



<http://newberlintherapies.com/adult-services/>



Benefits of OT and Aquatic Therapy

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What is an occupation?

- Meaningful activities in your life
- Each day you are involved in many
- Make up our identities
- Can you think of some of the occupations that you engage in every day?
- Sometimes there are barriers
- <https://www.youtube.com/watch?v=Ud5Fp279g4Y>



http://www.umc.edu/Education/SchoolsHealth_Related_ProfessionalsMaster_of_Occupational_TherapyMaster_of_Occupational_Therapy_Home.aspx

+ What is OT?

- Help people continue occupations independently
- Find out what a person wants to do
- Figure out the limitations
- Design a therapeutic intervention
- Assess the outcomes
- <https://www.youtube.com/watch?v=kkw77r-Kluc>



<http://www.aota.org/about-occupational-therapy.aspx>

+ Importance of Exercise

“Health and wellness promotion and preventative programs should be supported for the older adult to prevent or delay the development of many chronic problems which often result in the utilization of more costly services” -APTA



+ History of Aquatic Therapy

- Ancient Greek and Roman spas, other ancient civilizations used springs
- Started to be used more after WW II and polio epidemic
- Most research in 1960s and 1970s



<http://www.apta.org/History/>

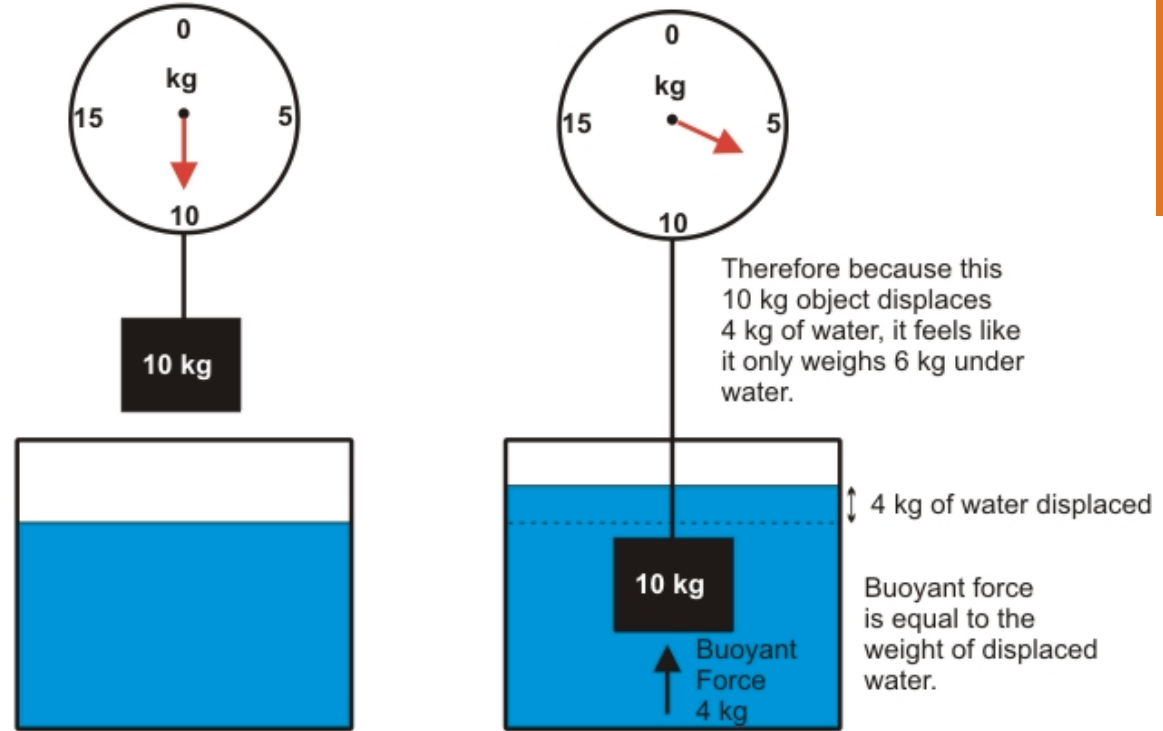
+ Why water?

- Buoyancy
- Pressure
- Temperature
- Resistance
- <https://www.youtube.com/watch?v=1Hw2nwYQIoY> 1:18-2:08, 4:05-4:35



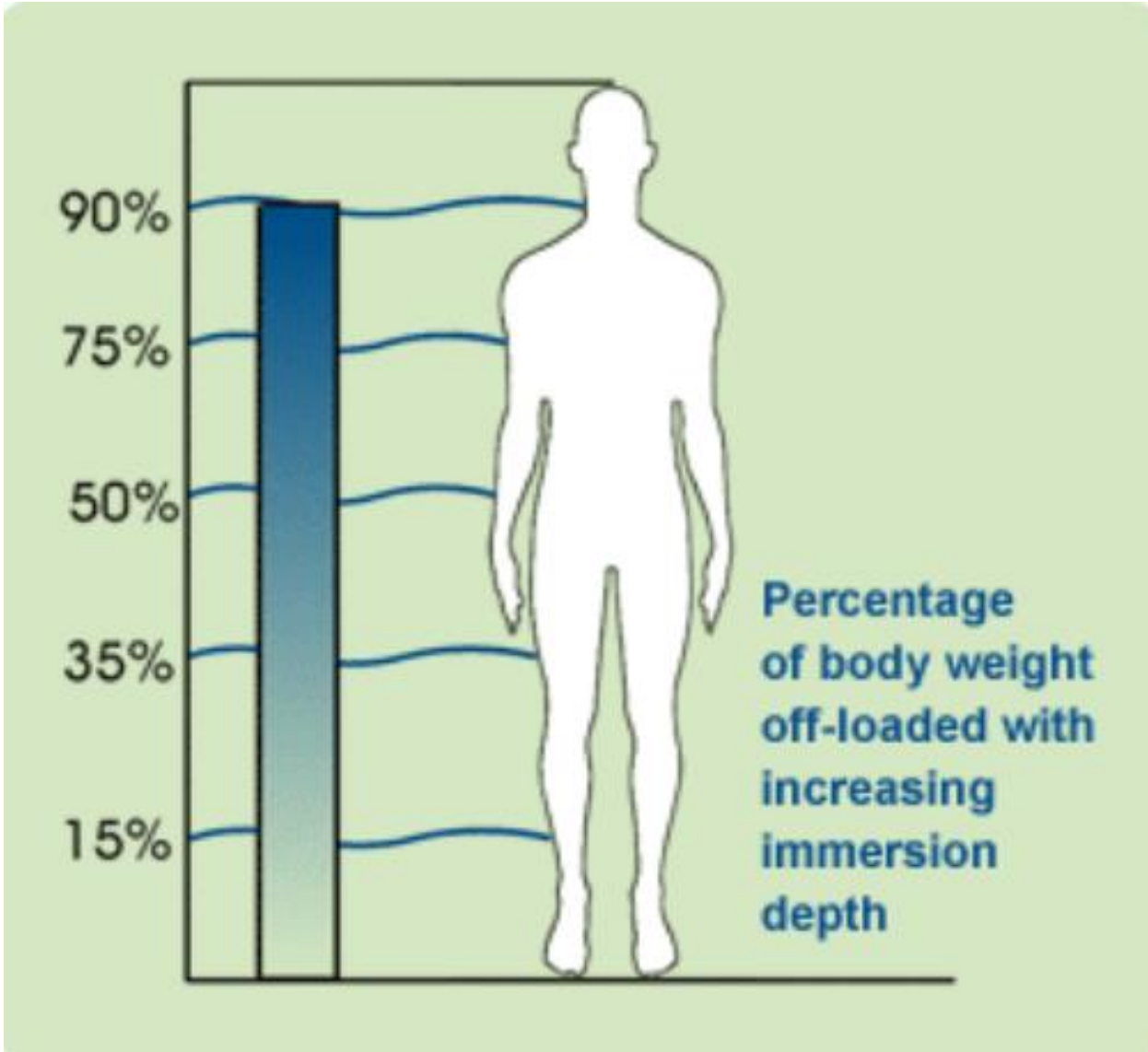
<http://www.metrophysicaltherapy.com/2014/03/25/aquatic-therapy-chronic-pain/#.VSL2ilr4tF>

+ Buoyancy



<http://www.uoguelph.ca/geology/geol2250/glossary/HTML%20files/archimedes.html>

- Average body density less than water density
- Counteract force of gravity → offloading



+ Pressure

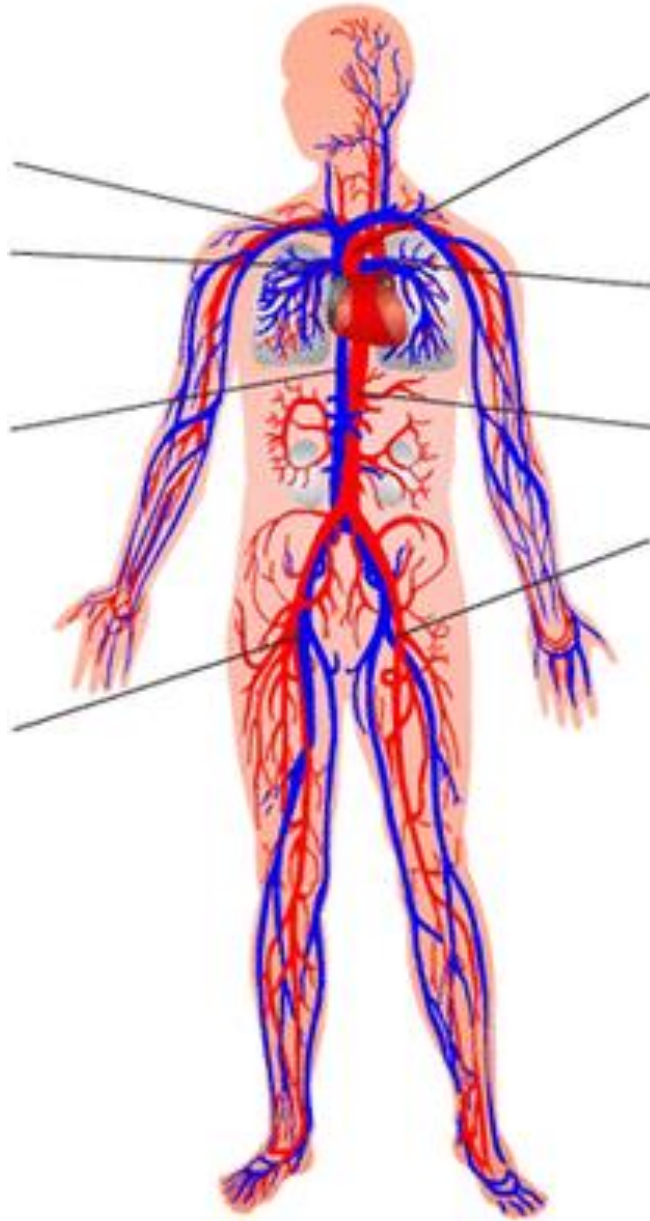
- Pressure on submerged object 22.4 mm Hg/ft of depth

- Promote circulation

- Edema (swelling) of injured body part



http://www.phschool.com/iText/sci_exp/iText/products/0-13-181243-2/ch1/ch1_s1_2.html



+ Temperature



- Able to manipulate
 - Therapy pools 87-96 degrees F
- Good conductor: transfers heat 25x faster than air
- Warm → relaxation and tone reduction

+ Resistance

- Strength training
- Equipment to increase surface area
- Current
 - Laminar and turbulent flow
- ACSM recommends resistance training 2-3 days per week for older adults



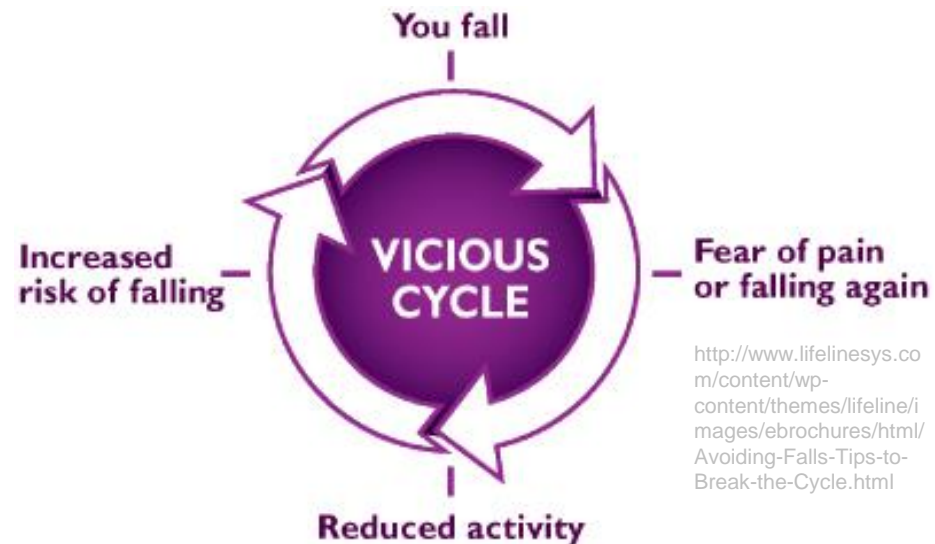
<http://www.aquagear.com/water-gear-aquaflex-paddles/>

+ Fall Risk

- Balance = postural control = ability to control one's body position for stability and orientation
- Age-related: falls are leading cause of injury adults over 65

■ Why?

- Musculoskeletal limitations
- Decreased sensory ability
- Decreased coordination
- Impaired anticipatory control mechanisms



+ Balance and Stroke

- Need early active and repetitive training
- Motor function in a meaningful context
- Aquatic therapy stroke patients better mobility than standard physiotherapy stroke patients



<http://completept.com/blog/?p=249>

+ Fall Risk and Aquatic Therapy

- Safe environment to exercise
- Buoyancy provides support and easier handling
- Lessen force on joints
- Turbulence and viscosity for core strength
- Buoyancy supports upright posture → activate joint receptors
- Muscle and skin receptors stimulated



+ Education and Aquatic Therapy



- Education and aquatic therapy
- Goals
 - Increase transfer of pool exercises to land ADLs
 - Increase knowledge of fall risk factors and prevention
 - Improve confidence in ability to avoid a fall
- Goals, discussion, positive reinforcement
- Fall risk decreased after education + aquatic therapy

+ Arthritis

- Rheumatoid arthritis and osteoarthritis associated with
 - Reduced strength
 - Reduced range of motion (ROM)
 - Slower gait
 - Pain
- Effects of disease
 - Inactivity from joint/muscle pain
 - Fear of physical activity



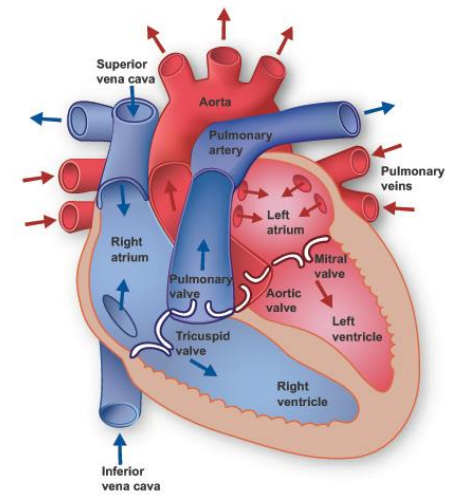
+ Arthritis



- Arthritis Foundation Aquatic Program
- Three 45-minute sessions/week
- Warm water 85-87 F
- Buoyancy reduced force on joints, move with less effort, and move safely
- Increased strength and ROM in joints affected by arthritis
- <https://www.youtube.com/watch?v=NcyIWuorhSU>

+ Heart

- Maximal HR decreases
- Decrease cardiac output, increase BP
- Thicker, less compliant arterial walls → increased BP
- Weaker valves and venous walls → harder to return blood to heart, peripheral edema (swelling)
- Rehabilitation for mild-moderate heart failure
 - Improve cardiac output
 - Improve QOL, sleep quality, general well-being



<http://www.texasheart.org/HIC/Anatomy/anatomy>

+ Back pain

- Less physical fitness associated with back pain
- Buoyancy reduces stress in joints and axial loading
- Decreased back pain and disability
- Increased quality of life
- Improved body composition
- Improved health-related fitness



+ Overall Health and Well-being



Aerobic exercise recommendation for older adults:

- 3 days/week, 20 minutes/session vigorous activity
- or
- 5 days/week, 30 min/session moderate activity
- Reduce
 - Blood pressure
 - Cardiovascular risk
 - Body weight, body fat, LDL cholesterol, and triglycerides
- Improve glucose and insulin metabolism

+ Overall Health and Well-being

Resistance training recommendation: 2-3 days per week for older adults

- Walking ability
- Muscle strength and mass
- Improve energy metabolism
- Reduce body fat mass
- Maintain metabolically active tissue





Review

- Occupations and the purpose of OT
- Properties of water used for therapy
- Conditions that benefit from Aquatic Therapy
- Overall health benefits of living an active lifestyle



<http://www.grdominicans.org/who-we-are/marywood-campus-map/>



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