



Halliwick®-Therapy

State of the Art

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Contents



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I swim once a week

It is great to be able to move in water freely. You should know that I always sit in the same position in my wheelchair: I cannot change my body position myself.

In water I can! I perceive my body differently: I can float with a bit of help, I can lift and hold my head. I can stand on my feet and even walk when I am supported. I can lift my legs and kick.

This is very normal for able-bodied people, but for me this is special and good. The physiotherapist uses Halliwick. Do not ask me what this is exactly, but it works. Anyway, I am happy about it. I get more strength, the balance of my head increases and muscles and joints become less stiff.

Joyce



History



- '50 Halliwick School for Crippled Girls
- '51 Penguin Swimming Club
- '52 Association of Swimming Therapy
- '63 Annual courses in Bad Ragaz
- '74 Project group in Bad Ragaz till '79: therapy
- '86 Conference Halliwick in 1986: Nijmegen NL
- '94 Int. Halliwick Ass. / Foundation
- 2005 Halliwick ®
- 2007 International Halliwick Therapy Network
- 2010 International Aquatic Therapy Foundation

The classical 10 points: till 1994



- Mental Adjustment
- Disengagement
- Vertical Rotation (Control)
- Lateral Rotation (Control)
- Combined Rotation (Control)
- Upthrust or Mental Inversion
- Balance is Stillness
- Turbulent Gliding
- Simple Progression
- Basic Movement

Classical Halliwick



- The Ten-Point-Programme since 1950
 - Breath control, Balance, Relaxation
 - Groups, programming for progress
 - No flotation aids
- Swimming: beyond point 10
- Applications: competition and high-low
- Water Specific Therapy since 1975

Halliwick swimming (?)



- Aims:
- Security
 - Breath Control
- Control
 - Equilibrium
- Movement
 - Relaxation

Halliwick also is a concept for active relaxation = a concept to make clients move “more elegant or more fluent”, applying rules of motor learning:

Gentile's Taxonomy (1987)

Bernstein: dynamic systems (1965)

Water Specific Therapy



Developed since 1974 in Bad Ragaz (CH) and Nijmegen (NL), based on the Ten Points. Updated by Gamper & Lambeck since 1995

Objective: to apply Halliwick for individual treatment in the neurologic, orthopedic and rheumatologic population



The Halliwick concept

Mental adjustment

Balance control

Movement

**Water specific
therapy**

**Recreation, competition. Also: Ai Chi,
obstacle course etc**



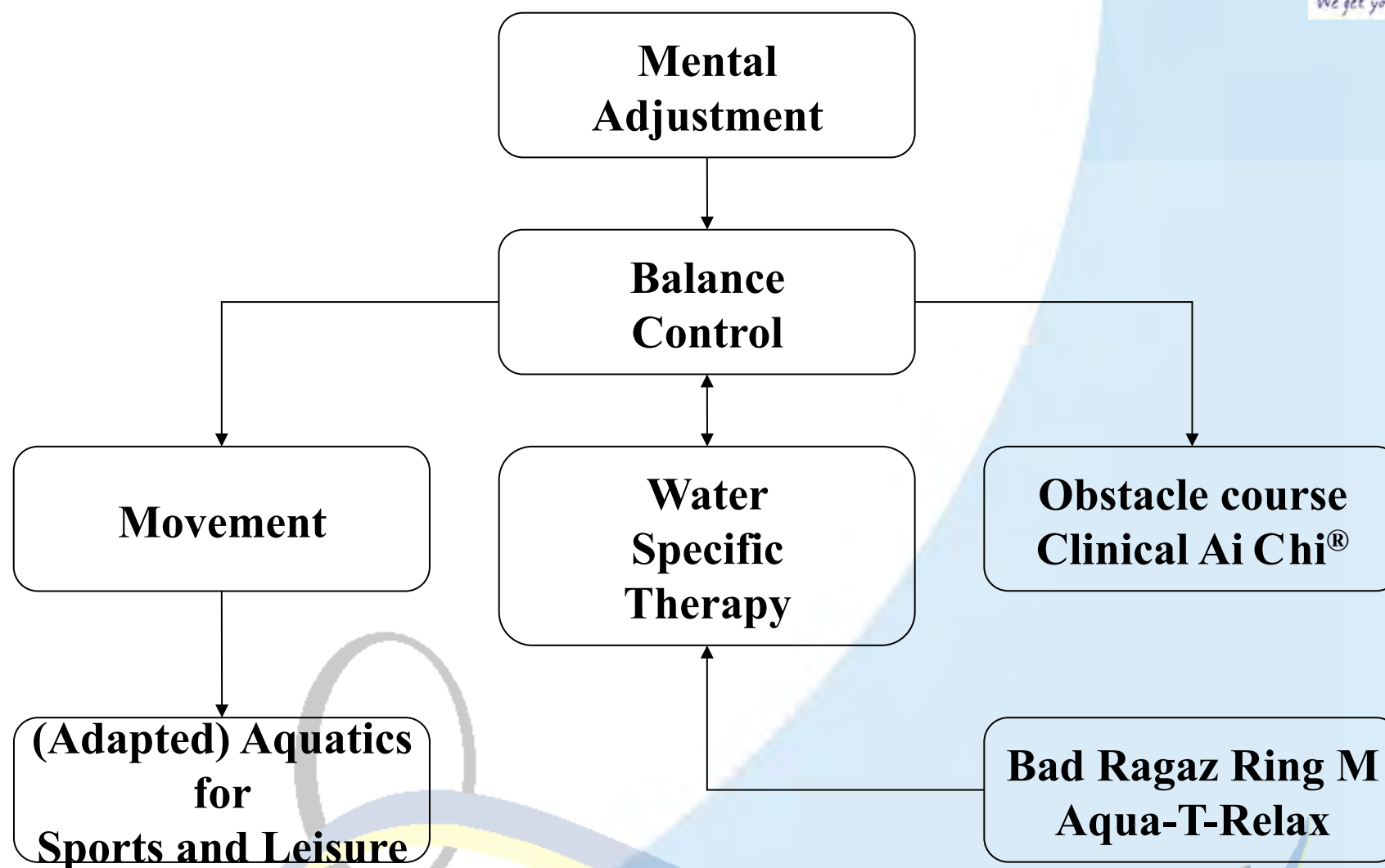
Water specific therapy

Sagittal rotation Control

Therapeutic effect at function level:

- Lateral flexion of the spine
- Strengthen lateral trunk
- Strengthen abdominals
- Head control
- Control of shoulder girdle
 - Mobilization
 - Strengthen latissimus, rhomboids
- Mobilization of knee in rotation
- Mobilization of the foot





Contemporary Halliwick

The Ten-Point-Programme

- Mental Adjustment/Dis
- Sagittal Rotation Control/Dis
- Transversal Rot Control/Dis
- Longitudinal Rot Control/Dis
- Combined Rotation Contr/Dis
- Upthrust/Dis
- Balance in Stillness/Dis
- Turbulent Gliding/Dis
- Simple Progression/Dis
- Basic Movement/Dis
- Mental Adjustment
- Balance Control
- Movement

The Ten-Point-Programme



- Mental Adjustment/Dis
 - Sagittal Rotation Control/Dis
 - Transversal Rot Control/Dis
 - Longitudinal Rot Control/Dis
 - Combined Rotation Contr/Dis
 - Upthrust/Dis
 - Balance in Stillness/Dis
 - Turbulent Gliding/Dis
 - Simple Progression/Dis
 - Basic Movement/Dis
- Dynamic
 - Static
 - Dynamic

Dynamic 10 Points



- Halliwick is the art of not touching
- Create distance
- Do not say “stop” too often
- Vary around a theme (disengagement)
- Use trial and error

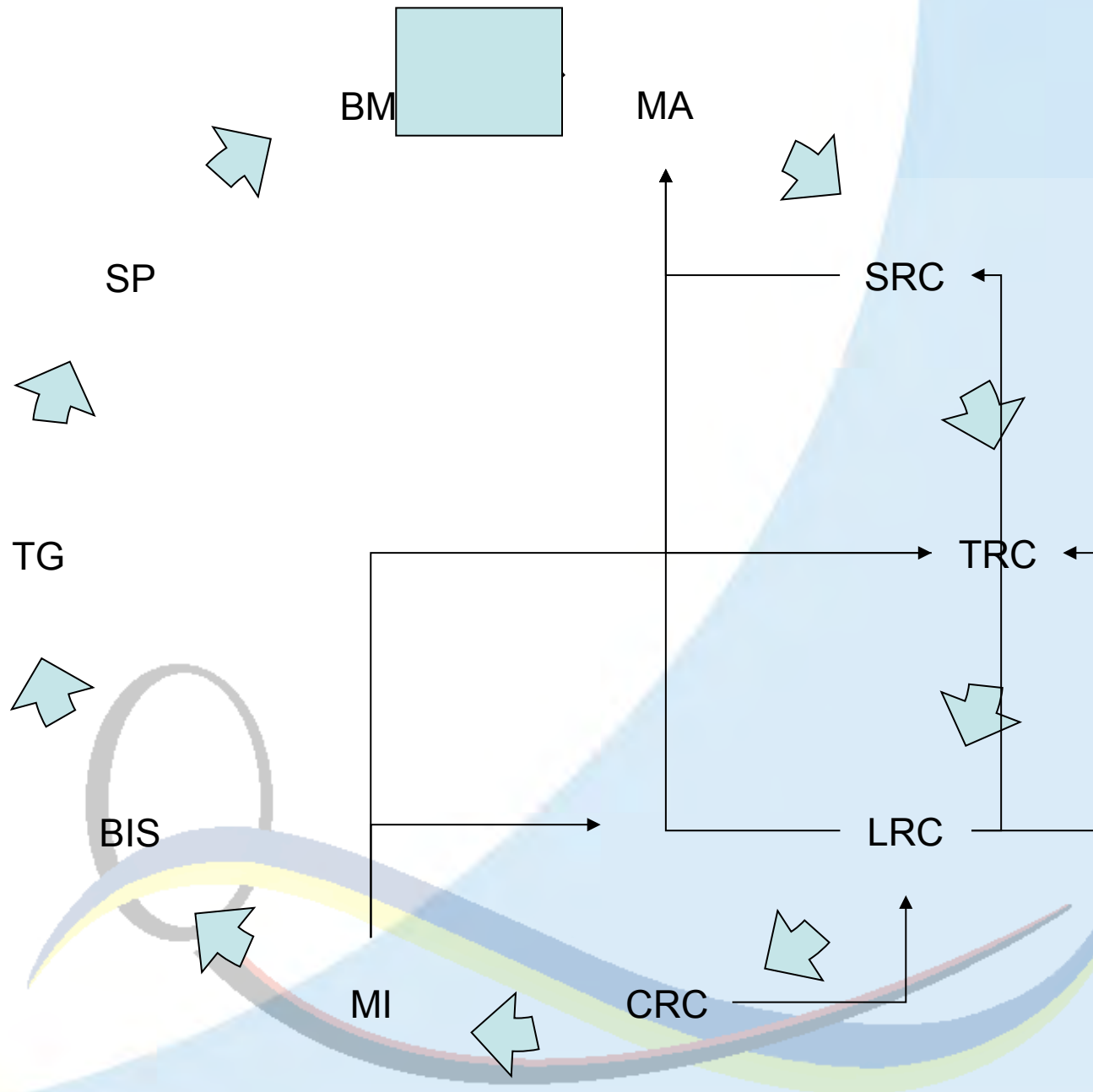




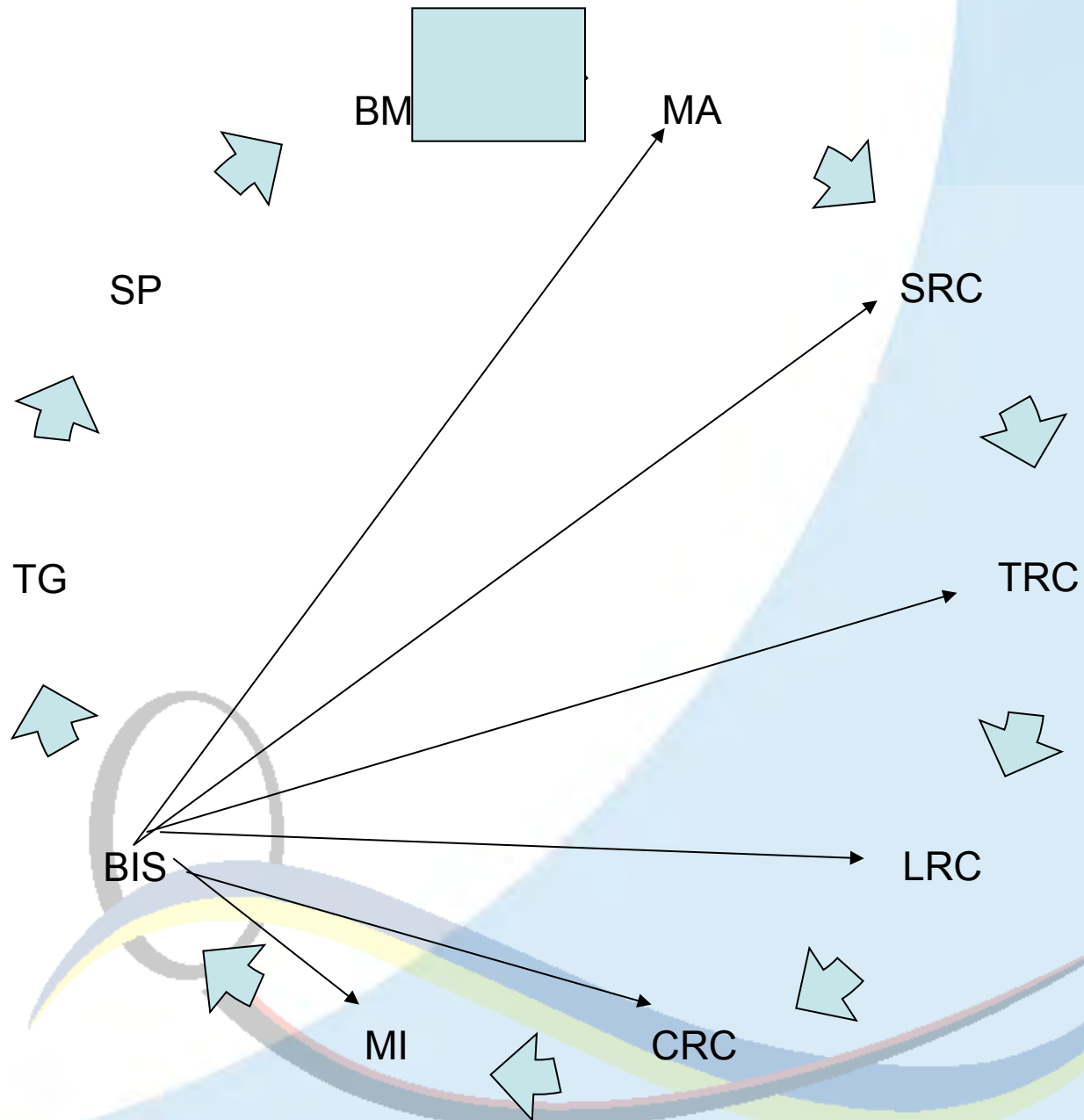
Halliwick has many possibilities. There is a structure, but this structure is adaptable and changeable.

In every point of Halliwick, there is something of another point, like yin and yang.

Adaptable structure (1)



Adaptable structure (2)



Therapy: key words



- Postural control, core stability, falls prevention
- Problem solving / motor learning
 - Reactive or voluntary intentional
- Stimuli: mc, turbulence, waves
 - Dynamic Systems Model
- Open and closed chains
- Floatation aids to destabilize
- Related to NDT, BRRM, AquaTrelax, Ai Chi
- Land goals and land assessment

Sagittal Rotation Control



Transversal Rotation control



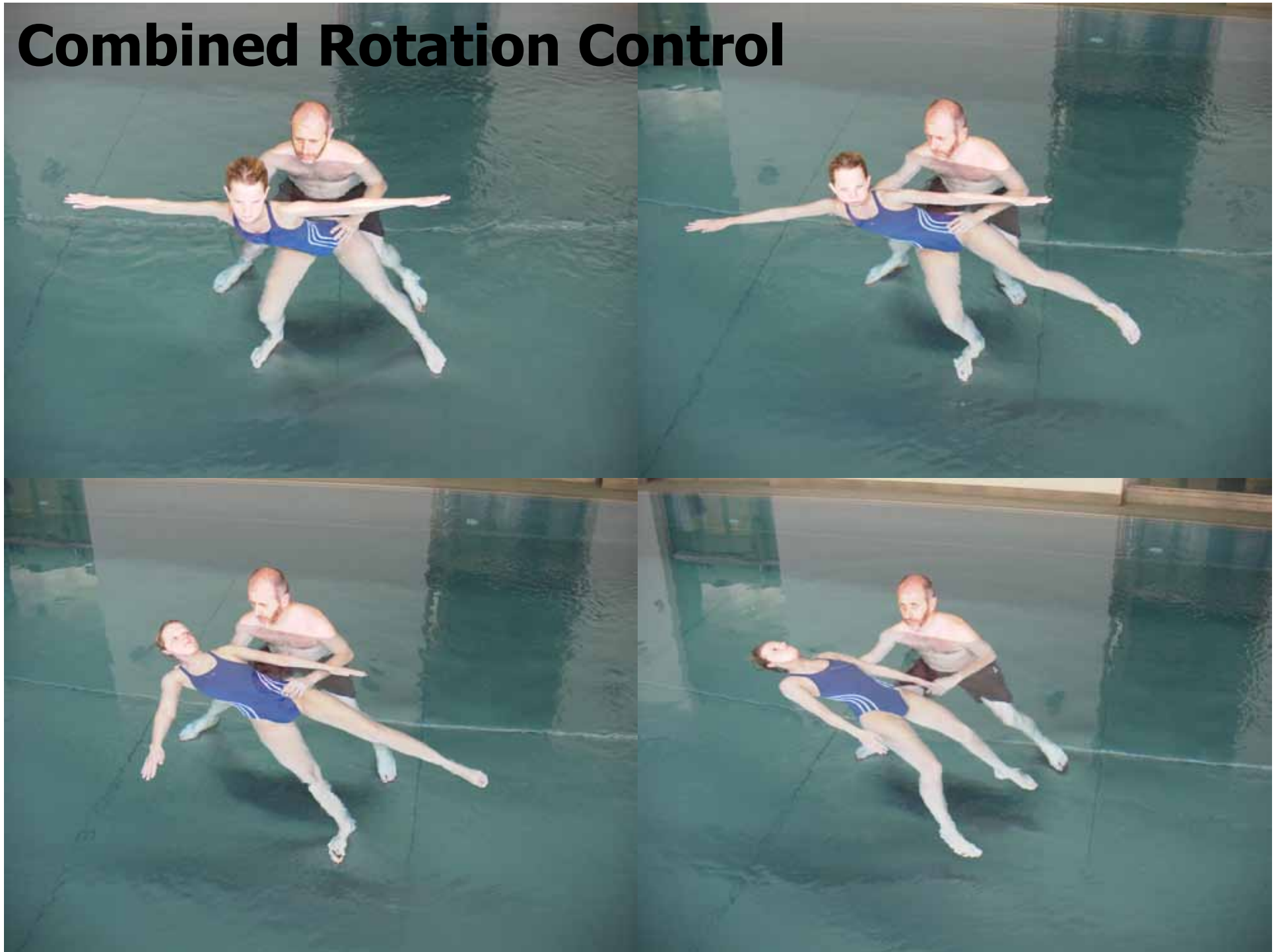
Longitudinal Rotation Control



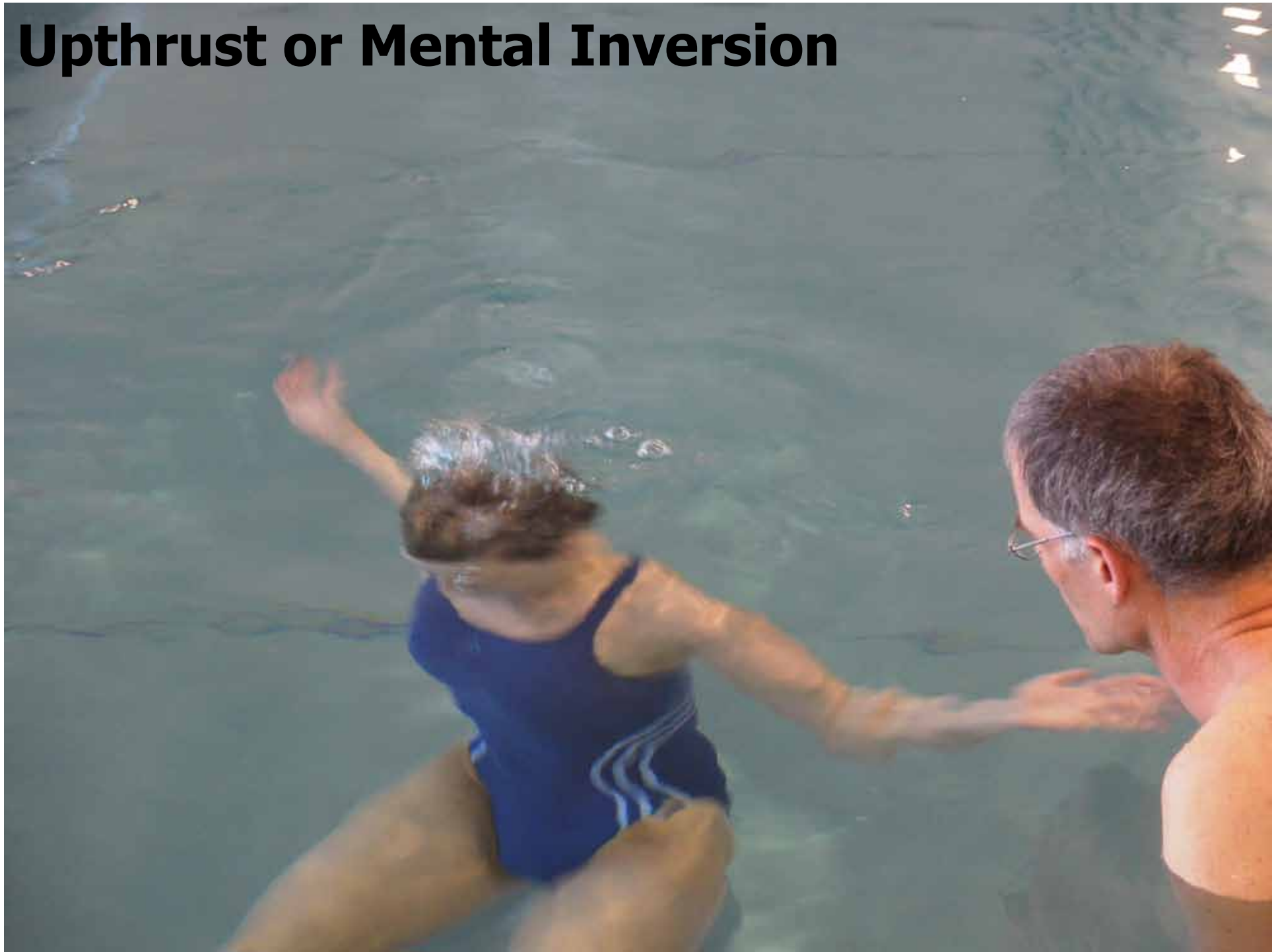
Combined Rotation Control



Combined Rotation Control



Upthrust or Mental Inversion



Balance in Stillness



Balance in Stillness



Turbulent Gliding, Simple progression, Basic Movement..... And beyond











Relationship

- All exercises and activities can be related to the ICF:
- International Classification of **Functioning, Disability and Health** (WHO 2001)
 - www3.who.int/icf

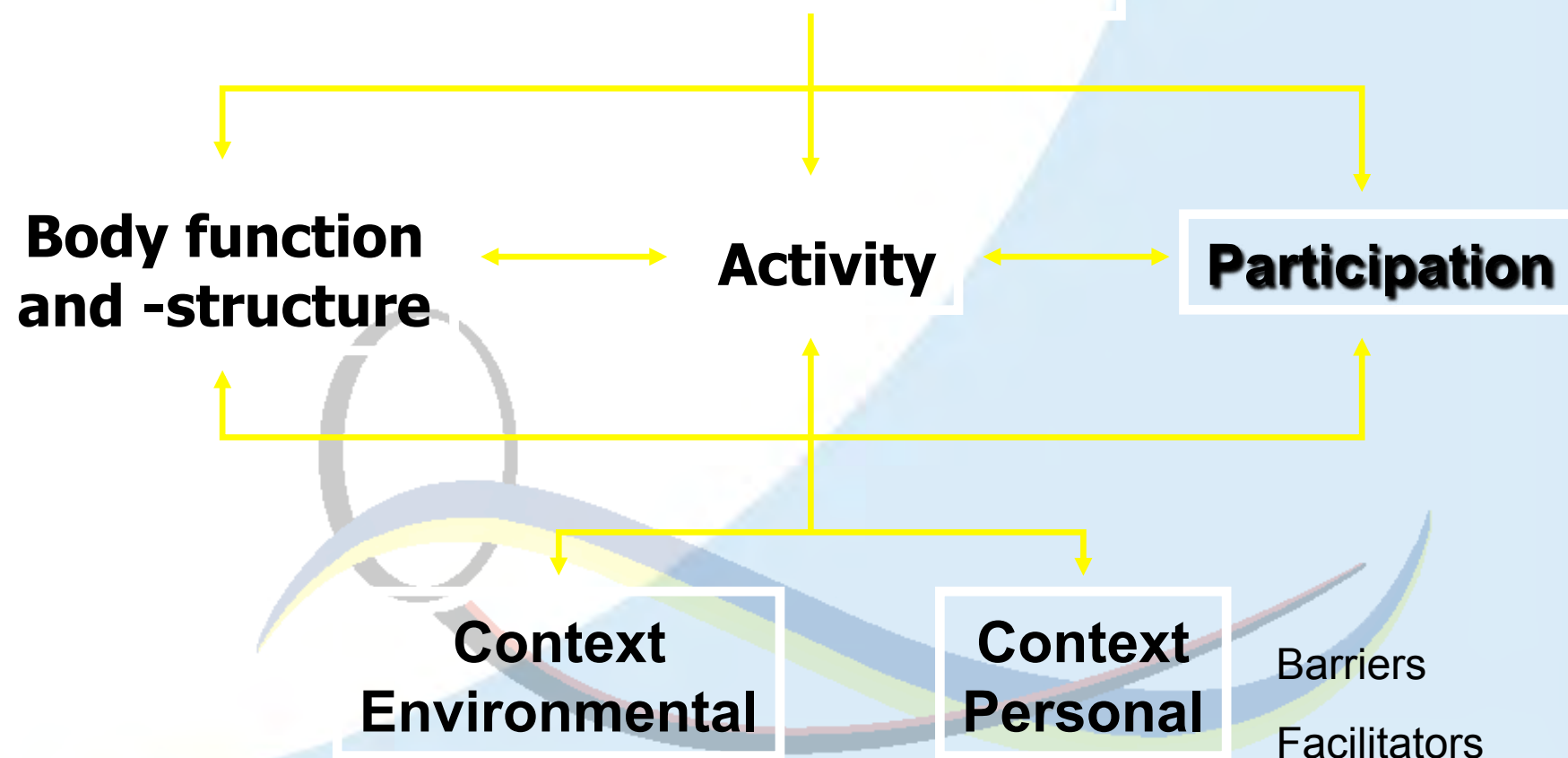


Icf.ico

ICF (WHO 2001)

ICD-10

Health condition



Halliwick and ICF



- Development:
 - 10 Points: activity / participation level
 - WST: more function level
- IHTN / IATF courses
 - The 10 points as the “guideline”
 - Inside: WST exercises, but focused on specific problem (in a combination of points)
- Assessment
 - Level of activity (what/how) and function (why)

ICF and water



- Hydrotherapy can be regarded as a change in contextual factor
- Question is:
 - How does the change from a land based / gravity dominant context to a water based / buoyancy dominant context influence specific domains of the various health components? (Getz, 2006)



Domain 7 of the body function component



B7 neuro-musculoskeletal and movement related functions

b710: mobility of joint functions

b715: stability of joint functions

b730: muscle power functions

b735: muscle tone functions

b740: muscle endurance functions

b755: involuntary movement reaction functions

b760: control of voluntary movement functions

b 7603: supportive functions of the leg

b770 gait pattern functions

Impairments: operational in Halliwick

- b 710 hypomobility: mobilization, stretching
- b 715 instability: stabilization (when mm possible)
- b 730 weakness, paralysis, --plegia: strengthening
- b 735 hypo/hypertonia, spasticity: tone normalization
- b 740 problems to sustain contraction: local endurance training or stabilization
- b 755 problems with --- reactions: facilitation ---
- b 760 disdiadochokinesis etc: coordination training
- b 770 spastic/hemiplegic gait etc: gait normalization

domains of the activities and participation component

Domains	
d1	Learning and applying knowledge
d2	General tasks and demands
d3	Communication
d4	Mobility
d5	Self-care
d6	Domestic life
d7	Interpersonal interactions and relationships
d8	Major life areas
d9	Community, social and civic life

d410: changing basic body position: shift COG, sit, stand, turn, roll

d415: maintaining a body position: lye, sit, stand, squat, glide, kneel

d420: transferring oneself: entries, exits

d430: lifting and carrying objects

d435: moving objects with lower extremities: kicking water

d440: fine hand use

d445: hand and arm use: pulling, pushing, reaching

d450: walking

**d455: moving around (d4554: swimming)
also bicycling, jumping, somersaulting**

d465: moving around using equipment

d510: washing oneself

d920: recreation and leisure

Activity domains operational in Halliwick (1)

- Changing basic body positions: d 410
 - Sagittal Rotation Control
 - Shift the centre of gravity (COG)
 - Transversal Rotation Control
 - Shift COG, sit down/stand up, go to supine/prone and stand up, turn from prone to supine vv
 - Longitudinal Rotation Control
 - Shift COG, turn around in standing, rolling over from supine to supine, rolling prone to supine vv
 - Combined Rotation Control
 - SRC + LRC or TRC + LRC : falling forward / sideways, standing up at the side

Activity domains operational in Halliwick (2)

- Maintaining a body position: d 415
 - Mental Inversion
 - Prone mushroom position, sitting
 - Balance in Stillness
 - Standing, sitting, kneeling, supine/oblique lying, squatting
 - Turbulent Gliding
 - Supine lying while gliding

Activity domains operational in Halliwick (3)

- Transferring oneself: d 420
 - Entries and exits: all possible methods = not a specific point
- Lifting and carrying objects: d 430
 - Many possibilities in MA, SRC, BIS
- Moving objects with lower extremities: d 435
 - Pushing: objects on the floor, from the wall = MA, LRC, BM
 - Kicking: swimming strokes = adapted BM and beyond
- Fine hand use: d 440
 - Picking up or passing objects, holding a trumpet (musical bubbles), releasing = most of the 10 points
- Hand and arm use: d 445
 - Pulling, pushing, reaching, lifting to splash water, SP, BM: most of the 10 points

Activity domains operational in Halliwick (4)

- Walking: d 450
 - Short distances, different surfaces, around obstacles = MA
- Moving around: d 455
 - Jumping, bicycling, somersaulting, cart-wheeling, 3D rotations, swimming = MA, SRC, TRC, CRC, BM, beyond
- Moving around using equipment: d 460
 - Mask, goggle, snorkel, fins, wetbelt, scuba, toys = MI, BM and beyond
- Washing oneself: d 510
 - Water is wet = MA
- Recreation and Leisure: d 920
 - Swimming club, Association of x-patients for Ai Chi etc

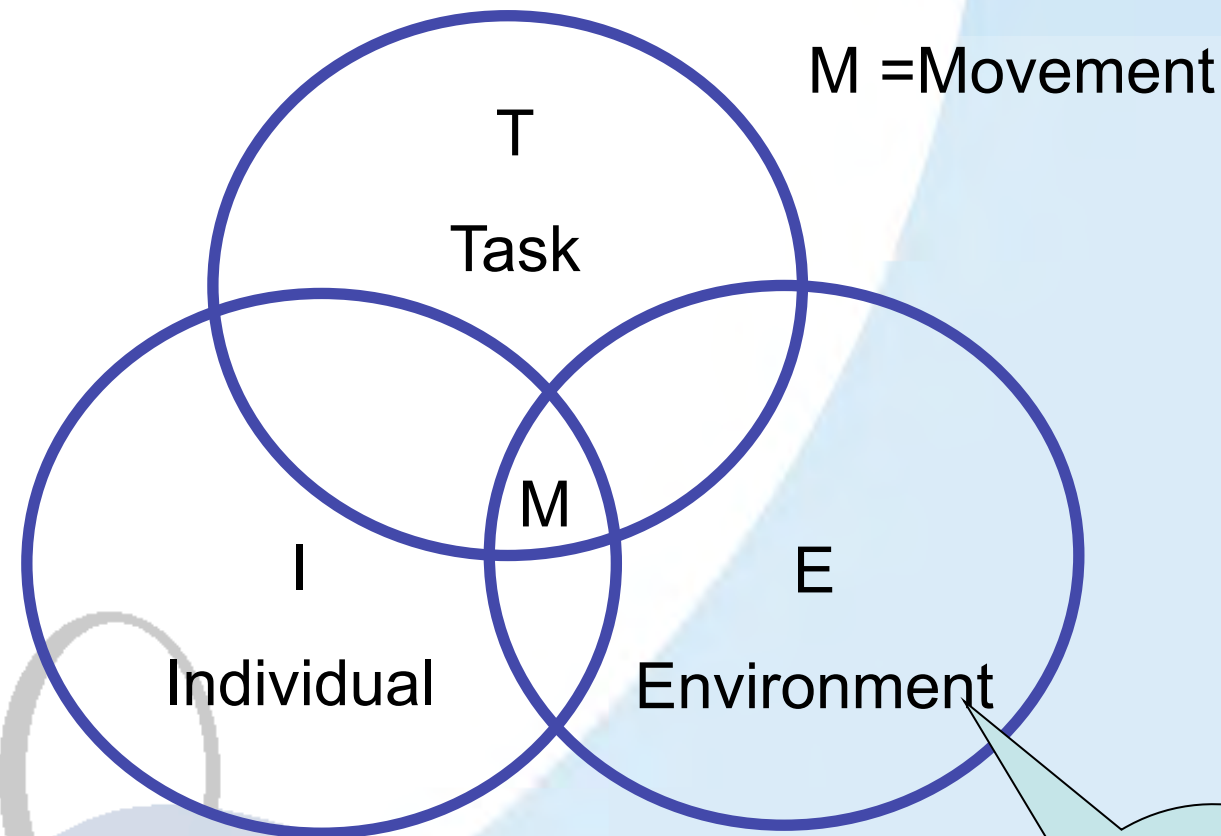
ICF and Hydrotherapy

	Body function	Activity	Participation
Halliwick	✓	✓	✓
Ai Chi	✓	✓	✓
Obstacles	✓	✓	
BRRM	✓		
Fitness	✓		✓
AquaTRelax	✓		

Hydro and principles

	Halliwick	Ai Chi, obstacle	BRRM	AquaT Relax	Fitness
Motor Control	✓	✓			
Muscle Activity	✓	✓	✓		
Strength	✓		✓		✓
Stiffness	✓	✓	✓	✓	✓
Enduran ce	✓				✓

Dynamic Systems Model



The Pool

Shumway-Cook & Woolacott, (2001).

Systems Model



■ Implications:

- Movements are arranged around behavioral important goals (= identifiable functional tasks)
- We can change the environment to achieve a goal in a more desirable way (e.g. to prevent stereotype solutions), also to build confidence.
- Desirable: less pain, easier to move, being able to walk, easier to breath, having fun



Systems Model



- The therapist is coach of the change or development: he helps to look for solutions to master or redesign a specific task. He uses variable environmental stimuli in order to offer the client the possibility to learn to solve motor deficits and to select effective motor patterns. Water is used (Getz 2006) to make this selection more easy.



Adapted systems model



- The therapist has to choose guided learning sometimes to teach the patient to cope with the specific constraints of the aquatic environment:
 - Mental adjustment
 - The more severely affected the patients, the more guidance



Water specific therapy

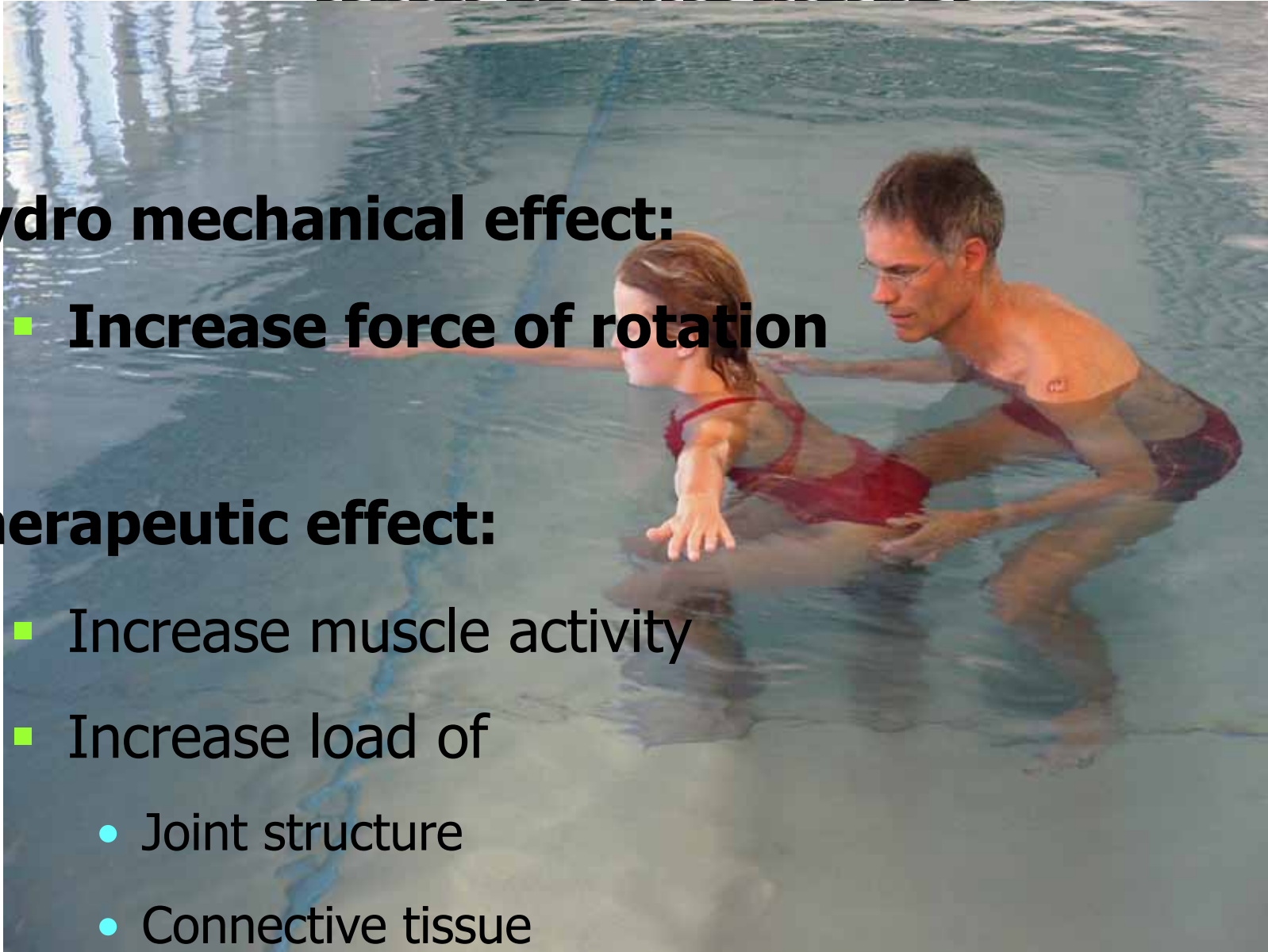


Hydro mechanical effect:

- Increase force of rotation

Therapeutic effect:

- Increase muscle activity
- Increase load of
 - Joint structure
 - Connective tissue



Metacentric effect



Skill



- Any activity that has become better organized and more effective with more degrees of freedom as a result of practice, or the ability to consistently attain a goal with some economy of effort (Gentile 1987)
>> taxonomy
- > As a preparation for skill achievement, weak muscles may have to be activated



FIGURE 3.19

Simple exercises to elicit muscle activity. (a) Therapist may need to stabilize foot to prevent it from sliding forward. (b) Therapist flexes the knee to 90° and patient tries to activate the hamstrings to lower the leg slowly (eccentric mode). It may be possible to elicit an eccentric contraction before a concentric contraction.



From: Sheperd & Carr, 2003



Learning



- Motor learning is problem solving in an environment with it's specific mechanical constraints and sensory input effects
- Type and time of practice is important
- Forced practice in enriched environments, constraint induced in a behaviorally relevant task (Taub & Wolf, 1997)



Active learning



- We only learn to perform an activity by practicing ourselves = attempting to carry out movements to achieve a goal voluntarily, this also provides knowledge of success (and provides a framework of errors)
- Confidence building accompanies skill training



Manipulating environment



- When changing aspects of the environmental context: the skill that develops is flexible and generative, facilitating motor problem solving ability (Bernstein, 1967) > repetition without repetition.
- But: transfer occurs in tasks with similar dynamic characteristics (Gottlieb, 1988)



The other environment



- Water:
 - Change of motor strategies means that the patient exploits the redundancy of the motor system with new movement possibilities in an altered environment. But these possibilities should lead to normalization, measurable on land



Water assessment



- Halliwick assessment
 - Years of experience, no validation etc, focused on water skills
- AIM: Aquatics Independent Measure (Anat Hacham)
 - Related to GMFM and Pedi by M.Getz (2004)
- Revised Halliwick by Ruthy Tirosh (WOTA2)
 - 27 items, 0-4 point scale (2005)
- Halliwick ICF assessment (draft) by Johan Lambeck (2006)



Assessment Tests

Name _____

Degrees of support Required.

	Maximum	Reducing	Minimum	None	Mentally adjusted	Checked
Going for Red						
M.A. Forward entry						
M.A. Walking forwards						
M.A. Walking in different directions						
M.A. Giant strides						
M.A. Blowing bubbles through mouth						
M.A. Blowing bubbles through nose						
M.A. Blowing bubbles head submerged						
M.A. Hum head submerged						
M.A. Flip eggs 10 metres						
M.A. Jumping forwards 10 metres						
M.A. Jumping in different directions						
M.A. Jumping and submerging						
M.A. Bicycling						
M.A. Scull upright to raise feet 3 seconds						
M.A. Space walk / climb round helper						
M.A. Space walk / climb circle of helpers						
M.A. Back float, canoes						
M.A. Back float, water boots						

Item	Basic Orientation	Score	
1A	General adjustment to the water		
2B	Blowing bubbles through the mouth (over 5 sec.) (MA)		
3B	Blowing bubbles through the nose (over 5 sec.) (MA)		
4B	Blowing bubbles with head immersed (over 5 sec.) (MA)		
5B	Rhythmically exhaling while moving (10 times) (MA)		
6B	Exhalation alternately, nose & mouth (3 cycles) (MA)		
7C	Entering the water (sit on deck, arms & head leads) (MA)		
8C	Getting out of the water (push body up on deck, rotate body to sit) (MA)		
9C	Sitting in the water (box position, for 20 sec.) (MA) (BIS)		
10C	Moving along the pool side rail using hands (3 m') (MA)		
11C	Walking across the pool (6 m') (MA)		
12C	Jumping forward (6 m') (MA)		
13C	Jumping and ducking in & out (5 times)(MA)		

WOTA2: Intra and inter rater reliability correlation coefficients

	Inter-rater	Intra-rater
Total	0.90**	0.96**
Function	0.95**	0.94**
Orientation	0.96**	0.95**

**p<0.01

	Assessment in conjunction with the ICF	Halliwick point	No difficulty (3) High quality performance	Moderate difficulty (2) Medium quality	Severe difficulty (1) Low quality	Complete difficulty (0) Does not perform	Not applicable (0) Not assessed	Breath control included 
Respiratory function b440	Mouth: bubbles (5 sec)	MA						
	Nose: bubbles (3 sec)	MA						
	Head under, blowing (5 sec)	MA						
	Rhythmic exhalation (with mouth, (6-9 × / 1 min)	MA						
	Exhalation alternately (3 ×) through mouth and nose	MA						
d510 Halliwick	“water over the head”	MA						
Changing a basic body position d410	Shifting CG forward/backward (25 cm)	TRC						
	Shifting CG left/right(25cm)	SRC						
	Sitting down	TRC						
	Standing up	TRC						
	Lying down	TRC						
	Sitting up	TRC						
	Rolling over right	LRC						
	Rolling over left	LRC						
	Turning and glide / with SRC or TRC	CRC						
Maintaining a body position d415	Stand (30 sec)	BIS						
	Sit (40 sec)	BIS						
	Supine/oblique (15 sec)	BIS						
	Floating up (5 sec)	MI						
	Gliding supine (10 sec)	TG						
	Gliding prone (5 sec)							
Moving around, walking and transferring oneself d420, d450, d455	Walking (6 m or more)	MA						
	Changing direction	RC						
	Turning 360° (< 4 sec)	LRC						
	Jumping (+ blowing, 5 ×)	MA						
	Swimming (15-25 m)	BM						
	Swimming prone (15-25 m)							
	Entry							

What do experts think?



- Karolina Pilarczyk, 2006. MSc thesis
- The Role of the Halliwick Method in patients with disabilities, reported by qualified pediatric physiotherapists practicing in the United Kingdom



The influence of Halliwick: Fun, Balance, (Relation, Emotion)

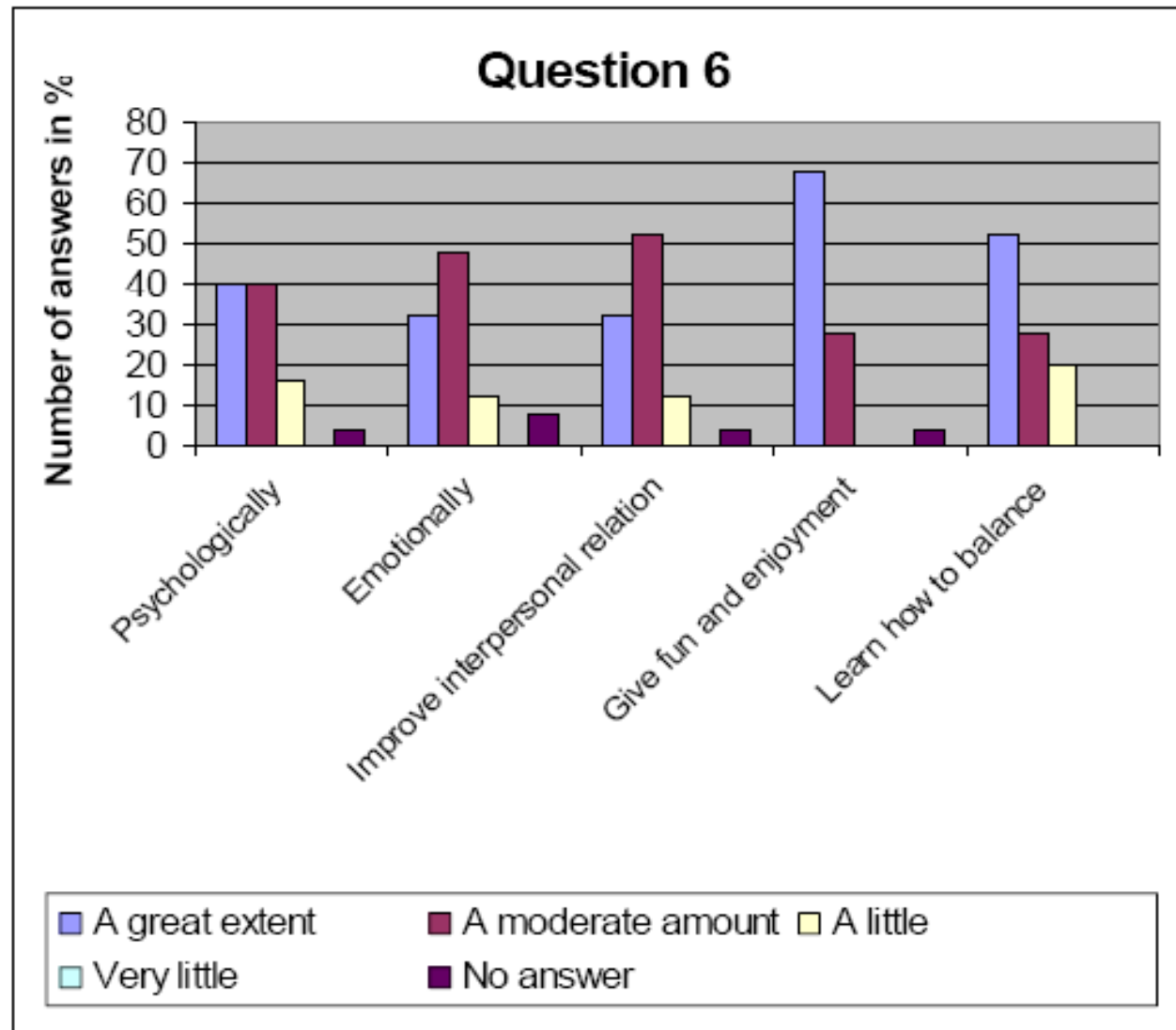


Fig 5: Degree of the Halliwick method influences patients (n=25)

Water skills, Confidence (and independence)

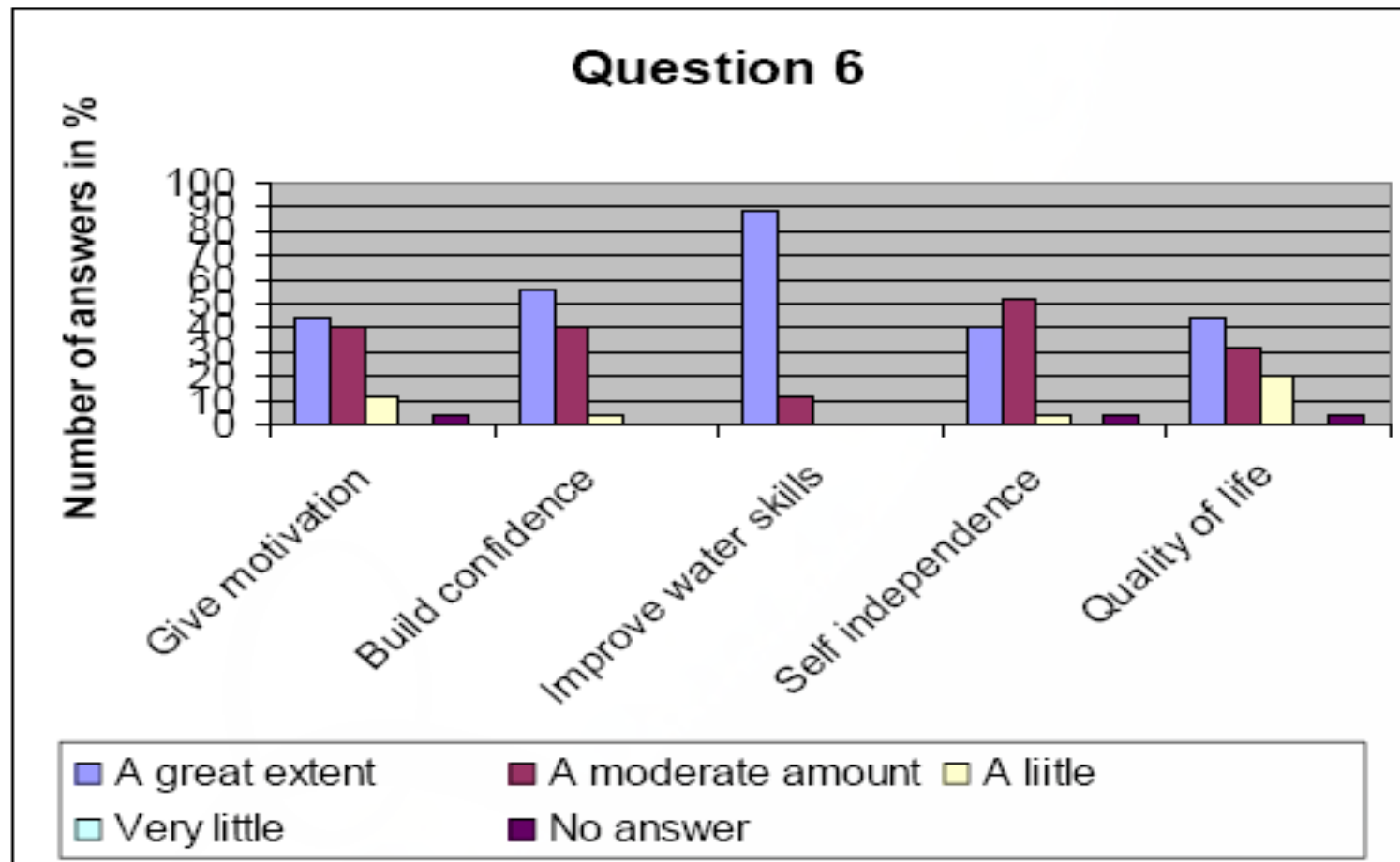


Fig 5 - continuation: Degree of the Halliwick method influences patients (n=25)

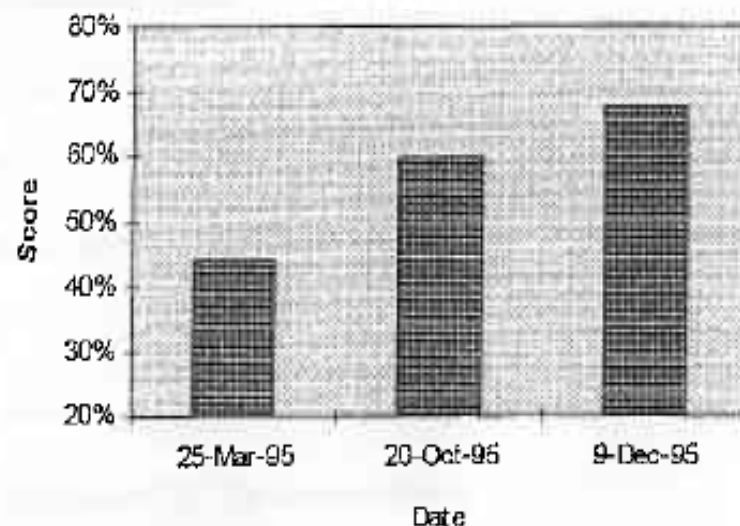
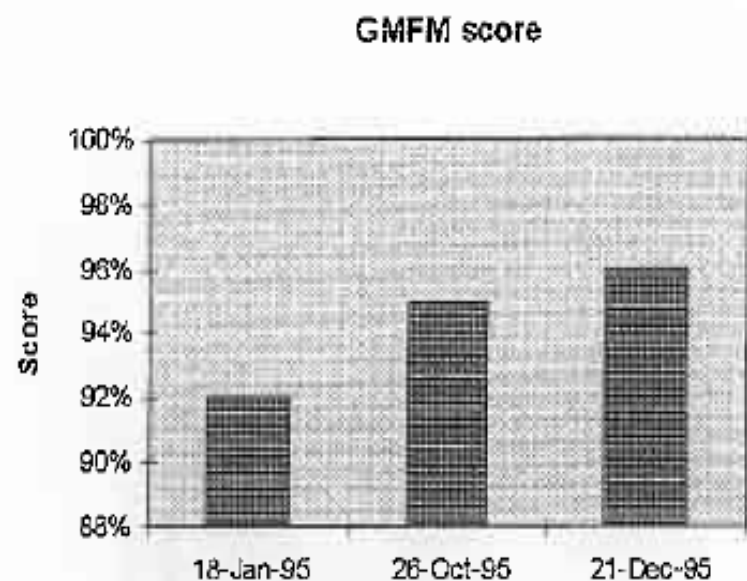


Figure 1 graph of SWIM against time.



- McKinnon 97:
Assessment of a child
with mild spastic
diplegia
- Corelation of the
increase in GMFM
and the SWIM tests

CP and Tonus



- N = 30 children
- Halliwick in 3 temperatures: 29, 32, 35 C
- Tests: ROM, Ashworth, EMG Soleus
- Results:
 - Ashworth ↑ in 29C and ↓ss in 32 + 35C
 - ROM ↑ss in 32 + 35C
 - EMG dorsi/plantar flexion ↑ in 29 and ↓ in 32 + 35C
- Conclusion: 32 is the best temperature

– Seo Sam-Ki, 2004

Aquatic intervention in children with neuro-motor impairments

Miri Getz, PhD Thesis
2006

A stylized graphic of a swimmer in motion, composed of overlapping curved lines in shades of blue, yellow, and red, set against a background of light blue and white wavy lines.

Thesis questions



- Will participation in aquatic therapy:
 - increase the economy of gait of children with CP?
 - increase metabolic values?
 - increase general functioning, measured with PEDI and GMFM?



Context



- ICF (Terminology and Paradigm)
 - Aquatic therapy is a change in the environmental context factor
- Dynamic Systems Model:
 - How does the change from a land/gravity context to a water/buoyancy context the specific domains of the various health components?



Research



- N = 49 children with CP
- Age: 5.36 y (range 3 – 7, SD = 1.2 y)
- GMFCS: mostly 1,3,4,5
- Halliwick: 2/W, 30 Min / 4 Mo
- Water skills measured with AIM: closely related with WOTA



correlation AIM and GMFM

	AIM overall	Water adjustment	Floating	Swimming
GMFM overall scores	.69	.79	.49	.48
A: lying & rolling	.63	.73	.49*	.41
B: sitting	.63	.76	.44	.40
C: crawling & kneeling	.65	.74	.47	.45
D: standing	.60*	.70*	.37	.44
E: walking, running & jumping	.56	.60	.40	.43

All $p < .01$, except * ($p < .05$)

AIM adjustment and GMFM



- The most powerful correlations were found between AIM Adjustment and GMFM standing / walking.
- Applying the DS Model: manipulation of a context factor (weight > buoyancy) could facilitate pattern generators and stimulate gait.



Effect sizes

	Water: Halliwick	Land Physio
EEI Energy Expenditure Index = longer distance	.55	.13
10 m	.34	.74
GMFM-D	.31	.03
GMFM-E	.10	.31

Conclusions



- Aquatic therapy has good effects on general equilibrium (when not applied land specifically in a task) and on activities where stamina is an important prerequisite.



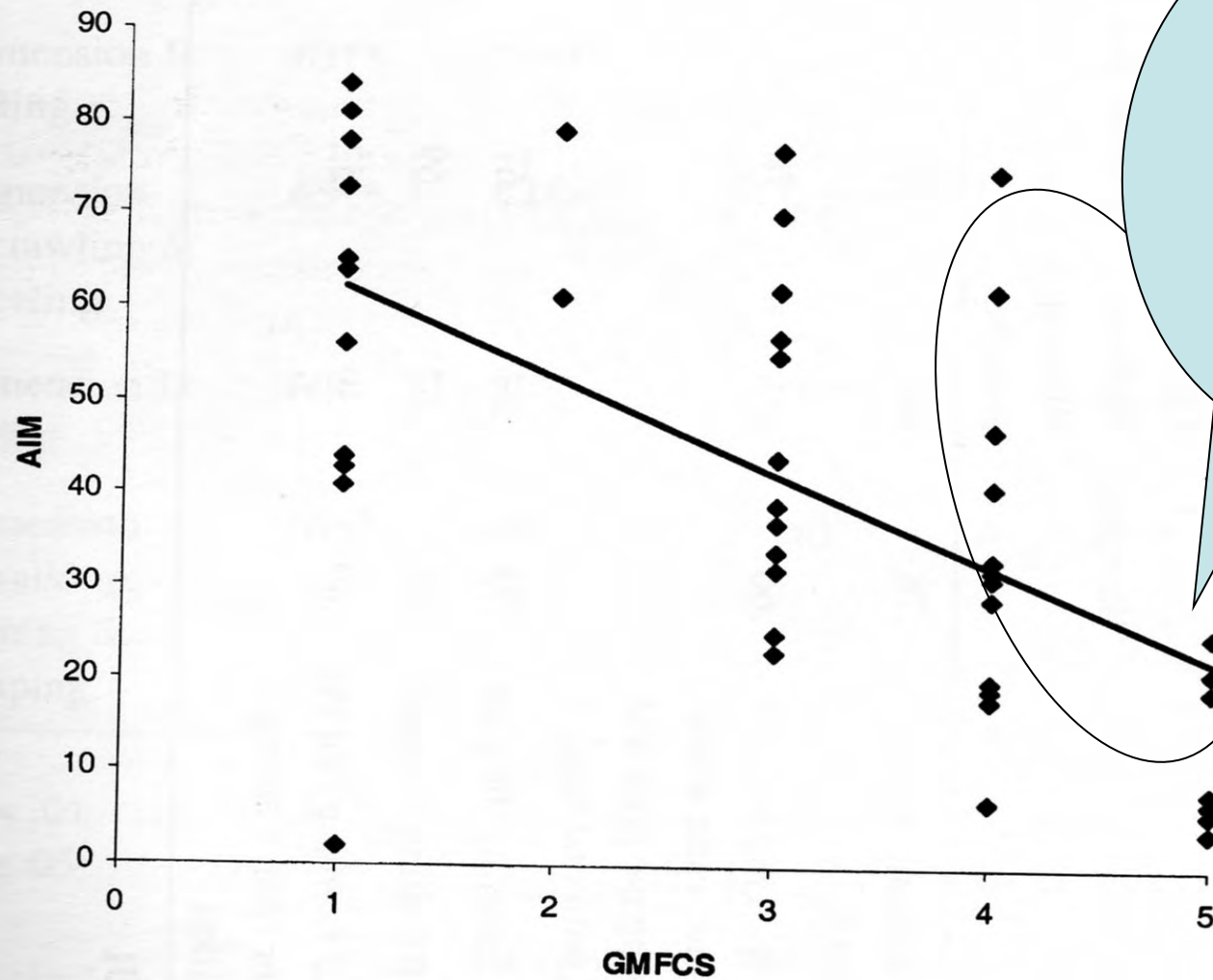
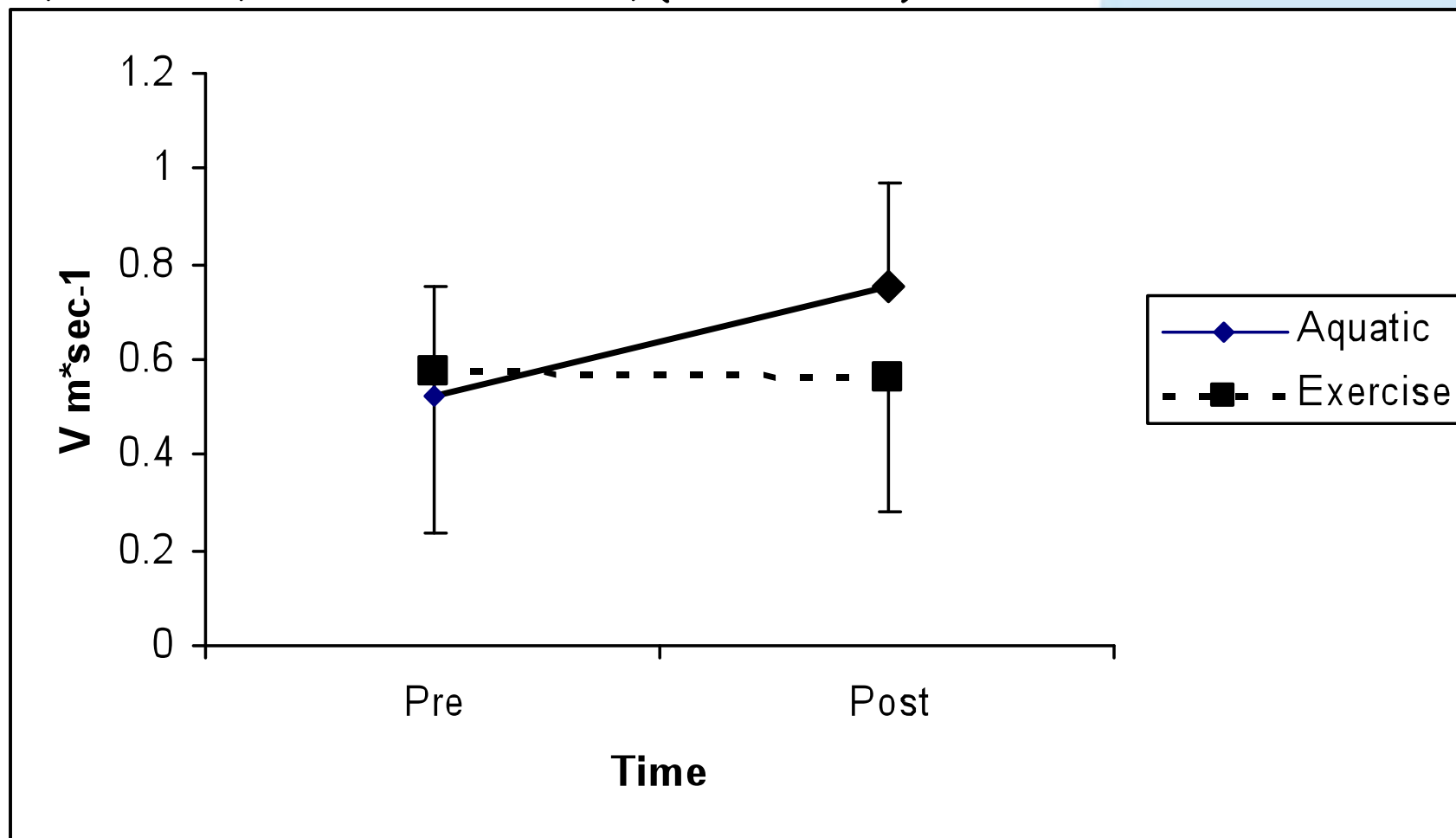


Figure 1. AIM results according to GMFCS levels

Levels 4 and 5 hardly can be assessed reliably
Statistically all levels were mixed

Therapeutic goal - Walking Speed

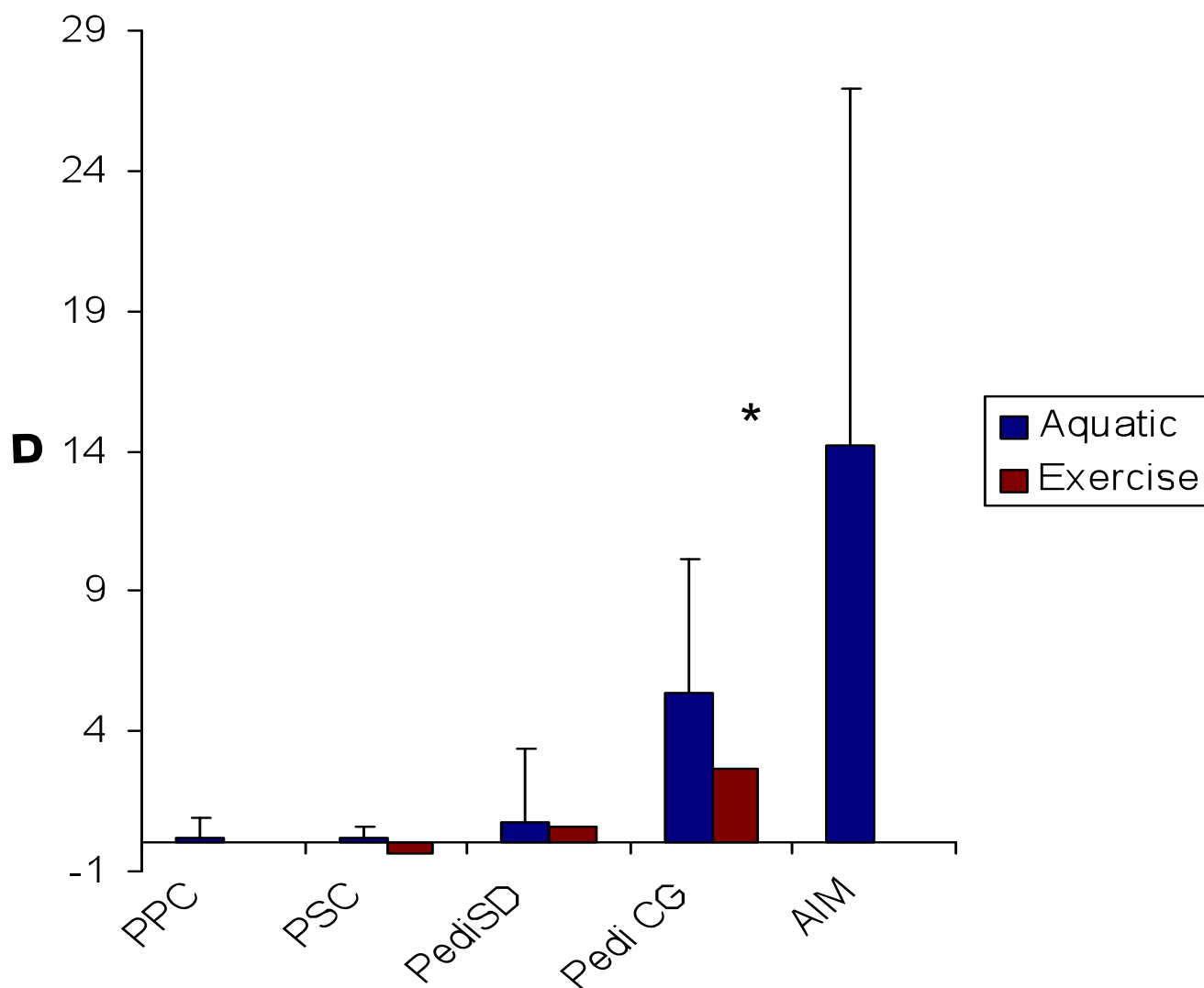
Getz, Hutzler, Vermeer & Yarom, (Submitted)



Comparison between pre to post means between groups of oxygen consumption

Getz, Hutzler & Vermeer, 2007, Eur J Special Needs Ed.

Activities & Participation

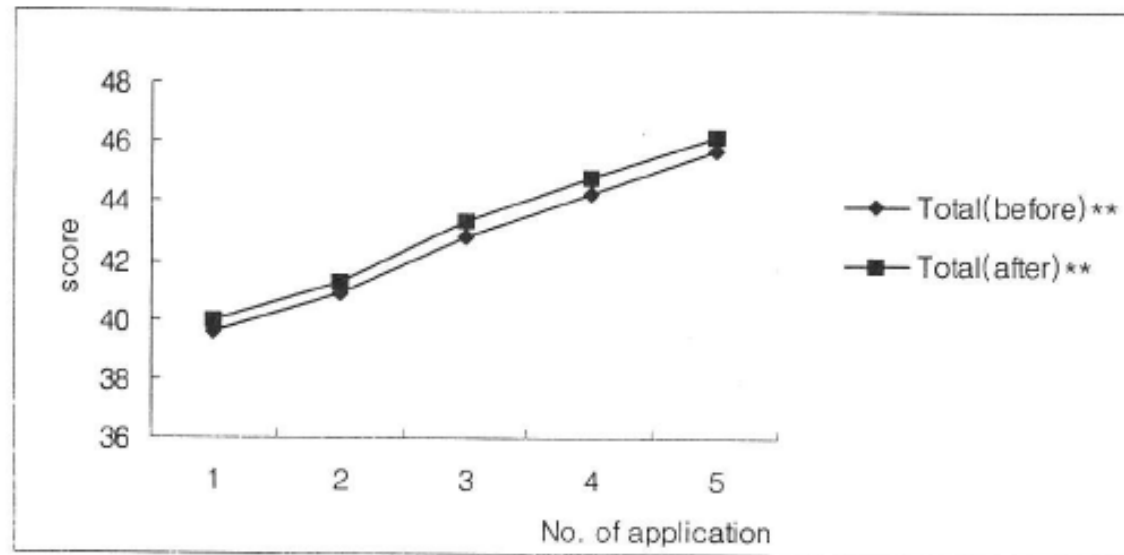


Stroke and balance

Bae Jung-Hyuk, MSc thesis 2006

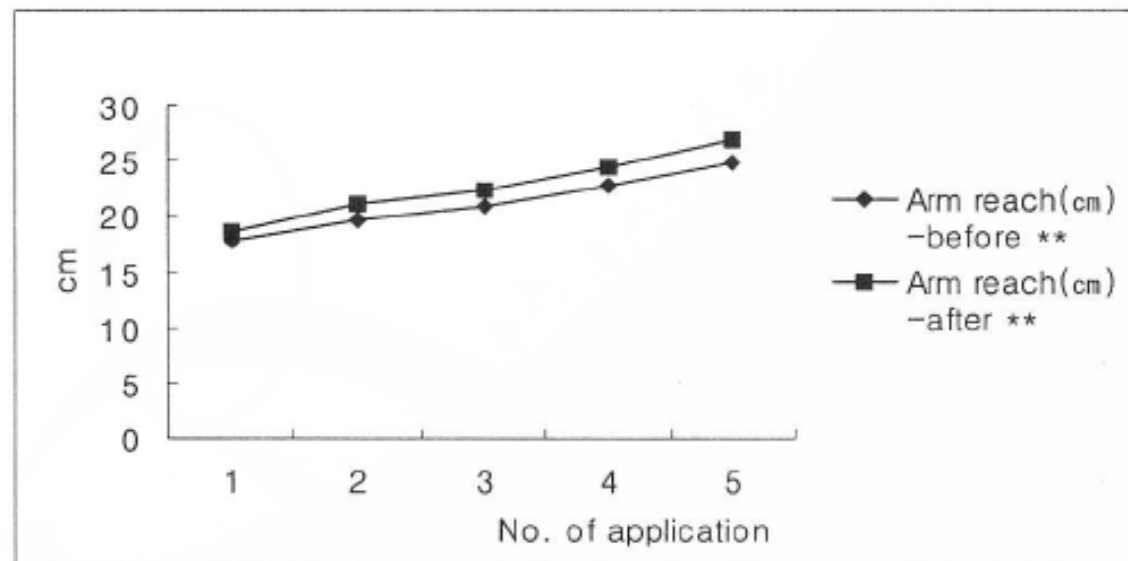


- Cohort study: no matched controls
- N = 26, duration of CVA?
- Primary outcome: BBS
- 5 treatments
- Intervention: Halliwick
- Conclusion: ss increase of the total BBS score, as well as on some subscales



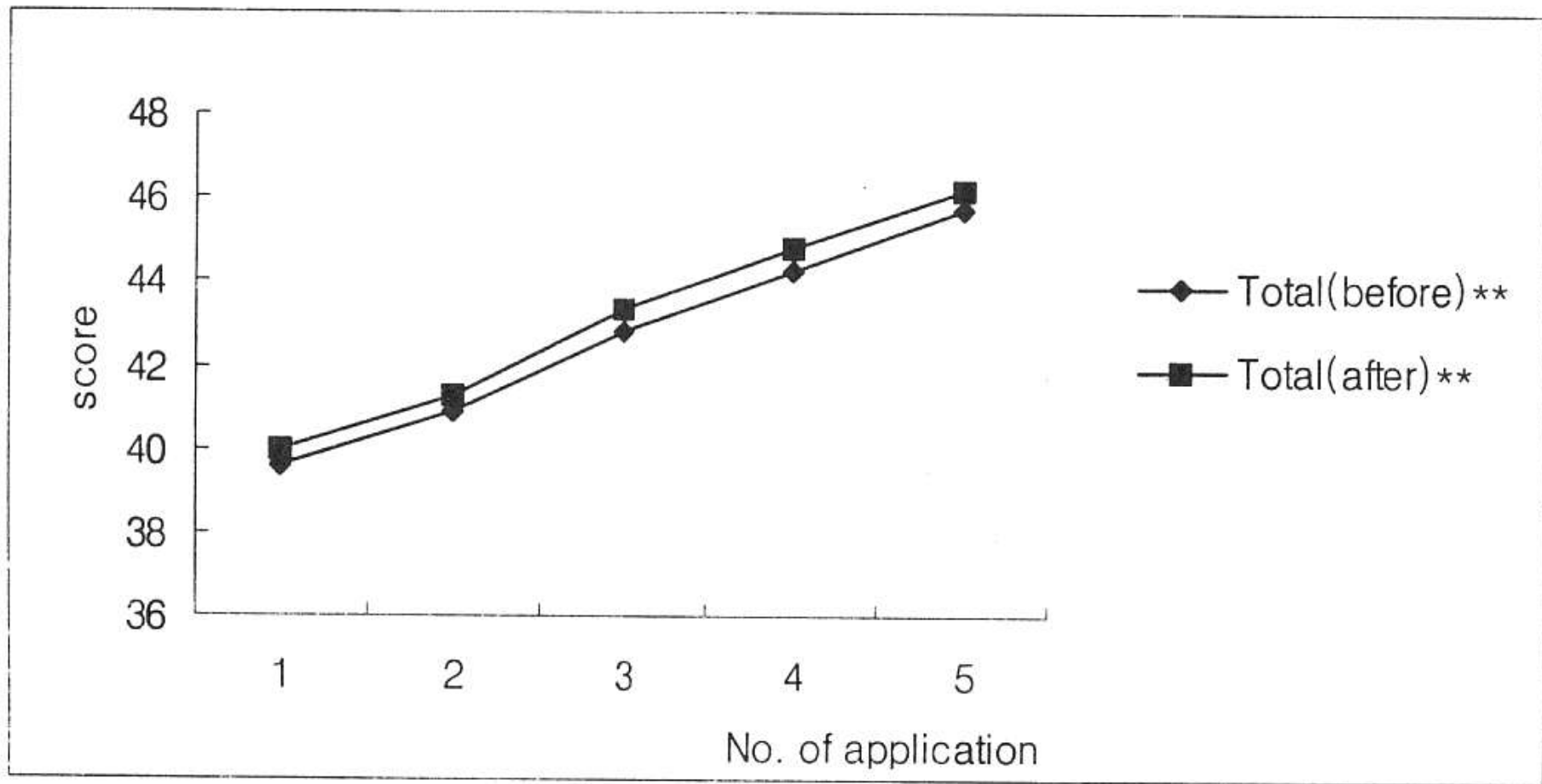
** $p < 0.01$

Fig. 22. Mean changes of BBS total scores



** $p < 0.01$

Fig. 23. Mean changes of arm reaches(cm)



** $p < 0.01$

Fig. 22. Mean changes of BBS total scores

BBS pretest: 39.58 ± 17.69 , BBS posttest 45.73 ± 13.25

>> smallest detectable difference BBS = 3 (CI 95%), so change is not accidental

>> cutoff score to identify falls is 38 - 52

- A change of 3 p is a change above which the difference is not accidental.

- SDD: smallest detectable difference

BBS	pre	post
Total, points	40	46
Reach, cm	17	25

Stroke and balance

Nam Cheung-Hong, 2006

- RCT
- N = 26, onset = 20 ± 3.24 month
- AT vs Bobath (AT is mainly Halliwick 10p), 6 weeks, 3 times / week
- Measurements: baseline and 6 wk
- Tests: e.g. BBS
- Groups were baseline comparable

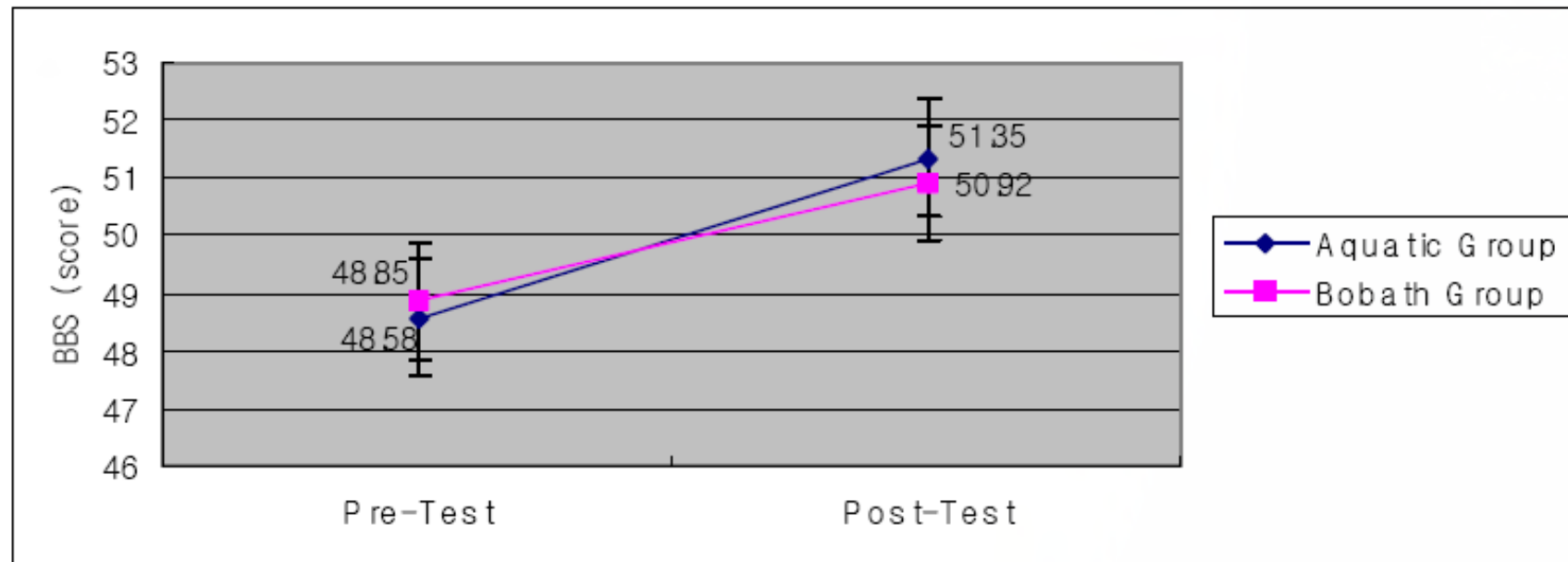


Fig 12. The change of Berg Balance Scale between the Aquatic and Baboth groups

BBS Bobath: pre 48.85 post 50.92

BBS AT: pre 48.58 post 51.35 , almost at the smallest detectable difference

Effect size very low: no difference between the 2 interventions

Why the negative difference with Bae (although here: 18 treatments). Other stroke group, not enough balance ex in the pool?)

Noh Dong-Gook, 2006, RCT



- Chronic stroke > 6 m.
- Intervention: Halliwick + Ai Chi (n= 9)
- Control: dry bicycle conditioning (n=8)
- Design: 8 wk / 3*wk / 1 hour
- Outcomes:
 - BBS, force plate weight bearing, gait (Modified Motor Assessment Scale), isokinetic strength



Noh programme



- Halliwick/Ai Chi (115 cm deep, 34°)
 - 5 min warming up
 - 25 min SRC weight transfer, TRC and CRC
 - 25 min Ai Chi rounding and balancing
 - 5 min cooling down
 - * supported by a pt when needed (only first week)
- Dry gym
 - Combination of bicycle ergometer, arm ergometer

Table 2.
Outcome Measure: Baseline and Posttest

Variable	Experimental Group(N=9)		Control Group(N=8)	
	Baseline	Posttest	Baseline	Posttest
BBS score(max=56)	45.0(17.0)	50.0(8.0) ^{†‡}	43.0(25.0)	45.0(25.0)
MMAS(max=6)	3.0(1.0)	4.0(3.0) [†]	3.5(1.0)	4.0(3.0)

More affected side

$P < 0.05$, sign difference between pre-post and between both groups posttest

Conclusion author: Halliwick and Ai Chi are effective in promoting balance and weight-bearing in people with stroke



Noh results 1

	BBS	Anterior weight bearing	Posterior weight bearing	Knee ext force	MMAS
Exp group	11% ↑	7% ↑	12% ↑	22 %↑	30 %↑
	SS	SS		SS	
Controls	No Δ	No Δ	No Δ	5 %↑	12 %↑

“Research conclusions”



- There is not much “Level 1 or 2” research, but it supports aquatic therapy
- Quality of research increases
- Opinion of therapists, parents and children is very positive
- There are good theoretical reasons to defend AT: Halliwick is like “modern Bobath in water” and is shaped in accordance with ICF
- AT and therapy on land are complementary

The “Ten” Point Programme in fall prevention = teaching to fall and stand up again

- Breath control
- Transversal Rotation Control
- Upthrust / Mental Inversion
- Combined Rotation Control
- Sagittal Rotation Control
- Balance in Stillness

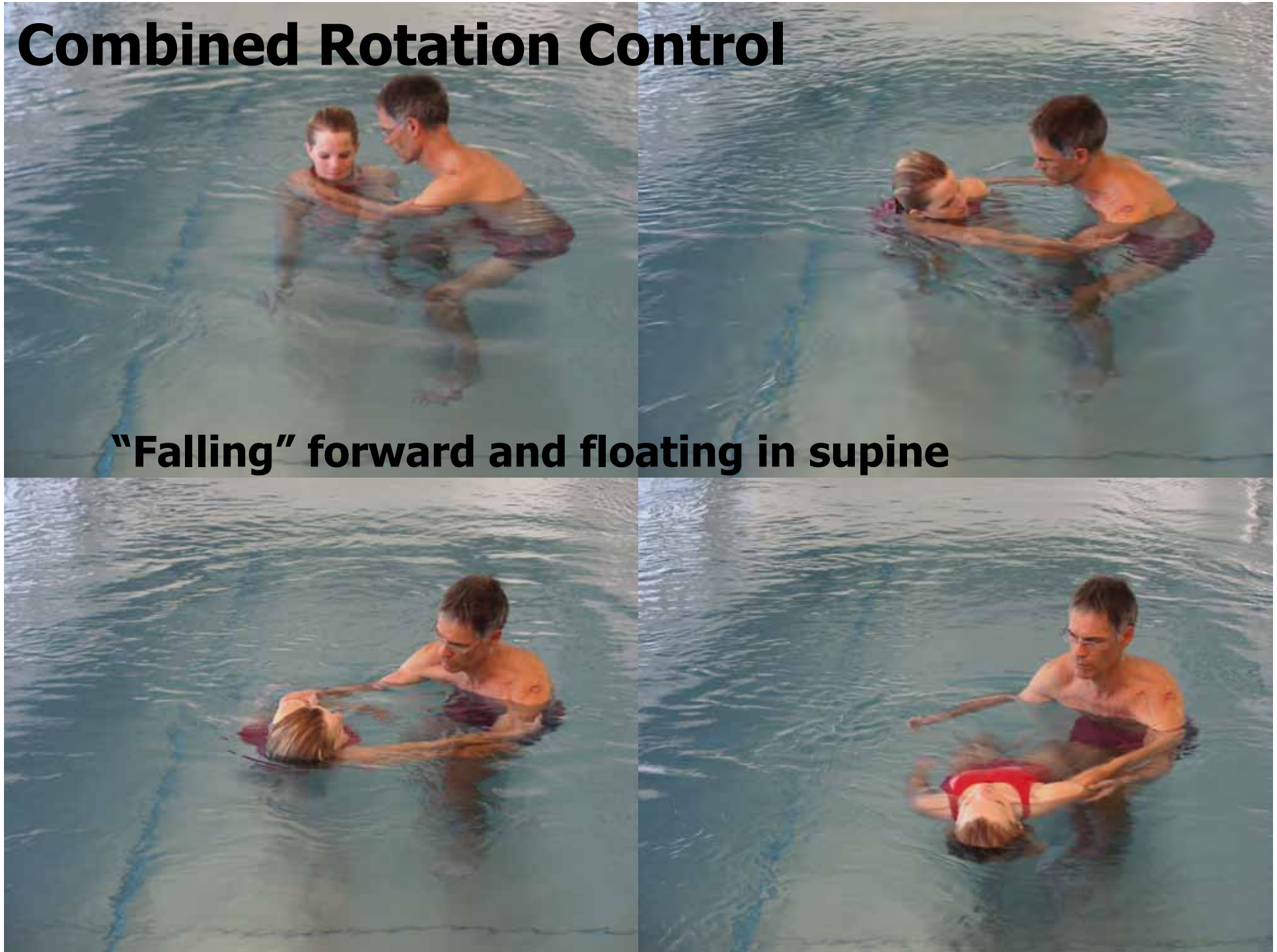
Sagittal Rotation Control

Weight transfer to the limit, + reaching



Combined Rotation Control

"Falling" forward and floating in supine



Ai Chi

- Originated by Jun Konno since 1995
- Designed as an individual preparation for Watsu, progressing to Ai Chi Ne
- Based on Zen-Shiatsu by Masunaga (meridian stretch)(or neurodynamics)
- Combines posture, breath and relaxation (like T'ai Chi and Qi Gong)



Ai Chi and Halliwick



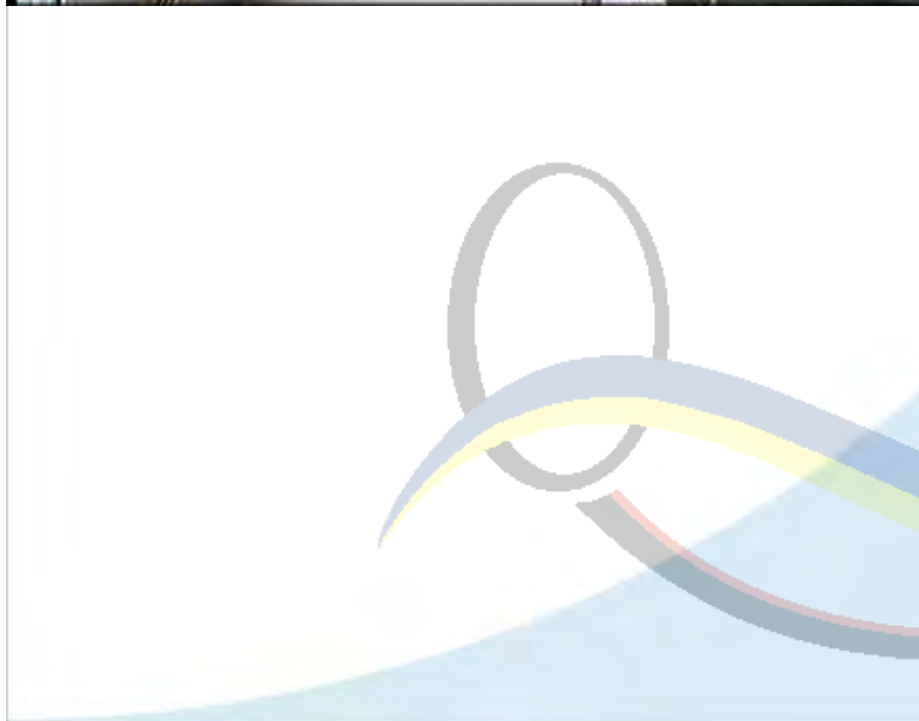
■ Resemblances

- Breath control
- Balance control
- Relaxation
- Progression / disengagement
 - Small > large ROM
 - Symmetry > asymmetry
 - Decrease base of support
- ICF: function, activity and participation

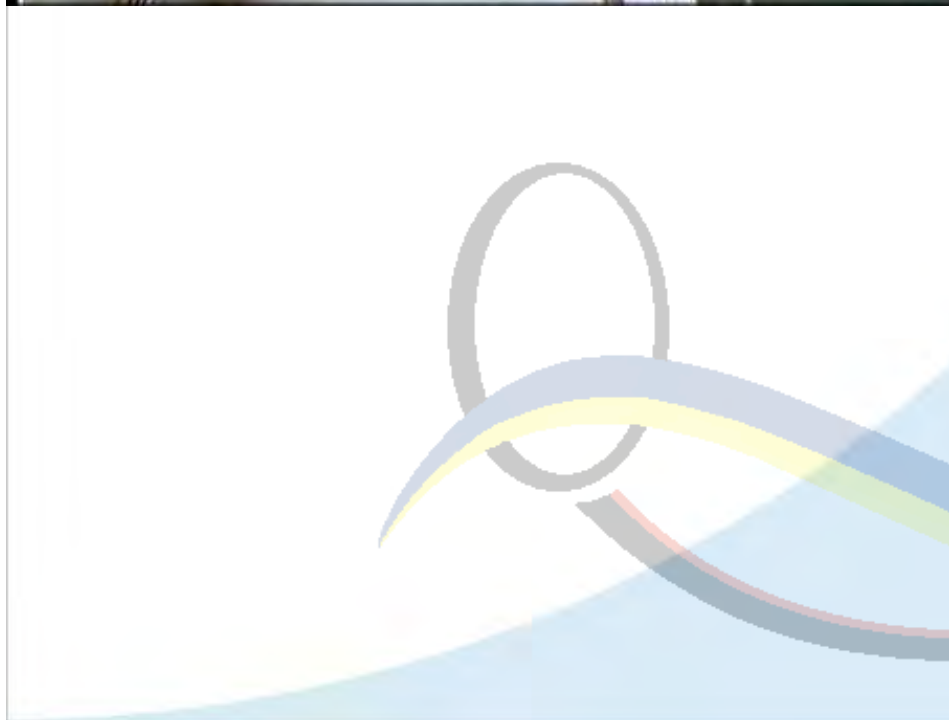


Sagittal
Rotation
Control

Transversal Rotation Control



Longitudinal Rotation Control

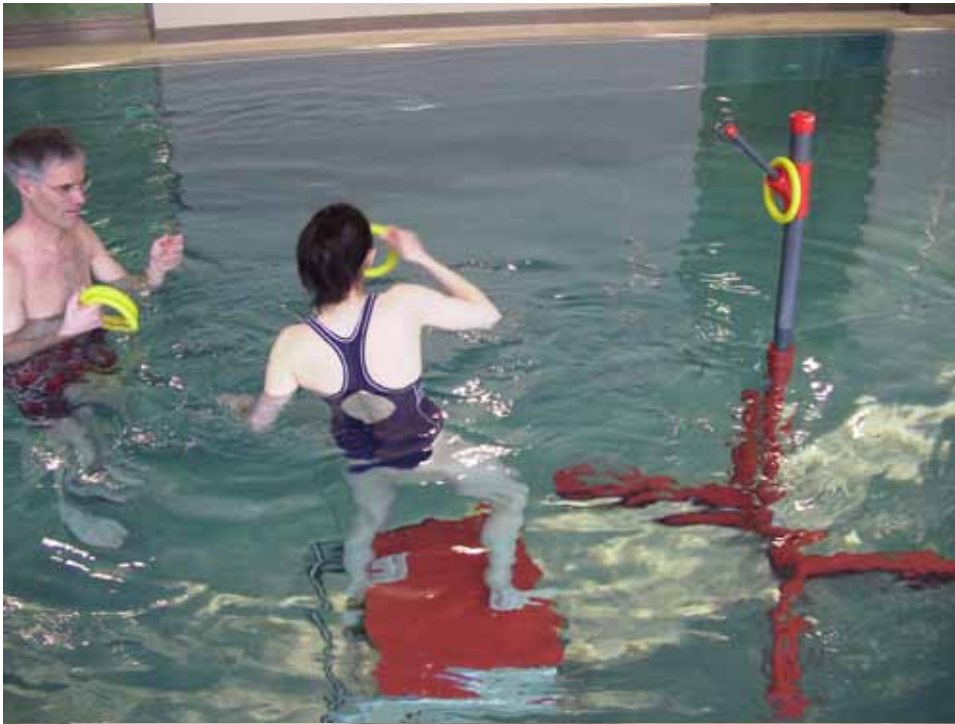


Obstacle course

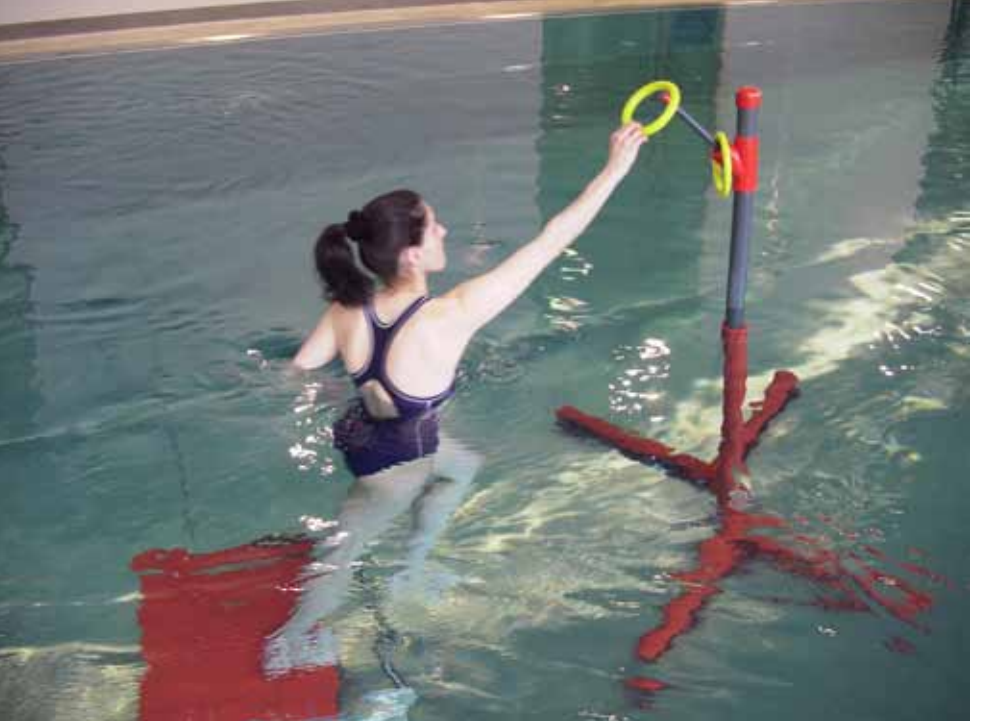


- Different surfaces as on the street
- Strips of carpet as inside
- Ducking under e.g. washing lines
- Small passages: walking around chairs
- Reaching and climbing
 - With cognitive double tasks, dimmed light, a tray in front, passing each other etc
 - K. Mead 1996, H.Rijken 2004





■ No risk to fall

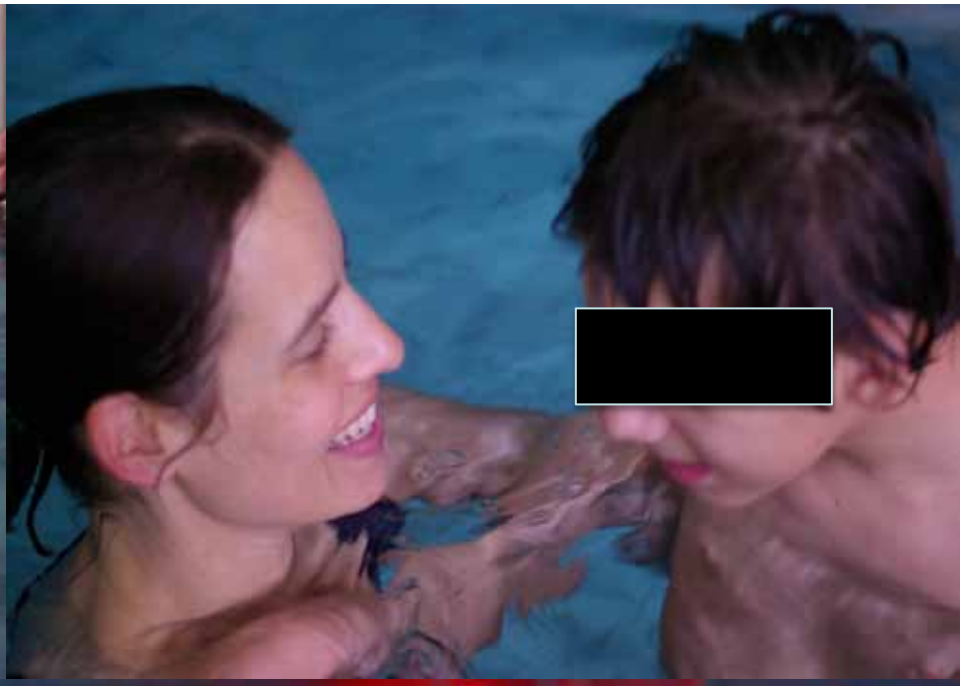


Snoezelen



- Careful exploration of the environment, using the senses that are most appropriate for a certain client.
- The clients should enjoy the stimuli that they receive and should feel at ease, become calm
- Combines active and passive moments
 - Halliwick and Aqua-T-relax





Pilates



- Pilates stresses core stabilization
- Halliwick stresses the trunk as the centre of balance:
 - First in a dynamic way to gain movement experience
 - Later in a more static way to give the basis of functional arm- and leg use









The environment provides



- **Instability**
 - Reactive activation of the body
 - Mental alertness: problem solving with water as a perceptual reference surface
- **Freedom of movement**
 - High dose of information and motor output
 - Patient can be dynamic with high ROM



The environment provides



■ Support

- Hands-free therapy: space between pt / pat
- Halliwick = “art of not touching”
- Less force needed to elicit muscle activity

■ Safety

- No risk to fall
- Time to think and to react



The environment provides



- Other possibilities
 - Change of fix point and mobile point
 - Change of the roles of the pt and the patient
 - Fun, motivation and adherence

