AquaStretch™ Certificate Manual

A Progressive Assisted Aquatic Stretching Technique.

AquaStretch™ Certificate Manual

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AquaStretch™ Introduction:

AquaStretch™ is a new form of individual and facilitated aquatic exercising, which may be used in wellness programs and as an aquatic therapy. It is like being stretched by an athletic trainer, only with movement in various depths of water (3'-5'), and with 5 to 15 lb weights attached to your body. It's also like a "cranial unwinding" in water, with verbal psychological encouragement to "Move, if you feel the need to move".

The two major changes I made to my traditional cranial training were:

1. To accent or amplify the (intuitive) movement, rather than just following it (the "unwinding"), based on the idea that the patient's body knows what to do, but doesn't have the strength or endurance to do the fascial stretching without supplemental energy/force, and
2. Giving the patient permission to "Move, if you feel the need to move," to offset the patient's natural suppression of their intuitive movement because of their expectation that they are going to be "done" by the therapist.

AquaStretch™ is considered a breakthrough in pain management and preventive medicine, provided primarily by massage therapists, athletic trainers, and physical therapists. It may quickly restore flexibility lost from accidents and surgeries more than three months old, significantly and immediately reduce chronic pain or movement pain, and/or create profound relaxation that may help improve sleep. AquaStretch™ theoretically breaks down fascial adhesions that inhibit flexibility or may cause nerve impingements, muscle tension or soreness, vascular insufficiencies, hormonal imbalances, and pain. It may also be potentially used in athletic conditioning and fitness programs to increase flexibility.

George Eversaul A.P.H.

Course Description

This course presents the foundations and application of AquaStretch™. AquaStretch™ is a new form of individual, facilitated aquatic exercise that has been successful in treating various patient populations, from people with chronic pain to elite athletes. AquaStretch™ is considered a breakthrough in pain management and aquatic therapy. It helps to quickly restore flexibility lost due to injuries or surgeries. AquaStretch™ significantly and immediately reduces chronic pain or pain with movement.

AquaStretch™ creates profound relaxation that helps to improve function, quality of life, sleep and therefore, overall ability to heal. In this manual, AquaStretch™ technique is presented, along with case studies that demonstrate how to maximize benefits for a variety of health conditions. The participants will be presented with the tools to apply appropriate documentation and application of this modality in their particular aquatic therapy/ aquatic exercise setting.

AquaStretch™ theoretically breaks down fascial adhesions utilizing a combination of the facilitator/ therapist's manual pressure and the client/ patient's intuitive movement. AquaStretch™ methodology can be utilized within a wellness program or by therapists as an aquatic manual therapy technique.

This certificate course will address the basic AquaStretch™ wellness procedures. Participants will practice this manual technique in the classroom and the pool. Topics in this course include starting positions and grips, how to safely apply stretch resistance using 5-15 pound weights to the body in 3-5 foot depth water using/ facilitating intuitive movement.

Course Objectives:

Upon completion of this course the participant will be able to:

1) Explain the 4 basic AquaStretch™ theories.
2) Safely progress a client through the eleven basic starting positions and grips within the AquaStretch™ wellness program.
3) Effectively cue and perform the basic AquaStretch™ procedure. (Play, Freeze, Pressure, Move)
4) Discuss appropriate water depth and use of equipment, including safe application and removal of weights.
5) Describe appropriate documentation for various aquatic therapy settings.
6) Describe the benefits of AquaStretch™ techniques for various patient populations.

Throughout this manual, the following terminology is used:

Facilitator/ Practitioner/ Therapist: Person performing AquaStretch™.
Client/ Patient: Person whom receives AquaStretch™.
AquaStretch™: May be abbreviated at AS
Grips/ Holds/ Starting Positions: Specific AquaStretch™ techniques (i.e.: Foot Grip; One Leg Standing) named and described in this manual.

Contributors to the manual

AquaStretch™ was developed by **George Eversaul A.P.H.**. (Advanced Practitioner of Homeopathy). Much of this manual is based on his theory, principles, techniques and procedures. The remaining contributors are aquatic therapy professionals personally trained by George and who use the technique in a variety of wellness and therapeutic settings.

Donna Adler

Donna Adler, BA, ATRIC, is founder of Lyu Ki Dou™ and owner of Liquid Assets for Fitness. She is a trainer for the Arthritis Foundation and works with geriatrics and clients with health challenges. She has been an AEA Advisory Board member and is a recognized national provider for AEA and ATRI. Donna attends a Medical Intuitive Training Program at the Center for Applied Energy Medicine. Beyond her active aquatic and private healing practice, Donna facilitates workshops on healing and spiritual self-mastery. Contact Donna at liquidassets4fit@gmail.com

Laurie Denomme

Laurie Denomme, B.Kinesiology, is the co-founder of Exercise Elements, a company whose mission is to deliver an approach to exercise that concentrates on the body as a whole for better results. She co-authored a book on special populations and is the creator of numerous aquatic fitness education products. A Fellow of Applied Functional Science™ and AquaStretch™ instructor, Laurie is dedicated to mentoring and motivating others. She travels internationally to share her unique and personally developed aquatic training methods. Contact Laurie at laurie.denomme@gmail.com or visit www.exerciseelements.com

Jessica Huss

Jessica Huss , DPT, CCI is the Aquatic Physical Therapy Director and owner of Aquatic Rehab and Wellness Center in Lake Havasu City, AZ. Jessica obtained her Doctorate of Physical Therapy (DPT) from A.T. Still University in 2002. She is a credentialed clinical instructor and serves as adjunct faculty to the Physical Therapy Assistant (PTA) program at Mohave Community College (MCC).

Jessica is a member of the Arizona Physical Therapy Association and Aquatics section. She takes pride in providing an in-depth, hands-on, educational experience for her patients and students. Jessica has practiced aquatic physical therapy since 2003. She has had the opportunity to work with a variety of patient populations in her career, including but not limited to: pediatrics, neurological and orthopedic conditions, post–surgical rehabilitation, sports injuries and geriatrics.

In September 2010, Jessica implemented AquaStretch™ (A/S) into her aquatic therapy program. She and her patients immediately noticed dramatic improvements in their physical therapy progress. Moreover, Jessica helped to conduct the first AquaStretch™ research study on total knee rehabilitation and has been an AquaStretch™ trainer since Novemeber 2010.

Jessica's passion is to provide the most effective and least painful physical therapy experience for her patients. She also strives to provide the best educational experience for aspiring Physical Therapy Assistants and AquaStretch™ Trainee's. Jessica can be contacted at Jessica@arawc.com

Connie Jasinskas

Connie Jasinskas, B.Sc., B.Ed., M.Sc.
Certified Exercise Physiologst, AEA Certified
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AquaStretch™ Practitioner and Trainer

Connie brings 30 years of experience, passion and humor to her work as an international health educator. She works both wet and dry, with 'regular' people, as well as those with chronic pain, musculoskeletal injuries and a variety of health conditions. Connie uses AquaStretch™ techniques daily with her physiotherapy patients and personal training clients.
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Terri Mitchell

Terri Mitchell, BA, PTA, ATRIC has committed her livelihood to aquatic fitness, therapy and wellness for more than 25 years. She is an AEA Training Specialist and Physical Therapist Assistant in Austin, Texas where she works with college kids, older adults and baby boomers in various indoor and outdoor pools.

She holds certifications from AEA, and ATRI, with specialty training in PNF, PiYoChi, Bad Ragaz, Deep Water, AquaStretch™ and more. Terri is a Post Rehab Specialist for both land and water. She is an experienced presenter, having shared her ideas globally.

She is the recipient of the 2010 Aquatic Therapy Professional Award from the Aquatic Therapy and Rehab Institute, the 2001 Dolphin Award from the Aquatic Therapy and Rehab Institute and the Fitness Professional of the Year from AEA in 1992.

Terri has produced Aqualogical Abdominals DVD and co-produced a DVD, CD ROM and manual on PNF in the Pool. She can be contacted at texterri@austin.rr.com

Beth Scalone

Beth Scalone, PT, DPT, OCS, ATRIC is a licensed physical therapist with over 20 years of experience in orthopedic and aquatic therapy. As the owner of North County Water and Sports Therapy Center in San Diego (www.waterpt.com) she continues with hands on clinical care in addition to her role as educator.

Since graduating from the University of Connecticut in 1991 Beth has belonged to the American Physical Therapy Association and has achieved Certification and re-certification as a Clinical Specialist in Orthopedic Physical Therapy. In January 2006, Beth graduated from Boston University with a Doctor of Physical Therapy degree. In 2010 Beth was honored with ATRI's Tsunami Spirit award. Additional certifications include Certified STOTT® Pilates instructor, Master Instructor for the Burdenko Method and AquaStretch™ Trainer.

Beth not only provides continuing education for health care professionals she is an adjunct faculty member at San Diego Mesa College PTA program, teaching Orthopedic Rehabilitation and Introduction to Pathology courses and provides the learning module/ instruction on aquatic therapy to the University of St. Augustine San Diego Campus DPT program.

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Additional AquaStretch™ Instructors

Julia Fetting

Julia Fettig, CTRS, LMT, ATRIC, is a Nationally Certified Therapeutic Recreation Specialist and Licensed Massage Therapist who's life's work is immersed in aquatics. Recently relocated from Idaho, she now instructs aquatic therapeutic exercise classes and provides Myofascial Aquatic Body Work© and AquaStretch™ sessions at the North Myrtle Beach Aquatic & Fitness Center in South Carolina. Julia Fettig is the founder/owner of Therapeutic Aquatics, Inc. Presenter and faculty for the Aquatic Therapy Rehab Institute, Inc. and Motivations, Inc. Julia is the author and publisher of The "Bad Ragaz Ring Method Visual Instructional Manual and Video"; also co-producer of "PNF in The Pool" and "Myofascial Aquatic Body Work " DVD's. She is the recipient of the ATRI 2002 Tsunami Spirit Award for her innovation, creativity and implementation of new ideas. Both national and international audiences have received her workshops enthusiastically. Julia Can be reached at julia@aquatictherapyinfo.com

AquaStretch™ Theory

AquaStretch™ Theories: Many people ask, "Why does AquaStretch™ work? In summary, there are four basic theoretical explanations that may be interacting synergistically to account for the many physiological changes observed with AquaStretch™. These theories are:

1. **The Body's Enhanced Flexibility in Water**
2. **The Use of Variable "Stretch Resistance"**
3. **The Fascial Adhesion Theory**
4. **Intuitive Movement**

The Body's Enhanced Flexibility in Water:

AquaStretch™ consistently restores flexibility that has been lost following prior surgeries, injuries and accidents. It also has demonstrated the ability to reduce chronic pain and movement pain. This may be due to the ability of AquaStretch™ to eliminate adhesions between vertebra and other joint spaces creating nerve impingements. AquaStretch™ also facilitates muscle relaxation, and sometimes autonomic relaxation. Decreased muscle tension / guarding can reduce muscle soreness following intense workouts, decrease anxiety in people with chronic pain, and improve sleep. In some cases, AquaStretch™ has been observed to improve vascular function, hormonal imbalances, emotional dysfunctions, and cognitive behavior. As part of an athletic conditioning program, AquaStretch™ can be used to optimize flexibility, muscle symmetry and performance.

We know the body has **enhanced flexibility in the water**. First buoyancy counteracts the force of gravity, allowing the body to stretch into positions that it cannot comfortably reach on land (joint space is increased due to reduced compressive forces; muscles relax). Second, your body can sustain stretches for much longer periods of time in the water. This is because your muscles do not have to make as much effort to hold the stretch position as they do on land. For example, you can hold your arm parallel to the pool floor for hours with minimal effort because your arm can essentially float.

The Use of Variable "Stretch Resistance"

The second theoretical explanation for why AquaStretch™ works is that AquaStretch™ controls **"stretch resistance"** with three variables, by:

1. Attaching 5 lb to 15 lb weights (2.2-6.8 Kg)
2. Changing buoyancy (water depth 3-5 feet/ .9-1.5 meters)
3. Varying facilitator pressure either directly or dynamically.

Without weights attached, the body does not have an anchor point against which to stretch, or will use antagonistic muscles / therapist's pressure to stretch. Stretch resistance can be generated by putting pressure against objects or surfaces in the water, such as the bottom and sides of the pool or with hand paddles. However, it can be difficult to control the plane of movement and desired amount of stretch resistance. Therefore, people may be limited in the directions and intensity of stretch they can achieve.

The amount of stretch resistance can be more effectively controlled by ***attaching 5 lb to 15 lb weights*** to various parts of the body. In addition, there is more ability to experience and retain freedom in the range of motion to stretch. For example, with 10 lb (4.5 Kg) weights attached above the ankle on one leg (the AquaStretch™ starting position called One Leg Standing), you can dynamically stretch the other foot, ankle, leg, as well as the lower back and pelvis in a remarkable number of directions. Similarly, with 10 lb weights above both ankles, (the AquaStretch™ starting position called Two Heavy Feet), you can dynamically stretch the entire spine and neck in ways that are virtually impossible on land, often producing significant clinical benefit.

You can also control stretch resistance by changing the ***body's depth in the water***. It is amazing how different the stretch resistance and the quality of the stretch are by only changing the body's relative buoyancy in the water by just a few inches. For example, it may be helpful to perform Two Heavy Feet first with the client in water 4 inches below their armpit and then to repeat this stretch in water at armpit depth. The greater your body's buoyancy (the deeper you are in the water), the gentler the stretch is. Thus, for people in significant pain or with limited movement, like frozen shoulder, scoliosis or recent injuries, it is often valuable to first AquaStretch™ in relatively deep water. This way, areas that need to be stretched are completely under water.

Facilitator pressure is approximately five pounds of pressure at a specific point, although it varies depending on the client's tolerance and irritability of symptoms. Dynamically, the facilitator may apply additional stretch force at the end range of a client/ patient's intuitive movement. This added stretch is called accentuated movement. Refer to the section on finding pressure points discussed in the basic procedure section of this manual for more details.

The Fascial Adhesion Theory

The third theoretical explanation for why AquaStretch™ works is the **Fascial Adhesion Theory**. A fascial adhesion limits range of motion and creates pain. Fascia is connective tissue found throughout the entire body. Fasciae encompass and hold muscles, nerves and blood vessels tightly together. Unfortunately, according to the Fascial Adhesion Theory, "adhesions" may form within the fasciae. These adhesions develop as a normal response to an injury. They are essentially internal "band-aids" that rest around the injury to protect it while it heals. These micro-calcifications are a temporary hardening around the injured area, primarily to facilitate the healing process and to protect against additional injury of those tissues. In normal situations, these fascial adhesions dissolve with normal exercise after the injured area has healed.

The formation of adhesions may cause a person to compensate and move out of their normal range of movement. The longer the body compensates, the harder the adhesions become. This may lead to layers of adhesions around and injury. Also, layers of adhesions may form throughout the rest of the body due to compensated movement patterns. If untreated, this may eventually cause neurological and vascular entrapments and impairments.

It seems that for some people, fascial adhesions may excessively harden and/or not dissolve for primarily two reasons.

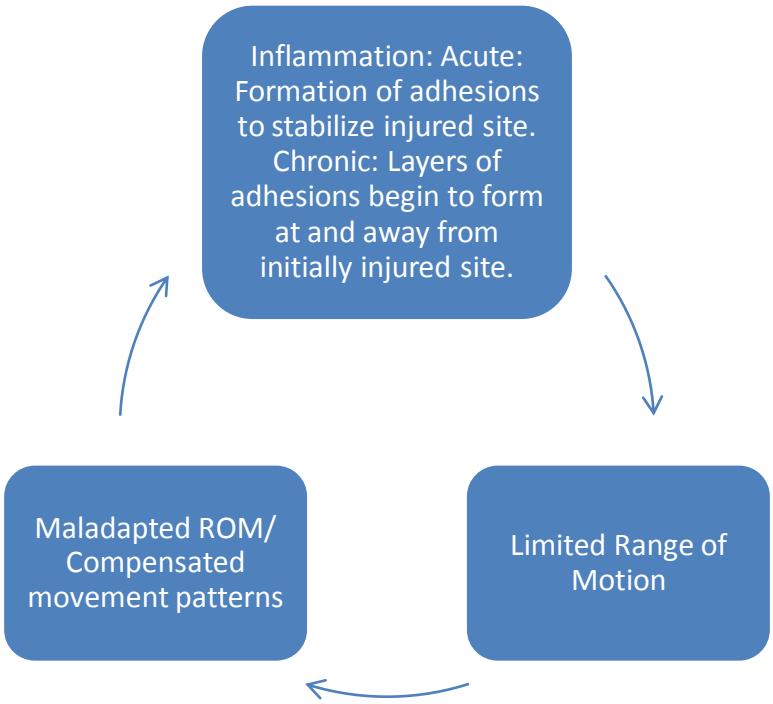
1. First, if someone is injured, they may start using that area before healing is complete. For example, it is common for dancers and athletes that have an injured ankle which requires 4 weeks to heal, to be practicing, running, competing, or performing after 2 weeks. This may result in that ankle healing improperly and cause them to experience decreased flexibility, movement pain, and/or compensation problems on either side of their body in their knee, leg, hip, or lower back, often manifested by not being able to move symmetrically.
2. Second, many people do not exercise sufficiently (pain may cause them to avoid ***any*** movement). As a result, they do not dissolve their fascial adhesions, especially if those adhesions were excessively hardened due to premature use in a previous injury. In addition, fascial adhesions may form in anatomical areas that may only be stretched in positions possible while in the water.

What is Connective Tissue?

Connective tissue is divided into five main groups: ordinary connective tissue, blood cells, cartilage, adipose and bone. Ordinary connective tissue includes superficial and deep fascial sheaths, nerve and muscle sheaths, supporting framework of internal organs, aponeuroses, ligaments, joint capsules, periosteum and tendons.

Connective tissue responds to demand (Wolff's Law). We know the body heals along the lines of stress. With rehabilitation, we gradually introduce stress to injured structures to promote healing. When healing tissues cannot handle the stress (return to activity too soon) or with chronic stress to the area or elsewhere the body's attempt to "strengthen" the area, adhesions calcify and become hardened leading to limitations in mobility.

Fascial Adhesion Cycle:



What are the Effects of Immobilization on Connective Tissue?

Research has found fibrofatty infiltrates within joints after a period of immobilization. These become more fibrotic the longer they are immobilized. Histological analysis reveals significant change in ground substance with a 30-40% loss of glycosaminoglycans (GAGs) and water without significant reduction in collagen fibers. Normal collagen has a half-life of 300-500 days; GAG's only have a half-life of 1.7-7 days.

What does this mean clinically? The ground substance including GAG's is the lubrication between tissues and is associated with the critical interfiber distance, the distance collagen fibers must maintain from other fibers to prevent excessive intermolecular crosslinks or micro-adhesions. Movement stimulates the production of ground substance and helps maintain the critical interfiber distance and lubricates the spaces. AquaStretch™ technique provides both a mechanism to break up adhesions and promote greater myofascial movement preventing further adhesion formation.

Intuitive Movement

The fourth theoretical explanation for the beneficial effects of AquaStretch™ is the concept of **Intuitive Movement**. It appears that if any part of the fasciae is put into a stretch and one is given permission to "Move, if you feel the need to move" (to avoid your expectation of being "done" by the therapist), the body starts to intuitively move and stretch in directions that it naturally needs. The body is often smarter than individual or their facilitator.

This intuitive movement may then be ***accented*** for greater effectiveness. This is achieved by the combination of the facilitator's pressure and the application of additional stretch force at end range of the individual's movement. As mentioned earlier, it is believed that the body alone cannot itself generate sufficient force in either strength or endurance to be able to stretch out the fascial adhesions at specific body spots restricting movement.

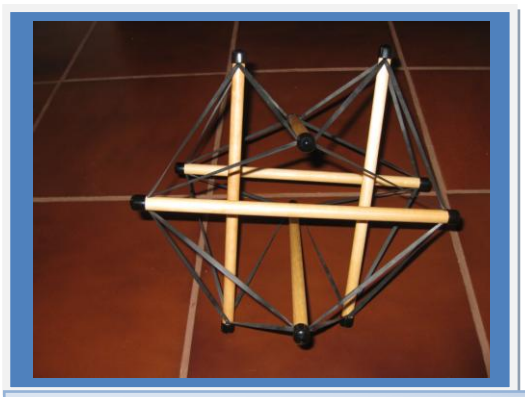
Further discussion on facilitating intuitive movement can be found on page 19 of this manual.

What are the Effects of Movement on Connective Tissue?

Movement of tissues stimulates the production of ground substance and rehydrates connective tissue. Movement breaks down fibrofatty macroadhesions and guides the orientation of new collagen fibers. For example, when there is no movement, collagen is laid down in a haphazard and random pattern. With movement, the collagen fibers adjust themselves along the lines of stress. The mechanical effects of movement and massage are increased blood flow, improved venous and lymphatic return and increased cellular metabolism. (Grodin & Cantu 1989)

TENSEGRITY

The term tensegrity comes from the phrase,"tension integrity." Described by R. Buckminster Fuller a tensegrity structure is one that demonstrates "continuous tension around localized compression." Tensegrity structures maintain their integrity through a balance of tensile forces throughout the structure with compression members within the body of continuous tension. With this configuration, strain is distributed throughout the structure.



Notice in this tensegrity structure how stress to the right side leads to strain on the left and center of the structure.

In nature, an example of a tensegrity structure is a spider web.

With tensegrity structures, stress applied to one side, leads to strain on all other parts of the structure (pull on one side of the spider web and observe the result).

The musculoskeletal system is a structure demonstrating the properties of tensegrity.

According to Schultz and Fertis (1996)

"*When one part moves, the body as a whole responds. Functionally the only tissue that can mediate such responsiveness is the connective tissue"*

The trainer/ therapist must consider of the unique properties of connective tissue, the extensive fascial networks, and the "tensegrity" of the human body when assessing, treating and exercising their clients.

"It is the victims who cry out not the criminals" Diane Lee

The meaning of the above quote applied to the human system implies the cause of the symptoms and pain may be distal from the area of complaint. A simple example of this is when a person breaks their foot and is in a walking boot, this changes their normal movement pattern leading to possible adhesions both at the site of injury and up the lower extremity chain. Several months later the person has complaints of knee, hip or back pain. Which area do you treat?

The answer: The whole person. Due to the body's systemic connectivity it is often necessary to dynamically stretch the whole body not just the symptom area. Addressing distal adhesions, helps restore normal movement patterns and reduce stress to the area. AquaStretch™ addresses the client globally and recognizes the body as a tensegrity structure.

AquaStretch™ Procedure

PAIN INSTRUCTIONS: Before beginning the four-step AquaStretch™ basic procedure, the client is instructed in "good" vs. "bad" pain. The client is instructed to immediately say, "Stop" or "less" if they experience any "bad" pain.

BASIC PROCEDURE: The basic AquaStretch™ procedure consists of four steps:

1. **Play**
2. **Freeze**
3. **Pressure**
4. **Move (if you feel the need to move)**

1. Play

First, the client is asked to **"play"** with their body's movement, to find any position in which they experience pain or restriction. For example, if they are having problems with movement pain or feel tension in the IT band of a leg, they are asked to move the leg in the water in all different directions until they feel that pain or tension.

Similarly, they may be asked to move their ankle, arm, shoulder, neck, back, or any other joint in their body to find pain or restriction. Following a soft tissue or joint fascial adhesion release, clients will often start "playing" spontaneously, to find any remaining restrictions. This movement is encouraged by the facilitator.

2. Freeze

Second, the client is asked to **"freeze"** their body in the exact position they feel their pain or restriction. The typical verbal instruction is, "Please play with your leg (ankle, arm, shoulder, etc) and freeze it when you feel any pain or restriction." This instruction is usually given with the client in one of the AquaStretch™ starting Positions.

3. Pressure

Third, the facilitator puts **"pressure"** with their thumb, hand, or fingers where the client feels pain or restriction. This is performed while the client maintains the "frozen" position. It is encourages to ask the client to direct you verbally to that spot (Up, down, left, right, forward, back, etc). Such spots are also called a "Fulcrum" because it may be the middle point around which the body stretches.

Use the pads of your fingers, rather than fingertips when applying pressure

It is important to understand that if the client points to the symptomatic spot, they may need to reposition themselves back into that position they felt the discomfort and confirm the facilitator is putting pressure on the correct spot. It is also important to appreciate that skin and muscle move when you put pressure on the skin. This is especially particular when trying to penetrate deeper fascial adhesions. As result, the spot on the skin where the client feels a restriction may not be the same place the pressure needs to be applied to release that adhesion, which may be located deep between muscle and bone.

4. Move

The fourth step is to elicit the participant's "intuitive movement". After the facilitator finds and places pressure on the spot where the client feels pain or restriction, the facilitator asks the client to **"Move**, if you feel the need to move." The client is encouraged to move and stretch any part of their body with the facilitator applying continued pressure until a release is experienced. Movement achieved by the client is highly individualized. Most often, these individualized movements, coupled with the application of accentuation, results in significant relief of pain and muscle tension.

It is critically significant to understand the importance of repeatedly telling the client to "Move, if they feel the need to move." Without the explicit verbal permission, many clients will have a psychological expectation that the facilitator will be deciding how to stretch their body and thereby suppress and inhibit their natural desire to move.

Repeat Steps 1-4 as Desired/ Required:

This four step process is repeated until either the client cannot find any pain or restriction in their "playing", or necessary time restraints demands stopping or moving on to the next AquaStretch™ Starting Position.

Finding Pressure Points: There are four ways to find pressure points or fulcrums for AquaStretch™:

1. **Playing**
2. **Palpation**
3. **Intentional Movement**
4. **Gravity Aggravated**

Playing

As previously described, "**playing**" is the process of encouraging a client to move their body freely in water, to find any position they feel pain or restriction. The client then directs the facilitator to that spot by descriptive directions while maintaining their "frozen" body position.

Palpation

Manually experienced massage therapists, athletic trainers and physical therapists may have useful skills to more quickly identify pressure points or fulcrums. These methods are sometimes more time efficient than "playing", but should be used in combination with playing;(i.e., palpation is first used to find spots, then playing is used to test for remaining spots.)

Intentional Movement

Another way for a facilitator to find pressure points during AquaStretch™ is **intentional movement.** This involves the facilitator intentionally moving the participants body while palpating for areas of restriction and /or pain. Often, it is easier to search for spots/fulcrums in the shoulders and ankles, or in the IT Band, with intentional movement.

Generally, the facilitator clears the uninvolved side first. For example, if a client has a right frozen shoulder, the left shoulder is treated first to establish normal range of motion. Intentional movement is then applied to the affected side while that body part is fully submersed. The client is instructed to direct the facilitator to the point of restriction or pain.

Intentional movement with palpation is a valuable way to find AquaStretch™ pressure points and fulcrums. Especially, because many clients have adapted to their limited flexibility and feel their anatomical restrictions are normal. A skilled AquaStretch™ facilitator may be able to identify fascial adhesions with palpation and/or intentional movement that the client may not be able to identify with their own "playing".

For example, it is common in long distance runners, people who wear improper shoes (i.e. dancers) and others whom walk extensively during work hours, to develop fascial adhesions between the flexor hallucis muscle and heel (calcaneous) and/ or the Achilles tendon. These individuals are more likely to develop chronic tension and/or less mobility in the ankle and the foot without the onset of pain or perceived stiffness. Therefore, these individuals continue to adapt to their unnoticed lack of mobility and create further deeper adhesions and adaptations to range of motion in all areas of their body. Intentional movement with palpation is very beneficial for these clients as they are unaware of their adapted limitations. AquaStretch™ quickly identifies and resolves these "unknown" adhesions and mobility is instantly restored.

However, please understand that both intentional movement and palpation should be used in combination with playing. Intentional movement and palpation may be diagnostically more time efficient, however, "playing" is invaluable to find remaining fascial adhesions. Playing allows the body to be more creative in finding unusual positions that need to be relieved with AquaStretch™. Playing is also a valuable tool to test the immediate benefit of an AquaStretch™ joint or soft tissue release.

Gravity Aggravated

The fourth way to identify pressure points and fulcrums to AquaStretch™ is to use the client move **"gravity aggravated"** positions. The client is asked to "play" or move into the position they know causes pain or discomfort on land. The client is asked to "Freeze" in that position to identify and direct the facilitator to the "spot" they are experiencing pain or tension. The client then returns to the water to duplicate the same position aggravating symptoms on land. Finally, the facilitator applies pressure to that identified spot and asks the client to "Move, if you feel the need to move."

Teaching Intuitive Movement

The definition of intuitive is, "what one feels is true even without conscious reasoning." For some, intuitive movement is truly spontaneous and instinctive. However, it may be a little more difficult for others, who are analytical thinkers and treating practitioners. The tendency of these facilitators is to "fix" their clients rather than allowing the clients to move first to follow the client's intuitive movement. It is a common facilitator "mistake" to "think" too much resulting in intentional movement and inhibition of the client's intuitive movement. Some clients will also struggle with moving intuitively. Typically, these clients believe there is a "right" way to move and try too hard which "overrides" their intuition. . The following is an example of how Jessica Huss DPT instructs her first time AquaStretch™ clients in intuitive movement.

> *This technique is based on what is called intuitive movement. It is the belief that your body knows how to fix itself better than you or I may know how. I will be taking you through a series of different positions in which we are going to stretch. Once we are in the starting position, I will apply a little pressure/stretch to an area of your body and then I will ask you to "move, if you feel the need to move." At that time, I want you to feel free to move your body to stretch in all different ways. I am here to assist and provide additional pressure (accentuation) to help dissolve the adhesions that are causing you pain and discomfort.*

Think of how a cat stretches. It is probably not thinking where to place each limb but instead, instinctively moving where its' body wants to go. This is intuitive movement.

Clinical pearls on teaching intuitive movement

- Have clients close their eyes
- If the client is "chatty" try to get them to minimize talking during this part of the session it will often make a difference in the way they move.
- Visualization and relaxation techniques combined with slight intentional movement to illicit intuition.
- Verbal cueing "soften or bend your knee" during wall hang technique, helps start the movement.
- Verbal cueing "try to relax and go with the flow"
- Cervical floatation (i.e. collar) can be used to float the head and neck to promote upper body relaxation.

- Noodles, belts may be necessary for “dense” individuals to avoid upper extremity tension from trying to “float” themselves in wall hang position.
- Take a pause and listen quietly with your hands to where the patient/client wants to move. The pause can be helpful to prevent the facilitator from rushing the movement.
- Try different language to the phase “move if you need to move” such as: “move how you want to, and I will follow” or “you start moving and I will follow you to stretch you in that position.”

Facilitators: It is important to develop **Proprioceptive Awareness**. This is the personal awareness of your body in respect to the client. If you are unable to create appropriate space between yourself and the client, it may inhibit or block the clients’ intuitive movement.

Let the patient/client’s body tell you what to do (don't try to force a movement you think needs to be done). Every BODY will be different. I see new things all the time so I do not know how to stress this enough!! Laurie Denomme

AquaStretch™ Starting Positions, Hand Grips and Instructions

BEFORE YOU BEGIN: PAIN INSTRUCTIONS

Begin each session by instructing your client with the following pain instructions. This is done while looking directly in the eyes of the client and/or while maintaining physical contact (i.e., holding their feet):

> ***"There is 'good pain' and 'bad pain'. 'Good pain' is ok, 'Bad pain' is not ok. If you experience any 'Bad pain' you are going to tell me to stop immediately."***
>
> ***"Now, please tell me what I told you (about pain)."***

This is important because some clients incorrectly believe "no pain = no gain". If clients force themselves to experience "bad pain", they may stimulate defensive (negative) neurological reactions. If necessary, repeat the pain instructions, to make sure the client has understood, and has been allowed time to ask any questions.

General Procedures & Instructions for Each AquaStretch™ Move:

- Get into the starting position for the stretch / grip / move.
- Say to the client: **"Move if you feel the need to move"** or **"Move how you want to, and I will follow."**
- It is important to ***follow*** the client's ***intuitive movement*** (stimulated by putting a position or grip into a stretch). **A*ccentuate*** that intuitive movement to various degrees by moving the client a little farther than they would have moved on their own. Sometimes, it may be useful to request ***intentional movement***. Intentional movement is performed to trigger intuitive movement or to diagnostically identify fascial adhesions limiting movement.
- After several intuitive movements – usually the facilitator will feel either a 'joint release' or a "soft tissue melting".
- For each AquaStretch™ position / move / grip, follow the "**4 Step AquaStretch™ Procedure"** by asking the client to:
    1. **Play** – The client moves freely in any / all directions.
    2. **Freeze –** The client 'holds still' in the position where (s)he feels any "restriction/ pain/ tension".
    3. **Pressure** – Pressure is applied with approximately 3-5 pounds with the facilitator's thumb, heel of hand, or pads of fingers specifically where the "restriction or pain" is felt.
        - The client remains still and guides the facilitator to move the contact point "up, down, left, right, forward, backward," until they are on the specific spot where pressure is needed.

4. **Move** – The client moves again however, he / she wants to, or as guided by you (the 'AquaStretch™ facilitator'). "***Intuitive movement" = self-directed movement by the client, is encouraged***.

- **Repeat steps 1– 4** above, as required, putting pressure on each new point of restriction or pain. Often, the pain will seem to 'travel' to new locations. This is expected and appropriate.
- ***Repeat all "positions / grips / holds"*** (listed on the following pages) ***on both sides of the body.***
- ***Start with the unaffected or least problematic side of the person's body.*** This allows the facilitator to learn what is "normal" for that client. This also allows the client to learn the AquaStretch™ process without defensive reactions.

Notes:

_____
_____
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Wall Hang:

Used for foot, ankle, toe grips, hip roll and IT pump.

- Hands holding pool wall / railing.
- Body is suspended as shown.
- Both feet are off the floor.
- Knees are unlocked / relaxed.
- Adapt hand holds as required for comfort.
- Use a supportive neck collar as required.
- Therapist holds L/E or hips depending on the AquaStretch™ being done

1. Foot Grip

- **Top Hands** – right hand on right foot of client; left hand on left foot of client.
- **Top hand** – Thenar eminance of thumb is over the space between 4 – 5th metatarsal near proximal phalanges.
- **Bottom hand** – grasps calcaneus firmly as shown.
- ***Press foot into plantar flexion & inversion.***
- Knee is unlocked / relaxed. Client is given instructions: ***"Move if you feel the need to move"***.
- Basic 4 step procedure (Play, Freeze, Pressure, Move) repeat until cleared.

2. Ankle Grip

- **Top hand** – Middle finger is over the space between the talo-navicular joint; the thumb is in the space between the talus and cuboid bones.
- **Top hand** – Tractions front of ankle joint.
- **Bottom hand** – Palm supports plantar surface of calcaneus and pushes foot into plantar flexion (push the heel toward the hip).
- **Knee is unlocked / relaxed.** Client is given instructions: ***"Move if you feel the need to move."***

3. Toe Grip

- **Distal hand** – Pad of thumb on proximal phalanx of great toe. Index finger can wrap completely around great toe.
- **Proximal hand** – Pad of thumb between distal end of first and second metatarsal.
- **Traction** – Metatarso-phalangeal joint of the great toe. Note: this procedure can be done with each toe, and with each of the phalangeal joints.
- **Knee is unlocked / relaxed.** Client is given instructions: ***"Move if you feel the need to move"***
- Following the foot, ankle, toe grip, the client is often asked to "play," (move the ankle in circles), to identify remaining points of pain or restriction. If so, the 4 step AquaStretch™ basic procedure is applied until the issue is resolved.

Proximal Hand

4. IT Band Pump/ Palpation

- **Distal hand** – therapist cradles posterior aspect of knee joint.
- **Proximal hand** – Therapist grasps anterior surface of thigh, above knee joint.
- **Proximal hand** – Pad of thumb applies pressure to Iliotibial Band (ITB), searching for 'tender points'. This can be done statically, or dynamically, while palpating up the ITB.
- **Pump action:** Results in flexion and extension of the client's knee.
- Facilitator applies pressure to the ITB by grasping the thigh on downward pump (knee extension).

- **Once tender point is found:** Facilitator applies pressure with the pad of the thumb.
- **Client is given instructions:** ***"Move if you feel the need to move"***
- **Repeat process along ITB** as needed to resolve additional adhesions located in this area. It is common that the client will naturally "pump" (flex and extend at the knee) following an ITB release.
- **Maintain a firm grip:** it is important that the facilitator maintain a firm grasp as the movement from the client can be very dynamic at the hip in this position.

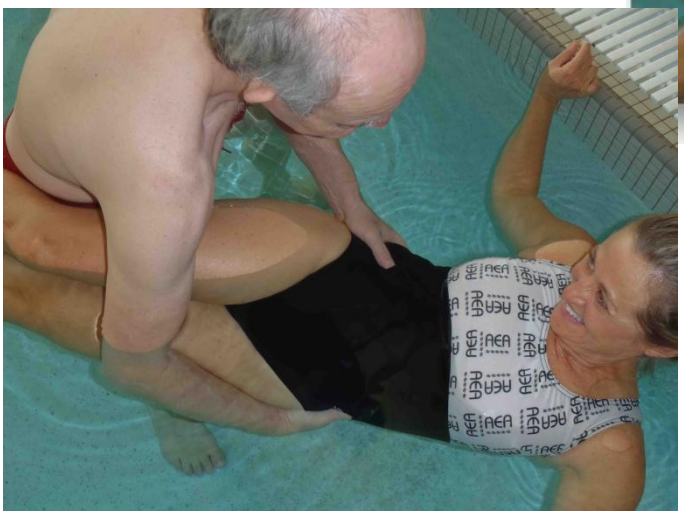
5. Hip Roll:

- **Both Hands** – Facilitator grasps the iliac crests of client.
- **Facilitator's thigh** – is against client's thigh, mid femur, as shown.

- **Lateral pressure is applied to the client's thigh** – causing lateral flexion of the lumbar spine

- **After several repetitions of lateral 'swaying' of client's thighs / lumbar region** – Therapist dips outer thigh (client's left hip in this picture) and begins figure '8' movement of client's pelvis in the transverse plane.

- After several repetitions, pelvic movement in the frontal plane can be added: figure '8' with added lifting and lowering of the pelvis toward the shoulders. Therefore, movement of the pelvis happens in all 3 planes.



Before exiting the Wall Hang:

- **Client is asked to move each lower extremity individually and them simultaneously to identify any points of pain or restriction. (hip flexion, abduction, circumduction)**
- **Knees are positioned together and the client "plays," rolls their hips to check lumbar spine.**
- **Apply the 4 basic AquaStretch™ procedure to each area as needed.**

For the remainder of the starting positions ankle weights can be utilized

Weight Application / Removal:

- Client rests foot on therapist's thigh while therapist straps on weight with snug fit.
- Therapist then cradles client's knee and lowers that leg for the client.
- The therapist always lifts / lowers client's leg into position for weight removal or adjustment.
- This is done by supporting the knee joint.

The pictures shown here are outside the pool for demonstration purposes, always apply the weights to a client's leg once in the water.

One Leg Standing

Apply a 10 Lb weight on one ankle

- Client stands with the weighted leg parallel to wall, grasping wall with the ipsilateral hand.
- Facilitator directs the client to “give me your foot”, referring to the un-weighted leg.
- Facilitator applies foot grip with traction on the un-weighted leg.
- Facilitator may then move behind the client’s leg, grasping at the ankle, shin, or supporting below the knee.
- The proximal hand applies pressure in the lumbar / SI region while client moves intuitively.
    - This is referred to as hip or lumbar fulcrum depending on the location of the other hand)

- The facilitator follows the client’s intuitive movement performing the AquaStretch™ for 20-30 seconds, or until a release is achieved.
- Apply the 4 basic AquaStretch™ procedure as needed.
    - Play, Freeze, Pressure, Move

- **Two Heavy Feet**: *4 Positions*

  The client has weights on both ankles.

  - The facilitator may use 5 – 10 lb per ankle, depending on client buoyancy & degree of force required to produce the desired AquaStretch™ result.
  - Client stands with feet wide apart, knees unlocked.
  - **The facilitator uses both hands to support and traction neck as shown below:**





Fall/ Lean Back:

- The facilitator supports the client's neck as shown in two heavy feet.
- Client has weights on both ankles.
- Client stands with feet wide apart and their knees unlocked. The client is asked to lean back onto therapist's supporting hands.
- **Client is given instructions: *"Move if you feel the need to move"***
- Client may choose to move their neck, shoulders, hips, arms… as dictated by his / her intuitive movement.
- Therapist will help client discover any tender points, and will use AquaStretch™ techniques to resolve these.
- Apply the 4 basic AquaStretch™ Procedure as needed.
  - Play, Freeze, Pressure, Move

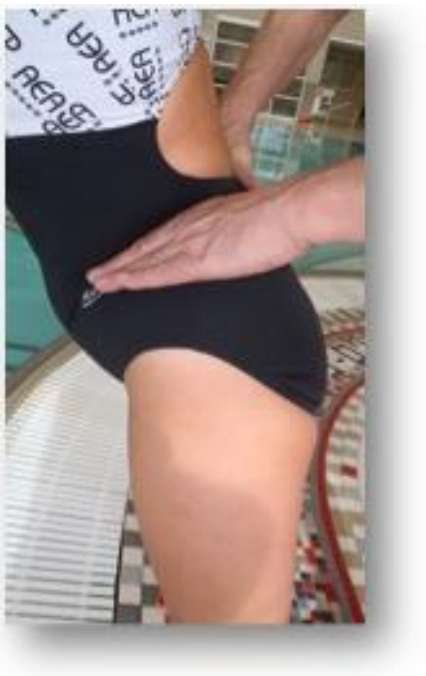
Arch Forward:

- Facilitator supports the client's neck as shown previously.
- Client has weights on both ankles.
- Client stands with feet wide apart, knees unlocked, and arches forward.
- Facilitator will have one leg between client's legs (lunge alignment) to help support client & stabilize oneself.
- **Client is given instructions: *"Move if you feel the need to move"***
- Client may choose to move their neck, shoulders, hips, arms etc. as dictated by his / her intuitive movement.

The facilitator may change hand placement if more control is required. This is the same hand placement used in the head hang position.

"Assume the Position"/ COPS:

- Client has weights on both ankles.
- Client stands with feet wide apart, knees unlocked, and leaning forward while supported on the pool wall / railing.
- The facilitator places their hands on upper rim of the ilium, pressing downward (inferiorly), with thumbs in the SI joint / paraspinals.
- Low back is being tractioned.
- **Client is given instructions:** ***"Move if you feel the need to move"***
- The 4 basic AquaStretch™ Procedure is applied as needed
  Play, Freeze, Pressure, Move



Back Against the Wall:

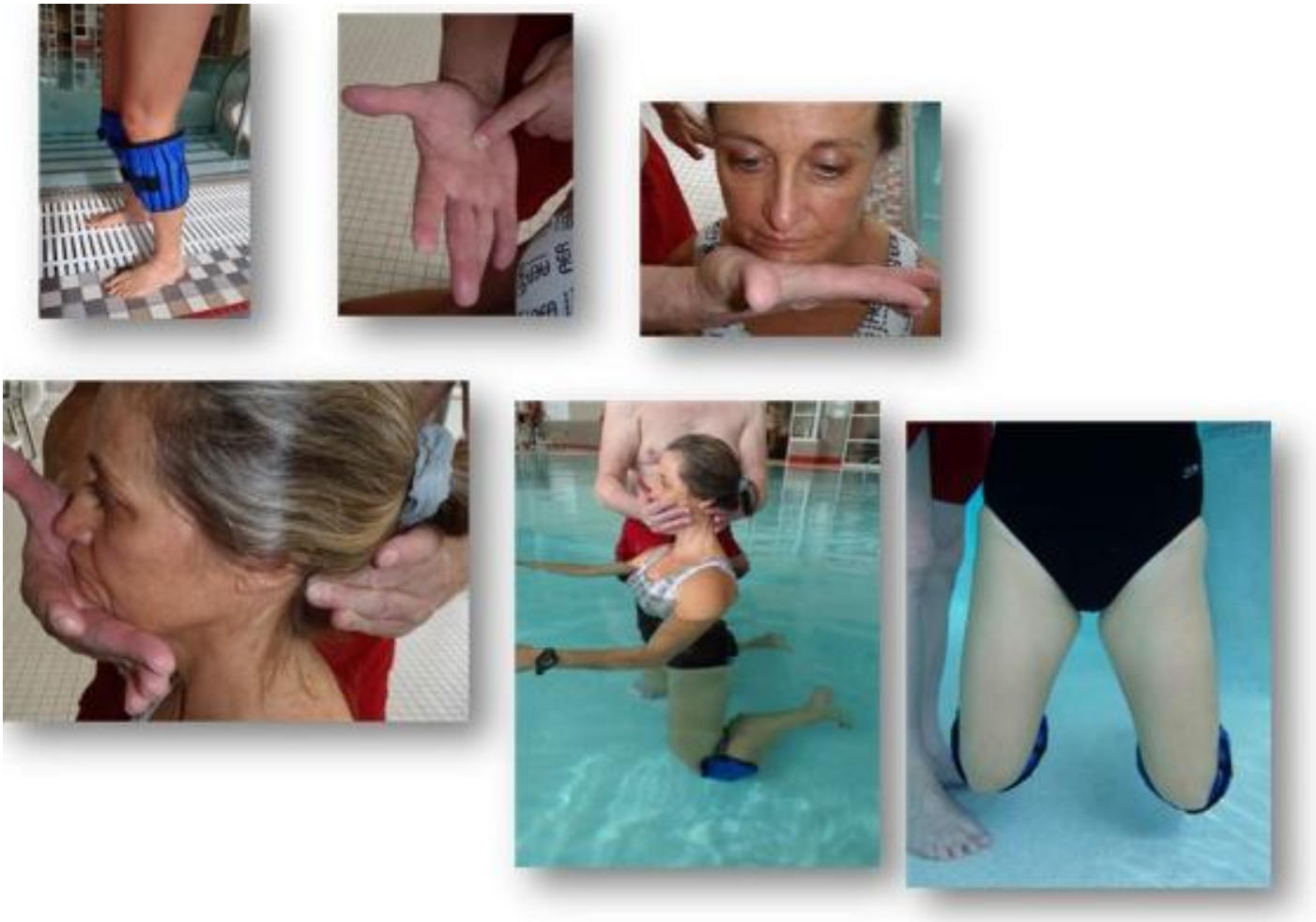
- The facilitator uses one knee as a fulcrum to apply stretch resistance.
- Changing the knee placement (lower, toward mid-scapula; higher, toward levator scapulae / C_7) will alter the fulcrum, and the AquaStretch™ result.

- Knee fulcrum can be moved up one side of spine (2 – 3 spots as required) using the facilitator's ipsilateral knee. Repeat the process on the other side, using therapist's ipsilateral knee.

Head Hang:

Weights are placed just below client's knees. 5+ lb each.

- Facilitator supports the client's head with one palm supporting under the chin; and the other hand at base of skull. (supra-occipital / temporalis muscle)
- Client first sits into the water, then kneels, and finally, they lift their feet off the floor. ("Heels toward your bottom")
- **Client is given instructions:** ***"Move if you feel the need to move"***



- The facilitator will accentuate intuitive movement of head / neck, and help the client discover any remaining tender points.
- Apply the 4 basic AquaStretch™ Procedure as needed.
  Play, Freeze, Pressure, Move

**** Weights may also be placed just above knees if more comfortable for the client.**

Modified Head Hang:

- AquaStretch™ facilitator supports client's head with one palm supporting chin; other hand at base of skull (A/O) / on capitis muscles, or between vertebrae (i.e. at tender / swollen spots identified by palpation).
- Client sits in the water, to immerse shoulders, and is asked to relax head into AquaStretch™ facilitator's hands.
- **Client is instructed to perform several reps of each of the following:**
    - ***Nod the head slowly – like saying 'yes' – dropping the chin toward the chest.***
    - ***With the chin low (neck in flexion), slowly rotate the neck – say 'no'.***
    - ***Gently move the chin in low circles – or move intuitively at this point.***
- AquaStretch™ facilitator accents intuitive movement of head / neck, putting tolerable pressure on affected posterior neck muscles; origin of SCM, capitis muscles…

After a few repetitions / any soft tissue or joint release, have the client, "Play, Freeze, Pressure, and move again as required.

Clinical Pearls

Get the most out of your AquaStretch™ session!

- Use a firm assuring grip during hand holds
- When the facilitator changes their hand position, the fulcrum point also changes. This alters the stretch and results. This is observed as the client's intuitive movement will change when the fulcrum point is changed.
- What is a "release" and what will I feel? The facilitator and/ or client may experience a pop, crack or melt under the area of pressure. The client will begin to move in a repeated pattern, or they will stop moving completely.
- When to stop and recheck?: Following a release.
- The more intuitive movement is applied, by both the facilitator and client, the quicker the release occurs.
- Facilitator may need to utilize a weight belt and aquatic shoes for improved stability. This may allow the facilitator to apply more accentuation and greater pressure while following intuitive movement.

Adaptations to the starting positions

Wall Hang

- Use a neck collar for comfort. Neck collars are used especially if the pool has a lip to protect the head.
- Add a noodle under the arms if the client is a "sinker", this reduces the stress to the shoulders while in the wall hang position.
- If the pool design has a large lip or overhanging edge the facilitator may use a noodle under the arms to act as a spacer
- If the client is unable to position themselves in wall hang, foot, ankle and toe grip can be modified in a seated position
- Beth's clinic made straps to attach to the side of the pool allowing the person to hold on with wrist in neutral

One Leg standing

- Reduce time spent if person has difficulty weight bearing on leg.

Fitness and Wellness Applications

Fitness: AquaStretch™ exercising has been observed to restore and/or increase flexibility in amateur and professional athletes. AquaStretch™ is also beneficial for individuals with above average or exceptional flexibility. AquaStretch™ has often been reported as a superior stretching technique useful in:

1. Athletic Conditioning: As part of programs to restore or increase flexibility.
2. Athletic Training: To relieve soreness from intense training and pain post injury.
3. Athletic Psychology: To physically "get loose" and to psychologically relax.

Two important general components of AquaStretch™ can be used to assist in training methods. First, AquaStretch™ makes training easier and more comfortable. This is achieved if performed as a flexibility preparation and as a post-training recovery tool to reduce muscle soreness. Second, many athletes and dancers do not allow sufficient time for proper healing when injured. For example, an ankle that requires four weeks to heal properly is many times used excessively after only a week or two. This results in improper haling causing a loss of flexibility and/or pain upon movement of that joint. The athletes may develop calcified adhesions in the body's efforts to stabilize the healing area. If left untreated, further adhesions may develop in layers around the injured area and in other areas of the athlete's body. This is the body's attempt to further stabilize and compensate for the lack of mobility. AquaStretch™ works quickly to eliminate adhesions restricting movement and creating pain.

Wellness: AquaStretch™ results are immediate and often last up to 3-4 times longer than other forms of exercise, or traditional manual techniques. AquaStretch™ is also beneficial as a motivational tool for other wellness programs (i.e., diet, exercise programs). There is a wide-based application for AquaStretch™. Here are some of the many examples that AquaStretch™ can be used.

1. Clients with movement pain or loss of flexibility more than 3 months after injury or surgery.
2. Individuals with foot and leg pain from high heels, dance shoes, or playing tennis
3. Clients who have the recurring need for massage, chiropractic, or osteopathic manipulative therapy (OMT).
4. Clients who sustain Occupationally Aggravated Joint or Muscle Pains, i.e. Back, neck, shoulder, wrist, foot. (i.e. Food servers, computer workers, cocktail waitresses, casino dealers, bartenders)
5. Personal Growth Clients: May enhance meditation or stimulate altered/spiritual states.

Integrating AquaStretch™ into Treatment and Wellness Programs

One of the biggest questions is, How do I integrate AquaStretch™ techniques into my rehabilitation and/or wellness programs?

Frequency and duration of AquaStretch™ depends on the individual, their tolerance to AquaStretch™ and their current activity level.

Generally, a new client to AquaStretch™ will require 1-2 sessions per week. This is gradually reduced in frequency based on client response, daily activities, and the general health of the client. A client may require an occasional "tune-up" when fascial adhesions return.

Fascial Adhesions may return generally in three situations:

1. Genetically predisposed conditions, i.e. scoliosis, fibromyalgia
2. Occupational or recreational aggravation
3. Doing goofy things: abnormal lifting, bad body posture, habits, lack of exercise, accidents etc.

AquaStretch™ produces tremendous results in the reduction of pain and the restoration mobility for a variety of patient/ client populations. To maintain these results the patient/ client often requires patient education and follow up exercise:

Patient Education

Patient education is an important part of rehabilitation. It is important to educate client on what to expect following their AquaStretch™ session.

What to expect after your AquaStretch™ session:

You should expect some muscle soreness, especially the following 24 hours.
Please be sure to drink plenty of water after your session.
Use ice/heat for any residual soreness PRN (as needed)
Use anti-inflammatory medication PRN (as needed)

To complete the rehabilitation picture and ensure lasting effects from releasing adhesions, patient education is essential to reduce improper biomechanical pull that created increased tissue stress leading to the formation of the adhesion in the first place. Postural education, lifting techniques, ADL modifications, and independent exercise programs are included in patient education.

Follow up exercise

Although specific exercise program design is beyond the scope of this initial certificate course, it is important to mention the essential component of exercise to maintain mobility gained in the AquaStretch™ session. Therapeutic exercise is used to continue to restore muscle strength, endurance and normalize compensated movement patterns. Remember normally adhesions are reabsorbed with normal movement.

" I've developed over 20 AquaStretch™ self-exercises for individuals to use to help maintain their A/S restored flexibility. During the maintenance phase of their program, I try to identify recurring fascial adhesion patterns and then select from those 20 A/S exercises 3 or 4 that will best help them maintain their flexibility" George Eversaul A.P.H.

Therapy and Rehabilitation Specific Topics

Abbreviated AquaStretch™

At times we are limited for time or in a therapy setting we are addressing a specific area of concern an are forced to abbreviate part of the AquaStretch™ wellness program. The following are examples of abbreviated sessions.

Cervical spine (Jessica Huss, DPT)

1) **Two Heavy Feet: Lean back**
2) Two Heavy Feet: Arch forward (PRN)
3) Two Heavy Feet: Assume the position (PRN)
4) **Back to the wall**
5) **Head Hang**
6) Float work (PRN)

Lumbar Spine (Jessica Huss, DPT)

1) **ITB**
2) **Hip Roll/Rock**
3) One leg standing (PRN)
4) **Two Heavy Feet Lean back**
5) **Assume the position**
6) Back to the wall (PRN)

Documentation and Reimbursement

Documentation is an important part of our treatments and the primary communication about the services rendered to those not present at the time of the treatment. To improve communication between therapists, therapist and doctor, and facility and insurance company the aquatic therapist should first understand the purpose of documentation.

Proof

The daily record or SOAP note indicates the patient attended therapy on a given day. (Proof they were seen) Recording initial and continued impairments along with functional limitations indicates a need (Proof) for skilled services. When the paperwork documents progressions and improvements, the it is demonstrating effectiveness in the treatment. (Proof it is working)

Protection

Unfortunately, in today's society the aquatic therapists must protect themselves against liability. A detailed medical record provides greater evidence in court compared to he said she said situations.

Professionalism

Documentation provides justification of our services and the additional professional skill required to provide these services.

Picture

Our documentation should paint a picture of the treatment rendered and how the patient tolerated that treatment. Aquatic therapists have an additional challenge in painting a picture for non-aquatic therapists, physicians and insurance companies.

Re-Produce

In daily communication, the therapy assistant or covering therapist should be able to duplicate the last treatment, get a sense of the patients level and expected progression.

Payment

The patient chart is a reflection of services provided and should reflect the services billed to the insurance company. In addition, documentation must include medical necessity for aquatic therapy and that the patient received skilled care.

Another way to help the therapist to provide adequate information is when documenting remember to answer the following questions:

- Did you perform the services billed?
- Are these services billed at the level of skill required?
- Is the person benefiting from the service?
- Does the water provide a therapeutic effect unachievable on land?
- Is there carryover to land based function?

AquaStretch™ Documentation

- Total treatment time
- Depth of water
- Resistance used
- Modifications needed
- Specific area targeted in each position
- Amount of pressure (if particular)
- Amount of time on each section
- Before and after measurements
- Patient's response (SPL) to treatment
- Recommend using standardized testing

Refer to the Forms section of this manual for sample documentation forms both in therapy and wellness situations.

Case Studies: Basic Case Study Form

Please note for all the following case studies:

The information is provided by AquaStretch™ Instructors based on their experience with actual patients/clients. The case study is provided to assist others learn AquaStretch™ applications. The AquaStretch™ Instructors and the Aquatic Therapy & Rehab Institute, make no representation, warranty, or responsibility with respect to the accuracy or completeness of any of the information contained. In particular, no recommendation is given. Accordingly any interested party must rely on his or her own investigations and scope of practice.

The case study portion of this manual presents examples of exercise utilized with AquaStretch™ clients designed by individual therapists, not exclusive to AquaStretch™. Each client/ patient is different and the exercise program should be designed to meet the client's individual needs.

Case study # 1

Patient/Client Information: The patient is a 51 year old pharmacist with **chronic neck and back pain** with radiographs indicating DJD, MRI indicates possible HNP L4. The patient has tried steroid dose pack and one steroid injection in his lower back without significant relief. The patient's past orthopedic history includes right knee arthroscopic surgery with prolonged rehab course 13 years ago. Patient has history of LBP off and on for several years. The patient presented with the following problems at the initial evaluation

1. Central neck and LBP 3/10
2. Functionally he is unable to sit for more than 15 minutes. Back index was 48 and NDI was a 22
3. Cervical ROM: flexion 55 degrees, extension 70 degrees, rotation 68 degrees right and 66 degrees left, side flexion 40 degrees right and 50 degrees left.
4. Lumbar spine/ trunk ROM: fingertips to floor 4 inches, side flexion right 42.5 cm and left 46.5
5. SLR 85 degrees right and 80 degrees left
6. Neuro screen negative: dermatome light touch intact, DTR's 2+ bilaterally and myotomes all 4+-5/5
7. Poor deep cervical flexor strength and decreased transverse abdominous and multifidus activation.

Stage of Rehab:	**AquaStretch™ Strategy**
☐ Acute ☐ Sub-Acute ☐ Remodeling ➢**Chronic** ☐ Post-rehab/ conditioning ☐ Fitness	**Wall Hang:** ✓ **Foot Grip** ✓ **Ankle Grip** ✓ **IT Band** ✓ **Hip Roll** **One Leg Standing (10 pound on leg)** ✓ **One Leg Standing** ✓ **Foot grip with traction and hip fulcrum (piriformis)** **Two Heavy Feet (5 pound ankle weights each)** ✓ **Lean Back** ✓ **Arch Forward** ✓ **Assume the Position** ✓ **Back Against the Wall** **Head Hang (5 pound weights each leg)** ✓ **Head Hang** **Other:** ✓ **Shoulder work: pectorals** ✓ **Float work with CS movement ending with stillness and breathing** ✓ **Lumbar lever**
No major movement restrictions, precautions included HNP at L4	
Pre/ Post pain levels, subjective reports and patient impressions After first AS session patient able to sleep on back without pain and significant reeducation in neck pain complaints that lasted for remainder of treatment period. Upon d/c back index improved to 28 and NDI improved to 11.	
Therapeutic/ Fitness Goals: Postural awareness Pain reduction Spine stabilization and strengthening	**Aquatic exercises to supplement the AquaStretch™ :** Generalized spine stabilization exercise and walking used to warm up and provide postural re-education after AS sessions.

Other thoughts / suggestions:

Client progress: patient seen for a total of 7 therapy session AS done on session 2 and 6
Pre/ post Objective measurements: minimal to no complaints, ROM and flexibility normalized
Additional interventions: Patient education including work station modifications, home program for spine stabilization and cardiovascular exercise.

Case Study # 2

Patient/Client Information: The patient is a 66 year old female with chronic **r/c tendinosis** of right shoulder, LBP and generalized OA(MD questioning RA) her past medical history includes C-S fusion 3-4-5 (s/p fracture 1978), breast CA with chemo and radiation treatments, colon CA with surgical intervention, Graves disease and chronic ulcerative colitis. The patient's medications include Celexa, Ambien and synthroid. At her initial evaluation she presented with the following problems:

1. Right shoulder and upper trapezius pain 1-2/10 at best and 8/10 with raising arm overhead, central LBP 5/10.
2. Functionally she is unable to sleep on right side, lift right arm overhead without pain DASH score is 29%., LBP increases with transitional movements, and limits her to 60 minutes of sitting and 10-15 minutes of standing.
3. Right shoulder ROM: flexion active 130 degrees, abduction 140.
4. Trigger points right upper trapezius
5. Mid and lower trapezius strength 3/5 with scapular dyskensis and winging on right with eccentric lowering of right arm.
6. Decreased quadriceps flexibility with prone knee flexion 110 degrees left, 140 degrees right
7. Left multifidus inhibited
8. Trigger points left hip flexor
9. Left Ilium anteriorly rotated compared to right

Stage of Rehab:	**AquaStretch™ Strategy**
☐ Acute ➢ **Sub-Acute (lower back)** ☐ Remodeling ➢ **Chronic (right shoulder)** ☐ Post-rehab/ conditioning ☐ Fitness	Wall Hang: ✓ Foot Grip ✓ Ankle Grip ✓ Toe Grip ✓ IT Band ✓ Hip Roll One Leg Standing (10 pounds on stance ankle) ✓ One Leg Standing Two Heavy Feet ✓ Lean Back ✓ Arch Forward ✓ Assume the position ✓ Back Against the Wall Head Hang (5 pounds each leg) ✓ Head Hang Other: ✓ Shoulder rolls and other work ✓ Lumbar lever
Movement restrictions: spine extension and right arm elevation primary movement limitations. No contraindications, precautions include recent history of CA, old cervical fusion and possible RA	
Pre/ Post pain levels After each session pain levels reduced, after final AS session all primary pain complaints eliminated.	
Therapeutic/ Fitness Goals: 1. Restore functional mobility 2. Increase overall spine/ UE strength 3. Eliminate pain with walking	**Aquatic exercises to supplement the AquaStretch™ program:** Walking forward and backward as warm up, spine and scapular stabilizing exercise, patient also participating in aquatic exercise class for generalized conditioning.

Other thoughts / suggestions:
12 therapy sessions in total (4 AS sessions #2,4,6 and 11)
Pre/ post Objective measurements: patient able to stand erect without LBP and gained 20-25 degrees forward shoulder flexion with first AS session without ever bring arm overhead.
Additional interventions: land and aquatic based exercise for scapular stabilization and lumbar spine stabilization exercise progression along with exercise to maintain flexibility gained

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Case Study # 3

Patient/Client Information: The patient is a 29 year-old professional violinist with a diagnosis of **neck pain with headaches**. The patient's primary complaint is left shoulder and shoulder blade pain with cervical pain bilaterally and correlating base of neck headache. No significant co-morbidities and current medication is aspirin PRN. At the initial evaluation the primary impairments included:

1. Subjective pain score 6/10 left shoulder, shoulder blade, bilateral base of neck and HA
2. Neck Disability Score 18 (with headache largest complaint), DASH is 13, Pain greatest when playing his violin and HA remains after he stops playing.
3. Postural alignment: left scapula abducted and depresses compared to right
4. Decreased lower and mid trapezius strength, decreased core muscle strength
5. Muscle tightness in suboccipitals bilaterally, left upper trapezius and scalenes.
6. Cervical ROM rotation right 50 degrees, left 40 degrees, side flexion right 33 degrees and left 28, flexion 32 degrees and extension 38 degrees (note normal ROM for his age = flexion 61, extension 71, side-flexion 43 and rotation 68 degrees)

Stage of Rehab:	**AquaStretch™ Strategy**
☐ Acute ➢**Sub-Acute** ☐ Remodeling ☐ Chronic ☐ Post-rehab/ conditioning ☐ Fitness	Performed the following AS session (50 minutes each) on the 3rd and 6th visit out of 6 total visits. Ended first AS visit with MHP to c-s x 15 minutes due to muscle soreness after session. Both sessions resulted in significant improvement in cervical rotation. Wall Hang: ✓ Foot Grip (used first session to introduce client to intuitive movement) One Leg Standing ✓ One Leg Standing 10 pound weight on stance leg Two Heavy Feet (5 pounds each ankle) ✓ Lean Back ✓ Arch Forward ✓ Assume the position ✓ Back Against the Wall Head Hang ✓ Head Hang Other: ✓ Shoulder work on upper trapezius and pecotals ✓ Float work before and after shoulder work 2-5 minutes each.
Movement restrictions primarily cervical and thoracic spine mobility. No contraindications:	
Pre/ Post pain levels, subjective reports and patient impressions After first visit muscle sore day of but no pain day after with greater mobility. No pain during last session.	
Therapeutic/ Fitness Goals: Restore ROM Improve postural awareness Decrease pain Independent with HEP	**Aquatic exercises to supplement the AquaStretch™ program:** N/A other than swimming, patient preferred land based exercise program

Other thoughts / suggestions:

Client seen for a total of 6 therapy sessions (two AquaStretch™) additional treatment included spine stabilization and postural correction exercise progression also change violin chin/ shoulder rest to optimal height.

Post Objective measurements: C-S ROM = rotation 80-82 degrees bilaterally, side flexion left 35 and right 32 degrees, full flexion and extension.

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Case Study # 4

Patient/Client Information: 41 year old flight attendant with **ankle sprain** 4 months ago, history of old peroneal tendon injury (peroneous brevis tear 2001 had returned to work without known deficit), MRI demonstrates mild scaring of ATFL and hypertophic synovitis in the area. The patient is overweight with BMI of 33.67 otherwise healthy individual not currently taking any medications. At the initial evaluation she presented with the following problems:

1. Pain lateral right ankle and lateral Achilles tendon and anterior talus. Pain ranges from 3/10 at best to 8/10 at worst.
2. Functionally the LEFS 42/80, pain with squatting, lifting, occasional sharp pain with walking, she is unable to run, hop wear high heels or perform job duties
3. Limited ankle ROM: DF 8 degrees, PF 61 degrees, inversion 28 degrees, eversion 18 degrees.
4. Mild edema lateral right ankle
5. Multiple areas of tenderness to palpation lateral ankle structures plus pain with resistance in all directions.
6. Decreased stance phase right, decrease push off on right and decreased DF terminal stance on right.

Stage of Rehab:	**AquaStretch™ Strategy**
☐ Acute ☐ Sub-Acute ☐ Remodeling ➢**Chronic** ☐ Post-rehab/ conditioning ☐ Fitness	**Wall Hang:** ✓ **Foot Grip with focus on ATFL and peroneal tendon with play, freeze, pressure, move component.** ✓ **Ankle Grip** ✓ **Toe Grip** ✓ **IT Band** **One Leg Standing (10 pounds on stance ankle)** ✓ **One Leg Standing** **Two Heavy Feet** ✓ **Lean Back (second AS session)** **Other:** ✓ **Anterior right ankle/ anterior tib tendon/ talo-navicular ligament region (second AS session)** ✓ **Float work (second AS session with significant lateral trunk stretching with movement)**
Movement restrictions patient painful will all motions at start and not tolerating weight bearing / no contraindications.	
Pre/ Post pain levels, subjective reports and patient impressions: patient reported immediate feeling of increased mobility, ambulated without at limp and eliminated deep anterior ankle pain complaints	**Responded first session with increased mobility for ankle dorsi-flexion and improved gait, second session patient no longer had anterior/ interior ankle pain with improved ROM all directions.**
Therapeutic/ Fitness Goals: 1. **Restore ankle ROM** 2. **Normalize balance and LE strength.** 3. **Return to work/ full duty**	**Aquatic exercises to supplement the AquaStretch™ program:** Shallow water exercise for gait, balance and calf strengthening, deep water for core strengthening and overall conditioning.

Other thoughts / suggestions:

Client progress such as # sessions: AS sessions #9 and #13 and #17 out of 18 visits(would have initiated sooner, had to wait for w/c to authorize aquatic therapy)

Post Objective measurements: after 2nd AS session DF 12 degrees, PF 66 degrees, Inv 50 degrees, eversion 28 degrees. Lower Extremity Functional Scale increased to 62

Additional interventions: land based therapy included kinesotape early for support with gait, progression of balance and gait activities, active release techniques of gastroc and peroneals, ultrasound for localized blood flow.

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Case Study # 5

Patient/Client Information:

History: 65 y.o. s/p L distal fibular fracture; slipped and fell playing golf
Immobilization from 5/11/10-7/30/10
Presentation: L ankle immobility, Pain, stiffness and swelling
Co-morbidity: Fibromyalgia; polymyalgia rheumatic

Stage of Rehab:	**AquaStretch™ Strategy**
☐ **Acute** ☐ **Sub-Acute** ☐ **Remodeling** **X Chronic** ☐ **Post-rehab/ conditioning** ☐ **Fitness**	**Wall Hang:** **X Foot Grip** **X Ankle Grip** **X Toe Grip** **X IT Band** **X Hip Roll** **One Leg Standing** **X One Leg Standing (10#)** **Two Heavy Feet** **X Assume the Position** **20-30 minute AquaStretch™ sessions performed each one hour aquatic therapy treatment**
Movement restrictions / contraindications: Patient restricted in all planes of motion including DF, PF, Eversion and Inversion	
Pre/ Post pain levels, subjective reports and patient impressions Audible "pops" and immediate improvement in ankle AROM, SPL: 8/10 prior to first A/S session SPL decreased to 2/10 following 1st treatment.	
Therapeutic/ Fitness Goals: Improve ankle ROM, Decrease pain, decrease antalgic gait	**Aquatic exercises to supplement the AquaStretch™ program:** LE PRE, Heel walk, toe walk; Joint proprioception exercises at the knee and ankle. (Hold kickboard under foot with hip and knee at 90 deg), Noodle walk and balance exercises

Other thoughts / suggestions:

Patient experienced dramatic pain relief and significant improvements in ROM following one visit.
Patient had a tendency to require less manual pressure, slower intuitive movement, and the facilitator experienced more "melts" rather than "pops".
Also appears that these patients have less residual soreness following treatments.

Patient letter

"What you accomplished in alleviating severe pain and helping my overall well-being is nothing short of a miracle. Now I am more mobile, more pain free and my balance has certainly improved. –even my hips and back hurt far less"

"Your approach and hands on water therapy is very different than traditional therapy and is far more effective".

"I thank you from the bottom of my heart and want to let you know that the improvement in my mobility and having so much less pain has given me a new lease on life. For the first time in many years I feel hopeful again and it is all because of you [AquaStretch™]".

"If only there was a way that all the people that have been diagnosed with fibromyalgia, arthritis, polymyalgia rheumatic and other debilitating muscle diseases could participate in your water therapy. It might not cure the diseases but the quality of life can be certainly improved. I am living proof of that".

Case study # 6

Patient/Client Information:

Patient is a 58 year old female with a 6 month history of L adhesive capsulitis (Frozen Shoulder) Patient c/o pain and stiffness in all planes of motion. Difficulty reaching and poor strength.

Stage of Rehab:	**AquaStretch™ Strategy**
☐ **Acute** ☐ **Sub-Acute** ☐ **Remodeling** **X Chronic** ☐ **Post-rehab/ conditioning** ☐ **Fitness**	**Two Heavy Feet** **X Lean Back** **X Arch Forward** **X Back Against the Wall** **Head Hang** **X Head Hang** **Other:** **X Shoulder Work (seated or squatted)** **X Floatwork (5# each LE)** **Supported head with floation collar** **L Upper Quadrant** **AquaStretch™ performed 20-30 min of 60 min treatment**
Movement restrictions: L shoulder all planes: Flexion and abduction = 120 degrees, ER = 40 degrees, IR = 65 degrees.	
Pre/ Post pain levels, subjective reports and patient impressions No treatment induced pain was experienced throughout AquaStretch™ sessions. Patient very encouraged and pleased with significant progress and eager to swim laps.	
Therapeutic/ Fitness Goals: Improve ROM and Strength, Decrease pain. Patient seen 2x/week for aquatic PT, and 1x/week land exercises	**Aquatic exercises to supplement the AquaStretch™ program:** Scapular stabilization and UE strengthening exercises. (ie. Bilateral kickboard hold downs, L UE surfing, rhythmic stabilization with floatation dumbbells, push-ups against the wall etc.)

Other thoughts / suggestions:

Patient demonstrated over 20 degrees of AROM improvement into flexion and abduction 2nd A/S visit. Patient demonstrated full functional AROM into all planes and able to perform front stroke without movement restrictions at discharge. (6 weeks)

Case Study # 7

Patient/Client Information: 68 y.o. female S/P 3 weeks R knee debridement (9/14/2010)

- ✓ Spinal Surgical History: 9/2006 laminectomy; 12/2006 Spinal fusion L3-L5; 12/2008 Spinal Cord Tethering, laminectomy; 7/2009 Spinal fusion L1-L5; old instrumentation taken out and replaced
  - Performed due to L2 disc eruption
  - Lengthy history of PT including aquatic PT in different pools/therapists
- ✓ Subjective c/o of "Heaviness" in legs; Difficulty walking (Heavy Step)
- ✓ Radicular pain into bilateral LE's

Stage of Rehab:	**AquaStretch™ Strategy**
☐ **Acute** **X Sub-Acute** ☐ **Remodeling** ☐ **Chronic** ☐ **Post-rehab/ conditioning** ☐ **Fitness**	**Wall Hang:** **X Foot Grip** **X Ankle Grip** **X Toe Grip** **X IT Band** **X Hip Roll** **One Leg Standing** **X One Leg Standing (10#)** **Two Heavy Feet** **X Assume the Position (5# each LE)** **X Lean Back** **X Arch Forward** ✓ **Back Against the Wall** **Head Hang** ✓ **Head Hang** **Other:** ✓ After 1st visit: First time to sleep through night in 4 years due to decreased pain in legs and hips; After exit from pool pt walking without subjective heaviness in hips and legs.
Movement restrictions / contraindications: Use caution with spinal extension postures with spinal fusion during A/S procedures	
Pre/ Post pain levels, subjective reports and patient impressions Decreased SPL from 8/10 to 0/10 following first session Decreased pain medications	
Therapeutic/ Fitness Goals: Decrease pain, Improve knee ROM and normalize "heavy step" gait pattern.	**Aquatic exercises to supplement the AquaStretch™ program:** Core Stabilization Exercises including: KB push down; Forward push pull, UE and LE trunk stabilization utilizing Burdenko methods

Other thoughts / suggestions:

Physical therapy with land based exercises (10/5/10-11/19/10); Only 3 AquaStretch™ visits needed.
Reports "the best day of my life" following 3rd A/S
At D/C all goals met. Patient reported "This is the strongest I have felt in years."

Case Study # 8

Patient/Client Information:

72 y.o. male S/P 3 level fusion with pins, bracket and hinges 2 years ago. Patient suffered injury during surgery resulting in initial paresis of bilateral LE's. Gradual increase in voluntary control over past 2 years. Significant bilateral LE spasticity (Plantar flexion and inversion).

Gait: Unsafe with SPC; Toe walker (heels approx. 3 " off ground with amb)

Poor strength and balance: Legs give out, trips, unable to right self when falling (Frequent falls) 10+ in past year.

Stage of Rehab:	**AquaStretch™ Strategy**
☐ **Acute** ☐ **Sub-Acute** ☐ **Remodeling** **X Chronic** ☐ **Post-rehab/ conditioning** ☐ **Fitness**	**Wall Hang: (Collar; Noodles and floatation belt)** **X Foot Grip** **X Ankle Grip** **X Toe Grip** **X IT Band** **X Hip Roll** **Two Heavy Feet** **X Assume the Position** **Other:** **X Wall Hang: Bilateral Hamstring Heel Hold** **X Wall Hang: Small Joint work; Feet**
Movement restrictions Poor hip and LE dissociation secondary to spasticity. Increased Extensor tone (bilateral LE knee ext, adduction, IR, plantar flexion pattern) Inability to contact heels on ground	
Pre/ Post pain levels, subjective reports and patient impressions Significant decrease in spasticity following 1st session Patient felt more unsteady due to decreased tone and needed to sit immediately following exit from the pool. Patient was wishing he had brought his walker rather than cane.	
Therapeutic/ Fitness Goals: Improve balance, LE strength and gait. Decrease tone to improve bilateral LE ROM, Decrease pain and stiffness in LB	**Aquatic exercises to supplement the AquaStretch™ program:** Neuromuscular re-education; LE strengthening exercises. (ie. 30% weight-bearing: hip abd/add, scissors and jogging in place, bicycle. (Patient demonstrated increased speed and ROM during LE exercises following A/S)

Other thoughts / suggestions:

Exercises performed with light ankle weights to increase LE proprioceptive sensation. Collar also used with additional noodles during wall hang for increased floatation to compensate for increased tone.

Case Study # 9

<table>
<tr><td colspan="2">Patient/Client Information:
✓ Age: 63 year old female
✓ Diagnosis: Fitness / Wellness Client
✓ Primary complaint: LBP, Plantar Fasciitis, Right Knee Pain
✓ Limitations/ impairments: Foot pain when walking, especially up/down stairs or elevation changes, LBP when seated for long periods, limited pelvic ROM, kyphosis</td></tr>
<tr><td>Stage of Rehab:</td><td>AquaStretch™ Strategy</td></tr>
<tr><td>☐ Acute
☐ Sub-Acute
☐ Remodeling
☐ Chronic
☐ Post-rehab/ conditioning
➢Fitness</td><td rowspan="3">Wall Hang: Used neck collar to reduce stress on shoulders
✓ Foot Grip
✓ Ankle Grip
✓ Toe Grip
✓ IT Band
✓ Hip Roll
One Leg Standing – 5 lb. progressing to 10 lb. weights used
✓ One Leg Standing
Two Heavy Feet – 5 lb. weight on each leg
✓ Assume the Position
✓ Lean Back
Head Hang – 5 lb. weight on each leg
✓ Head Hang
Other:
Foot Work in areas of restriction</td></tr>
<tr><td>Movement restrictions / contraindications:
NONE</td></tr>
<tr><td>Pre/ Post pain levels, subjective reports and patient impressions
Foot pain eliminated
LBP occurrence only on occasion
Improved sleep</td></tr>
<tr><td>Therapeutic/ Fitness Goals:

Reduce pain going up/down stairs;

Reduce LBP so client can golf and play

with grandchildren</td><td>Aquatic exercises to supplement the AquaStretch™ program:
LE strengthening in waist depth water, progressing to land
Core strengthening
Exercises to improve pelvic ROM
Exercises that improve thoracic mobility and stability to improve posture</td></tr>
<tr><td colspan="2">Other thoughts / suggestions:
✓ 30-40 minute sessions
✓ Restoration: 2x/week for 2 weeks, 1x/week for 3 weeks; Maintenance: 1x/every other month</td></tr>
</table>

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Case Study # 10

Patient/Client Information:

- ✓ Age: 54 year old female
- ✓ Diagnosis: Fitness / Wellness Client
- ✓ Primary complaint: LBP, Sciatica
- ✓ Limitations/ impairments: Pain when walking, especially when walking for long periods of time and when playing tennis

Stage of Rehab:	**AquaStretch™ Strategy**
☐ Acute ☐ Sub-Acute ☐ Remodeling ☐ Chronic ☐ Post-rehab/ conditioning ➢ **Fitness**	**Wall Hang: Used neck collar to reduce stress on shoulders** ✓ **Foot Grip** ✓ **Ankle Grip** ✓ **IT Band** ✓ **Hip Roll** **One Leg Standing – 5 lb. progressing to 10 lb. weights used** ✓ **One Leg Standing** **Two Heavy Feet – 5 lb. weight on each leg** ✓ **Assume the Position** ✓ **Lean Back** **Head Hang – 5 lb. weight on each leg** ✓ **Head Hang** **Other:**
Movement restrictions / contraindications: NONE	
Pre/ Post pain levels, subjective reports and patient impressions LBP eliminated Increased stride length	
Therapeutic/ Fitness Goals: Reduce LBP so client play tennis and walk with her husband.	**Aquatic exercises to supplement the AquaStretch™ program:** LE strengthening in chest depth water, progressing to land Core strengthening Exercises to improve pelvic ROM Exercises that improve thoracic mobility and stability to improve posture

Other thoughts / suggestions:

- ✓ 20 minute sessions
- ✓ Restoration: 1x/week for 4 weeks; Maintenance: As needed (once every 2-3 months

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Case study #11

<table>
<tr><td colspan="2">Patient/Client Information:
Doreen, 68 years old. LB surgery (lumbar) 8 years ago. R supraspinatus repair 4 years ago; nearly complete biceps tear (R), 2 months ago (cannot be repaired). Obese (BMI 35). LBP L into glutes & ITBand; leg / foot are sometimes numb. R U/E – limited ROM (100º) & strength in flexion / abduction. Arm and LBP restrict ADL. Fear of falling has increased.</td></tr>
<tr><td>Stage of Rehab:</td><td>AquaStretch Strategy</td></tr>
<tr><td>☐ Acute
☐ Sub-Acute
☐ Remodeling
✓ Chronic
☐ Post-rehab/ conditioning
☐ Fitness</td><td rowspan="3">Wall Hang:
✓ Foot Grip
✓ Ankle Grip
✓ Toe Grip
✓ IT Band
✓ Hip Roll
One Leg Standing
☐ One Leg Standing
Two Heavy Feet
✓ Assume the Position
✓ Lean Back
✓ Arch Forward
✓ Back Against the Wall
Head Hang
✓ Modified Head Hang
Other:
✓ Glute release as required
✓ Scap & shoulder release (R)</td></tr>
<tr><td>Movement restrictions / contraindications:
Abnormal gait; no restrictions for AS</td></tr>
<tr><td>Pre/ Post pain levels, subjective reports and patient impressions
AS sessions dramatically improve LBP, and sleep, though there is post-Tx tenderness.
R arm pain with movement is improved ≥85% most sessions.
Ability to move; ADL & rehab exercise tolerance are increased by AS.</td></tr>
<tr><td>Therapeutic/ Fitness Goals:
Maintenance of ADL (caring for elderly Mom), likes to cook. Pain reduction and optimizing function. Pain interferes with function + sleep.</td><td>Aquatic exercises to supplement the AquaStretch program:
Suspended L/E X & U/E ROMS. No added load for U/E at this time. Suspended X promotes core strength and allows mild cardio to improve BMI.</td></tr>
<tr><td colspan="2">Other thoughts / suggestions:
Doreen gets reasonably good relief from AS sessions. Pain is reduced; ROM is better. More emphasis on conditioning exercise is a goal to improve general health. So far, painful episodes have prevented this.</td></tr>
</table>

Case study # 12: Patient/Client Information:

Jan is 59 years old. Diagnosis: OA in hands and feet. Hands are very sore. At least one digit on each had is swollen and immobile. Feet: load bearing is painful, affecting gait; restricting ADL. BMI low-normal (20). She is used to being very active (motor cyclist, gardener), and is having to give up her favourite recreational activities. Feels she is losing strength and ability to do what she wants in life. Had successful lumbar fusion surgery 5 years ago. Some LBP (probably from antalgic gait / lack of activity). Has had numerous musculoskeletal injuries over the years (biking & car accidents), including whiplash. No other health issues.

Stage of Rehab:

- ☐ **Acute**
- ☐ **Sub-Acute**
- ☐ **Remodeling**
- ✓ **Chronic**
- ☐ **Post-rehab/ conditioning**
- ☐ **Fitness**

Movement restrictions / contraindications:

Hands are being treated in clinic (acupuncture, hot wax, mobs); have not responded well to AS.

Pre/ Post pain levels, subjective reports and patient impressions

Patient finds pain levels reduced for up to 2 days after AS sessions. Is able to walk / move much more comfortably. Has reduced pain meds 90%. Feels she is now able to train (in water) and build core & extremity strength comfortably. Does water workouts & Ai Chi 3 – 5 X / week.

AquaStretch Strategy

Wall Hang:

- ✓ **Foot Grip**
- ✓ **Ankle Grip**
- ✓ **Toe Grip**
- ✓ **IT Band**
- ✓ **Hip Roll**

One Leg Standing

- ✓ **One Leg Standing** (useful when LB is painful)

Two Heavy Feet

- ✓ **Assume the Position**
- ✓ **Lean Back**
- ✓ **Arch Forward**
- ✓ **Back Against the Wall**

Head Hang

- ✓ **Modified Head Hang** (no weights)

Other:

- ✓ **Shoulder / upper trap release when needed**

Therapeutic/ Fitness Goals:

Reduced pain; comfortable movement for hobbies & ADL. Client feels she has accomplished these goals and more. She is working hard in the pool (cardio exercise). Her ability to do self-directed myofascial release at home is excellent, allowing her to remain comfortable between treatments.

Aquatic exercises to supplement the AquaStretch program:

- Suspended (riding a noodle / water horse like a horse) Jacks, cycle, running with vigorous arm movements using resistive equipment when energy levels are good. Vigorous 5 min intervals are well tolerated.
- Prone planks; prone falls with noodle support
- Ai Chi; Gait training patterns
- Standing (on noodle) balance challenges

Other thoughts / suggestions:

- ✓ Client points to dramatically reduced usage of pain meds; improved ROM of extremities, neck & LB; normalized gait; improved performance of all exercises / Ai Chi as evidence of her improvement.
- ✓ Acupuncture, hot wax & mobs continue for hand issues.

Case study # 13

Patient/Client Information:
John is 72 years old. Total knee replacement (R) 18 months ago. Land based physio since surgery. Unable to fully extend R knee (10º flexion remains). ROM in flexion = 90º. Unable to walk normally. Cannot get right heel to floor due to knee flexion, therefore gait is restricted. Otherwise, fit and healthy.

Stage of Rehab:	**AquaStretch Strategy**
☐ **Acute** ☐ **Sub-Acute** ☐ **Remodeling** ✓ **Chronic** ✓ **Post-rehab/ conditioning** ☐ **Fitness**	**Wall Hang:** ✓ **Foot Grip** ✓ **Ankle Grip** ✓ **Toe Grip** ✓ **IT Band** ✓ **Hip Roll** **One Leg Standing** ✓ **One Leg Standing** **Two Heavy Feet** ✓ **Assume the Position** ✓ **Lean Back** ✓ **Arch Forward** ✓ **Back Against the Wall** **Head Hang** ✓ **Modified Head Hang** **Other:**
Movement restrictions / contraindications: **Abnormal gait; no restrictions for AS**	
Pre/ Post pain levels, subjective reports and patient impressions Two 20 minute sessions, one day apart. John was able to fully extend R knee at the end of the first AS session. This range remained the following day / session, and on follow-up afterward.	
Therapeutic/ Fitness Goals: John is an active senior, teaching regular spin classes, and living an physically active lifestyle. He was very impressed with how AS could accomplish what 18 months of land-based physiotherapy had not been able to do – straighten his knee!	**Aquatic exercises to supplement the AquaStretch program:** Maintain regular fitness regimen, including regular stretching for both legs, hips and back. Recommended deep water running for cardio.

Other thoughts / suggestions:
John was enthusiastic to have regular AS sessions. Geographically, this is not yet possible.
The result was instantaneous and significant. It seems AS freed restrictions in all segments of his affected L/E, allowing the knee to extend fully for the first time since surgery.

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Case study # 14 Patient Information: 50 y/o female complaining of hip pain prior to running a half-marathon. She tripped and fell at the marathon, creating a complete break from the acetabulum to the ball of the femur. She had no co-morbities, but found out she had osteopenia after the break. Her complaint was a tight IT Band, and she wanted to get rid of her limp from the surgery. She had only one AquaStretch Session, which was 4 months post-op, with permission from her orthopedic surgeon to assume all previous activities. She had 3 screws placed with the surgery to repair the hip joint.

Stage of Rehab for this patient?	**AquaStretch Techniques Utilized :**
Fitness/Post-Rehab	✓ Foot Grip ✓ Ankle Grip ✓ Toe Grip ✓ IT Pump ✓ Hip Roll ✓One Leg Standing – 5 lb. progressing ✓Two Heavy Feet – 5 lb. weight on each leg ✓ Assume the Position ✓ Lean Back ✓Arch Forward ✓Back Against the Wall ✓Head Hang – 5 lb. weight on each leg
What movement restrictions / contraindications are there? **Restrictions:** Hip ROM, IT Band Pain	
Pre/ Post pain levels, subjective reports and patient impressions Pain Level was 8 prior to the session; 0 Pain level after one session and no recurring pain. 4 months post AS session, Client no longer complains of a tight IT Band, or any pain in that area. She has a normal gait pattern. She has returned to normal activities.	

Case study # 15 Patient Information: 2 y/o male with Guillain Barre. Has been in land and aquatic therapy for three years. Two years after onset of Guillain-Barre, he had a C6 spinal fusion. Client complains of pain in his feet and lack of ROM. His goal is to increase range of motion and improve neuromuscular function in his lower body. Physician recommended L/E work to assist in gait pattern, and fall prevention.

Stage of Rehab for this patient?	**AquaStretch Techniques Utilized :**
Therapeutic/Fitness	✓ Foot Grip ✓ Ankle Grip ✓ Toe Grip ✓ IT Pump ✓ Hip Roll
What movement restrictions / contraindications are there? **Restrictions:** No Cervical Exercise per physician. Client's major complaint is fear of falling, lack of range of motion, and restriction in ADL's.	**Additional Therapies:** Client continues to use water and land-based exercise on his own 3x/week in addition to weekly AS treatments. Somatic work has been integrated into assisting in gait pattern during AS treatments. Core stabilization work is also integrated into his program.
Pre/ Post pain levels, subjective reports and patient impressions Client has pain in his feet, and has improvement in pain levels lasting a week; some foot pain is due to gout. Client was able to flex his phalanges after one session; prior to AS Session he had no movement in his feet. After his 3rd AS treatment he was able to put on his own shoes.	

Abbreviations used in the previous case studies:

ADL- activities of daily living
AROM- active range of motion
ATFL- anterior talo-fibular ligament
CA- cancer
DASH- Disability of the Arm Shoulder and Hand questionnaire
DJD- degenerative joint disease
HA- headache
HNP- herniated nucleus pulpous
LBP- low back pain
LEFS- lower extremity functional score
MHP- moist hot pack
NDI- Neck Disability Index
OA- osteoarthritis
RA- rheumatoid arthritis
SLR- straight leg raise
S/P- status post
SPL- subjective pain level
Tx- treatment

Blank Case Study Form

Patient/Client Information:

- ✓ Age
- ✓ Diagnosis
- ✓ Primary complaint
- ✓ Limitations/ impairments
- ✓ Co-morbidities etc.

Stage of Rehab:	**AquaStretch Strategy**
☐ **Acute** ☐ **Sub-Acute** ☐ **Remodeling** ☐ **Chronic** ☐ **Post-rehab/ conditioning** ☐ **Fitness**	✓ List AquaStretch positions & grips used ✓ Indicate amount of weight used ✓ List any modifications to position, grip or sequencing ✓ Summarize patient/client response **Wall Hang:** ✓ **Foot Grip** ✓ **Ankle Grip** ✓ **Toe Grip** ✓ **IT Band** ✓ **Hip Roll** **One Leg Standing** ✓ **One Leg Standing** **Two Heavy Feet** ✓ **Lean Back** ✓ **Arch Forward** ✓ **Assume the position** ✓ **Back Against the Wall** **Head Hang** ✓ **Head Hang** **Other:** ✓ ✓
Movement restrictions / contraindications:	
Pre/ Post pain levels, subjective reports and patient impressions	
Therapeutic/ Fitness Goals: Indicate specific patient/client needs	**Aquatic exercises to supplement the AquaStretch program:** Provide general and/or specific recommendations.

Other thoughts / suggestions:

- ✓ Client progress such as # sessions
- ✓ Pre/ post Objective measurements
- ✓ Additional interventions

Definitions/ Glossary of terms

Accentuated Movement: External force created by the facilitator to emphasize and or intensify the amount of stretch into the patient/ client's end range during intuitive movement.

ADL: Activities of Daily Living

Calcaneous: The heel bone

Connective Tissue: The material between the cells of the body that gives tissues form and strength. Tissue that supports and connects other tissues and parts.

Cuboid: Outer tarsal bone (on the lateral side of the foot) articulating with the 4th and 5th metatarsals

Decompression: To remove pressure

Distal: Describes the position of something relative to another that is furthest form midline or the center of the body.

Dynamic: Pertaining to vital force or inherent power and is usually marked by continuous and productive movement.

Fascia: Fibrous membrane covering, supporting and separating muscles in addition to connective tissue uniting skin with the underlying tissue. Fascia can be deep or superficial

Fascial Adhesions: Micro-calcifications or fibrous band within fascia holding parts together that are normally separated.

Femur: Thigh bone

Frontal Plane: The plane parallel to the long axis of the body, it divides the body into front and back Halves.

Glycosaminoglycans (GAGs): Mucopolysaccarides that are the primary component to ground substance, the non-sulfated group primarily binds to water and the sulfated group contribute to the cohesiveness of connective tissue.

Ground Substance: Medium in which cells and connective tissue fibers lie, acts as a medium for diffusion of nutrients and waste products and acts as a lubrication system maintaining a distance between adjacent collagen fibers.

Iliac Crest: Upper free margin of the ilium, the part of the pelvis that stretches posteriorly from the anterior superior iliac spine (ASIS) to the posterior superior iliac spine (PSIS).

Iliotibial band/ tract: wide thick fascial band that runs on the lateral aspect of the femur from the iliac crest to the lateral condyle of the tibia.

Ilium: The uppermost and largest bone of the pelvis

Intentional Movement: Occurs when the facilitator leads the patient/ client's movement of a joint as a method to evaluate and find remaining fascial adhesions that may have gone unnoticed by the client. Intentional movement should always be combined with client playing for most effective results.

Intuitive Movement: The patient/client's unconscious natural movement in response to stretch resistance placed on a joint or the body by the facilitator with the mental encouragement to "move if you feel the need to move"

Inversion: Is a term to describe the motion resulting from component actions of the foot: adduction, supination and plantar flexion. (these component motions always occur together). Turning the foot medially resulting in the sole moving inward.

Ipsilateral: Pertaining to the same side

Joint subluxation: Partial or incomplete dislocation, congruency of joint surfaces are altered

Lateral flexion: Usually refers to the vertebral column. You can laterally flex your neck or trunk. This side bending occurs in the frontal plane along the sagittal axis

Metatarsal: Foot bones between the tarsals and the phalanges

Metatarsal-phalange joint: **(MTP)**: Functionally the MTP joints allow a rigid inverted foot to pass over the weight bearing toes during gait through two mechanisms metatarsal break (distributing the weight more evenly across the metatarsals) and windlass effect (increased tension on the plantar aponeurosis contributing to supination of the foot.)

Micro-calcifications: Fascial adhesion

Myofascia: Fascia surrounding the muscle tissue

Osteopathy: A system of medicine based on the theory that the normal body is a vital mechanical organism in which structural and functional states are of equal importance and that the body is able to rectify itself when it has a favorable environment. Osteopathy often emphasizes normal body mechanics and manipulation to correct faulty body structures. Osteopathy was founded by Dr. Andrew Still (1828-1917)

Paraspinals: Muscles adjacent the spinal column

Phalange: Bone of the fingers or toes

Plantar flexion: Movement action where the dorsal part (top) of the foot is moved away from the tibia; commonly referred to as “pointing the foot”.

Plantar surface: The sole/ bottom surface of the foot

Pretzeling: The patient/client may move their body into positions not usually possible on land. When the client intuitively seeks to experience it may result in you and the client looking like human pretzels.

Proprioceptive Encroachment: This is when the facilitator is in the way of the patient/client’s intuitive movement.

Proximal: Describes the position of something relative to another that is closest to the midline or center of the body.

Sagittal Plane: The plane that divides the body into two halves right and left, movement about the sagittal plane is rotation through the tranverse axis

Sacro iliac joint or SI Joint: The joint in the bony pelvis between the sacrum and ilium, which are joined together by strong ligaments.

Snaking: Sometimes the patient/ client’s spine may move in the water like a snake, or the facilitator may intentionally move the client’s head or body from side to side to stimulate stretching their intervertebral connective tissue.

Static: In place, still

Talocalcaneal (subtalar) Joint: Articulation between the talus and calcaneus; a uniaxial joint; allows pronation and supination; a tri-plane joint with movement primarily in the frontal and transverse planes.

Talo-navicular joint: The articulation of talus and navicular forming the medial aspect of the transverse tarsal (midtarsal) joint of the foot.

Talus: A small bone that sits between the heel bone (calcaneus) and the two bones of the lower leg (tibia and fibula). The talus is an important connector between the foot and leg and body, helping transfer weight and pressure forces across the ankle joint.

Tensigrity: Is a structural principle based on the use of isolated components in compression inside a net of continuous tension

Thenar Eminence: Refers to the group of muscles on the hand at the base of the thumb.

Traction: The process of drawing or pulling

Transverse plane: The plane that divides the body into top and bottom halves, movement in the transverse plane is rotation about the frontal axis.

Wolff's Law: A law stating that bone density changes in response to changes in the functional forces or load on the bone.

Study/ Review Questions

Please describe the Fascial Adhesion in your own words:

Where do the adhesions develop?

What factors cause adhesions to develop?

What makes AquaStretch™ different compared to other manual aquatic techniques?

How does stretch resistance affect AquaStretch™?

How does the facilitator alter the amount of stretch resistance?

What is the most important instruction to give your patients/clients?

What is the 4 step basic procedure to identify areas of adhesions or limitations?

What are other ways can you identify adhesions?

How do you know when the adhesion has released?

What are some aftercare instructions following the first AquaStretch™ session?

Testimonials

Aqua stretch testimonial letter (F. Fuller Royal M.D. from George)

February 22,2010
Jamie Davidson, PhD
Ass't V. P., Student Wellness
University of Nevada, Las Vegas
Las Vegas, NV 89154-3020

Dear Dr. Davidson:
Nevada Clinic physicians and I have referred several hundred of our patients to UNLV for its AquaStretch™ exercising Wellness program since it began in January of2008, including several of the clinic's medical staff and their families. The vast majority of these patients have reported immediate and dramatic pain relief, profound relaxation, and/or improvements in sleep and physical functionality.

Many of the chronic pain patients referred, who often "have tried everything" and had been suffering with their pain for years, also reported being able to significantly reduce their intake of medications for pain, sleep, and other purposes, and to reduce markedly their need for chiropractic, physical therapy, and massage services.

I believe AquaStretch™ exercising is a breakthrough in pain management and preventive medicine. AquaStretch™ will quickly become a critical part of evidence based Wellness programs because it consistently provides immediate and enduring physical benefits, and because it may produce significant health care cost savings.

F. Fuller Royal, MD

What clinicians who are using this technique have to say:

"As a former dancer, I have always had good flexibility and so it is difficult to find stretches that help relieve the tightness I feel in my muscles and joints. The first time I experienced AquaStretch™ , I knew it would solve this problem. AquaStretch™ allows me to move through my body's full range of motion and alleviate the tension that I cannot reach with conventional stretching techniques. The support of the water also allows you to get into positions you normally would not be able to manage on land and that freedom of movement lets you to relax that much more. As a physical therapist, I have also seen the immediate relief or reduction of pain in my patients after they receive AquaStretch™ . I find it to be a vital tool for encouraging movement with patients who are experiencing pain in addition to addressing muscle or joint limitations that limit a person's overall function."

Ryann Cramer, DPT, MTC, CSCS

What client's and patient's have to say:

"I've had back, knee & foot surgery; plenty of reasons to try AquaStretch. I didn't know my body could move like that! Immediately after the session, I felt as if I just had a massage and a lot more movement in my knee. Results were lasting." – Bonnie Rowley

Patient letter to Jessica Huss,

> *"What you accomplished in alleviating severe pain and helping my overall well-being is nothing short of a miracle. Now I am more mobile, more pain free and my balance has certainly improved. –even my hips and back hurt far less"*
>
> *"Your approach and hands on water therapy is very different than traditional therapy and is far more effective".*
>
> *"I thank you from the bottom of my heart and want to let you know that the improvement in my mobility and having so much less pain has given me a new lease on life. For the first time in many years I feel hopeful again and it is all because of you [AquaStretch™]".*
>
> *"If only there was a way that all the people that have been diagnosed with fibromyalgia, arthritis, polymyalgia rheumatic and other debilitating muscle diseases could participate in your water therapy. It might not cure the diseases but the quality of life can be certainly improved. I am living proof of that."*
>
> Hetti H. Lake Havasu City, AZ

"I feel like I have had a deep tissue massage without the soreness"- Stephanie H. San Diego, CA

" I have had restriction in my left ankle for years after an injury after one AquaStretch™ session I now feel my motion is equal on both sides, I almost can't believe it!" Torri, San Diego, CA

Appendix One: Sample Forms

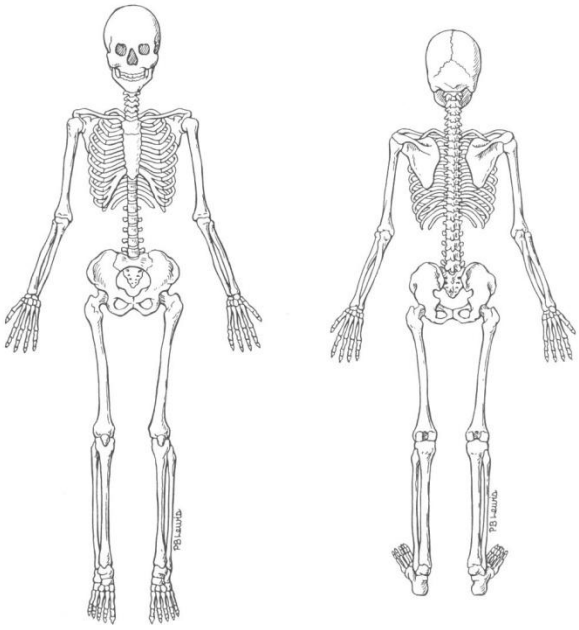
AquaStretch™ – Client Evaluation Form **Date:** _____

Name: _____

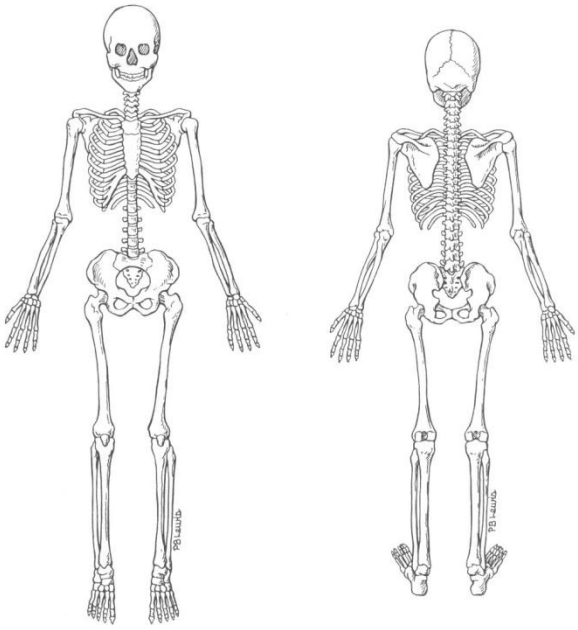
What is the primary purpose of today's AquaStretch™ session?

_____

Before AquaStretch™ Session



Immediately After



Please use this form to rate your pain today before and immediately after your session.

STEP 1.
On the diagrams, **circle** the specific body area(s) that hurt.

STEP 2.
Place a number beside each circle:

0 – Pain free
1 – Pain is hardly noticeable
2 – Pain is minor annoyance, comes & goes
3 – Pain is somewhat distracting
4 – Pain is quite distracting
5 – Pain cannot be ignored for more than a few minutes at a time
6 – Pain is always there (may still do daily activities)
7 – Pain is always there (difficult to concentrate, interferes with sleep; you can still function with effort)
8 – Pain severely limits physical activity. Nausea and dizziness may result from pain.
9 – Pain makes you unable to speak.
10 – Pain makes you pass out. Intolerable.

Additional Comments (if desired): _____

_____

_____

AquaStretch™ – Session Documentation

AquaStretch™ Facilitator: _____

Grip and Position	☐✔	Notes
Wall hang: Foot grip		
Wall hang: Ankle grip		
Wall hang: Toe grip		
Wall hang: Hip roll		
One Leg Standing		
Two Heavy Feet: Lean Back		
Two Heavy Feet: Cops		
Head Hang		
Trap Tap & Release Scap		

Exercise Elements is a company whose mission is to deliver an approach to fitness training that concentrates on the body as a whole for better results.
Website: www.exerciseelements.com

North County Water and Sports Therapy Center

Aqua Stretch™ Flow Sheet Patient: _____

Date		
	Techniques	Comments
Wall Hang		
Foot grip		
Ankle grip		
Toe grip		
IT pump		
Hip rolls		
Lumbar lever		
Knee ROM work		
One leg stand		
Foot grip with TX		
Hip fulcrum		
Lumbar fulcrum		
Two heavy feet		
Lean back		
Arch forward		
Assume the position		
Back against wall		
Shoulder work		
Arm circles		
Scapular circles		
Serratus anterior		
Pectoralis		
Head hang		
Other:		
Therapist Signature		

Appendix Two: Article of Interest

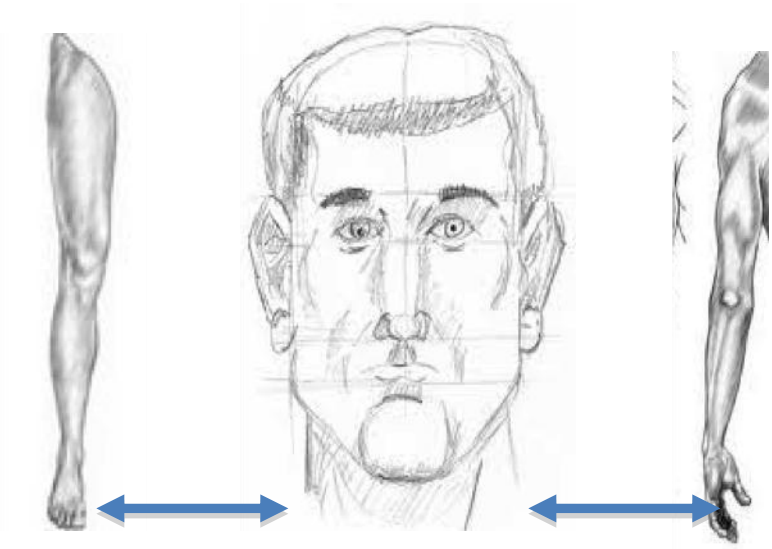
Acupuncture link by Donna Adler

Liver2 Point in AquaStretch™

One of the theories in Chinese Medicine is that everything has a mirror image on every part of the body. Reflexology, foot reflexology, is an example of this. It's like a holographic imprint. So, when we are looking at different parts of the body we think in terms of segments relating to other segments.

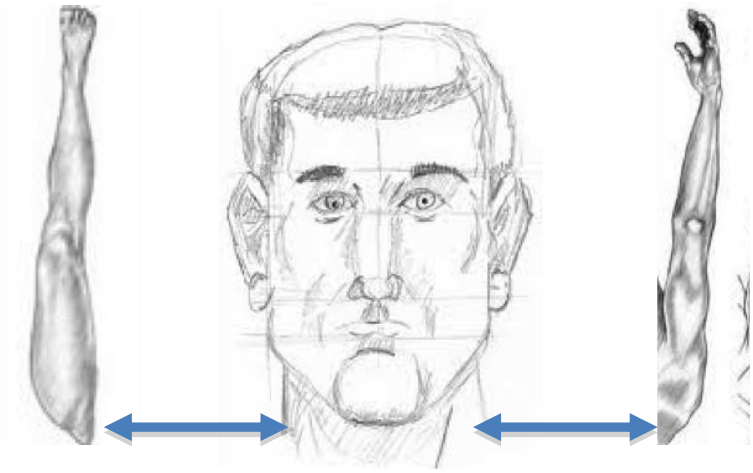
Below in Drawing A we have a mirror image of the head in comparison to the arm and leg. You will note the arrows from the Liver2 (L2) spot in relation to the neck as a mirror image, and in relation to the knuckles as a mirror image. (The L2 spot is located on the dorsum of the foot, in between the web of the first and second toe. This corresponds to the location of the Toe Hold in the Wall Hang position in AquaStretch™ .) What this means is that while giving an AquaStretch™ treatment, if you are putting pressure on the L2 spot, or the Toe Hold AquaStretch™ position, you will be able to affect the neck. Oftentimes in AquaStretch™ , when we are at the Toe Hold position in the Wall Hang, we have found the neck releases on patients. This is a hypothesis of why this occurs. This is also a great option to affect the neck if a Head Hang position may be contraindicated for certain patients.

Drawing A



You can also flip that around and hit something in the upper hip and affect the neck as well, as demonstrated in drawing B below. The same would hold true, where you could work on the cheek area to affect the knee, or affect the elbow. In summation, this means that you can affect the neck while working on the hip area, and also you can affect the neck while working on the shoulder area.

Drawing B



In acupuncture, one usually utilizes the points on the opposite side of the body. For example, if you want to affect the right side of a patient's neck, you would use the Toe Hold of the left foot, the L2 point as reflected in acupuncture, and the Toe Hold AquaStretch™ position. In order to make the pressure point in AquaStretch™ most effective, you would have your pressure on the dorsum of the foot between the web of the first and second toe; therefore, keeping as close to the acupuncture point (L2 point), as documented.

This style of mirror-image acupuncture points is explained in the tradition of acupuncture taught by Dr. Richard Tan. This technique is derived from the Tung Family tradition. It is a very different system than the Traditional Chinese Medicine system. It's "outside the box". There are quite a few practitioners that use this technique, and you will find it widely used in the US.

Bibliography:

1. Discussion – Liver 2 Point: Dr. Lloyd Wright, LAc. July 15, 2011
   Dr. Wright has a full-time acupuncture and herbalist practice in Scottsdale, AZ. He has further extended his education with a Diplomat from the National Board of Acupuncture Orthopedics (NBAO). He has served on a scientific review panel for the National Center for Complimentary and Alternative medicine (NIH). He has been Academic Dean of the RainStar University, College of Acupuncture & Oriental Medicine in Scottsdale, AZ. He also held the position of Dean of the East West College of Natural Medicine in Sarasota, FL where he taught orthopedic testing.
2. Tan, Richard, O.M.D., LAc. Acupuncture 1, 2, 3. Dr. Richard Teh-Fu-Tan: San Diego, CA: 2007.

Appendix Three:

Sample Information and Marketing flier

Aquatic Rehab & Wellness Center
P.O. Box 3681
Lake Havasu City, AZ 86405
(928) 680-8229 Jessica@arawc.com

AquaStretch™ Information

AquaStretch™ (A/S) has been described as a "breakthrough in preventive medicine and pain management" (F. Royal, M.D.) It is like being stretched by an athletic trainer (the facilitator), only in 3'2" to 5'6" water, with 5 to 15 lb weights attached to your body. AquaStretch™ frequently produces immediate and dramatic results following the first session.

What can I expect from my first A/S session?

It is recommended that you arrive 10 minutes prior to your appointment to get into the pool and perform some gentle warm-up exercise. You will be given pain instructions (good pain vs. bad pain) and asked to repeat them back.

The basic principal of this technique is that *your body* knows what it needs better than you or the facilitator knows. Therefore, you will be encouraged to actively participate by utilizing your "intuitive" movement and to "move, if you feel the need to move."

The facilitator will take you through a series of positions and stretches, and often apply weights to your body. Your only job is to "move, if you feel the need to move." The facilitator is there to help accent your natural body movement.

How does AquaStretch™ work?

AquaStretch™ works to break down and dissolve calcified fascial adhesions. The combination of intuitive movement, accented movement and the properties of warm water make this a perfect environment for joint and soft tissue "releases" to occur.

What are fascial adhesions?

Fascial adhesions are calcifications that form in the connective tissue, called fascia, that occur between muscles, between skin and muscle, or between muscle & bone. Fascial adhesions may form due to a number of factors, that may act in combination:

1. Improper Healing: It's common to use injured joints prematurely, i.e. sprained ankles.
2. Lack of Sufficient Exercise: Especially flexibility exercise in needed positions.
3. Occupation and/or Recreational Aggravation: Excessive or repetitive joint use.

What is a "release", what will I feel?

Releases occur when a fascial adhesion has diminished or absolved. This usually occurs after you have placed your body in the position that was creating pain, tension or discomfort, the facilitator has applied pressure to that area, and you have been asked to "move if you feel the need to move". There are a couple of things you may experience as a result of a release.

1. You or the facilitator feel a “pop” (joint) or a “melting” (soft tissue) of that adhesion.
2. You your body will stop its intuitive movement.

What should I expect after my A/S session?

You should expect an amazing sense of relaxation and overall sense of “feeling loose”. Many have reported dramatic improvements in their ability to sleep, which overall facilitates healing.
You may experience muscle soreness the first 24-72 hours following your session because you have been stretched in ways you may not have stretched for years. It is advised that you drink plenty of water following your sessions as warm water exercising may cause dehydration.

What is an AquaStretch™ Wellness Program?

An AquaStretch™ Wellness program consists of two stages: 1. Restoration 2. Maintenance
Restoration: The Restoration stage usually involves 2-4 A/S sessions for one week. However, A/S may be performed daily depending on recovery time from “treatment soreness”. The purpose of this stage is to restore flexibility in the connective tissue (fascia) that has been lost due to prior injuries, surgeries, improper healing, lack of exercise or excessive training, and/or occupational/recreational stresses.

Maintenance: The Maintenance stage consists of intermittent facilitated sessions (i.e. once every month or two). It is also recommended that you perform a combination of individual A/S exercises and/or perform other land-based exercises that encourage flexibility (ie. Yoga). The purpose of this stage is to maintain the flexibility and well-being that was achieved in the Restoration stage.

When do I need to more AquaStretch™ ?

Following the restorative phase of facilitated A/S sessions, there are generally 4 reasons why people need AquaStretch™ again or regularly.

1. They have recurring fascial adhesions that are occupational aggravated, ie. Repetitive use
2. They “over-play” recreationally or physically train too quickly or excessively,
3. They have genetically predisposed or chronic conditions like scoliosis or fibromyalgia
4. They do something goofy, i.e., lift boxes/bags improperly, move as if “20 years” ago

AquaStretch™ Certificate Course Reference List

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Additional links for fascia research

http://www.fasciaresearch.de/#Top

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References support **basic procedure** for diagnosis and treatment

Bron, C, ranssen, J, Wensing, M, Oostendrop RAB. (2007) Interrater reliability of palpation of myofasical trigger points in three shoulder muscles. *The Journal of Manual & Manipulative Therapy. 15(4): 203-215.*
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For more information you can obtain Myofascial release bibliography on-line at http://www.myofascialrelease.com/fascia_massage/public/resources_research.asp

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AQUATIC THERAPY & REHAB INSTITUTE

The Aquatic Therapy & Rehab Institute (ATRI) is a non-profit, educational organization dedicated to the professional development of healthcare providers in the area of aquatic therapy. Offering educational courses, membership and certifications, ATRI provides continuing education opportunities to advance the competencies, knowledge and skills of the aquatic therapy and rehabilitation professional. Our conferences feature in-the-water pool labs for hands-on experience.

EVENTS / EDUCATION - ATRI Education is Never Dry!

International Aquatic Therapy Symposium (IATS) – Every other year in the summer, ATRI presents the International Aquatic Therapy Symposium. This Symposium features workshops that combine lecture with practical experience in the pool, giving registrants the opportunity to gain hands-on experience from industry experts. You don't want to miss this!

National Aquatic Therapy Conferences (NATC) – ATRI offers National Aquatic Therapy Conferences in various cities around the country. These multi-day Conferences feature Specialty Certificate Programs as well as half- and full-day general education workshops on aquatic therapy topics offered by a handful of distinguished speakers. These courses are in-depth, hands-on, educational experiences with smaller class sizes.

Professional Development Days (PDDs) – Typically hosted by a rehab center, hospital or similar facility, these weekend events offer a selection of aquatic therapy courses by a few of our most popular speakers. This is a great opportunity to learn practical, hands-on education in the pool and obtain continuing education credits close to home.

ATRI Online Ed – Online courses solve the problem of needing to stay up-to-date or maintain continuing education when unable to attend a conference. These select courses are taped during actual courses at conferences. Courses can be viewed at your convenience, not just one specific time – a great advantage! Course proceedings (handouts and supplemental materials) are included for online attendees to download and print. For information and to see what courses are available go to www.atri.org and click on Online Ed.

STANDARDS

The Aquatic Therapy and Rehabilitation Industry Standards are designed to separate the aquatic therapy practitioner from land-based therapists and from aquatic fitness professionals. If these base criteria are met, it will demonstrate the knowledge to provide clients with safe aquatic therapy and/or rehabilitation. The full Standards are available on the ATRI web site www.atri.org and can be downloaded free of charge.

I. Aquatic therapy and rehabilitation practitioners should have knowledge of Movement Mechanics and Science (Anatomy, Physiology, Kinesiology and Biomechanics) including knowledge of the cardiovascular, respiratory, circulatory, nervous, muscular and skeletal systems and their collective interactions; knowledge of basic anatomy, physiology and kinesiology concepts; knowledge of basic health care terminology; and knowledge of body terms, positions and movements.

II. Aquatic therapy and rehabilitation practitioners should have knowledge of aquatic principles including variations to movement quality using aquatic and physics concepts correctly, knowledge of how to choose equipment based on client need and goals, and knowledge of practical skills in aquatic therapy and rehabilitation.

III. Aquatic therapy and rehabilitation practitioners should have knowledge of basic principles and methods used in aquatic therapy and rehabilitation including indications, contraindications, precautions and opportunities for aquatic therapy and/or rehabilitation; knowledge of the client evaluation process; and knowledge of the treatment and prevention components.

IV. Aquatic therapy and rehabilitation practitioners should exhibit professional responsibility; including the proper education, certification, and/or license and training or their equivalent; knowledge of the allied health field; and knowledge of legal, ethical practices.

V. Aquatic therapy and rehabilitation practitioners should demonstrate health and safety consciousness by maintaining current certifications and training; they should be familiar with local, state and federal bathing codes and regulations as they pertain to water; and be certified as a pool operator if operating the pool.

VI. Aquatic therapy and rehabilitation practitioners should have knowledge of applicable regulations and legal considerations; comply with all applicable codes and laws relating to aquatics, therapy and rehabilitation; know and apply the limits of practice as they relate to base competencies within the medical system; and generally know basic reimbursement factors.

CERTIFICATION

Aquatic Therapeutic Exercise Certification Exam

This certification is for competent, knowledgeable professionals in aquatic therapy, rehab and therapeutic exercise. The exam will test your ability to meet the Aquatic Therapy and Rehabilitation Industry Standards to practice. The Standards are available on the ATRI website and can be downloaded free of charge. Successfully passing the exam will allow you to use the term “ATRI Certified” or the initials “ATRIC” after your name. The certification will not make you a therapist if you aren’t already one. For more information, please click on “Certification Information” at www.atri.org.

MEMBERSHIP

$45 per year, ATRI Members Receive the Following:

- Early Bird registration and discounts for all conferences
- Exclusive Aquatic Therapy articles
- Quarterly eNewsletter
- Aqua Marketplace discounts
- Research updates/articles

Free eLIST/BULLETIN BOARD

Aimed at aquatic therapy, rehab and wellness professionals, the eList is a place to get information, share ideas and hear what peers and colleagues are doing. The goal for eList participants is to receive and provide a fast response to questions and concerns from around the world, to stay on the cutting edge, to help others, and to get involved in ATRI. Participants ask questions, list new books or products, post job searches, or get involved in a discussion. The elist is multidisciplinary and open to all aquatic therapy, rehab and wellness professionals. To subscribe, go to the ATRI web site at www.atri.org and click on ATRI eList/Bulletin Board.

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