



# Hydrotherapy for ABI Survivors

Karen Ford

Holy Cross Hospital

# Content

- What is Hydrotherapy?
- How can it benefit ABI survivors?
- Considerations for patient treatment.
- What are the practical barriers to overcome?
- What is the evidence base?
- Time for questions.

# What is hydrotherapy?

- Hydrotherapy is a generic term which describes any water-based therapy
- Aquatic Physiotherapy is new term defining it as the  

‘special practice of physiotherapy, with therapeutic intent toward rehabilitation or attainment of specific physical and functional goals of individuals using the medium of water’.

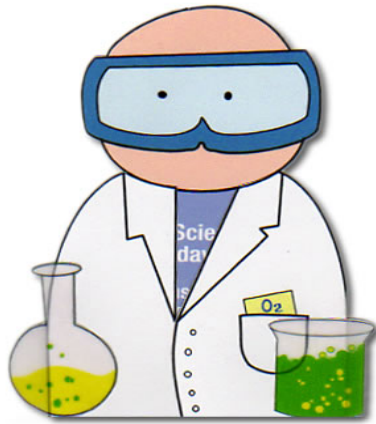


# Hydrotherapy vs normal pool

- Pool temperature 33 - 35 degrees Celsius
- Air temperature 28 degrees Celsius
- Controlled number of people in pool
- Focused environment for rehabilitation
- Appropriate equipment with expert assistance

# Physiological Effects of Immersion

- Increased cardiac output, decreased blood pressure
- Increased blood supply to muscles and elasticity of connective tissue
- Decreased muscular contraction force
- Increased renal output
- Decrease of muscular contraction force
- Decrease in joint compression force
- Decrease in mechano-receptor transmission

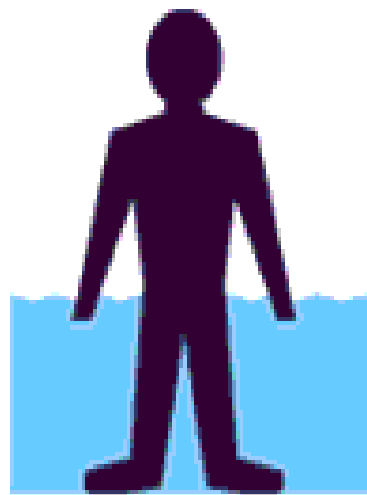


# The Science of Aquatic Therapy

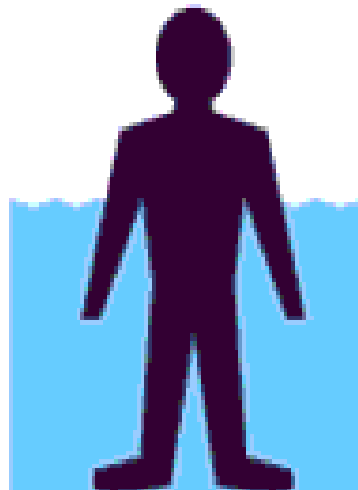
- Hydrodynamic Principles
  - Relative Density
  - Metacentric Principle
  - Turbulence
- Hydrostatic Pressure

# Buoyancy

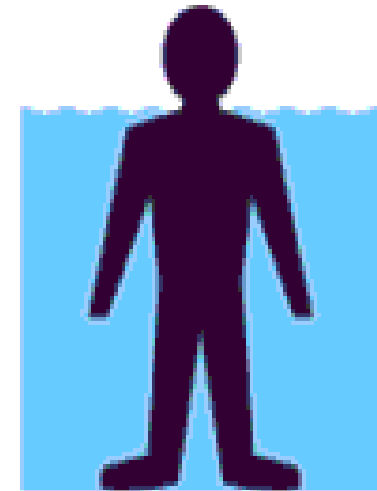
A 200 lb. Person Weighs:



100 lbs.



60 lbs.



20 lbs.

# Referral Procedure

- Self referral
- Referral from health professional
- Prior to treatment in pool all patients require:-
  - land assessment by physiotherapist
  - health screen





# Treatment Aims for ABI Patient

- Decrease tone
- Improve balance
- Increase range of movement
- Increase muscle strength
- Elicit purposeful movement/reactions
- Increase proprioceptive & exteroceptive input
- Decrease pain, promote relaxation
- Increase self esteem
- Socialisation



# Treatment Techniques

- **Bad Ragaz Ring Method**

Developed in 1957. Three dimensional patterns adapted to the floating patient. Therapist can add resistance.

- **Halliwick**

Developed in 1950 as swimming method – Ten Point Programme from water adaptation to basic swimming stroke.

- **Watsu**

Developed in 1980's – Shiatsu in water.

# Bad Ragaz



# Halliwick



# Watsu



Copyright Holy Cross Hospital July  
2009



# Considerations for treatment

- Unwanted tonal changes
- Observation
- Impaired sensation
- Stability and control
- Level of breath control and airway protection
- Communication
- Visual/hearing impairment
- Epilepsy
- Cognitive/Behavioural Disorders
- Fatigue



# Practical Barriers to Overcome

- Accessing a pool near to residence
- Managing Continence
- Transfers
- Consent
- Treatment expectations




# Evidence Base for Treatment

- Driver 2003 (single subject study) and Driver 2004 (RCT 16) completed 60 minute treatment sessions, 3 times per week over 8 week period. Individual programme.

Improvements in strength, flexibility, range of movement, fitness, self esteem and goal attainment.

Shoulder, elbow and knee extension unchanged. No change to muscle endurance.



- 
- Jones 2005 investigated 16 week programme. Individual programme following assessment of 3 to 5 additional periods of exercise per week.

Improved goal attainment and improvement in Aberrant Behaviour Checklist.



# Limitations of research

- How do you find a homogenous sample?
- Comparison to land based activity and assessment of carry over
- Individual, one to one and manual aquatic practice understudied.
- Research question asked limits answer

# Any questions?



Copyright Holy Cross Hospital July  
2009