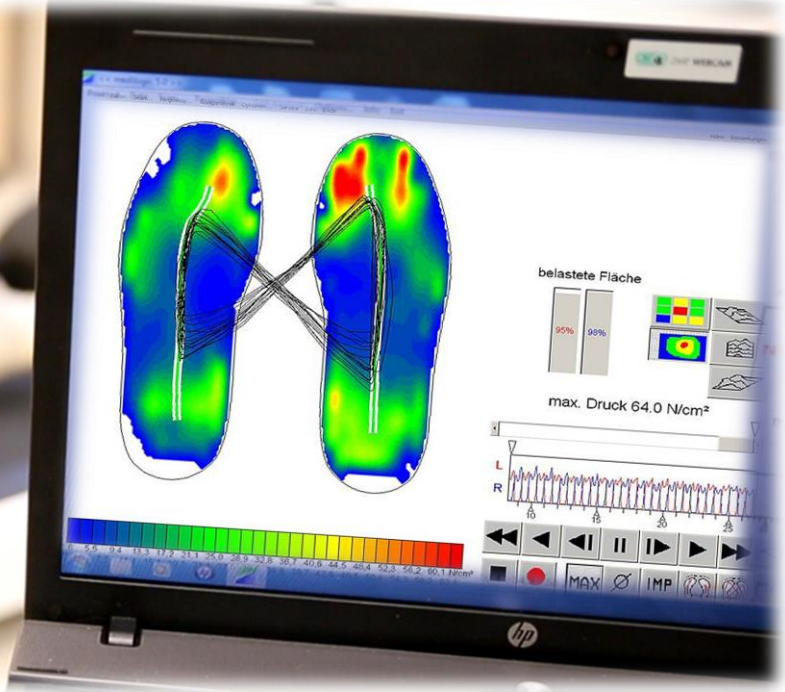
PROGRAM REGIONALNY
NARODOWA STRATEGIA SPÓJNOŚCI

WOJEWÓDZTWO LUBELSKIE

UNIA EUROPEJSKA
EUROPEJSKI FUNDUSZ ROZWOJU REGIONALNEGO

100 000,00 $
=70 000,00 euro

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95%
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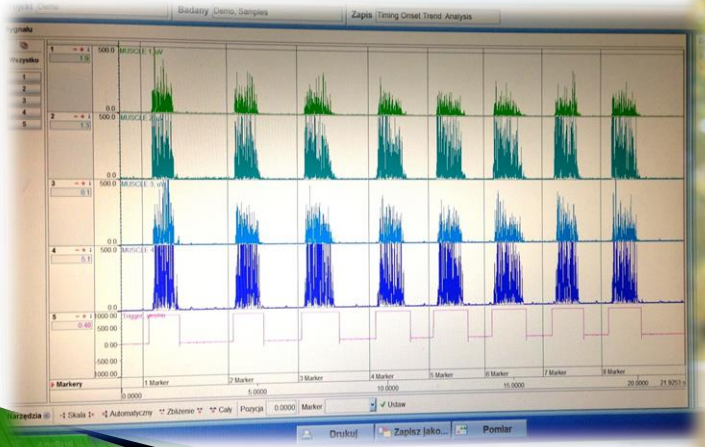
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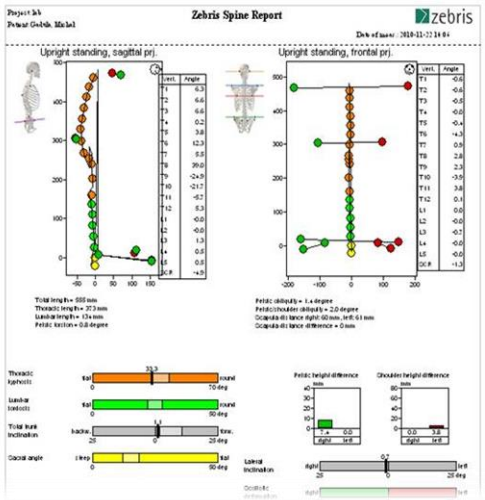
easytech
minitahus


Zebris Spine Report
zebris
Upright standing, sagittal prj.
Upright standing, frontal prj.


BTL-5816SLM

MediTutor Rehabilitation Software

HandTutor™ ArmTutor™ LegTutor™ 3DTutor™

Biofeedback backgroud

- Insert a meditouch ppt

Clinical Applications

- Traditional treatment
- Meditouch use combined with traditional
- compare

Remote rehab. benefits

Hospital usage

Software benefits

CASE STUDIES/案例分析

- **6 CASE STUDIES** – 5 ADULTS, 1 CHILD
  6 个案例–包括5名成人和1名儿童
- **TYPE OF CASES/案例类型:**
  - neurological disorders / 神经障碍
  - standarized group /?
    - *equal treatment plans / 同样的治疗计划*
    - *similar disorders, and functional impairments*
      同类失调和功能障碍
    - *similar goals / 同样的目标*

- **CASES AIM/案例目的:**
  - results assesment of long term treatment plan with Meditouch devices applications
    长期治疗计划后结果评估与Meditouch设备应用的关系。

Case I

ANNA 28 years old female / 安，28岁，女性

January 2013

Suffered / 病情:

ISCHEMIC STROKE, / 缺血性脑卒中

LEFT HEMISPHERE, / 脑左半球

- RIGHT SIDE OF THE BODY AFFECTED/ 右侧身体受到影响

Clinical evaluation/临床评估

- **Past medical history / 过去病史**
  - chronic headache, migraine type occurring once a week, since December 2012.
    / 慢性头疼，偏头疼一周，2012年12月起
- **Medical treatment / 治疗**
  - no treatment, no evaluation until the stroke incident
    / 无，无评估直至中风。
- **January 2013** – an ischemic stroke incident, occurred when she woke up in the morning
  / 2013年1月，当她起床时缺血性中风发生。
- **Emergency assessment** revealed as follow: (2013)/急诊评估:
  - a ischemic stroke in left brain hemisphere caused by a blood clot as the result of artial fibrillation and initially caused by estrogen treatment。
    雌性激素治疗导致的纤维化造成血管斑块脱落，从而导致的缺血性中风发作在左半脑。
  - minimal sensory/motor response from her right leg
    右腿只保存了极小的感知和运动反应。
  - no sensory/motor response from the right side of her mouth, face, upper extremity
    口部，面部及上半身无任何感觉/运动反应
  - visual loss and poor motility to the right
    视力丧失且视线很难向右侧运动。
  - loss of speech, except for the phrase: yes, yes, yes
    丧失言语功能除了简单的“是，是，是”
  - emotional response – frustrated, cry easily, as a result of shock
    情绪化反应– 沮丧，易哭，如同打击之后。

2013

- **Treatment, motor functions assessment**

  治疗，驱动功能评估

- Anna was staying in hospital stroke department, for 3 weeks and received a interdisciplinary treatment each day:

  安， 在医院中风部门接受治疗3周，每天接受联合康复治疗。

  - 2h of physiotherapy, 2小时物理治疗
  - 1h of speech therapy, 1小时言语治疗
  - psychological help, 心理帮助
  - 1h of occupational therapy，1小时作业治疗

- After three weeks she was enrolled to ambulatory rehabilitation program continued for next 3 months.

  3周后她登记参加流动康复治疗项目，为期3个月。

2013 october

- Registered in Miomed Centre, for individual ambulatory rehabilitation program

  在Miomed中心注册，正式开始流动康复项目。

- **Treatment history** 2013 july-october 治疗史 2013年7月到9月
  - reeducation of the fine and gross motor functions of upper extremity

    重新教育患者上肢精细和粗大运动功能。
  - Gait reeducation

    步态训练
  - Meditouch devices treatment with 3d Tutor, Arm Tutor, Leg Tutor, Hand Tutor

    全身反馈设备治疗包括3D，上肢，下肢，及手部训练。

Evaluations/评估

BARTHEL INDEX	2013.01 3 days after stroke	2013.05 5 months after stroke	2013.07 meditouch treatment beginning	2013.10 5 months after combined treatment
Bowels	1	2	2	2
Bladder	1	2	2	2
Grooming	0	1	1	1
Toilet use	0	1	2	2
Feeding	0	1	2	2
Transfer	0	2	3	3
Mobility	0	2	3	3
Dressing	0	1	2	2
Stairs	0	1	1	2
Bathing	0	0	1	1
Total	**2**	**13**	**19**	**20**

巴氏指数：日常活动能力量表

Fugl Meyer Index

UPPER EXTREMITY

	2013.01 3 days after stroke	2013.05 5 months after stroke	2013.07 meditouch treatment beginning	2013.10 5 months after combined treatment
I. Reflex	0	2	2	2
II. Volitional movement within synergies:				
Shoulder	0–1	1	1	2
– retraction	0–1	1	1	2
– elevation	0	1	1	2
– abduction	0	1	1	2
– adduction	0	1	1	2
– external rotation	0	1	1	2
– internal rotation				
Elbow				
– flexion	0	1	1	1–2
– extension	0	1	1	1–2
– supination	0	1	1	1–2
Forearm				
– pronation	0	1	1	2
– supination	0	1	1	2
III Volitional movement mixing synergies (without compensation)				
Shoulder	0	1	1	2
– flexion 0–90 ° with elbow at 0° with pronation–supination at 0°				
– external rotation	0	1	1	1
– internal rotation	0	1	1	2
– hand to L spine	0	1	1	2

Fugl Meyer Index

UPPER EXTREMITY

	2013.01 3 days after stroke	2013.05 5 months after stroke	2013.07 meditouch treatment beginning	2013.10 5 months after combined treatment
Elbow				
Flexion	0	1	1	2
Extension	0	1	1	2
Forearm				
Pronation	0	1	1	
Supination	0	1	1	1–2
				1–2
Wrist				
Flexion	0	2	2	2
Extension	0	1	1	1–2
HAND				
Fingers				
Flexion	1	2	2	2
Extension	1	1	1	1
K. JOINT PAIN	0	1	1	2
L. MUSCLE PAIN WHEN STRETCHED	0	1	1	2

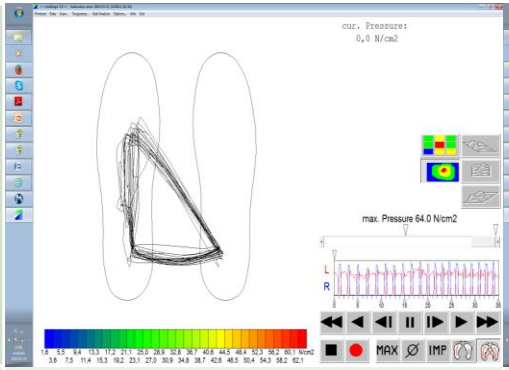
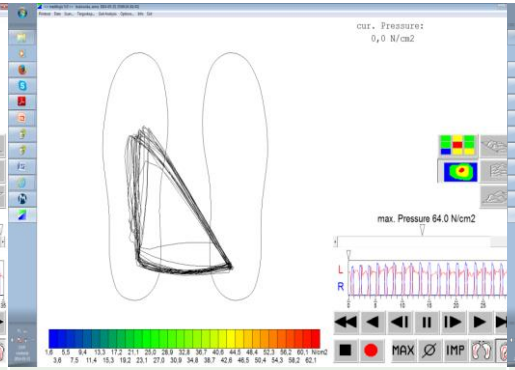
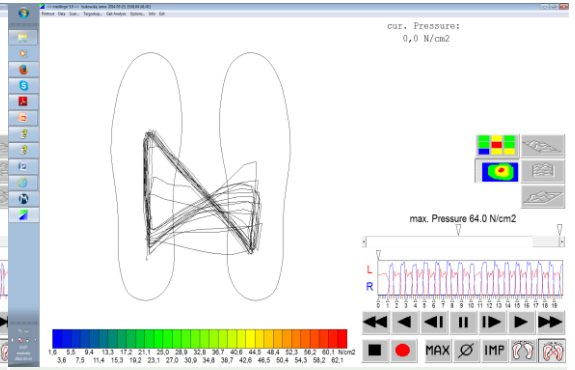
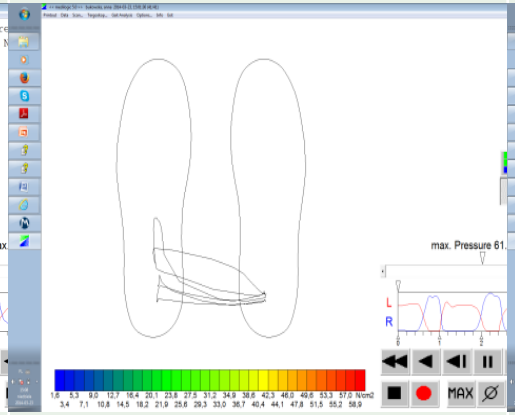
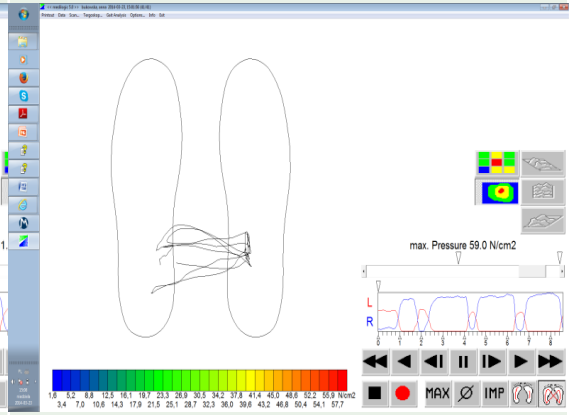
Fugl Meyer Index

Lower extremity

	2013.01 3 days after stroke	2013.05 5 months after stroke	2013.07 meditouch treatment beginning	2013.10 5 months after combined treatment
HIP				
Flexion	0	1	1	2
Extension	0	1	1	2
Internal rotation	0	1	1	2
External rotation	0	1	1	2
KNEE				
Flexion	0	2	2	1–2
extension	0	1	1	1–2
ANKLE				
dorsiFlexion				
Plantar flexion	1	2	2	2
	1	1	1	1–2
TOES				
Flexion				
Extension	0	1	1	2
	0	1	1	2
JOINT PAIN	0	1	1	2
MUSCLE PAIN WHEN STRETCHED	0	1	1	2

Functional tests	2013.01 3 days after stroke	2013.05 5 months after stroke	2013.07 meditouch treatment beginning	2013.10 5 months after combined treatment
GROSS MOTOR:				
UPPER EXTREMITY				
Hand to knee	0	0	1–2	2
Hand to trunk	0	1	1–2	2
Hand to head	0	1	1–2	2
Hand to lower back	0	1	1–2	2
FINE MOTOR:				
UPPER EXTREMITY				
Reaching test	0	1–2	2	2
Box- blocks test 5 blocks	0	0	1–2	2
Hair combing	0	0	1–2	2
Paiting a circle on a paper sheet *with stable wrist*	0	0	1	2
GROSS MOTOR:				
LOWER EXTREMITY, TRUNK:				
Sit to stand	0	1–2	1–2	2
One leg stand (impaired) [s]	0	3 sec	10 sec	2

Tensometric evaluation/张力评估

Test	2013.05 5 months after stroke	2013.07 meditouch treatment beginning	2013.10 4 months after combined treatment
Walk 16 m			
One leg stand			

Treatment review/治疗回顾

– 3d, HT, ARM, LEG TUTORS applications 应用各类设备

- video

II case –

MAGDA 34 y.o female / 马格达，34岁，女

December 2012

Suffered/病情:
haemorhagic STROKE,/出血性中风
LEFT HEMISPHERE, /脑左半球

– RIGHT SIDE OF THE BODY AFFECTED/ 右侧身体受到影响

Clinical evaluation

- **Past medical history/病史**
  - headache 3 months before stroke onset / 中风发病前头疼3个月
- **Medical treatment /治疗史**
  - acupuncture to reduce headache /针灸减轻头痛
- **December 2012** – an haemorhagic stroke incident while gym training,
- 2012年12月–在健身房中发生出血性中风
- **Emergency assessment** revealed as follow: (2012):

  急诊评估如下：
  - a haemoragic stroke in left brain hemisphere caused by a arteriovenous malformation
    脑动脉畸形造成的左脑出血性中风
  - minimal sensory/motor response from her right leg
    右腿仅剩极小感知和运动反应。
  - no sensory/motor response from the right side of her mouth, face upper extremity
    上半身无知觉/运动反应
  - loss of speech,
    丧失言语能力
  - emotional response – frustrated, cry easily, as a result of shock
    容易情绪化– 沮丧，易哭。

2013

- **Treatment, motor functions assessment**
- Magda was staying in hospital stroke department, for 4 weeks and received a interdisciplinary treatment each day:

  马格达住院4周并每天接受了综合治疗。

  - 2h of physiotherapy, 2小时 物理治疗
  - 1h of speech therapy, 1小时言语治疗
  - psychological help, 心里帮助
  - 1h of occupational therapy 1小时作业治疗

  After three weeks she was enrolled to ambulatory rehabilitation program continued for next 3 months.

  3周后她登记参加流动康复治疗项目，为期3个月。

2013 April

- Registered in Miomed Centre, for individual ambulatory rehabilitation program

  在Miomed中心注册，正式开始流动康复项目。

- **Treatment history** 2013
- – reeducation of the fine and gross motor functions of upper extremity

  重新教育患者上肢精细和粗大运动功能。

  – Gait reeducation

  步态训练

  – Meditouch devices treatment with 3d Tutor, Arm Tutor, Leg Tutor, Hand Tutor

  全身反馈设备治疗包括3D，上肢，下肢，及手部训练。

evaluations

BARTHEL INDEX	2012 3 days after stroke	2013.02 3 months after stroke	2013.04 meditouch treatment beginning	2013.08. 5 months after combined treatment
Bowels	1	2	2	2
Bladder	1	2	2	2
Grooming	0	1	1	1
Toilet use	0	1	2	2
Feeding	0	1	2	2
Transfer	0	2	3	3
Mobility	0	2	3	3
Dressing	0	1	2	2
Stairs	0	1	1	2
Bathing	0	0	1	1
Total	**2**	**13**	**19**	**20**

Fugl Meyer Index

UPPER EXTREMITY

	2012 3 days after stroke	2013.02 3 months after stroke	2013.04 meditouch treatment beginning	2013.08. 5 months after combined treatment
I. Reflex	0	2	2	2
II. Volitional movement within synergies:				
Shoulder	0–1	1	1	2
– retraction	0–1	1	1	2
– elevation	0	1	1	2
– abduction	0	1	1	2
– adduction	0	1	1	2
– external rotation	0	1	1	2
– internal rotation				
Elbow				
– flexion	0	1	1	1–2
– extension	0	1	1	1–2
– supination	0	1	1	1–2
Forearm				
– pronation	0	1	1	2
– supination	0	1	1	2
III Volitional movement mixing synergies (without compensation)				
Shoulder	0	1	1	2
– flexion 0–90 ° with elbow at 0° with pronation–supination at 0°				
– external rotation	0	1	1	1
– internal rotation	0	1	1	2
– hand to L spine	0	1	1	2

Fugl Meyer Index

UPPER EXTREMITY

	2012 3 days after stroke	2013.02 3 months after stroke	2013.04 meditouch treatment beginning	2013.08. 5 months after combined treatment
Elbow				
Flexion	0	1	1	2
Extension	0	1	1	2
Forearm				
Pronation	0	1	1	
Supination	0	1	1	1–2
				1–2
Wrist				
Flexion	0	2	2	2
Extension	0	1	1	1–2
HAND				
Fingers				
Flexion	1	2	2	2
Extension	1	1	1	1
K. JOINT PAIN	0	1	1	2
L. MUSCLE PAIN WHEN STRETCHED	0	1	1	2

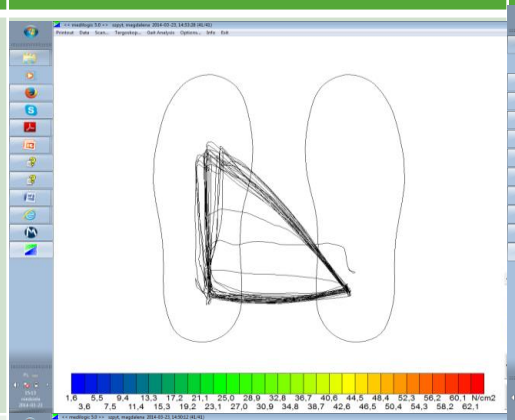
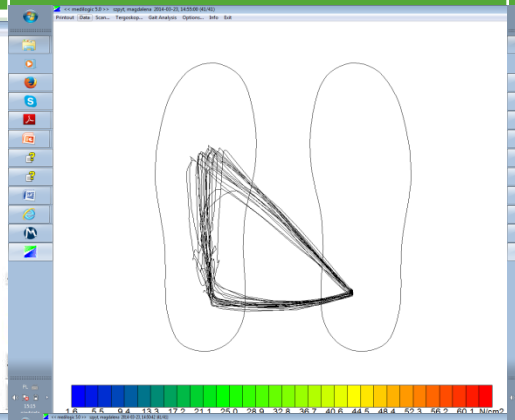
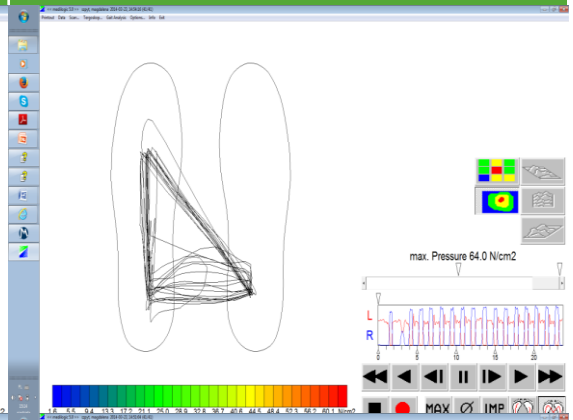
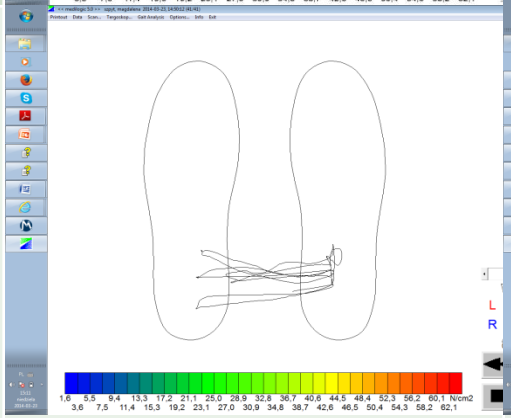
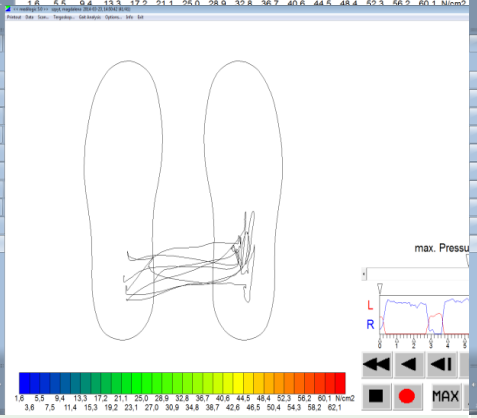
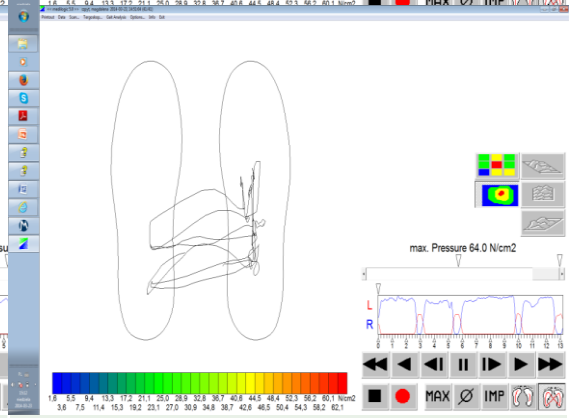
Fugl Meyer Index

Lower extremity

	2012 3 days after stroke	2013.02 3 months after stroke	2013.04 meditouch treatment beginning	2013.08. 5 months after combined treatment
HIP				
Flexion	0	1	1	2
Extension	0	1	1	2
Internal rotation	0	1	1	2
External rotation	0	1	1	2
KNEE				
Flexion	0	2	2	1–2
extension	0	1	1	1–2
ANKLE				
dorsiFlexion				
Plantar flexion	1	2	2	2
	1	1	1	1–2
TOES				
Flexion				
Extension	0	1	1	2
	0	1	1	2
JOINT PAIN	0	1	1	2
MUSCLE PAIN WHEN STRETCHED	0	1	1	2

Functional tests	2012 3 days after stroke	2013.02 3 months after stroke	2013.05 meditouch treatment beginning	2013.10. 5 months after combined treatment
GROSS MOTOR:				
UPPER EXTREMITY				
Hand to knee	0	0	1–2	2
Hand to trunk	0	1	1–2	2
Hand to head	0	1	1–2	2
Hand to lower back	0	1	1–2	2
FINE MOTOR:				
UPPER EXTREMITY				
Reaching test	0	1–2	2	2
Box- blocks test 5 blocks	0	0	1–2	2
Hair combing	0	0	1–2	2
Paiting a circle on a paper sheet *with stable wrist*	0	0	1	2
GROSS MOTOR:				
LOWER EXTREMITY, TRUNK:				
Sit to stand	0	1–2	1–2	2
One leg stand (impaired) [s]	0	3 sec	10 sec	2

Tensometric evaluation

Test	2013.05.	2013.07 meditouch applied	2013. 10. 5 months after meditouch treatment
Walk 16 m			
One leg stand			

Treatment review/治疗回顾

– 3d, HT, ARM, LEG TUTORS applications

- video

Ill case –

ANDREW 56 y.o male / 安德鲁 56岁 男

June 2011

Suffered/病情:

ISCHEMIC STROKE /缺血性中风,

LEFT HEMISPHERE, /脑左半球

– RIGHT SIDE OF THE BODY AFFECTED

Clinical evaluation/临床评估

- **Past medical history/病史**
  - no previous heath problems, slight obesity/ 无病史，轻微肥胖
- **Medical treatment /治疗**
  - no treatment，no evaluation until the stroke incident/无
- **June 2011**– an ischemic stroke incident, in the morning/
  2011年，晨起发上中风
- **Emergency assessment** revealed as follow: (2011):
  - a ischemic stroke in left brain hemisphere caused by a blood clot as the result of artial fibrillation
    纤维化造成血管斑块脱落，从而导致的缺血性中风发作在左半脑。
  - minimal sensory/motor response from his right leg
    右腿仅剩极小感知和运动反应。
  - good sensory/motor response from the right side of his mouth, face, upper extremity
    右侧上半身感觉及驱动良好。
  - no visual loss /视力良好。
  - loss of speech, except of few phrases/ 基本丧失言语功能

2011

- **Treatment, motor functions assessment**
- Magda was staying in hospital stroke department, for 2 weeks and received a interdisciplinary treatment each day:

  安德鲁住院2周并每天接受了综合治疗。

  - 2h of physiotherapy, 2小时 物理治疗
  - 1h of speech therapy, 1小时言语治疗
  - psychological help, 心里帮助
  - 1h of occupational therapy 1小时作业治疗

  After three weeks she was enrolled to ambulatory rehabilitation program continued for next 4 months.

  3周后她登记参加流动康复治疗项目，为期4个月。

2013 april

- Registered in Miomed Centre, for individual ambulatory rehabilitation program

- **Treatment history** 2013 april-july
  - reeducation of the fine and gross motor functions of upper extremity
  - Gait reeducation
  - Meditouch devices treatment with 3d Tutor, Arm Tutor, Leg Tutor, Hand Tutor

evaluations

BARTHEL INDEX	2011 3 days after stroke	2011.10. 5 months after stroke	2013.04 meditouch treatment beginning	2013.07. 3 months after combined treatment
Bowels	1	2	2	2
Bladder	1	2	2	2
Grooming	0	1	1	1
Toilet use	0	1	2	2
Feeding	0	1	2	2
Transfer	0	2	3	3
Mobility	0	2	3	3
Dressing	0	1	2	2
Stairs	0	1	1	2
Bathing	0	0	1	1
Total	**2**	**13**	**19**	**20**

Fugl Meyer Index

UPPER EXTREMITY

	2011 3 days after stroke	2011.10. 5 months after stroke	2013.04 meditouch treatment beginning	2013.07. 3 months after combined treatment
I. Reflex	0	2	2	2
II. Volitional movement within synergies:				
Shoulder	0–1	1	1	2
– retraction	0–1	1	1	2
– elevation	0	1	1	2
– abduction	0	1	1	2
– adduction	0	1	1	2
– external rotation	0	1	1	2
– internal rotation				
Elbow				
– flexion	0	1	1	1–2
– extension	0	1	1	1–2
– supination	0	1	1	1–2
Forearm				
– pronation	0	1	1	2
– supination	0	1	1	2
III Volitional movement mixing synergies (without compensation)				
Shoulder	0	1	1	2
– flexion 0–90 ° with elbow at 0° with pronation–supination at 0°				
– external rotation	0	1	1	1
– internal rotation	0	1	1	2
– hand to L spine	0	1	1	2

Fugl Meyer Index

UPPER EXTREMITY

	2011 3 days after stroke	2011.10. 5 months after stroke	2013.04 meditouch treatment beginning	2013.07. 3 months after combined treatment
Elbow				
Flexion	0	1	1	2
Extension	0	1	1	2
Forearm				
Pronation	0	1	1	
Supination	0	1	1	1–2
				1–2
Wrist				
Flexion	0	2	2	2
Extension	0	1	1	1–2
HAND				
Fingers				
Flexion	1	2	2	2
Extension	1	1	1	1
K. JOINT PAIN	0	1	1	2
L. MUSCLE PAIN WHEN STRETCHED	0	1	1	2

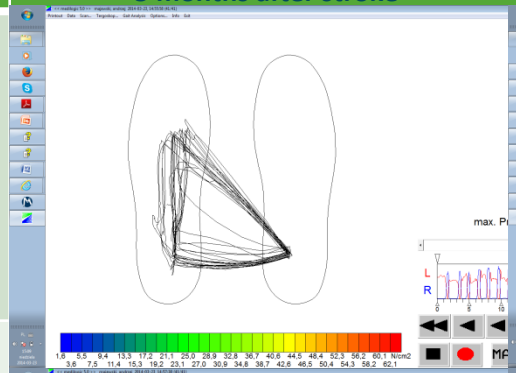
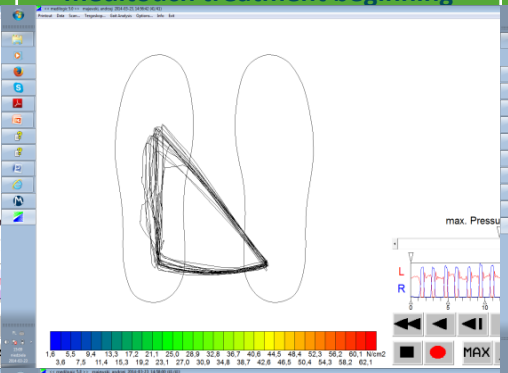
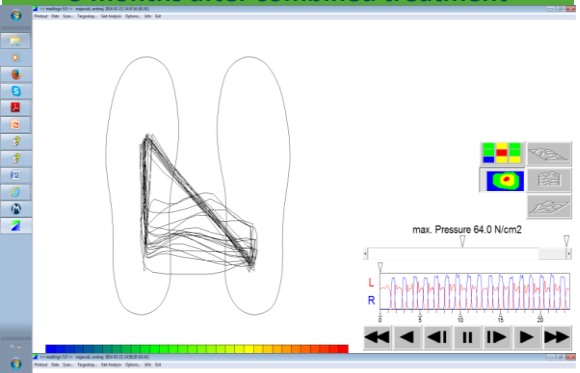
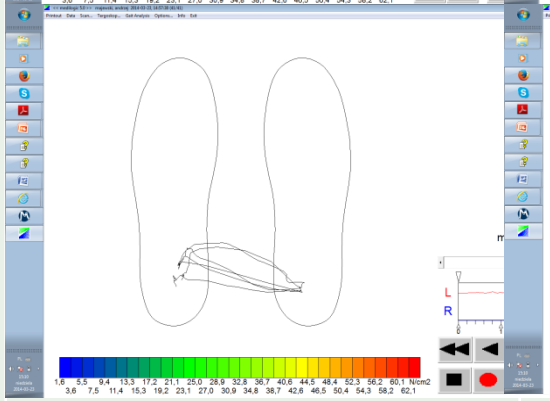
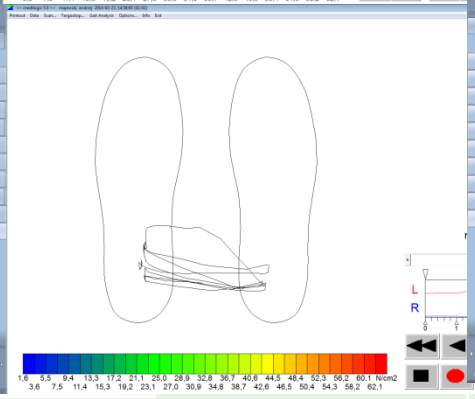
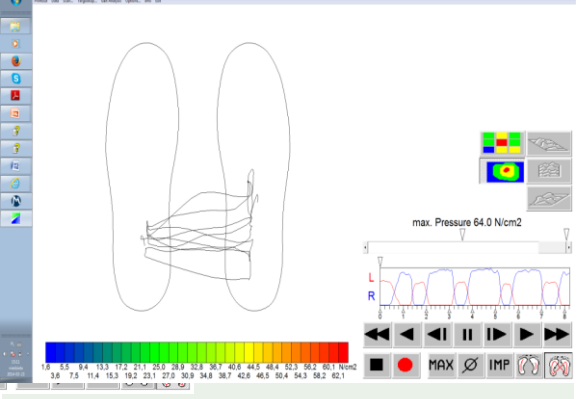
Fugl Meyer Index

Lower extremity

	2011 3 days after stroke	2011.10. 5 months after stroke	2013.04 meditouch treatment beginning	2013.07. 3 months after combined treatment
HIP				
Flexion	0	1	1	2
Extension	0	1	1	2
Internal rotation	0	1	1	2
External rotation	0	1	1	2
KNEE				
Flexion	0	2	2	1–2
extension	0	1	1	1–2
ANKLE				
dorsiFlexion				
Plantar flexion	1	2	2	2
	1	1	1	1–2
TOES				
Flexion				
Extension	0	1	1	2
	0	1	1	2
JOINT PAIN	0	1	1	2
MUSCLE PAIN WHEN STRETCHED	0	1	1	2

Functional tests	2011 3 days after stroke	2011.10. 5 months after stroke	2013.04 meditouch treatment beginning	2013.07. 3 months after combined treatment
GROSS MOTOR:				
UPPER EXTREMITY				
Hand to knee	0	0	1–2	2
Hand to trunk	0	1	1–2	2
Hand to head	0	1	1–2	2
Hand to lower back	0	1	1–2	2
FINE MOTOR:				
UPPER EXTREMITY				
Reaching test	0	1–2	2	2
Box- blocks test 5 blocks	0	0	1–2	2
Hair combing	0	0	1–2	2
Paiting a circle on a paper sheet *with stable wrist*	0	0	1	2
GROSS MOTOR:				
LOWER EXTREMITY, TRUNK:				
Sit to stand	0	1–2	1–2	2
One leg stand (impaired) [s]	0	3 sec	10 sec	2

Tensometric evaluation

Test	2011.10. 5 months after stroke	2013.04 meditouch treatment beginning	2013.07. 3 months after combined treatment
Walk 16 m			
One leg stand			

Treatment review

– 3d, HT, ARM, LEG TUTORS applications

- video

Case IV

Lucy 6 years old girl

Born with total brachial palsy

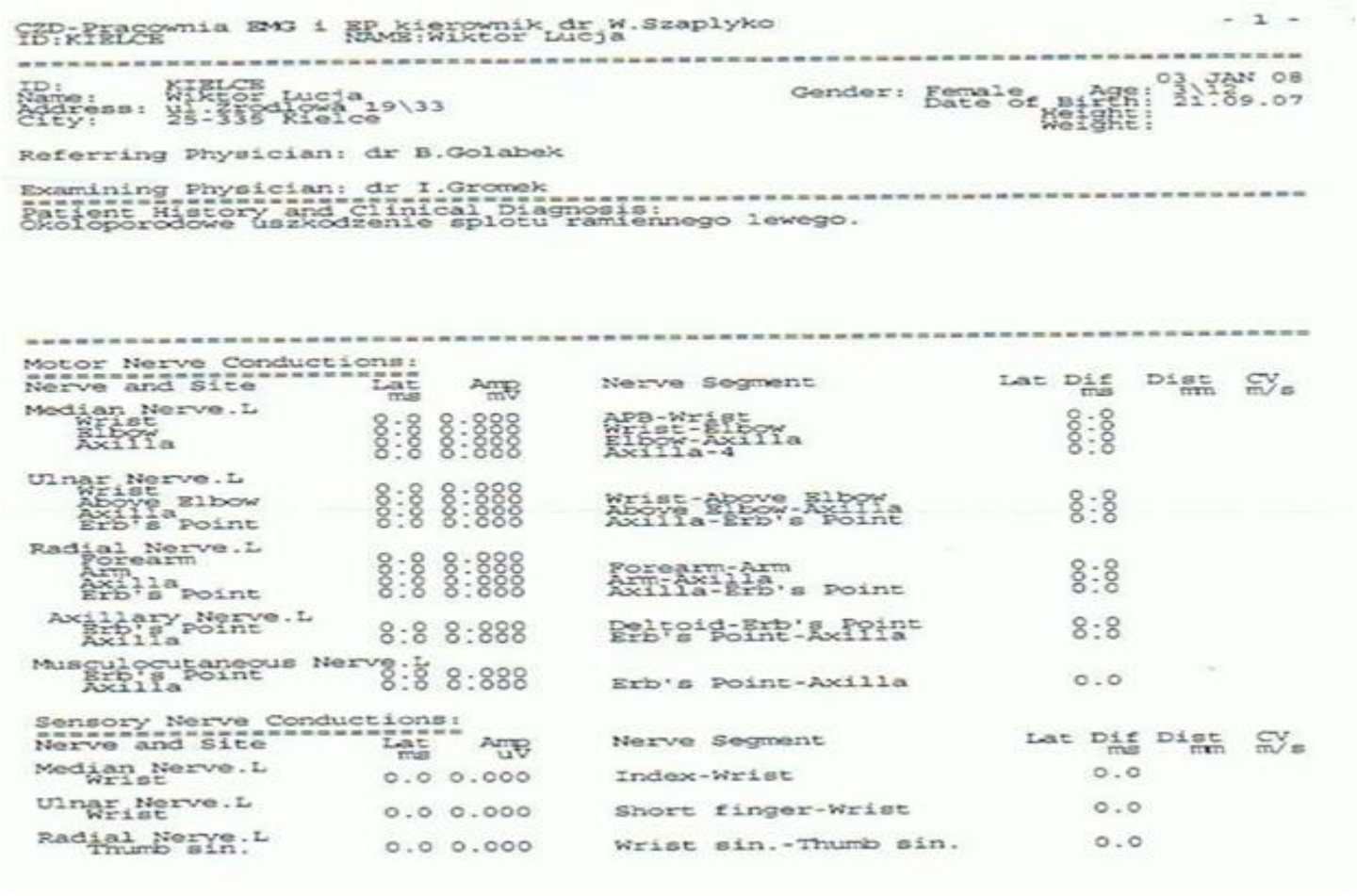
Clinical evaluation

- **Medical story**

  – **born in** 21-09-2007r, 3940 kg, 56 cm, born in 38 week of pregnancy, suffers a total brachial palsy as a result of shoulder dystocia in delivery complications, 3 points in Apgar scale, with Birth asphyxia,
- **Medical treatment**

  – Brachial Plexus surgeries: nerve grafts and transfers, tendon transfers,
- **Treatment** – physiotherapy since she was born

EMG evaluation semptember 2007



CZD-Pracownia EMG i EP kierownik dr W.Szaplyko - 1 -
ID:KIELCE NAMS:Wiktor Lucja

ID: KIELCE
Name: Wiktor Lucja
Address: ul.Grodzka 19\33
City: 25-335 Kielce

Gender: Female Age: 3\12
Date of birth: 21.09.07
Height:
Weight:

03 JAN 08

Referring Physician: dr B.Golabek

Examining Physician: dr I.Gromek

Patient History and Clinical Diagnosis:
Okoloporodowe uszkodzenie splotu ramiennego lewego.

Motor Nerve Conductions:

Nerve and Site	Lat ms	Amp mV	Nerve Segment	Lat Dif ms	Dist mm	CV m/s
Median Nerve.L						
Wrist	0.0	0.000	APB-Wrist	0.0		
Elbow	0.0	0.000	Wrist-Elbow	0.0		
Axilla	0.0	0.000	Elbow-Axilla	0.0		
			Axilla-4			
Ulnar Nerve.L						
Wrist	0.0	0.000				
Above Elbow	0.0	0.000	Wrist-Above Elbow	0.0		
Axilla	0.0	0.000	Above Elbow-Axilla	0.0		
Erb's Point	0.0	0.000	Axilla-Erb's Point	0.0		
Radial Nerve.L						
Forearm	0.0	0.000				
Arm	0.0	0.000	Forearm-Arm	0.0		
Axilla	0.0	0.000	Arm-Axilla	0.0		
Erb's Point	0.0	0.000	Axilla-Erb's Point			
Axillary Nerve.L						
Erb's Point	0.0	0.000	Deltoid-Erb's Point	0.0		
Axilla	0.0	0.000	Erb's Point-Axilla	0.0		
Musculocutaneous Nerve.L						
Erb's Point	0.0	0.000				
Axilla	0.0	0.000	Erb's Point-Axilla	0.0		

Sensory Nerve Conductions:

Nerve and Site	Lat ms	Amp uV	Nerve Segment	Lat Dif ms	Dist mm	CV m/s
Median Nerve.L						
Wrist	0.0	0.000	Index-Wrist	0.0		
Ulnar Nerve.L						
Wrist	0.0	0.000	Short finger-Wrist	0.0		
Radial Nerve.L						
Thumb sin.	0.0	0.000	Wrist sin.-Thumb sin.	0.0		

Emg evaluation 2007

CZD-Pracownia EMG i EP kierownik dr W.Szaplyko
ID:KIELCE NAME:Wiktor Lucja

Needle EMG Examination:

	Spontaneous and/or Volitional Activity						Max Voluntary Effort		
Muscle	Fibs	Pos Wave	Fasc	Poly	Amp uV	Dur ms	Amp mV	Pattern	Effort
Deltoid.L	2+	None	None	Many	800	11	1.1	Discrete	Sub-max
Biceps Brachii.L	2+	1+	None	Many	300	9	2.0	Discrete	Sub-max
Triceps.L	None	None	None	Few	1000	11	3.5	Discrete	Sub-max
Brachioradial..L	2+	2+	None	Many	200	9.5		None	
Extn. Dig. Com.L	3+	2+						None	
1st Dorsal Int.L	3+	2+						None	
Abduc. Dig. Mn.L	3+	2+						None	

Conclusions and Interpretation:
WNIOSEK:Aktualnie w NCS calkowite uszkodzenie splotu ramiennego lewego (brak odpowiedzi na stymulacje we wszystkich badanych nerwach, zarowno we wloknach ruchowych jak i czuciowych), z cechami odnerwienia w efektorach miesniowych: m.brachioradialis sin., m.ext.dig.com.sin., m.interosseus I sin., m.abd.dig.min.sin., oraz z zapisem neurogennym w pozostalych efektorach miesniowych(m.deltoideus sin., m.biceps br.sin., m.triceps.sin.)

IWONA GYCZEK
Spec. Neurologii Dziecięcej
PEDIATRA
1453615

surgery

Modified Quad Procedure* (muscles releases and transfers) for contractures in the axilla and chest,

Clinic Appointment	400 AED Dirham
MQ Surgical Cost:	USD$ 19,850 (AED Dirham 72,900)
Hospital Costs:	USD$ 3,976 (AED Dirham 14,600)

* with no complications

Triangle Tilt Procedure* (a series of bony rotations as well as anterior capsule release) for SHEAR (Scapular Hypoplasia, Elevation and Rotation) and MRC (medial rotation contracture). This second surgery can be done as early as within three months of the first one.

Clinic Appointment	400 AED Dirham
Surgical Cost:	USD$ 19,850 (AED Dirham 72,900)
Hospital Costs:	USD$ 3,976 (AED Dirham 14,600)
Post Surgery Brace:	USD$ 1,225 (AED Dirham 4,500)

* with no complications

2007-2013

Treatment- previous, current

- Vojta method since she was born
- NDT Bobath method from 3 month
- Soft tissues therapy after first surgery recovery
- Functional training
- Scoliosis therapy and prevention
- Physical therapy
- Swimming pool therapy
- Meditouch since 05.2013

05.2013

09.2013

Pojedynczy raport ROM

	Aktywny Vs Pasywny	Deficyt Aktywny Wyprost	Deficyt Aktywne Zgięcie
	[mm]	[mm]	[mm]
Nadgarstek	0/1	1	0
Mały	0/0	0	0
Serdeczny	1/3	0	2
Środkowy	1/1	0	0
Wskazujący	0/1	1	0
Kciuk	0/1	1	0

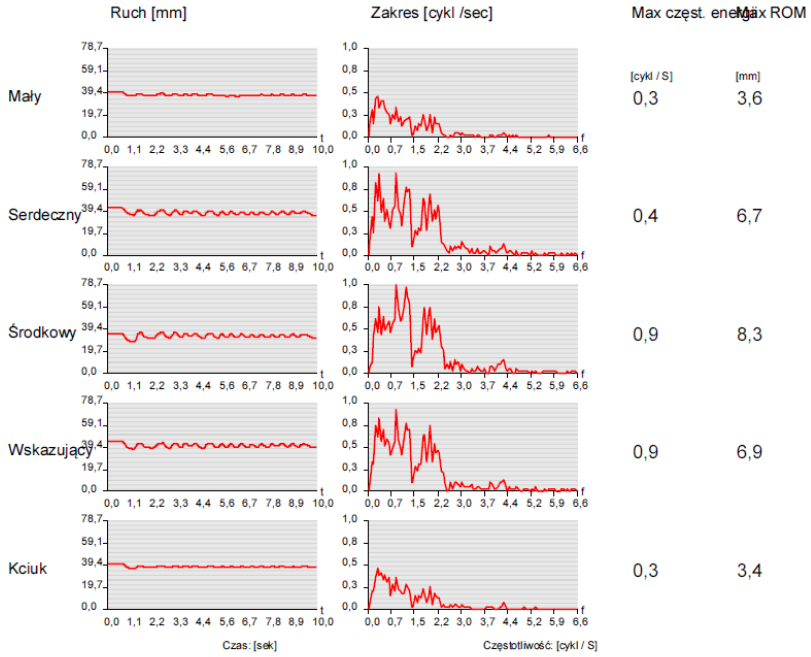
Bierny ROM
Aktywny ROM

	Aktywny Vs Pasywny	Deficyt Aktywny Wyprost	Deficyt Aktywne Zgięcie
	[mm]	[mm]	[mm]
Nadgarstek	2/7	0	5
Mały	3/9	6	0
Serdeczny	7/7	0	0
Środkowy	7/7	0	0
Wskazujący	4/9	0	5
Kciuk	2/17	2	13

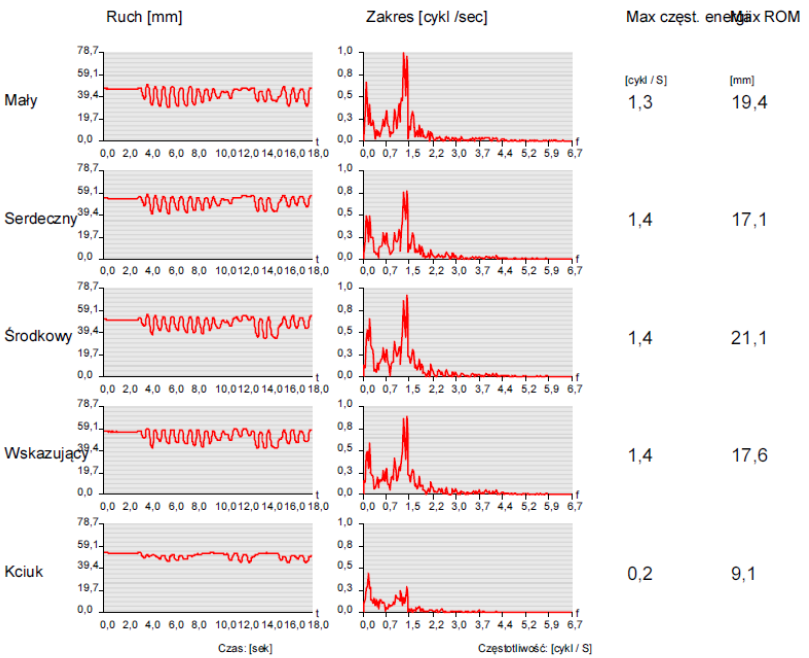
Bierny ROM
Aktywny ROM

Jwagi:

05.2013



09.2013

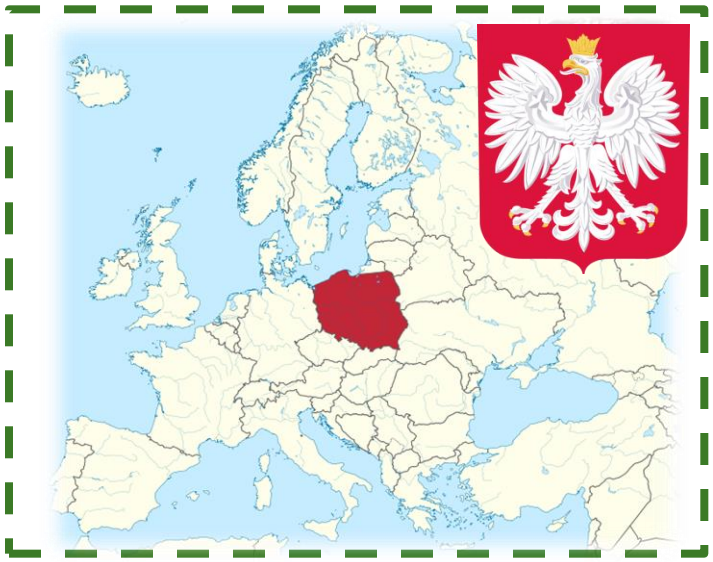


HT application, evaluation, before after

- video

Bio-feedback system applied in Poland & Europe

MediTouch



- PNF
- NDT BOBATH
- KINESIO TAPING
- ACTIVE RELEASE TECHNQUE
- MANUAL THERAPY
- VOJTA METHOD

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MediTouch

Content:

1. The story of work with Meditouch.
2. Bio-feedback system clinical background.
3. Clinical applications - ideas how to use it and how to combine in with regular methods
4. Remote rehab therapy's advantages
5. Possibilities of using devices in a hospital
6. Explain the software benefits such as: evaluation reports, quantitive and easy measures of the progress
7. Case studies
8. Review of HT, LT, AT and 3d , additonal New tech about Balance tutor
9. Questions, and conclusions.

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1. The story of work with Meditouch.

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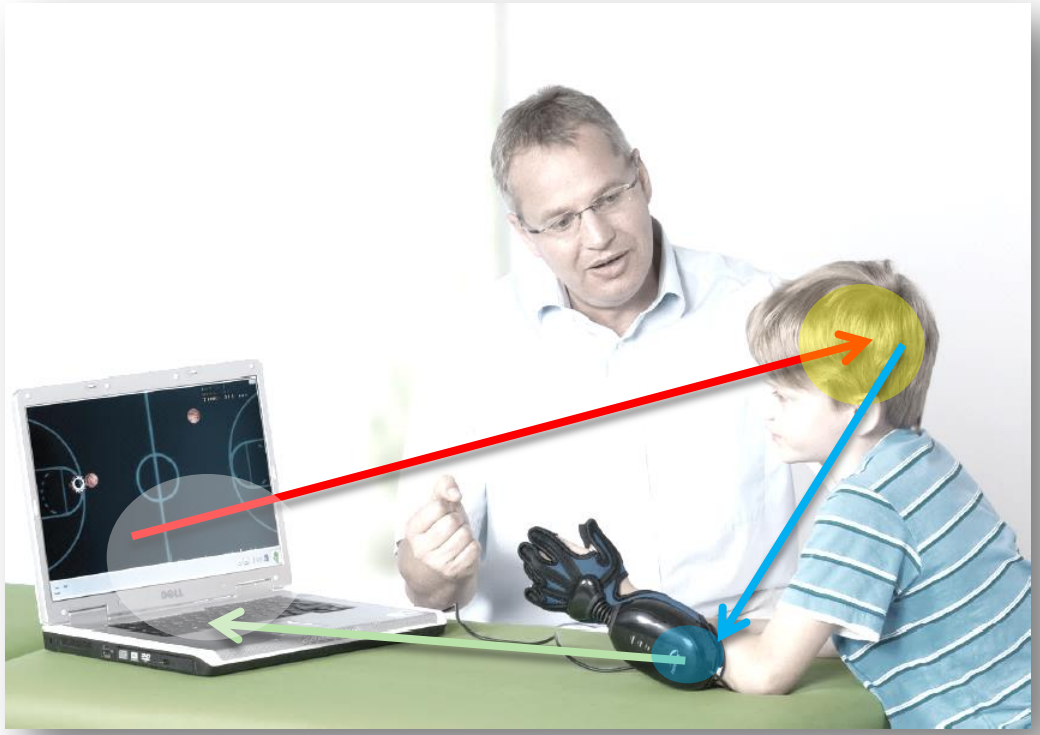
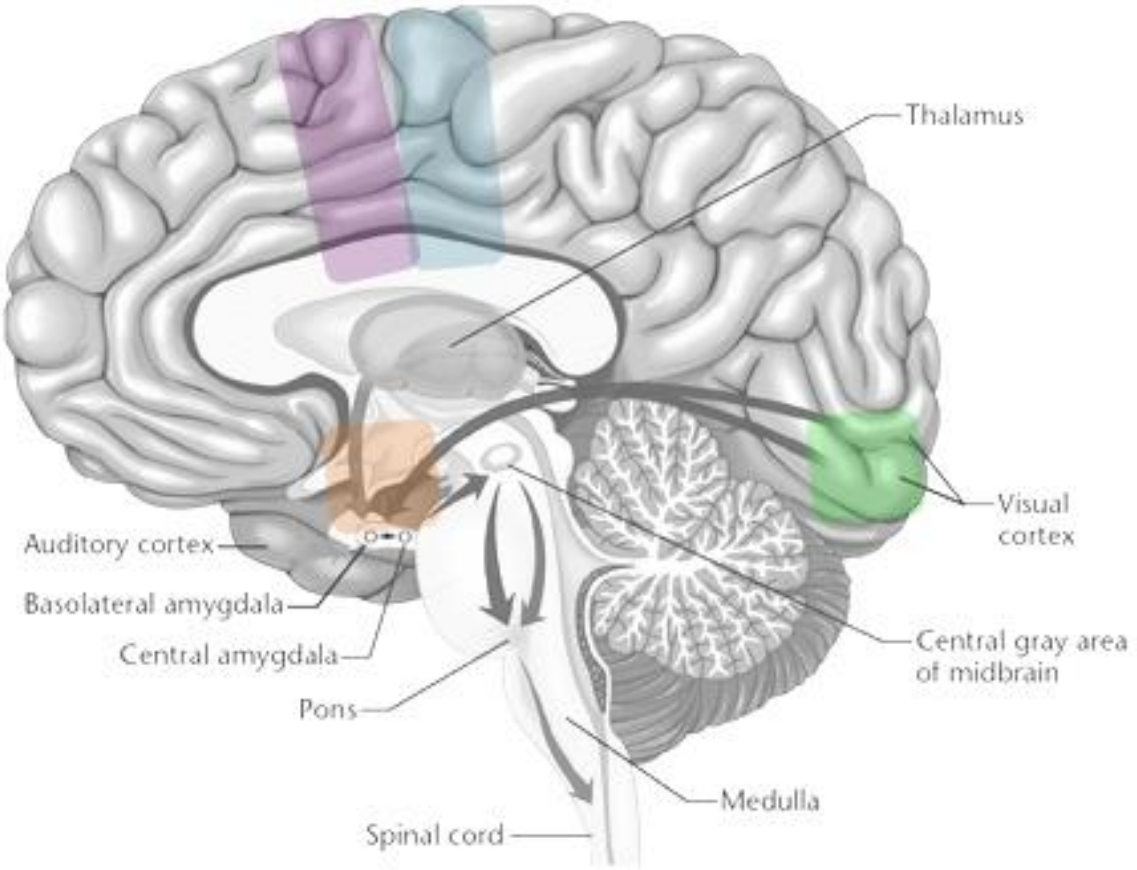
2. Bio-feedback system clinical background.




Thalamus
Visual cortex
Auditory cortex
Basolateral amygdala
Central amygdala
Central gray area of midbrain
Pons
Medulla
Spinal cord

MediTouch

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3. Clinical applications - ideas how to use it and how to combine in with regular methods

video

video

video

video

video

What is the regular way for daily therapy for the patient …

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MediTouch

3. Clinical applications - ideas how to use it and how to combine in with regular methods

What is the Bi-feedback for daily therapy for the patient …

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MediTouch

3. Clinical applications - ideas how to use it and how to combine in with regular methods

	Bio-feedback group	Compare group
ROM power speed …		

Compare the result…

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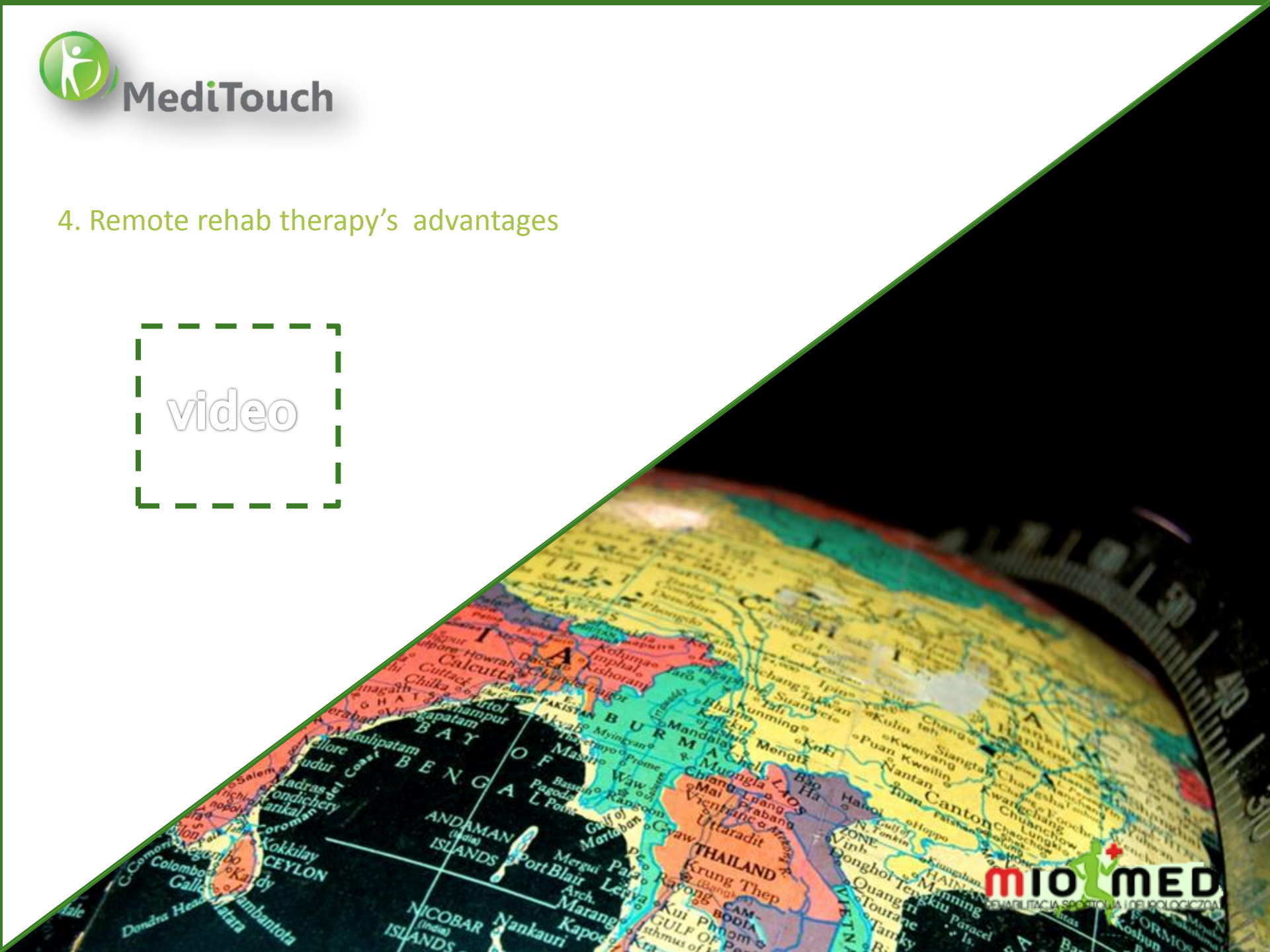
MediTouch

4. Remote rehab therapy's advantages

video



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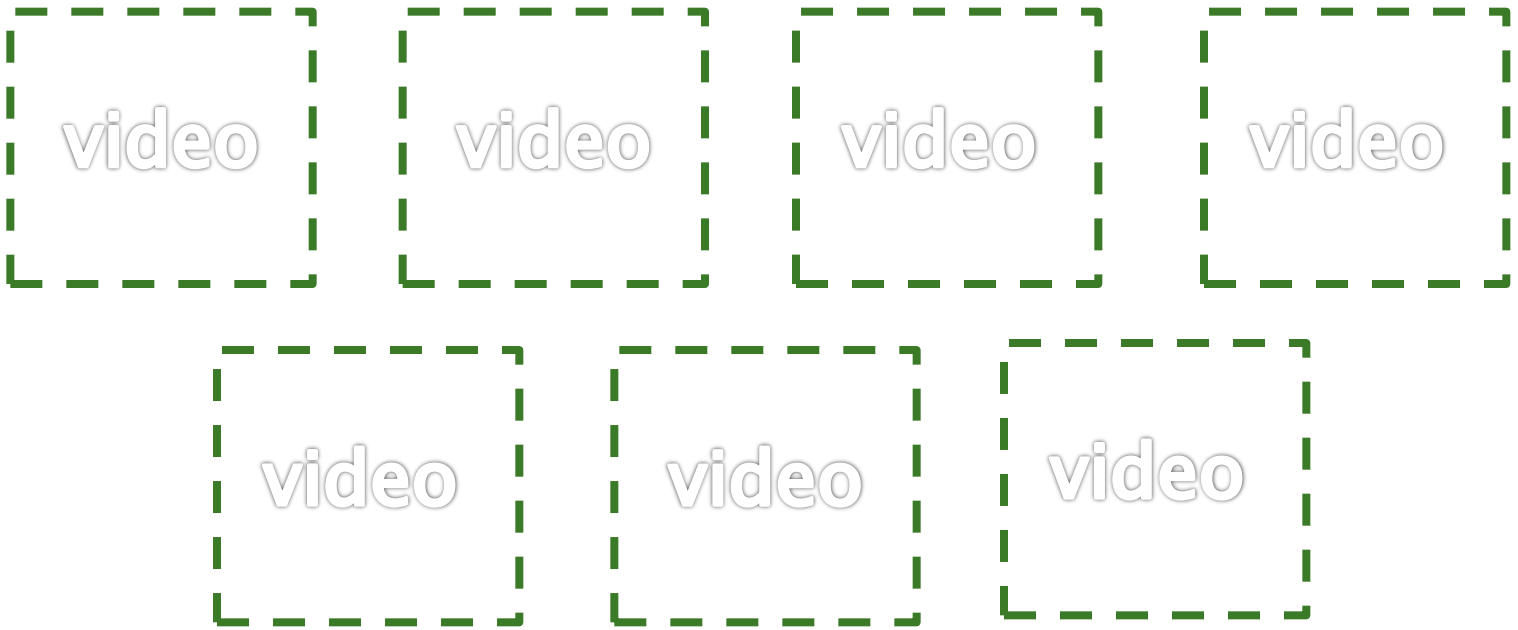
5. Possibilities of using devices in a hospital



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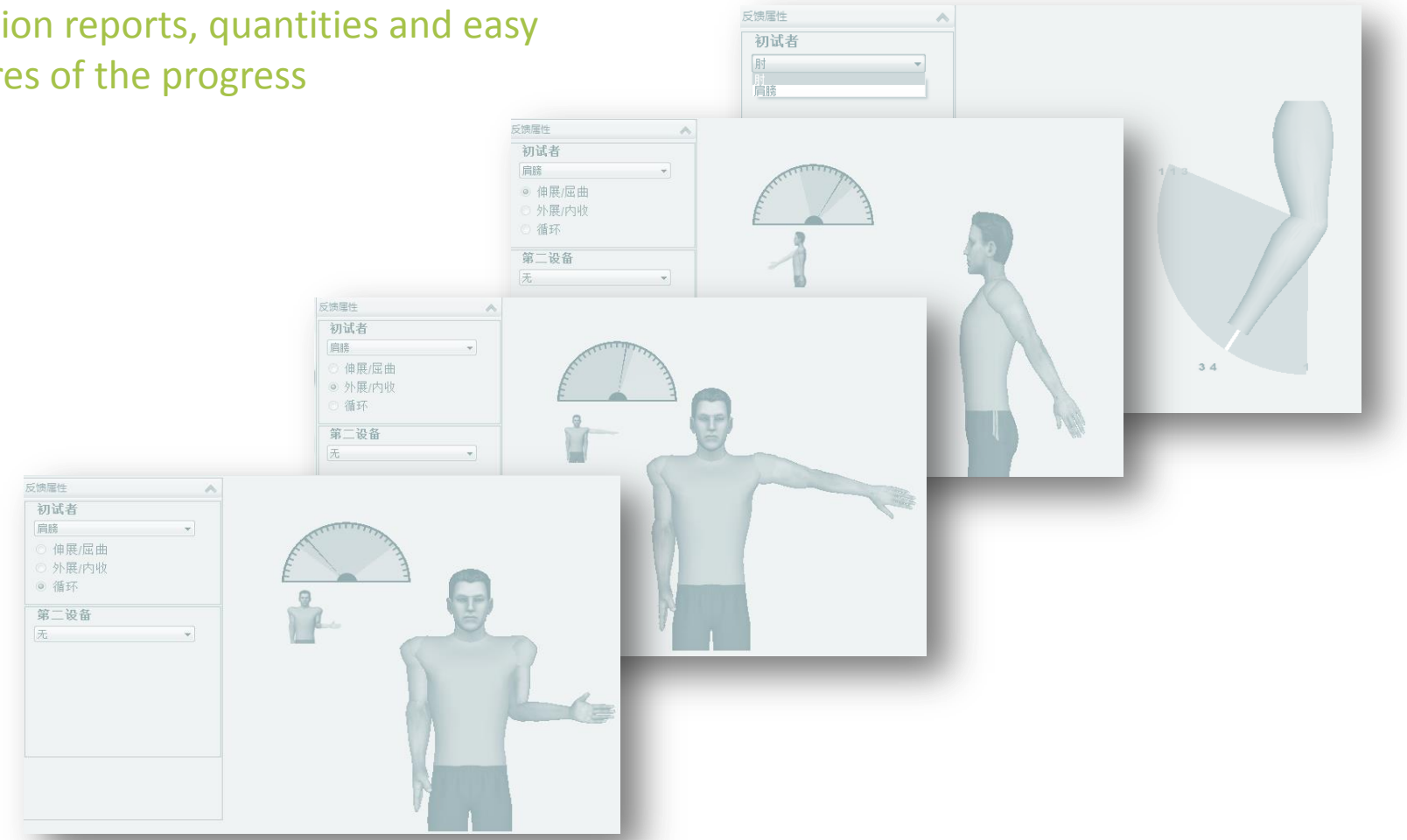
6. Explain the software benefits such as: evaluation reports, quantities and easy measures of the progress



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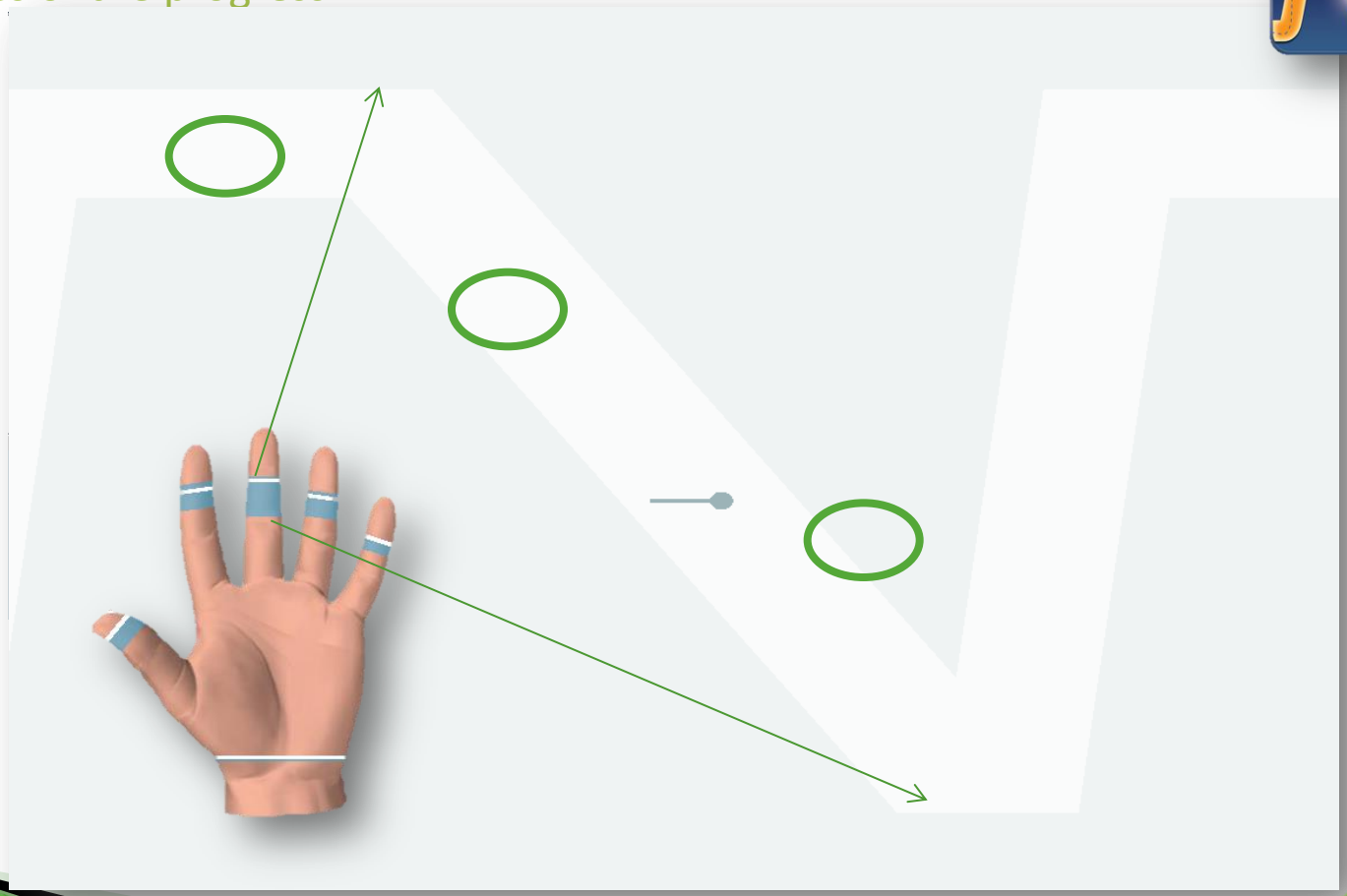


MediTouch

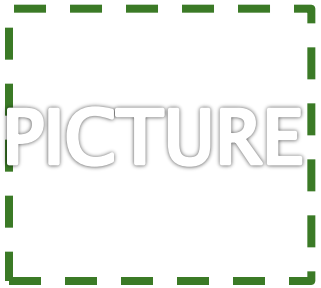
6. Explain the software benefits such as: evaluation reports, quantities and easy measures of the progress

video

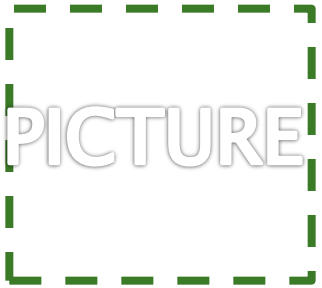
MediTouch

7. Case studies – CP children (trunk, neck, hand ,arm , leg, … …)

BEFORE



USE OUR DEVICE



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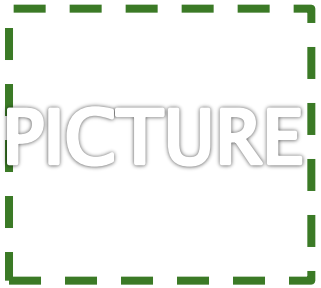

Comments:

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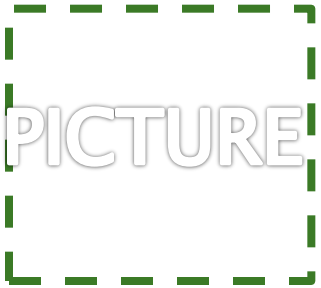
7. Case studies – TBI patient (trunk, neck, hand ,arm , leg, … …)

BEFORE



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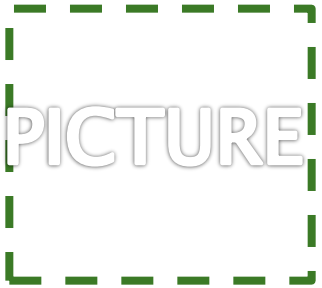

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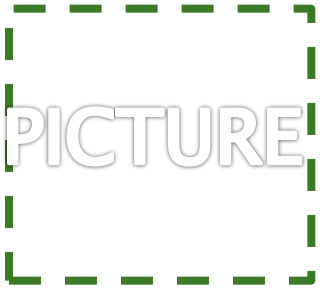

Comments:

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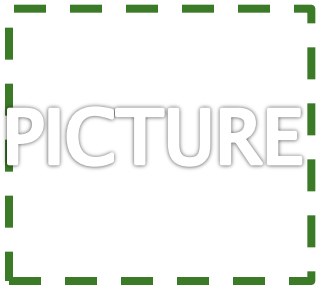
7. Case studies – stroke patient (trunk, neck, hand ,arm , leg, … …)

BEFORE



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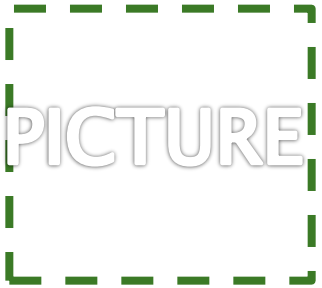

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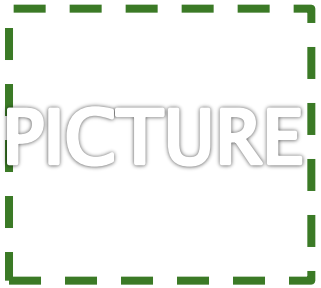

Comments:

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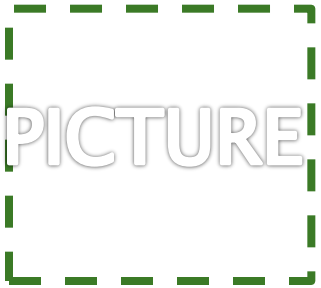
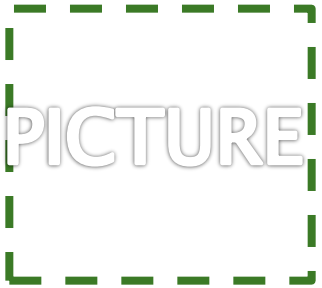
MediTouch

7. Case studies – Balance patient (trunk, neck, hand ,arm , leg, … …)

BEFORE



USE OUR DEVICE



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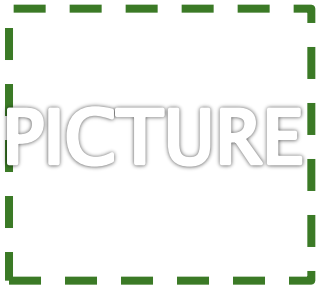

Comments:

MIOMED
REHABILITACJA SPORTOWA I NEUROLOGICZNA

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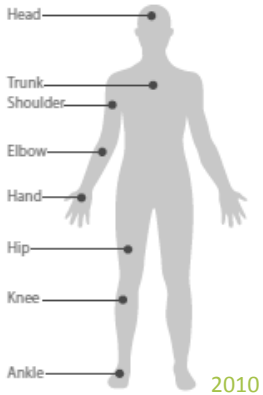
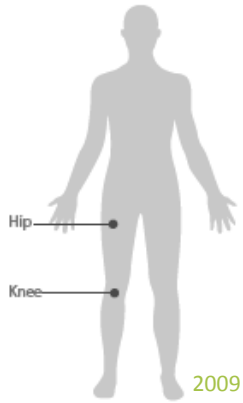
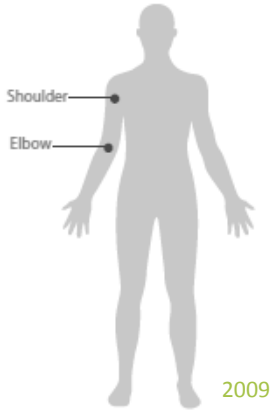
8. Review of HT, LT, AT and 3d , additonal New tech about Balance tutor



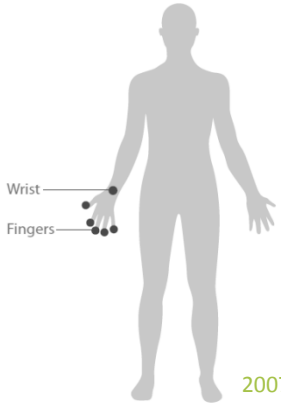
2010



2009



2009



2007

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8. Review of HT, LT, AT and 3d ,
additional New tech about Balance tutor

video

Balance tutor :

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9. Questions and conclusions.

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