

PREFACE

The UE Ranger Calm®

When a person's physical ability to generate natural movement is disrupted due to a surgery or injury, the natural processes supporting one's underlying tissue health, along with its dependent circulation can also become impaired leading to a deterioration in a patient's global healing potential. Consequently, our body's ability to fully recover on a combined circulatory to tissue level is interdependent on also restoring **replenishing mobility**. Understanding that such pathological relationships exist is essential in our professional pursuits to support one's full healing. However, implementing an effective strategy to resolve such a comorbid relationship does not necessarily extend itself into complete resolution so easily.

Inherent to each person we work with is a “push and pull” relationship reflected in one's will to restore, while simultaneously being conditioned by varying levels of fear, to close and protect. As such, we are left juggling respectively, in the form of compensatory movements and underlying apprehension, the very foundations for lingering impairments and persisting symptoms. By acknowledging the full breadth of forces at hand, we can with the assistance of the UE Ranger Calm® and its prescribed therapeutic exercises, **personify the nature of healing** per patient to restore such a capacity and as a result achieve the following lasting results.

Movement Health Recovery Goals:

- Eliminate apprehensive movements and resultant protective muscular bracing
- Naturally facilitate circulatory tissue perfusion
- Restore soft tissue elasticity and mobility
- Resolve tone imbalances and compensatory movement patterns
- Resume functionally supportive, pain free range of motion
- Proactively prevent, or if present, effectively manage Lymphedema and Frozen Shoulder

Applications of the UE Ranger Calm®

By utilizing the naturally supportive properties of the UE Ranger Calm®, you are afforded the opportunity of communicating an organized recovery of trust with that of the most sensitive command center of the human body, the Autonomic Nervous System. Restoring a balanced state of motor tone enables oxygenated blood to deliver its nurturing ingredients to the active processes of tissue healing, while carrying off for discard the inflammatory products responsible for the perpetuation of pain, motor inhibitions, susceptibilities of adhering down and subsequent reductions of self-replenishing functional mobility. Establishing this supportive state of natural physiological healing will diminish your patients' requirements of anti-inflammatory and or pain reduction medications, thus avoiding the negative side effects which often includes disruption of their restorative sleep and healthy digestion along with physical and mental energy depletion which patients need to further enhance their capacity to heal as well as support their general well-being and positive outlook.

The UE Ranger Calm®
Breast Cancer Post-Surgical Rehabilitation Guidelines

Effectively turning fearful and painful arm use into confident spontaneous living. “How,” you ask? By regaining the trust of a protective Autonomic Nervous System, the UE Ranger Calm® fulfills the quest of patients and therapists alike. Boosting the physiology of healing with therapeutically replenishing neuro-muscular biomechanics, the UE Ranger Calm® personalizes, at each impairment level, an efficient pathway to restored well-being.

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Movement Health Essential Foundations

Described below are the physical principles that provide the essential foundations of restoring full body support of upper extremity movement health.

Healthy Biomechanics – Movement proceeding in a most efficient manner and without undue stress on non-contractile structures to preserve the integrity and prevent injury of the musculo-skeletal system.

Proprioception – The unconscious perception of movement and spatial orientation arising from stimuli within the body itself.

Awareness of Movement – The individual capacity to accurately perceive the coordinated joint contributions during functional movements involving both healthy biomechanics as well as deviation from the intended therapeutic influences.

Therapeutic Threshold – When in which any intended intervention actually is producing a therapeutic influence from which the body can respond favorably versus supporting a compensation.

Strength – The ability of the required muscles to generate adequate forces to support the intended movements.

Neuro-Muscular Re-Education – Getting the right message(s) to the right muscle(s) is the first requirement of therapeutic strengthening, and subsequent re-establishment of healthy biomechanics.

Endurance – The ability to perform the necessary repetitive muscular contractions required to support repetitive functional movements with healthy biomechanics.

Movement Coordination – The ability during a functional movement to sequence the appropriate muscle contractions at the most opportune time and with the most opportune intensities.

Soft Tissue Mobility – The ability of muscles, tendons, fascia, fat, blood vessels, nerves, and synovial tissues (tissue around joints) to allow necessary relational movements to support the advancement of a functional systemic movement.

Substitution or Compensation – Using muscles and joint efforts beyond those normally designed to participate in the execution of healthy movements. Generally, a sign of deficiency in one or more of the following:

- Strength
- Endurance
- Motor control
- Movement understanding
- Soft tissue mobility

Fatigue – Point at which one loses the capacity to efficiently support healthy biomechanics and or experiences persistent pain provocations with movement.

COMPONENTS OF THE UE RANGER-CALM®

CUSTOM MOLDED HAND SUPPORT designed to support in a relaxed posture either the left or the right hand of the involved upper extremity.

SECURING NEOPRENE HAND STRAP AND VELCRO ATTACHMENTS designed to comfortably support and secure the involved hand within the molded hand support. This strap should be secured in a comfortable position, yet snug enough to prevent the patient's hand from sliding. Clinical Note - hand wash and air dry as needed.

PROXIMAL MULTI-PLANE ARTICULATING JOINT designed to support the natural relational motions of each joint of the upper extremity (shoulder girdle, elbow, forearm, and wrist) during open and closed chain kinetic functional applications.

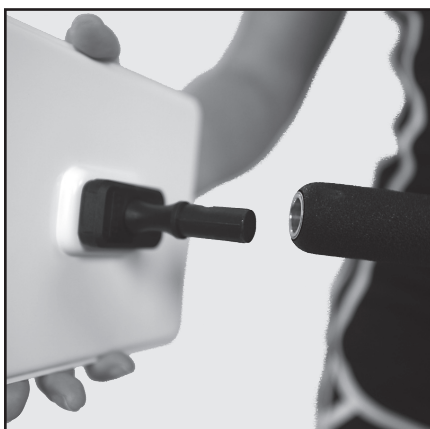
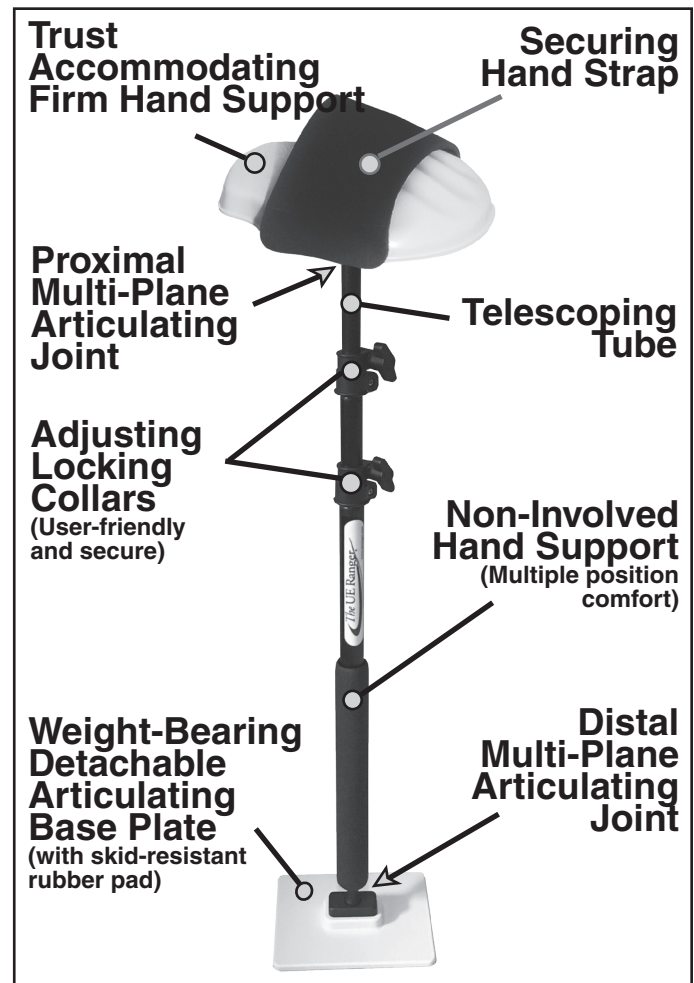
TELESCOPIC SUPPORTIVE AND GUIDANCE TUBING WITH ADJUSTING LOCKING COLLARS

designed to support multiple patient applications with considerations of all healing stages, desired intensity levels, skill levels, and varying current upper extremity joint mobility measurements. To adjust the overall length of the UE Ranger unlock the collar by turning the thumb bolt counter clockwise. After the desired height is reached be sure to re-secure the locking collar by turning the thumb bolt clockwise to a tightened position. ***Caution as to not overly tighten which can result in stripping the threads of your thumb bolt, rendering it unusable.**

NON-INVOLVED HAND SUPPORT designed to support the guidance and force produced by the non-involved upper extremity in multiple open chain kinetic functional applications.

WEIGHT-BEARING DETACHABLE ARTICULATING BASE PLATE with a **SKID RESISTANT RUBBER PAD** on its undersurface designed to support closed kinetic chain functional applications.

DISTAL MULTI-PLANE ARTICULATING JOINT designed to support the natural relational motions of each joint of the upper extremity (shoulder girdle, elbow, forearm, and wrist) during closed chain kinetic functional applications.



▲ FIGURE 1



▲ FIGURE 2

BASE PLATE OPTIONS

Open Kinetic Chain Techniques:

Detach the base plate by simply pulling it and the adjoining distal articulating joint out of the telescopic tubing (**figure 1**).

Closed Kinetic Chain Techniques:

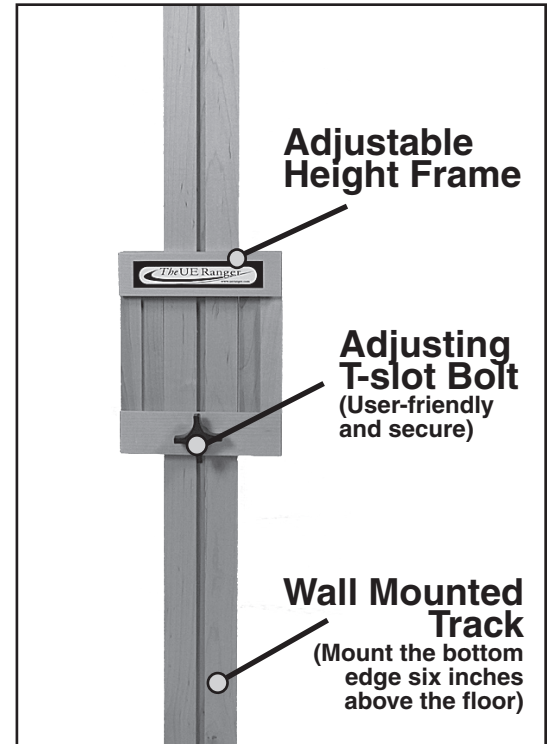
Reattach the base plate in a reverse manner. Be sure the base plate is fully secure before application (**figure 2**).

COMPONENTS OF THE CLINICAL WALL MOUNT

The Wall Mount supports a significant expansion of UE Ranger applications which are instrumental to effectively produce the required progressively graded therapeutic influences necessary to achieve optimal mobility recovery in the most efficient manner. It is designed to support specific and progressive closed kinetic chain Neuro-muscular Re-education, Functional Strengthening, Flexibility, and Endurance applications.

Securely insert the base plate of the UE Ranger into the Wall Mount frame by first angling the top of the base plate up and under the top portion of the frame as shown in (figure 1). Progressively guide the base plate up and under the top portion of the frame to a point where the bottom of the base plate clears the bottom portion of the frame, allowing the base plate to then be received and rest securely within the full frame as shown in (figures 2 and 3).

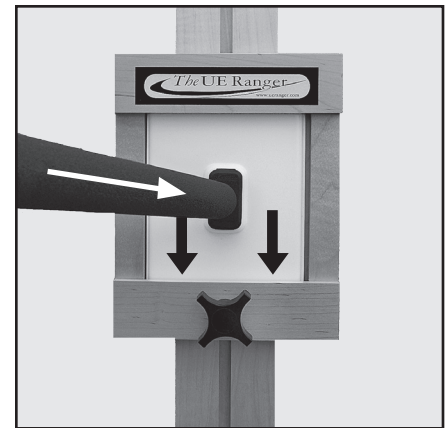
*****CAUTION*** TO RETAIN STABILITY OF THE BASE PLATE IN THE RECEIVING FRAME, IT IS IMPORTANT THROUGH EACH APPLICATION TO APPLY A SLIGHT AMOUNT OF PRESSURE THROUGH THE TUBING AND INTO THE WALL MOUNT FRAME AS DIAGRAMED BY THE WHITE ARROW IN (figure 3).**



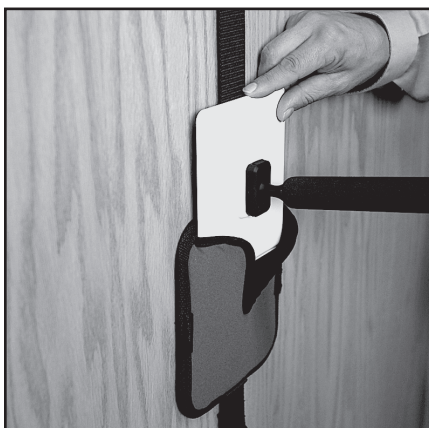
▲ FIGURE 1



▲ FIGURE 2



▲ FIGURE 3



▲ FIGURE 4



▲ FIGURE 5

HOME USE OPTION

To support the patient's Home Exercise Program, a portable Door Mount version of the Wall Mount is available and sold individually. It can be securely fastened to a standard size door and the UE Ranger inserts as shown in (figures 4 and 5). This home version is intended for a single user with anticipated low frequency of height adjustments.

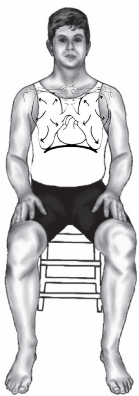
Setting the Tone for Healing

Prior to beginning the use of the UE Ranger Calm®, it is encouraged for your patients to consistently implement a personally preferred means of promoting a relaxed state of being. Devotion to such personal awareness will ultimately translate into a higher level of therapeutic awareness through such supportive movements to come. For starters, devotion to a conscious connection of one's breathing can be very helpful. Preferably not attempting to generate one's own respiratory cycle, rather simply in connection with its existence.

If desired, the following warm-up exercise offers a more encompassing method of intervention designed to re-condition both a balanced resting state, purging the accumulative responses to stressors we all experience, complete with respiratory and associated circulatory support as well to reset the foundation for coordinating healthy movement patterns, free of compensation. The Autonomic Nervous System is by far the most sensitive determinant of whether you can return to a thriving existence or forever exist within a survival means, so it is an important influence to nurture one's overall well-being.

Postural - Circulatory Restoration Program® - Seated Position

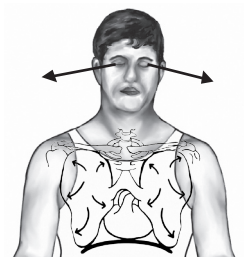
To benefit most from this exercise, first pause to collectively calm your mind allowing yourself to be fully present and ready to engage in a healing process. The emphasis of this form of exercise is to both resolve your sources of persistent physical pain and restore your bodies essential foundation to support a combination of healthy movements and underlying circulatory requirements. The actual process of healing occurs within the combined development of the following prescribed movements along with the resultant responses that follow. Admittedly both these movements and their responses are very subtle, however by maintaining a quiet mind and body you will soon recognize both an enhanced physical awareness and immense easing of your physical restraints. These intended responses to be acknowledged and utilized will be highlighted in the text with an **Symbolizing an Awareness point*. Recall also the emphasis described by your therapist of breathing ideally from your diaphragm without interruption as you execute each step. Holding your breath will diminish the benefit of your efforts as well as perpetuate your pain, circulation and associated restrictive movement patterns.

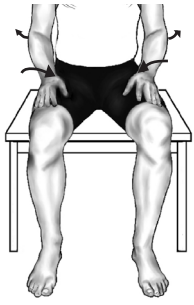


Set up - Seated as shown in a firm chair with your feet flat and rested (toes uncurled – not gripping), your hands resting on your thighs, with your thenar eminence (thumb side) just medial to the crown of your thigh and your spine erect and balanced over your evenly distributed pelvis (sit bones) and if able, not fully reliant on the back rest. Proceed forward by executing in an accumulative progression the following sequence:



1) Begin by closing your eyes and visualizing the thought of a relaxing and comforting image, which ideally requires the utilization of your peripheral vision (sunset, ocean, stars in the sky, good health) **recognize the gradual softening of your eyes*. Next, gently begin to smile **recognizing the subtle doming of your hard palate (roof of your mouth) and progressing to a decompression of your sinuses, opening of your nasal pathway for air movement, and ultimately the enhancement of your respiratory diaphragm*.






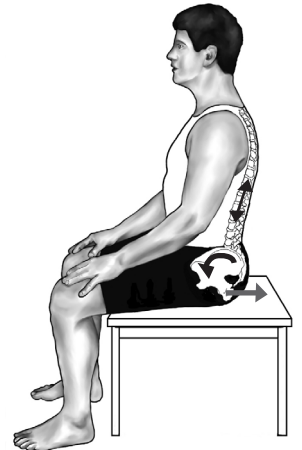
2) Progress by minutely moving your elbows forward and away from your body (slight circumduction) **recognizing and stopping at the point of your distal forearms, wrists and hands begin to move into slight pronation (softening).*

3) Next, as described to you by your therapist, gently extend your wrists (bending them backwards without lifting your fingertips) as to create a small void or space under your palms **recognizing and stopping at the point of feeling your abdominal muscles engage.*



4) Utilize the reflexive engagement of your abdominal muscles to roll forward over your pelvic “sit bones,” **recognizing and stopping at the point of a combined transfer of weight bearing into your palms and slight lengthening of your spine at the junction of your thoracic spine (lowest ribs) and your lumbar spine.*

5) Finally, within each of your inhales, move your elbows slightly further away from body (like angel wings), while very slightly initiating with both hands the very beginning portion of the “A -OK” symbol  **recognizing the point of your breath reaching the greatest depths of your lungs (region of your lowest ribs posteriorly), while simultaneously *recognizing the engagement of your deep shoulder muscles, before returning your elbows to your sides and allowing yourself to fully exhale.*



Note within the motions described as a whole 1-5, the end result being in support of the following therapeutic components of your fullest recovery:

- Unraveling of the confining consequence of Inverted Core Syndrome (available in the “Support” section of our website www.ueranger.com) Subsequent space for your heart and lungs to breathe into.
- Cardio-pulmonary induced circulatory pump
- Mechanical induced circulatory pump – axial peripherally
- Restoration of true postural core foundation and dynamic stabilization of the shoulder girdles

These responses offer a progressive integration of multiple essential links within many movements associated with daily living. Proceed with 10 to 12 full yet relaxed respiration cycles. It is encouraged to perform this exercise multiple times per day – each time carrying away the awareness of a healing calm.

This video offers a patient testimonial and supportive video demonstration of this exercise.



Initiation of Movement

Prior to initiating motion, it is important to recall, our patients have grown accustomed to protecting. While as described, we know motion to be restoratively necessary, yet it must also be recognized as worthy of their trust. Initial trust can be promoted by merging your patient's learned relaxation methods while progressively trusting the full weight of their arm to the support of the UE Ranger Calm®. A useful analogy for restoring healthy movement is much like fastening our shirt, "we need to start in the right hole to end in the right hole." Beginning a motion either in a compensatory or protectively braced manner will continue in such a manner until provided guidance otherwise. It is therefore best; with any motion you prescribe to simply initiate it slow enough that a person doesn't simultaneously hold their breath. Begin there and stay there and the art of healing will forever be in your grasp.

Pure Physical Expression Without Fear

As motion progresses, allow your patient's growing sense of trust and resultant relaxation to "ripple" throughout the kinetic chain as their motion progresses. Such promotion of kinetic chain freedom of movement or rather articulation in a dissociated manner (unlocked from the bound protective or compensatory state) allows the sympathetic branch of the ANS to progressively let down its fight or flight guard. Consequently, we can produce for our patients a "window of relaxed opportunity" to reorganize their coordination of muscle activity away from an inclination of compensations and towards healthy biomechanical movement productions.

Functional Progression of Movement Options

The following Replenishing Mobility Exercises will provide you with an introduction to the foundational principles supporting movement health recovery in a functionally based context. You are certainly encouraged to utilize these principles along with the supportive capacities of the UE Ranger Calm® to personalize the care (beyond these described exercises) in accordance with your individualized patient's needs.

Further, you are also encouraged to refer to the complete Ortho based manual – A Professional Guide to Personalized Healing, which has significant cross over application in relation to breast cancer rehabilitation.

Within each exercise, following the set-up adjustments, the executions of movement are described from the perspective of the user (whenever possible).

PROM Goals

1. Preserve the integrity of the surgical procedure
2. Restoration of a balanced Autonomic Nervous System, absent of the sustained fight or flight influences
3. Restoration of proper resting tone of the full shoulder cervical and torso involvement
4. Restoration of primary or diaphragm produced respiration, absent of neck and shoulder bracing
5. Preserve and enhance the integrity of the circulatory system's role in healing
6. Resolution of pain and swelling sources
7. Reduce the need of medications, eliminating their side effects, thus supporting restorative sleep, digestion and foundational energy reserves
8. Prevent adhesions
9. Resolve and prevent further compensations

This video offers additional support and demonstration of the PROM goals.



Passive Range of Motion PROM - Initiation and Progression of Forward Reaching

Set up adjustments

With the patient in a standing position, adjust the length of the UE Ranger to approximately the height of their elbow or slightly below as to accommodate an initial relaxed positional support. (**figure 1**). If a person is unable to stand, simply duplicate this measurement and all further instructions/applications from a seated position (**figure 2**).



▲ FIGURE 1



▲ FIGURE 2

Place their involved hand in the molded support and comfortably secure it with the overlying strap (**figure 3**). At this point allow sufficient time for their full upper extremity, shoulder girdle and neck to establish a sensation of security and relaxation, similar to that shown in (**figure 4**).

It is of the utmost importance at this point and going forward to fully trust the weight of your involved arm to the support of the UE Ranger. Often times, patients will hold their shoulders in a shrugged position at rest, only to amplify this braced posture as motion progresses. Such an existence will conflict with all efforts to support both your natural healing requirements and your natural movement recoveries.



▲ FIGURE 3

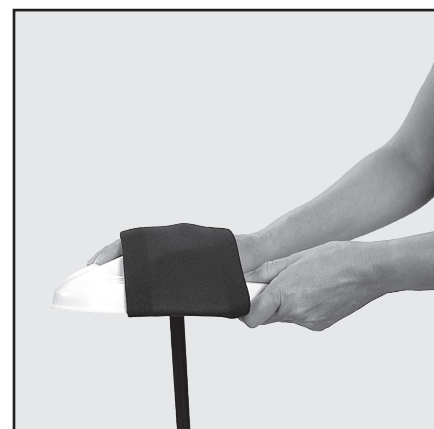


▲ FIGURE 4

For PROM Application - Place their less-involved hand in either position option A (**figure 5**) or position option B (**figure 6**). Position A is recommended in the beginning because it offers the most support. As the patient progresses in comfort and confidence, they may change to position B which offers more freedom of movement. Some patients report they can be more confident that they are producing the efforts of movement from their non-involved arm when they use position B, rather than position A (thus keeping their involved shoulder and arm relaxed). It is encouraged that the rehabilitation professional and the patient talk this through.



▲ FIGURE 5

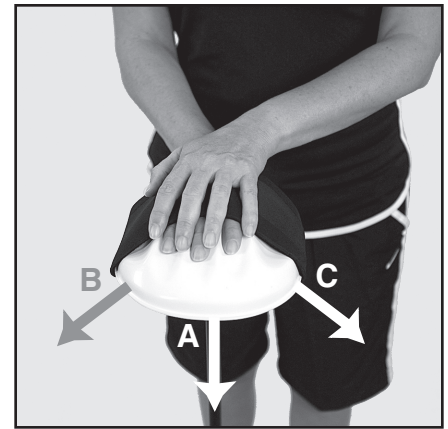


▲ FIGURE 6

Production of Movement

All production of movement should be with the combined efforts of the following criteria:

1. PROM - All production of movement should be from the less-involved upper extremity. You will want to begin with a straight-ahead motion as shown in **(figure 7 and labeled by arrow A)**. As you become more comfortable and under the guidance of your rehabilitation professional, you may vary your planes of motion to correspond with **(figure 7 labeled arrows B and C)**.
2. It is imperative in this stage of motion recovery that the involved humeral head moves independently with “Pure Spin” in its joint (made up of the humerus and the scapula). This means that your humerus and scapula move in a dissociated manner or uncoupled from one another **(figure 8 and supported by Illustration A)**.

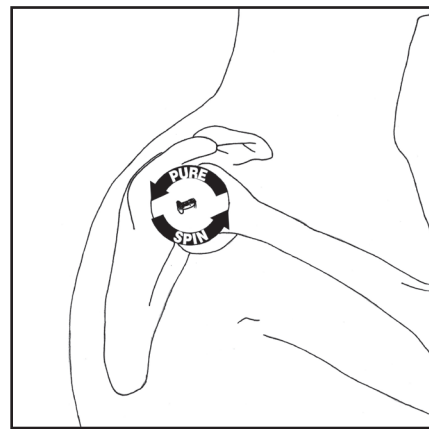


▲ **FIGURE 7**

The ability to support this pure spin motion is made easier by first instructing the patient to visualize reaching



▲ **FIGURE 8**



▲ **ILLUSTRATION A**

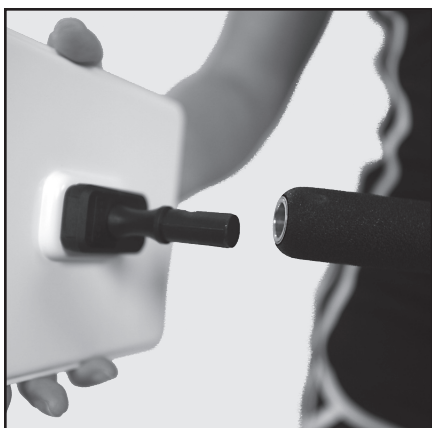
for an intended object (promotion of eye - hand control) and to simultaneously feel as if their elbow is being pulled forward by the guidance of the fingers in pursuit of the imaginary target.

This movement awareness technique promotes the full weight of a person's arm being trusted to the UE Ranger and therefore optimally relaxes the involved shoulder girdle and neck torso region. Achieving this capacity represents the accomplishment (even if momentarily at first) of re-establishing a balance in motor tone influencing the shoulder girdle and neck region and therefore a critical first step in providing the nervous system with a fresh message to both reference and to build from. Sustaining this capacity is essential to resolve the persistence of pain, excessive muscle tension, and swelling. Additionally, this will support the return of progressive movement abilities and respective muscular coordinations. The physical capacity to perceive the accuracy of this motion is termed Kinesthesia and/or Awareness Through Movement.

PROM - Initiation and Progression of External Rotation

Set up adjustments

For this application remove the articulating base from the UE Ranger (**figure 1**). Depending on whether your patient has been advised to maintain their upper arm close to their body or allowed to move into abduction you can have the patient rest their arm against their side or utilize a “bolstered” pillow to accommodate either situation as shown in (**figures 2 and 3**). At this point as in the previous section, prior to the execution of movement allow sufficient time for their full upper extremity, shoulder girdle and neck to establish a sensation of security and relaxation.



▲ FIGURE 1



▲ FIGURE 2



▲ FIGURE 3

All production of movement should be with the combined efforts of the following criteria:

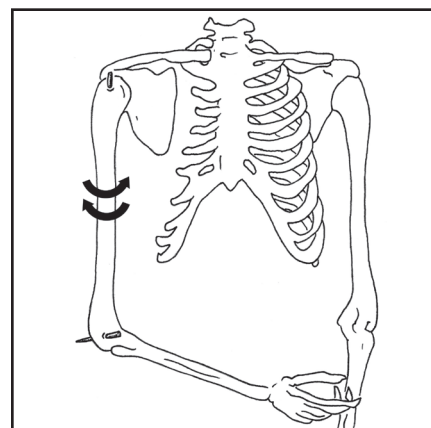
- Following an adequate warm up as described in the forward reaching section or that which is instructed to you by your rehabilitation professional
- The available pain free range of motion
- With the correct biomechanics, including pure spin, but with a different axis of rotation (**figures 4 and 5 supported by Illustration A**)



▲ FIGURE 4



▲ FIGURE 5



▲ ILLUSTRATION A

- Attention and concentration are advised to insure you are producing actual shoulder rotations without mistaking either elbow or forearm substitutions
- The range of motion limit advised by your rehabilitation professional

Active Assistive Range of Motion - AAROM

By definition AAROM means that the involved upper extremity is now contributing to its own movement production. The degree to which the involved upper extremity successfully contributes to the production of motion will vary as a patient re-learns the foundational coordination of healthy motions and thereafter regains the strength and endurance to successfully re-produce these motions. In varying circumstances and to varying degrees, the UE Ranger and the patient's full body supportive kinetic chain, and in some circumstances the non-involved upper extremity should be contributing the necessary influences and assistance of movement to insure the execution of healthy biomechanics.

Within each exercise, following the set-up adjustments, the executions of movement are described from the perspective of the user (whenever possible).

AAROM Goals

1. Preserve the integrity of the surgical procedure
2. Maintain resolution of pain and swelling
3. Preserve the integrity of the circulatory system's role in healing and prevent capsular adhesions and or myo-fascial restrictions
4. Preserve primary or diaphragm produced respiration absent of neck and shoulder bracing
5. Reserve the capacity to achieve restorative sleep and minimize the need for medications with their resultant side effects
6. Facilitate neuro-muscular re-education to support reintegration of coordinated motor activity
7. Maintain resolution of a balanced ANS, absent of the fight or flight influences (evidenced in part by balanced motor tone when at rest)
8. Establish variable planes of graded strengthening/ endurance program free of compensatory patho-mechanics

This video offers additional support and demonstration of the AAROM goals.



Active Assistive Range of Motion (AAROM) Initiation and Progression of Forward Reaching and Elevations

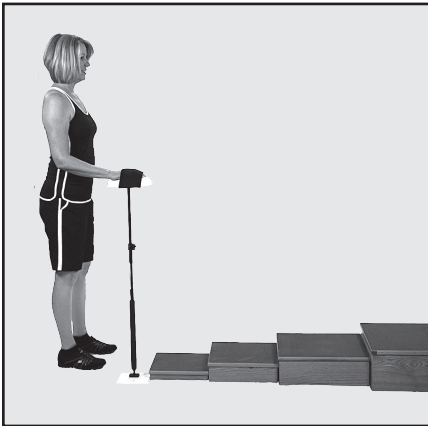
All production of movement should be with the combined efforts of the following criteria:

1. **Within the current capable volitional efforts of the involved upper extremity and its supportive kinetic chain without provocation of pain and or compensations.**
2. **With the necessary supplemental support of the UE Ranger and as needed the lesser involved upper extremity**
3. **With the recognition that an appropriate warm up and cool down are utilized for both safety and optimal benefit.**

*****CAUTION*** NEVER CONTINUE MOTION IF YOU ARE EXPERIENCING ANY PROGRESSION OF PAIN. ANY PAIN STEMMING FROM USE OF THE UE RANGER COULD BE RELATED TO THE FOLLOWING REASONS:**

Reasons for Pain:

- A) Failure to adequately warm up and relax respective upper quadrant muscles
- B) Not supporting a “Pure Spin” motion
- C) Failure to produce other correct biomechanics as movement involves the greater kinetic chain
- D) Overextending your current physical capacities



▲ FIGURE 1

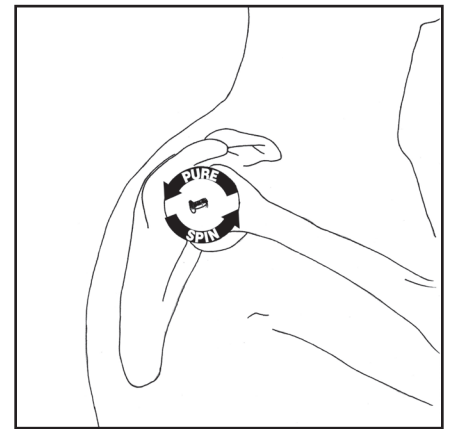
Always begin with a warm up using the base on or near the ground (**figure 1**). All warm-ups and any progressions in height should begin with partial strokes and gradually progress to full strokes.

Partial or Short strokes mean that your forward motions are progressive and pain free. The forward motion is a blend of the contributory movements of the involved shoulder, elbow, forearm, and wrist. Avoid achieving full elbow extension at the expense of an elevated effort from your shoulder. Also, in this first phase of recovery, avoid moving the shoulder into extension (or the elbow behind or past your side) upon the return of forward motion since this can potentially stress the pectoral portion of certain surgical procedures.

It is imperative in this stage of volitional motion recovery to continue the production of the involved humeral head moving independently with “Pure Spin” in its principal joint (made up of the humerus and the scapula). This means that your humerus and scapula move in a dissociated manner or separately of one another (**figure 2 and supported by Illustration A**). This capacity at this stage is indicative of appropriate relaxation, successful motor facilitation and subsequent support of healthy initial biomechanics. Additionally, this will eventually support the return of progressive functional to spontaneous movement abilities and supportive muscle activity.



▲ FIGURE 2



▲ ILLUSTRATION A

Clinical Note: If producing the dissociation of the humeral head on a stable glenoid proves difficult; consider implementing the neuro-muscular re-education of the serratus anterior muscle (See Neuro-Muscular Re-Education section on page 26 of the Ortho manual), which in this described execution will facilitate a stable scapula and more efficiently support the differentiated humeral head mobility within the actively stabilized scapula.

Additionally, the active role of the Supraspinatus (See Neuro-Muscular Re-Education section on page 28 of the Ortho manual) is extremely influential in commanding the balance of communications within the active muscles associated with this and many other progressive functional movements of the shoulder girdle.

Perform up to 6-10 total strokes per height progression intervals by either adjusting the height of the telescopic tube or alternative step progressions. In the early stages only execute 1 to 3 height intervals (**figure 3-5**).



▲ **FIGURE 3**



▲ **FIGURE 4**

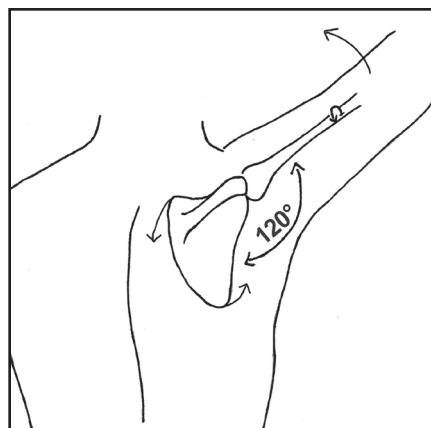


FIGURE 5

For heights in elevation above 70 degrees it is necessary to externally rotate your involved humerus and scapula (**figure 6 and supported by Illustration B**). Observe how Position **B** (described earlier) of your non-involved hand can support this effort.

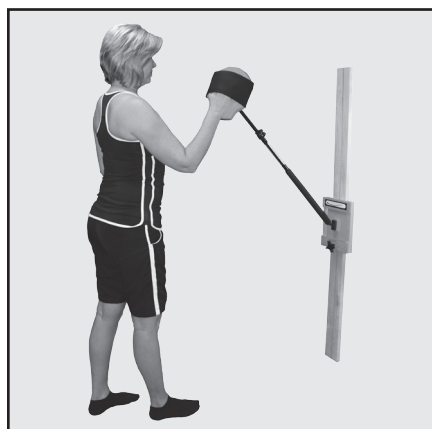


▲ **FIGURE 6**

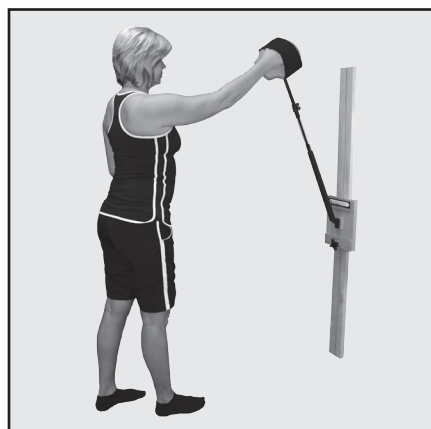


▲ **ILLUSTRATION B**

As you progress in post-operative time, movement awareness, and endurance you will reach up to 3 to 5 height interval increases from your current beginning height and working towards the goal of approximately 70 to 120 degrees of elevation (**figures 7-9**). Note the progressive functional support made possible with applications of the Wall Mount or Door Mount.



▲ **FIGURE 7**



▲ **FIGURE 8**



▲ **FIGURE 9**

Active Assistive Range of Motion (AAROM)

Open Kinetic Chain External Rotation – Standing Position

Set up adjustments

Begin as described to you by your rehabilitation professional with the involved upper extremity supported in a position within the scaption plane and in a comfortable level of elevation (**figure 1**). It is advised to maintain some form of external support for the elbow to rest on (initially that can be your rehabilitation professional's hand which can allow this person to cue the appropriate movement) (**figure 2**) progressing to the Wall Mount with a towel to cushion your support (**figure 3**) or comparable book shelf at home, and finally progressing further to a mild pressure against the wall (**figure 4**). These progressive supports help tremendously to guide the very precise motion requirement of external rotation. Attention and concentration is advised to insure you are producing actual shoulder rotations without mistaking either elbow or forearm replications. For maximum benefit ensure that your motion is opposing gravity.



▲ FIGURE 1



▲ FIGURE 2



▲ FIGURE 3



▲ FIGURE 4

Production of Movement

1. Progress as needed to assist the involved upper extremity through the current available range of external rotation motion. It is recommended (within the safe limits of the involved shoulder muscles) to fully participate in the execution of this effort of motion.
2. Within the safe limits of your capacity to support healthy biomechanics, progressively elevate your upper extremity (**figures 5-12**). Perform up to 6 -10 total strokes per height progression interval and only execute 1 to 3 height intervals initially. As you progress in post-operative time, movement awareness, and endurance you will reach up to 3 to 5 height interval increases from your current beginning height and working towards the goal of approximately 120 to 130 degrees of working height elevation.



▲ FIGURE 5



▲ FIGURE 6



▲ FIGURE 7



▲ FIGURE 8



▲ FIGURE 9



▲ FIGURE 10



▲ FIGURE 11



▲ FIGURE 12

Recognize in (**figure 11 and supported by the arrows**) the ability to influence a simultaneous inferior glide of the humeral head, which bodes well for integrating the active External Rotator muscles into a combined progression of elevation (**figure 12**).

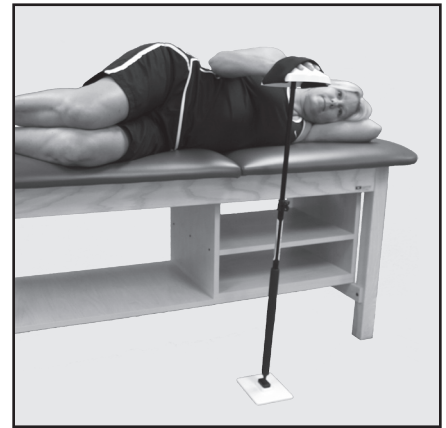
3. Upon fatigue, gradually return to lower elevations and produce pure external rotation with or without support of the elbow at your side as a cool down.

Active Assistive Range of Motion (AAROM)

Closed Kinetic Chain – Side-lying

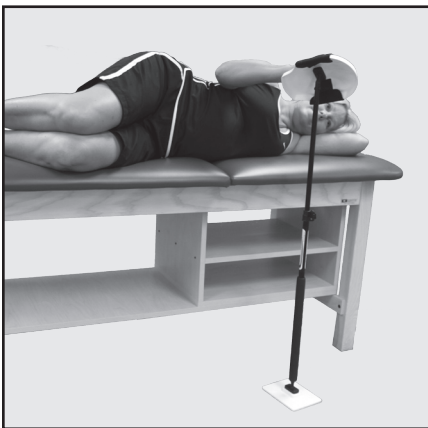
Set up adjustments

Begin with the patient lying on their non-involved side, with the involved upper extremity supported in a position of comfort, with the elbow resting on their side and by the support of the UE Ranger as shown in **(figure 1)**. This position of comfort is typically found with the UE Ranger's hand support adjusted to just at or slightly below the height of the lateral ribs of the involved side. This overall measurement is a rule of thumb. The key is to facilitate the gradual arc of motion near parallel to the plane of the floor while making sure the patient's shoulder with respect to the commonly hypertonic muscles, remain at or near a relaxed tone.

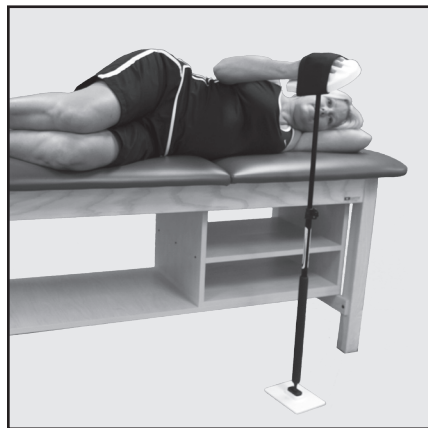


▲ FIGURE 1

Clinical Note: From this position and with the support of the UE Ranger, the patient can successfully work on the endurance of the muscles that support rotation and elevation of both the scapula and the humerus respectively. In this position the motion of elevation is in a gravity lessened influence, thus if the patient finds comfort in this postural setup, they can work on the endurance of executing elevations with a simultaneous investment in challenging either various torso contributions to upper extremity reaching and or distal forearm, wrist and hand maneuvers **(figures 2 and 3)**.



▲ FIGURE 2



▲ FIGURE 3

Production of Movement

Production of movement is solely from the involved upper extremity. (Recall it is extremely important that you allow the UE Ranger to hold the weight of your arm – failing to do so will promote undesirable muscle activity and ultimately conflict with your goals to achieve optimal movement health). Caution should be given as a patient's initial proprioception within this new postural alignment may likely be compromised. It is often very helpful for the rehabilitation professional to manually assist these initial intended motions as in **(figure 4)**.



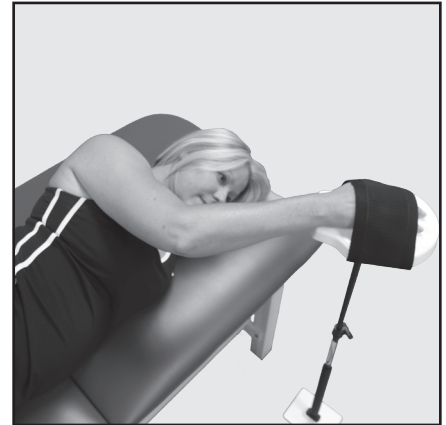
▲ FIGURE 4

To assist you in this effort, imagine your arm reaching for your alarm clock while lying in bed. It is very helpful in properly executing this motion to also imagine your arm floating across water. Finally, it is of great importance with respect to the orientation of the elbow to both:

- Keep the elbow at or below the level of your hand throughout the full execution of each movement as in **(figure 5)**. The tendency will be for you to elevate your elbow to the ceiling which will stress multiple aspects of the upper extremity and principally the shoulder.
- Project your elbow away from your body, while also feeling as if your involved hand is pulling your elbow towards it as in **(figure 6)**.



▲ **FIGURE 5**



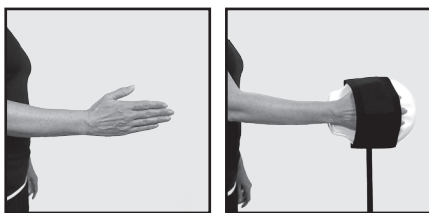
▲ **FIGURE 6**

As you become more comfortable and under the guidance of your rehabilitation professional, you may vary your planes of motion to correspond with both your tolerances and allowances.

Always begin with a warmup by positioning the base as to support your involved upper extremity as described in the set up above. All warmups and any progressions away from your body should begin with partial strokes and gradually progress to full strokes.

Partial or Short strokes mean that your forward motions are progressive and pain free. The forward motion is a blend of the contributory movements of the involved shoulder, elbow, forearm and wrist. Avoid achieving full elbow extension at the expense of an excessive effort from your shoulder.

Full or Long strokes mean that you have developed the capacity to move your elbow into full extension without the binding or straining of your shoulder. You will be taught by your rehabilitation professional that reaching full extension of your elbow requires a specific secondary motion (supination) to occur in your forearm.



Forearm Supination

POST-OPERATIVE • MANUAL INTERVENTIONS

As a manual therapist, have you ever been in the middle of a therapeutic manual intervention and wished you had a third hand? Often this is the case as we feel what the body needs; we are at times unable to follow through as we have run out of a free hand to support that next influence. So, for the manual therapist who espouses the integration of movement health principles into their clinical efforts you have just been given back both of your hands, to mobilize and guide, resist or assist, and facilitate and or inhibit. Within the movement health principles supported by the UE Ranger Movement Health System, your patient becomes an active participant within their current capacities thus supporting the integration of your manual interventions with an Active Afferent Efferent Nervous System. The UE Ranger offers you and your patients the capacity to participate in:

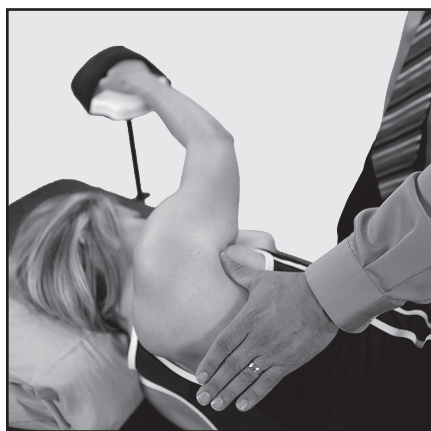
- Positional passive static mobilizations
- Soft tissue mobilization
- Lymphatic drainage and circulatory support techniques
- Dynamic active mobilizations with local and or full kinetic chain integration
- Rhythmic stabilizations and other proprioceptive neuro-muscular facilitation techniques
- Functional active self-stretching
- Functional positional manual cueing to facilitate and or inhibit
- Functional positional myofascial release

This manual is not intended to teach specific manual interventions; rather it is designed to offer clinical opportunities to blend with your preferred manual skills. The following are examples of such clinical capacities. Note, it is encouraged to integrate circulatory support within each of these commonly restrictive components of the shoulder girdle:

1. S/L UE Ranger supported Scapulo Thoracic Joint Passive Mobilizations at an appropriate current soft tissue restriction (**figure 1**)
2. S/L UE Ranger supported Neuro-muscular re-education of scapular ER via manual resistance at the inferior lateral angle, during active elevation (**figure 2**)
3. S/L UE Ranger supported isolated thoracic costal vertebral and intercostal joints passive mobilizations during active elevation (**figure 3**)



▲ FIGURE 1



▲ FIGURE 2



▲ FIGURE 3



▲ FIGURE 4



▲ FIGURE 5



▲ FIGURE 6

4. S/L UE Ranger supported ACJ passive mobilizations during active elevation (**figure 4**)
5. H/L UE Ranger supported SCJ passive mobilizations into an inferior glide during active elevation (**figure 5**)
6. H/L UE Ranger supported clavicular passive mobilizations during a supported static position of elevation (**figure 6**)



▲ FIGURE 7



▲ FIGURE 8



▲ FIGURE 9

7. H/L UE Ranger supported GHJ inferior posterior glide passive mobilizations during active elevation (**figure 7**)
8. H/L UE Ranger Pectoral Myofascial Release during a supported static position of elevation (**figure 8**)
9. Standing supported elevation; passively mobilizing the component movements of the STJ into external rotation and clavicle into a superior roll during active elevation (**figure 9**)
10. Standing Supported Elevation; passively mobilizing the component movements of the GHJ into a forward glide and the clavicle into a superior roll **during the active assistive movements** of combined ER, and elevation (**figure 10**).

Following the executions of your patient assisted manual interventions it is advised for your patient to perform at their current level of volitional movement capacity (PROM, or AAROM) a functionally meaningful and compensatory free sequence of motions as to reintegrate any new mobility into the progressive recovery levels of movement health.



▲ FIGURE 10