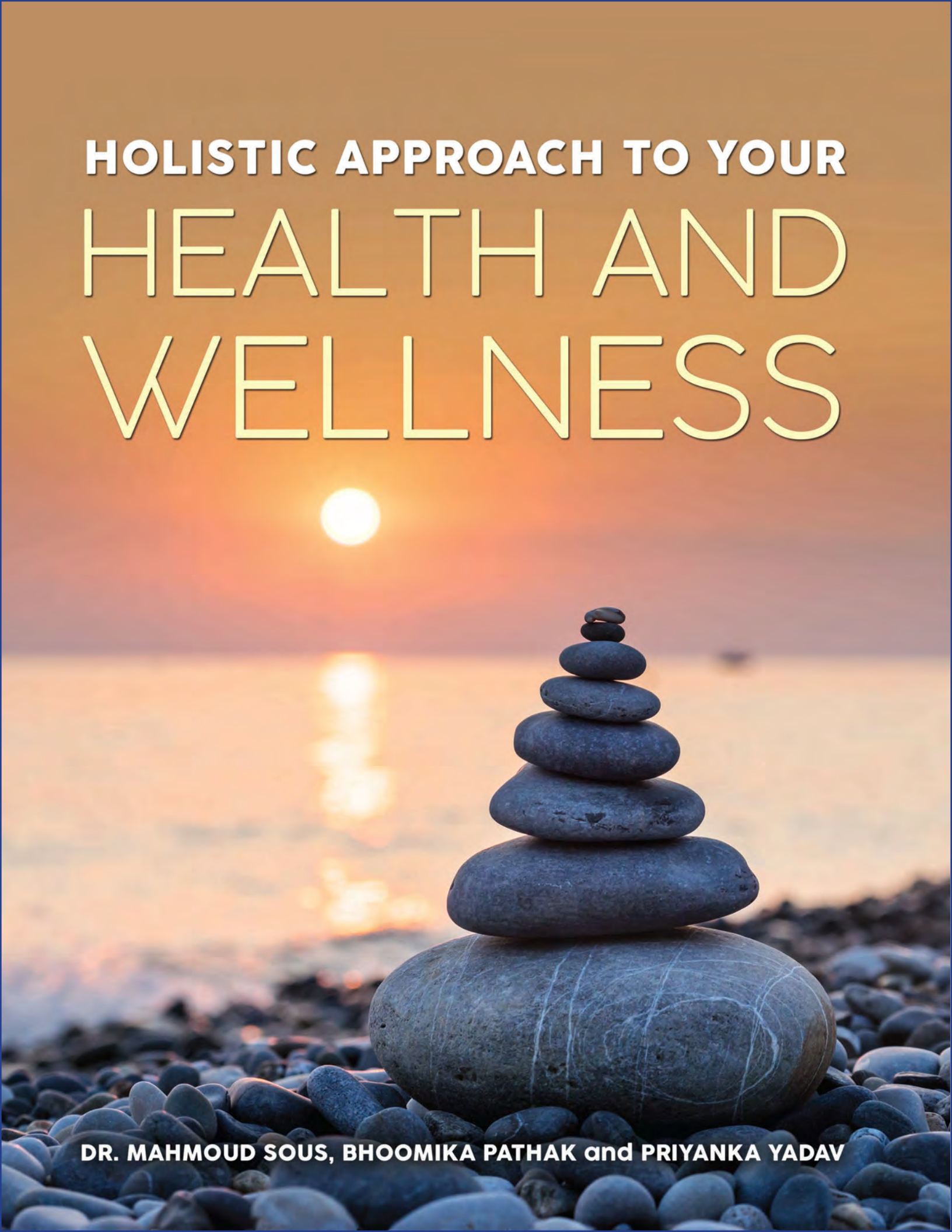
HOLISTIC APPROACH TO YOUR HEALTH AND WELLNESS



DR. MAHMOUD SOUS, BHOOMIKA PATHAK and PRIYANKA YADAV

HOLISTIC APPROACH TO YOUR HEALTH AND WELLNESS

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Mahmoud Sous – Ph.D.

During the period of 1995-1999, I went to the medical school in Poland to arch about the various methods of back pain treatment. After finishing my , I took variety of courses including naturopath, acupuncture, and manual niques. This gave me an idea that exercises, and massage could be helpful in tment of chronic pain. But my findings didn't stop me here, I also worked as turopath practitioner in Canada where I got familiar about treatments with ese medicines, osteopath techniques and some other manual therapies :h helps in pain management.

Fixing injuries requires an understanding of anatomy and biomechanics. : is why my research and treatment belong to the holistic approach of using erent techniques and remedies for the treatment of back pain. In 1990, I ze that there are some complex spinal aspects and issues which leads to of back pain. So, from my ca ies I formulated a guideline which is clear and easy to understand and will fix your issues.

My goal is to help people visualize how the body functions and what happens inside when y erience pain. Healing requires to focus on one's action because pain results due to faulty actions a ements. This thought motivated me to work on a book which will include all home remedies whe ple can treat themselves to fix their pain. I have included knowledge based on my clinical research usi ual massage therapy, food habits, nutrition facts, heat, sauna, hydrotherapy, cold water treatmer :h overall helps in pain management. It gives me pleasure to introduce this book to the community whe ve shared all my experienced treatment plans.

Bhoomika Pathak (Physiotherapist)

After graduating in 2014, I have been working with various clinical conditions like spo injury, musculoskeletal injury, and neurological disorders for 7 years. Along with I Mahmoud, I have worked on treatment and pain management for back pain populatic With all the successful outcomes till now, we have designed a home remedy book w 24-hour stepwise guide to treat your back pain.

Priyanka Yadav (Physiotherapist)

Since completing my study in Physiotherapy, I always aspired to work for the socie Seeing people suffering motivated me to work for this book. Along with Dr. Mahmouc have been constantly working with various use of herbs and its effects in pa management.

Sous's Team who have contributed with their approaches in this book,

- Dr. Fauzia Ahmed – Chiropractor
- Dr. Youssef Elaridi – Reg. Massage therapist
- Larry Wang – Acupuncturist
- Dr. Alexy Kaganovsky - Naturopath
- Sheena Anand – Resident Physiotherapist
- Navjot Kaur – Physiotherapist
- Doris Valentin – Massage therapist

This book will include a complete management of your back pain starting with pain management, correction of posture, self exercises for strengthening, self-massage techniques, incorporation of herbs to reduce inflammation and stiffness, hydrotherapy, heat and cold application, nutritional food to eat during pain. It will be a stepwise guide to treat and monitor your back and restore your functions. Find out what are the factors which are causing you back pain and start healing it today. This could be useful to any individual who is experiencing back pain needs a cure. Hopefully, this book will give you a glimpse into those other areas. So please accept this humble offering of help which represents my current understanding as of today this book is published.

We believe in a Pain-Free Society!

Contents

CHAPTER 1: HISTORY AND DEVELOPMENT OF MASSAGE THERAPY

Massage is the manipulation of the body's soft tissues. Massage techniques are commonly applied with hands, fingers, elbows, knees, forearms, feet, or a device. The purpose of massage is generally for the treatment of body stress or pain. The massage practitioner has been referred to as a "massage technician" or "massotherapist". In the past, a male massage practitioner might have been called a "masseur" (ma-SUR), and a female practitioner a "masseuse" (ma-SOOS). Today, professionally trained men and women prefer to be called massage practitioners or massage therapists. Massage therapy is part of a traditional holistic system of healing methods that began about 5,000 years ago.

The origin of massage therapy and ancient time:

Ancient China (2700 B.C.E.): The earliest date of origin for massage therapy was back in 2700 B.C.E, which was about 4700 years ago. Acupuncture involves the use of needles placed at meridian points to promote better health and wellness. Similar to acupuncture, acupressure involves the use of hands, fingers, and sometimes massages tools on precise locations in your body to provide similar health and wellness to your body. The only difference in acupressure is that a practitioner does not use needles but applies pressure in the same spots where needles would typically go.

Ancient Egypt (2500 B.C.E.): About 200 years later, the reflexology technique was developed by the ancient Egyptians, and this was a vital part of some of the largest cultures in ancient history, including ancient Greece and Rome. While the use of reflexology has ancient roots, Western medicine and current healthcare techniques have yet to fully understand everything that reflexology has to offer, which is why research continues to be vital in this area. This form of massage applies pressure to a certain part of the foot, which controls a particular organ in the body.

Ayurvedic Medicine (1500 B.C.E.): Fast forward about a thousand years in time and you will find that massage therapy shifts to the ancient Hindu practice of Ayurveda medicine. Ayurvedic Medicine holds that the mind, body, and spirit are all connected and when one substance is not functioning properly, it negatively affects the others. This symbiotic relationship explains how health, illness, and medicine are viewed and practiced in Ayurvedic Medicine.

Japanese Massage (1000 B.C.E.): Around the year 1000 B.C.E., Japanese Buddhist monks, who were training in China, were introduced to Tui Na, which is a massage modality in Traditional Chinese Medicine (TCM). Upon returning to Japan, the monks added their own modifications to Tui Na, which eventually became its own distinct massage modality, known as Anma. During the 1940's, Anma,

along with massage techniques from other modalities were codified by Tokujiro Namikoshi into what we now know as Shiatsu.

Ancient Greece (800-700 B.C.E.): One of the most influential cultures in history were the ancient Greeks. Because the Greeks had a strong sense of a physical culture, it is no surprise that massage was a common practice. Specific techniques included decreasing the "knots" throughout muscle tissue in the body through therapeutic rubbing. This practice is very similar to modern-day techniques employed by Sports Massage Therapists.

Hippocrates (500 B.C.E.) The fifth century B.C.E. era was vital to the history of medicine, as this was the era of Hippocrates. As a medical pioneer, Hippocrates prescribed treatments for injuries, which included friction and rubbing as a form of healing. Within his treatments and prescriptions, Hippocrates promoted overall wellness by encouraging a good diet, exercise, ample sleep, and music. In many ways, his system of healing had more in common with holistic medicine than with conventional medicine.

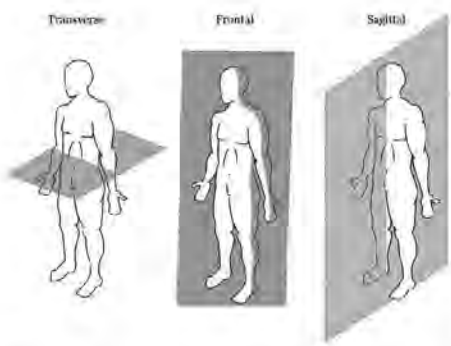
Modern Western Medicine (1800s-Present Day): Modern Massage Therapy was largely developed during the 19th century. Per Henril Ling created what we know today as Swedish massage. The method created by Dr. Henril was refined by Johan Georg Mezger, who introduced several techniques based on Swedish gymnastics, such as the stroke movements, to the massage modality. While our scientific knowledge has changed over the centuries, massage as an applied healing practice has not changed dramatically. Afterall, the human body has not changed significantly since the ancient Egyptians. Because massage treats the most common kinds of pain with the most natural form of medicine (human touch), it transcends the particulars of human culture and history. So long as people are prone to discomfort and illness, massage will continue to exist as a healing practice.

As long as the benefits of massage therapy remain, these traditional practices will continue to follow society into the future. And while these practices may be improved upon or altered, as seen in the past, massage therapy is likely to see a closing of the gap between conventional and alternative medicine, with massage being considered as part of an overall healthcare plan. Given the advancements of technology, there may come a time where we see science and technology integrated into conventional massage to lift and improve the benefits it has on a patient. In recent years we have seen the emergence of massaging chairs being used in addition to massage treatment, while immersion techniques as seen in sense deprivation tanks may be incorporated into traditional massage practices to incorporate a multi-level sensory experience. So long as society seeks relief from pain or finds comfort in relaxation, massage therapy will continue to be on the leading edge of holistic medicine and treatment.

CHAPTER 2: REGIONAL ANATOMY

Human anatomic structures are described spatially relative to the anatomic position, defined for the human as an erect position with the palms of the hands facing forward. Structures on the "front" side of the body are described as being anterior, whereas those on the "back" of the body are termed posterior. Similarly, alternate terms may be used in referring to directions aimed at the head or tail. Cranial or superior means "toward the head," whereas caudal or inferior refers to "tailward," although neuroanatomists prefer the term rostral for cranial or superior.

The terms superficial and deep are used to describe positions relative to the surface of the body from any aspect. Alternate terms for superficial and deep are external and internal, respectively. Proximal and distal are terms generally applied to positions close to or away from the body, respectively. Medial and lateral are terms applied in relationship to the midline of the body.



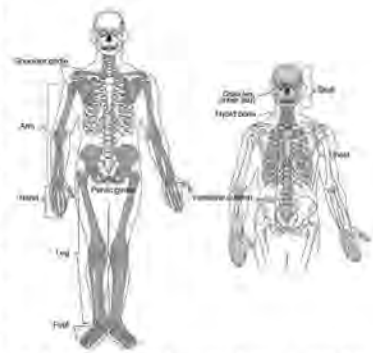
The median plane passes vertically through the body from anterior to posterior at the midline. This plane divides the body into symmetric right and left halves, except for certain areas of the viscera. This plane may also be referred to as the midsagittal plane. Any plane parallel to this plane is simply a sagittal plane. A plane through the body at right angles to the midsagittal plane is the horizontal or transverse plane, providing a cross section with superior and inferior parts. Another plane passes at right angles to the midsagittal plane, again in a vertical direction, and is the frontal or coronal plane, dividing the body into anterior and posterior sections.

Skeletal System:

The elements of the skeletal system—bone, cartilage, and the joints—are composed of intercellular materials and cells specialized in performing certain functions for the body. Functions unique to this system include support, protection, providing attachment for muscles, leverage, mineral storage, and blood formation. Protection is afforded to the soft tissues of the body, including the viscera, lungs, and brain, by encasing them in partially enclosed structures, such as the rib cage and pelvis, or in an enclosed chamber, the skull.The skeletal system also provides sites of attachment for skeletal muscles along the bones and across the joints. The various parts of the skeletal system then can be used as levers for the production of motion as a result of muscle contraction. In addition to their function in providing leverage, bones become calcified by mineral deposits during development and growth and, therefore, serve as reservoirs for mineral storage. The predominant minerals stored are calcium, magnesium, and phosphate.

The skeletal system, composed of 206 bones, is divided into the axial skeleton and the appendicular skeleton according to the following distribution: Axial Skeleton - Skull 28, Hyoid

1, Vertebral Column 26, Ribs and Sternum 25. Appendicular Skeleton - Upper Limbs 64, Lower Limbs 62. This number is not constant because slight variations can exist among individuals. Many bones do not fuse together until after infancy; therefore, infants possess more bones than adults.



The axial skeleton comprises the bones making up the longitudinal axis and protects the spinal cord, brain, and vital organs. It also supports the head and neck, along with the trunk and its appendages. A major part of this portion of the skeleton is the skull, composed of many bones more or less tightly sutured together forming the cranial vault to protect the brain, as well as bones forming the face. The vertebral column is the major foundation of the skeleton and protects the spinal cord. Attached to the vertebral column are the ribs, which enclose and protect the lungs and heart and attach anteriorly to the medial, anteriorly placed sternum. The five fused sacral vertebrae and four coccyx form part of the pelvis, serving to protect the pelvic viscera. These last nine constitute the remaining components of the axial skeleton.

The appendicular skeleton, composed of some 126 bones, makes up the remaining skeletal system. The bones of the superior extremity include those of the hand, arm, and pectoral girdle. The pectoral girdle attaches the bones of the superior extremity to the axial skeleton. The inferior extremity includes the bones forming the foot and leg and the pelvic girdle. Here the pelvic girdle attaches the extremity to the axial skeleton.

Bone classification:
Bones may be classified on the basis of their general shape. These shapes include long bones, as found in the arms and legs, short bones, as in the wrist and ankle, flat bones, like those forming the skull, and irregular bones, such as the vertebrae. Sesamoid bones are also described as a separate category. Bone is a composite of cells and organic matrix secreted by bone cells with deposited inorganic salts crystallized within the matrix.

The tubular design of long bones, consisting of a thin layer of compact bone external to spongy bone with its trabeculae, increases the structural strength of the bone. The articular ends of bones usually covered by the articular cartilage are designated as condyles or heads. The shaft of the bone may possess several characteristic landmarks indicating much information. Terms used to describe these features include smooth areas, indicating a periosteum cover only; elevations, in the form of lines, crests, ridges, processes, tubercles, tuberosities, and spines, indicating points of attachments; depressions, such as pits, foveae, and fossae, indicating intervals between elevations or sites where a structure may be housed; grooves and sulci, indicating linear depressions housing particular structures; foramina and notches, indicating openings or holes; and canals or meatuses, indicating passageways or tunnels.

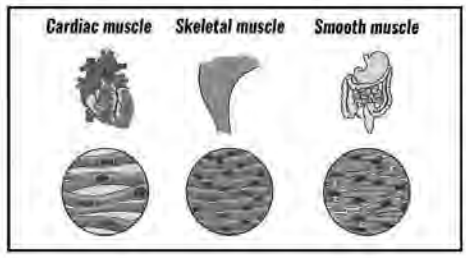
Joints of body:

Two or more bones coming together form a joint. Joints can be classified as fibrous, cartilaginous, or synovial, depending on the structural articulations of the opposing bones. Fibrous joints include two types: syndesmoses and sutures. The syndesmosis joint permits only slight movement between the two bones, which are separated by a layer of fibrous connective tissue. Sutures are joints like those between the flat bones of the skull. Cartilaginous joints are represented by synchondroses and symphyses. Opposing bony surfaces of this group are united by cartilage.

A synchondrosis is a temporary joint that will eventually be ossified into a bony component. A symphysis is a cartilage joint between two bones. It is located in the midline and is interposed between the fusion of the bones, as in the mandibular symphysis and the pubic symphysis. Synovial joints, the most abundant type in the body, afford the greatest degree of joint movement. The articular surfaces of the bones are covered by hyaline cartilage. The entire joint is in turn covered by ligaments forming an articular capsule, which is lined by synovial membrane.

Occasionally, the joint is separated by an articular disk (meniscus). This meniscus is continuous with the capsule peripherally, but its articular surfaces are not covered with synovial membrane. A variety of synovial joints exist in the body, each permitting only a particular type of movement. These movements are categorized using six different terms. Because most of these terms are not associated with the joints of the head and neck, they will be defined as discussion of individual joints requires. Articulations of the synovial joint are usually of a gliding or sliding character. The joint contains synovial fluid, which acts as a lubricant and also supplies nutrients to the avascular articular cartilage. Synovial joints are richly supplied with sensory nerve endings, principally of the proprioceptive variety, as well as with pain and stretch receptors. Articular capsules and ligaments are highly vascularized, forming capillary networks over the synovial membranes.

Muscular System:



Cells specialized to function in contraction on stimulation comprise the muscles of the body. Skeletal muscles are usually attached from bone to bone, across a joint. On contraction, muscles change the angle of the joint, producing motion. In this way, muscles acting in concert, effect movement. Such motion may be under conscious control (voluntary) or not under conscious control (involuntary). The body has three types of muscles: skeletal, cardiac, and smooth. The first two are striated and the last is not. Skeletal muscle is under voluntary control, whereas cardiac and smooth muscles are involuntary.

Smooth muscle is a nonstriated, fusiform muscle containing a centrally placed nucleus. This involuntary muscle is the contractile element in vessel walls and forms the walls of the viscera, where it forms longitudinal and circular layers reinforcing the hollow viscera. Contractions of these layers in the gastrointestinal (GI) tract are responsible for peristalsis. Each hair of the skin possesses a smooth muscle attached at its base. Contractions of these muscles causes "goose- flesh." Because smooth muscle is involuntary, it is innervated by the autonomic nervous system.

Cardiac muscle is found mostly in the muscular pump, the heart. Cardiac muscle fibers are striated in a fashion similar to skeletal muscle cells, but each cell possesses only one centrally located nucleus. Features unique to cardiac muscle are its branching and its anastomosing, or joining together, of the cells, and its transversely oriented intercalated discs, located at the junction of any two fibers. This muscle type is unique in that it possesses an ability to modify its contractive actions by altering the wave of impulses received from the nervous system.

Skeletal muscle is by far the most abundant muscle in the body. In fact, it comprises about 40% of the total body weight. Each skeletal muscle fiber is encased in a thin connective tissue covering, the endomysium. A muscle fascicle, composed of a group of muscle fibers, is bundled into a separate connective tissue sheath, the perimysium. The entire muscle, composed of many fasciculi, is wrapped in yet another connective tissue sheath, termed the epimysium or deep fascia. At the attachment to bone, the endomysium, along with the epimysium and perimysium, merge to form the tendon, a dense, regular, collagenous connective tissue, silvery white in color.

Tendinous attachments to bone are usually described as the origin and insertion of the muscle. The origin is usually the more proximal and/or fixed area, with the insertion being the more distal or movable area. Movement is usually described relative to the muscle insertion position moving toward the origin while the body is in the anatomic position. Muscle action is described according to the movement effected in the part in motion from the anatomic position. Flexion is described as motion that reduces the angle of a joint, whereas extension increases the joint angle. Adduction and abduction describe motion toward and away from the body centerline, respectively. Terms describing movements of the head and neck protrusion, retraction, elevation, rotation, and depression are self-explanatory.

Often, names assigned to muscles reflect the architecture of the muscle, its form or shape, its attachments and action, or, in some cases, a combination of these features. However, seldom does a muscle function independently. Indeed, movements are so complex that muscles must function in a cooperative and integrated manner to accomplish a total desired movement. Muscles may be prime movers or synergists, which assist a prime mover. Certain other muscles, such as the strap muscles attached to the hyoid bone, serve as fixators, so that other actions may be initiated by yet other muscles. Antagonists function in such a manner that the action they develop is in opposition to the desired function of yet other muscles (agonists). In addition to aiding in the production of smooth movement, antagonists protect the musculoskeletal system from damaging itself, as might occur through a violent movement. Voluntary muscle contraction is controlled by nerves that interact with the muscle fiber at the motor end plate stimulating the muscle fiber to contract. Other nerve fibers enter the muscle to relay sensory and proprioceptive information back to the central nervous system.

CHAPTER 3: BIOMECHANICS OF BODY MOVEMENT

Biomechanics is the science of movement of a living body, including how muscles, bones, tendons, and ligaments work together to produce movement. Biomechanics includes not only the structure of bones and muscles and the movement they can produce, but also the mechanics of blood circulation, renal function, and other body functions. These are the key areas that biomechanics focuses on:

- Dynamics: Studying systems that are in motion with acceleration and deceleration
- Kinematics: Describing the effect of forces on a system, motion patterns including linear and angular changes in velocity over time as well as position, displacement, velocity, and acceleration are studied.
- Kinetics: Studying what causes motion, the forces, and moments at work
- Statics: Studying systems that are in equilibrium, either at rest or moving at a constant velocity

Biomechanics of neck: The neck is comprised of seven cervical vertebrae from C1 to C7, hyoid bone, manubrium of sternum and clavicles. The cervical spine has a lordotic curve (C shaped curve. According to peculiarities of cervical vertebrates, it could be divided into two groups:

- Superior cervical group made up by C1 (atlas) and C2 (axis).
- Inferior cervical group made up by C3 to C7.

Superior Cervical Group: The first two cervical vertebrae differ considerably from the others. Atlas - C1, is a ring-like shape, it lacks a body and a spinous process. Axis - C2, has a vertebral body. Its most distinctive feature is the odontoid process or tooth which is placed vertically on the superior surface of the vertebral body with two articular facets (anterior and posterior) which articulate with atlas bone and atlas transverse ligament. C2 has a smaller and triangular vertebral foramen.

Inferior Cervical Group: C3 to C6 has similar characteristics such as smaller vertebral body with spinous processes, two pedicles directed backwards, and transverse process located anteriorly. C7 may be considered typical or atypical but has two distinct features. The first is that unlike the rest of the cervical vertebrae, is that the vertebral artery does not traverse the transverse foramen. The second is that it contains a long spinous process, also known as "vertebra prominent".

Cervical spine joints: Joints between vertebrae are made for spine mobility, Movements of superior cervical spine joint and inferior cervical spine joints functionally completing each other's allowing movements like rotation, flexion, extension, and inclination of head.
Superior cervical spine joints:

- Atlanto-occipital joint is aligned to permit movement of nodding (Flexion and extension) and turning (Lateral flexion and rotation)
- Atlanto-axial joint: It compromise three synovial joints, one central Atlanto-odontoid joint and two lateral Atlanto-axial joints

Intervertebral joints: Below C2 adjacent cervical vertebrae are linked by intervertebral discs at inter-body joint (symphysis). Discs allow and restrain movement. These joints are saddle

articulation. It is reinforced by anterior longitudinal ligament anteriorly and posterior longitudinal ligament posteriorly.

Apophyseal joints: It is formed by articulation of inferior facets of vertebrae and superior facet of adjacent vertebrae. Direction and range of movement of these joints depend on orientation of articular facets. These joints allow flexion, extension, rotation and lateral flexion. Degenerative changes at these joints are very common due to weight-bearing functions.

Ligaments of Cervical Spine

Stability of this region depends on integrity of ligaments of upper cervical spine, and this has an important consideration in examining and treating cervical region. Ligaments from anterior to posterior:

- Anterior Atlanto-occipital membrane: it connects between foramen-magnum above and atlas below, it continues with anterior longitudinal ligament.
- Apical ligament: it is short and attaches anterior part of foramen-magnum.
- Alar ligaments: they are symmetrically placed and inserted onto occipital -condyles. Rotation to right is limited to by left alar ligament and vice-versa. Damage of Alar ligaments by trauma or inflammatory disease can result in increased axial rotation between occiput and atlas and atlas and axis [9]
- Membrane of Tectoria: Connecting posterior surface of body of axis to the basioccipital. It is prolongation of posterior longitudinal ligament, and it is found in internal surface of vertebral canal.
- Transverse ligament of Atlas.
- Accessory atanto-axial ligaments
- Posterior atlanto-occipital membrane
- Lateral atlanto-occipital ligaments
- Lower Cervical Ligaments:
- Anterior longitudinal ligament: it is strong band lies anterior to vertebral body. It is relaxed in flexion and taut in extension.
- Posterior longitudinal ligament: it is posterior to vertebral bodies and lies in vertebral canal. It stretches in neck flexion and relaxes in neck extension.
- Ligament flava: It is yellow elastic tissue; it connects laminae of adjacent vertebrae. It allows flexion to occur and prevent hyper-flexion by breaking movement at end of range.
- Ligamentum nuchae: it is a fibro-elastic membrane which extends from occiput to spine of all cervical vertebrae. It helps in stability of head and neck especially in head flexion /acceleration injuries. It limits flexion and provides an attachment to Trapezius and Splenius capitis.

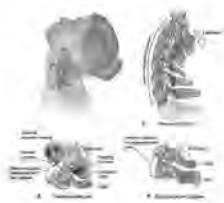
Intervertebral Discs: It makes about 25% of cervical spine height, there is no disc between occiput and C1 or between C1 and C2. Intervertebral discs consist of both nucleus pulposus and annulus fibrosis.

Cervical Nerve Roots

Although there are 7 cervical vertebrae's, there are 8 nerve roots as there is a root between occiput and C1. The roots are named for the vertebrae below.

Arthrokinematics of neck:

Flexion: Head slides back and roll forward on top of C1. C2-7: top facet glides anterior and upward on the inferior facet. Apophyseal joints act like rails that guide movement.



Extension: Exactly the opposite of flexion. Head rolls back on C1. C2-7 facet glides posterior on inferior facet.

Rotation: During right rotation apophyseal joints on the right side do extension and on the left flexion. Opposite happens during left rotation.

Lateral flexion: During right lateral flexion apophyseal joints on the right side do extension and, on the left, flexion. Combined with same side rotation.

Biomechanics of shoulder joint:

The bones that make up the shoulder complex are humerus, scapula and clavicle. The glenohumeral (GH), acromioclavicular (AC) and sternoclavicular (SC) articulations constitute the shoulder complex. In addition, the scapula and the thorax have one "functional" articulation known as scapulothoracic joint.

The SC joint is the upper extremity's only bone connection to the axial skeleton. The ST joint consists of the scapula gliding over the rib cage during upper extremity movements without any physical bone-to-bone attachment. The GH joint is a ball and socket synovial joint in which the convex surface of the humerus articulates with the concave surface of the glenoid fossa of the scapula. Because of the humeral head's high surface area in comparison to the fossa, the joint has limited bony congruency and so relies largely on surrounding soft tissues for structural support.

Ligaments of GH joint: Together, the Joint Capsule and the Ligaments of the GH Joint work to provide a passive restraint to keep the humeral head in contact with the Glenoid Fossa.

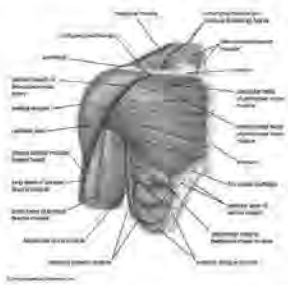
Superior Glenohumeral Ligament: Limits external rotation and inferior translation of the humeral head. Arises from the glenoid and inserts on the anatomical neck of the humerus.

Middle Glenohumeral Ligament: Limits external rotation and anterior translation of the humeral head. Arises from the glenoid and inserts on the anatomical neck of the humerus.

Inferior Glenohumeral Ligament: Limits external rotation and superior and anterior translation of the humeral head (anterior portion). Limits internal rotation and anterior translation (posterior portion). Arises from the glenoid and inserts on the humerus just beyond the lesser tuberosity.

Coracohumeral Ligament: Split into anterior and posterior divisions by the biceps tendon. Anterior portion limits extension while the posterior portion limits flexion. Both divisions limit inferior and posterior translation of the humeral head. Helps to support the weight of the resting arm against gravity. Runs laterally from the coracoid process to the humerus, covering the superior Glenohumeral Ligament and blending with the Superior Joint Capsule and Supraspinatus Tendon superiorly.

Transverse Humeral Ligament: This ligament serves to keep the tendon of the long head of the biceps in the bicipital groove.



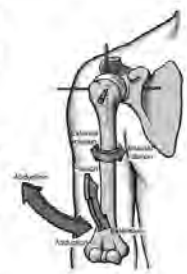
Muscles of Shoulder joint: The musculature of the shoulder region can be subdivided into the global movers of the shoulder and the fine-tuning stabilizers of the individual articulations. The larger muscles such as the trapezius, the levator scapula, the pectoralis, the deltoids, the serratus anterior, the latissimus dorsi, the rhomboids, the teres major, the biceps, the coracobrachialis, and triceps muscles are responsible for various synergistic activities during shoulder movements. Conjointly as agonist and antagonist couplings, they allow for the gross motor movements of the upper quadrant. More specifically to the GH joint, the fine-tuning stabilizers are just as important to the shoulder complex as the global movers for coordinated and smooth shoulder movements.

The stabilizing muscles of the GH articulation, the supraspinatus, subscapularis, infraspinatus, and teres minor, are often summarized as the rotator cuff (RC) complex and attach to the humeral head within the glenoid fossa. Collectively, they act as the dynamic stabilizers of the GH joint by maintaining a centralized positioning of the humeral head within the glenoid fossa, in both static and dynamic conditions. It has been suggested that the tendons of the rotator cuff muscle blend with the ligaments and the glenoid labrum at their respected sites of attachments, so that the muscle contractions can provide additional stability by tightening the static structures during movement.

The synchronized contractions of the RC muscles must maintain the centralized positioning of the humeral head during movements to avoid the physical encroachment of tissues,

predominantly anteriorly or superiorly to the GH joint, which has been linked to injury and pain amongst the shoulder regions. As previously noted, due to the anatomical passage of the common RC tendon within the subacromial space, the RC tendons are particularly vulnerable to compression, abnormal friction, and ultimately an impingement (pinching) during active tasks. Proper alignment of the glenohumeral head is important for the healthy engagement of the shoulder joint in activities of daily living.

Arthrokinematics of Shoulder joint: The arthrokinematics below are described for the open kinematic chain since most functional tasks of the glenohumeral joint occur as a movement of the humerus on the glenoid.



- Flexion: Pure Spin of the Humerus on Glenoid (Posterior Spin when following greater tuberosity).
- Extension: Pure Spin of the Humerus on Glenoid (Anterior Spin when following greater tuberosity).
- Abduction: Superior Roll of the Humerus, Inferior Glide of the Humerus.
- Adduction: Inferior Roll of the Humerus, Superior Glide of the Humerus.
- Internal Rotation: Anterior Roll of the Humerus, Posterior Glide of the Humerus.
- External Rotation: Posterior Roll of the Humerus, Anterior Glide of the Humerus.

Biomechanics of elbow joint:

The elbow increases the flexibility of the upper limb. It also transmits forces between the arm and the forearm and acts as the axis for the forearm lever system. The elbow is a complex of three joints of humerus, ulna and radius: humeroulnar, humeroradial and proximal radioulnar joints. All three joints are enclosed within the same capsule. The distal humerus is divided into medial and lateral columns, which are tilted anteriorly approximately 40° from the humeral shaft. The columns form two articulating surfaces at the elbow joint: capitellum and trochlea.

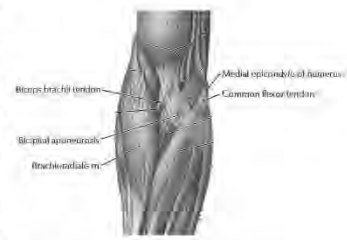
The humeroulnar joint is a hinge joint formed by the hourglass-shaped trochlea articulating with the saddle-shaped trochlea notch of the ulna. This is an inherently stable configuration and restricts undue relative motion between the articulating surfaces. The humeroradial joint is a ball and socket joint. It is an unconstrained joint formed between capitellum, which is an almost perfect hemisphere, and radial head, which has little contact with the capitellum. The proximal radioulnar joint is a pivot joint formed by articulation between the adjacent surfaces of the radius and ulna. It is a relatively constrained joint.

Ligaments of elbow joint:

- Medial collateral ligament: Located on the inside of the elbow this ligament connects the ulna to the humerus.
- Lateral collateral ligament: Located on the outside of the elbow this ligament connects the radius to the humerus.
- Annular ligament: This ligament forms a ring around the head of the radius bone, holding it tight against the ulna.

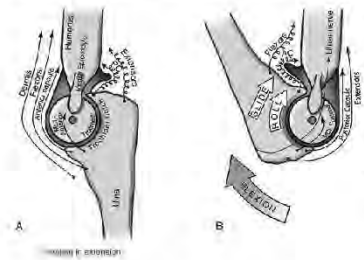
- Quadrate ligament: This ligament also connects the radius to the ulna.

Muscles of elbow joint:



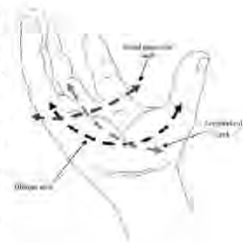
- Biceps: This is the large muscle on the front of the arm above the elbow that allows elbow supination, rotation of the elbow.
- Triceps: This is the large muscle on the back of the arm above the elbow enabling elbow extension, straightening of the elbow.
- Brachialis: This muscle is the primary elbow flexor enabling bending of the elbow. It is located at the distal end of the humerus.
- Wrist extensors: These muscles of the forearm attach to the lateral epicondyle enabling extension of the hand and wrist.
- Wrist flexors: These muscles of the forearm attach to the medial epicondyle enabling flexion of the hand and wrist.

Arthrokinematics of elbow joint:

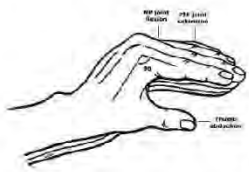


Extension: ulna rolls and glides posteriorly on humerus while radius moves distally ulna and radius spread apart ulna and radius pronate with respect to each other.
Flexion: ulna rolls and glides anteriorly on humerus while radius moves proximally ulna and radius move closer together ulna and radius supinate with respect to each other.

Biomechanics of hand:



Three arches balance stability and mobility in the hand. The proximal transverse arch is rigid, but the other two arches are flexible, and are maintained by activity in the hand's intrinsic muscles. arches of the hand. Functional position of hand: Wrist extended 20 degrees, ulnarly deviated 10 degrees, Digits 2 through 5, MP joints flexed 45degrees, PIP joints flexed 30-45 degrees, DIP joints flexed 10-20 degrees, Thumb first CMC joint partially abducted and opposed, MP joint flexed 10 degrees, IP joint flexed 5 degrees.



Joints and arthrokinematics of hand:

Metacarpophalangeal (MP): condyloid, biaxial joints, joint's palmar aspect is palpable at level of distal palmar crease proximal joint surface is convex and distal surface is concave, roll and glide occur in same direction anterior with flexion and posterior with extension. large

metacarpal joint surface a fibrocartilaginous volar plate is lined with hyaline cartilage so that it augments or enlarges the proximal phalanx' relatively small articular surface. superficial to volar plate is the transverse metacarpal ligament joint capsule supported by two collateral ligaments

Interphalangeal (IP): uniaxial hinge joints, supported by two collateral ligaments, and by smaller versions of a volar plate. Like MP joint, proximal joint surface is convex and distal surface is concave roll and glide occur in same direction anterior with flexion and posterior with extension.

Biomechanics of lumbar spine:

The lower back (where most back pain occurs) includes the five vertebrae in the lumbar region and supports much of the weight of the upper body. The spaces between the vertebrae are maintained by intervertebral discs that act like shock absorbers throughout the spinal column to cushion the bones as the body moves. Ligaments hold the vertebrae in place, and tendons attach the muscles to the spinal column. Thirty-one pairs of nerves are rooted to the spinal cord and they control body movements and transmit signals from the body to the brain.

Ligaments of lumbar spine:

- The broad, thick anterior longitudinal ligament originates from the anterior and basilar aspect of the occiput and ends at the upper and anterior part of the sacrum.
- The posterior longitudinal ligament is smaller and thinner than its anterior counterpart: 1.4 cm wide (versus 2 cm in the anterior ligament) and 1.3 mm thick (versus 2 mm). The posterior longitudinal ligament is narrow at the level of the vertebral bodies and gives lateral expansions to the annulus fibrosis at the level of the disc, which bestow on it a denticulated appearance.
- The ligamentum flavum connects two consecutive laminae and has a very elastic structure with an elastin content of more than 80%.
- The interspinous ligament lies deeply between two consecutive spinal processes. The ligament is also bifid, which allows the fibers to buckle laterally to both sides when the spinous processes approach each other during extension.
- The supraspinous ligament is broad, thick, and cord-like. It joins the tips of two adjacent spinous processes, and merges with the insertions of the lumbodorsal muscles.
- The intertransverse ligaments are thin membranous structures joining two adjacent transverse processes. They are intimately connected to the deep musculature of the back.
- The iliolumbar ligaments are thought to be related to the upright posture. The iliolumbar ligaments play an important role in the stability of the lumbosacral junction by restricting both side flexion and rotational movement at the L5–S1 joint and forward sliding of L5 on the sacrum.

Muscles of lumbar spine:

- Extensors, arranged in three layers: Most superficial is the strong Erector Spinae or sacrospinalis muscle. Middle layer is the multifidus. The fibers of the multifidus are centered on each of the lumbar spinous processes. Third layer is made up of small muscles

arranged from level to level, which not only have an extension function but are also rotators and lateral flexors.

- Flexors: intrinsic group (psoas major, psoas minor and iliacus) and extrinsic group (abdominal wall muscles).
- Lateral flexors and rotators: internal and external oblique, the intertransverse and quadratus lumborum muscles. remember that pure lateral flexion is brought about only by the quadratus lumborum.

Arthrokinematics of lumbar spine:

Lateral flexion: During lateral bending in the erect position, considerable rotation accompanies the abduction of the trunk if there is a significant degree of lordosis. The intertransverse spaces of the normal spine open on the convex side and close on the concave side during lateral bending. In normal extension and distinct lordosis, however, the facets jam and lateral flexion is so restricted that the vertebrae must severely rotate to allow lateral flexion.

Flexion: During lumbar flexion and extension, there is considerably less facet gliding than seen in other areas of the spine during such motions. Widening of the anterior disc space on extension or of the posterior disc space on flexion does not occur until movement nears its full range of motion. Even then, it is far less than that seen in other areas of the spine.

Extension: Movement takes place in two parts with the anterior interbody space opening only after backward bending has reached its limit. This opening anteriorly is, however, a smaller movement than that which occurs in other regions of the spine. The extent of lumbar extension is primarily controlled by the tautness of the anterior longitudinal ligament, the elasticity of the posterior ligaments, and the tonicity of rectus abdominis anteriorly and the spinal extensor muscles posteriorly.

Rotation: If the axis of rotation of lumbar vertebrae were at the tips of the spinous processes, as sometimes is taught, the spinous process of L1 would be directly in line with the spinous process of L5 during rotation while the vertebral bodies rotate to a greater degree towards the direction of movement. But because the center of rotation of T12 is distinctly anterior, it must pull L1 with it during rotation. This pulls the lumbars into rotation and flexion, jamming the facets on the side moving posteriorly and opening the facets on the side swinging anteriorly. This effect in the lumbar spine continues caudally to the sacrum, which also flexes and rotates with the lumbar.

Biomechanics of Hip joint:

The hip joint is a ball and socket joint that is the point of articulation between the head of the femur and the acetabulum of the pelvis.

Capsules and ligament:

- Iliofemoral ligament (also known as the Y ligament of Bigelow) is the strongest ligament in the body; it lies on the anterior aspect of the hip joint - it prevents hyperextension,
- Pubofemoral lies anteroinferior - it prevents excess abduction and extension

- Ischiofemoral ligaments - is the weakest of the three ligaments and consists of a triangular band of fibers that form the posterior hip joint capsule. It attaches to the ischium to behind the acetabulum and it attaches to the base of the greater trochanter - it prevents excess extension
- The ligamentum teres (ligament of the head of the femur): Located intracapsular and attaches the apex of the cotyloid notch to the fovea of the femoral head.
- Serves as a carrier for the foveal artery (posterior division of the obturator artery), which supplies the femoral head in the infant/pediatric population (vascular contribution to the femoral head blood supply is negligible in adults).
- Joint Capsule: The hip joint is extremely strong, due to its reinforcement by strong ligaments and musculature, providing a relatively stable joint. Unlike the weak articular capsule of the shoulder, the hip joint capsule is a substantial contributor to joint stability. The capsule is thicker anterosuperior where the predominant stresses of weight bearing occur and is thinner posteroinferiorly.

Muscles of Hip joint: Muscles of the hip joint can be grouped based upon their functions relative to the movements of the hip

- Flexors: Psoas Major, Psoas Minor, Iliacus, Pectineus, Rectus Femoris
- Extensors: Gluteus Maximus, Semitendinosus, Semimembranosus, Biceps Femoris (long head)
- Adductors: Adductor Magnus, Adductor Longus, Adductor Brevis, Gracilis, Pectineus
- Abductors: Gluteus Medius, Tensor Fascia Late
- Internal Rotators: Tensor Fascia Late, Gluteus Minimus
- External Rotators: Gluteus Maximus, Gemellus Superior, Gemellus Inferior, Obturator Externus, Obturator Internus, Quadratus Femoris, Piriformis

Arthrokinematics of hip: In an open chain, when the convex femoral head moves on a stationary acetabulum,

- FLEXION: femoral head rolls anteriorly and glides posteriorly on acetabulum
- EXTENSION: femoral head rolls posteriorly and glides anteriorly
- ABDUCTION: femoral head rolls laterally and glides medially
- ADDUCTION: femoral head rolls medially and glides laterally

Biomechanics of Knee joint:

The knee joint is one of the largest and most complex joints in the body. It is constructed by 4 bones and an extensive network of ligaments and muscles. The thigh bone (femur), the shin bone (tibia) and the kneecap (patella) articulate through tibiofemoral and patellofemoral joints. These three bones are covered in articular cartilage which is an extremely hard, smooth substance designed to decrease the friction forces. The patella lies in an indentation of the femur known as the intercondylar groove.

Ligaments of knee joint: The ligaments of the knee maintain the stability of the knee. Each ligament has a particular function in helping to maintain optimal knee stability.

- Medial Collateral Ligament (MCL) - This ligament can be divided into two sets of fibers - the superficial and the deep fibers. The superficial fibers originate from medial femoral condyle and attaches to the medial aspect of the proximal tibia distally to the pes anserinus. The deep fibers are continuous to the joint capsule and originates from the inferior aspect of the medial femoral condyle and inserts to the proximal aspect of the medial tibial plateau.
- Lateral Collateral Ligament (LCL) – a cord like ligament that begins on the lateral epicondyle of the femur and joins with the tendon of the biceps femoris (hamstring muscle) to form the conjoined tendon. This ligament is different to the MCL and is an extracapsular ligament.
- Anterior Cruciate Ligament (ACL) - The ACL is an important structure in the knee for resisting anterior translation of the tibia on the femur. The ACL runs from anterolateral aspect of the medial intercondylar tibial spine superolateral and posteriorly to the posteromedial aspect of the lateral femoral condyle. The ACL twists medially as it travels proximally.
- Posterior Cruciate Ligament (PCL) - This ligament runs from the posterior surface of the tibia between the two posterior horns of the menisci it then runs superiorly and anteriorly and attaches to the lateral aspect of the medial femoral condyle.

Muscles of knee joint:

- Quadriceps femoris: Strong extensor of the knee
- Semitendinosus: Flexor and internal rotator of the knee
- Semimembranosus: Flexor and internal rotator of the knee
- Gracilis: Flexor and internal rotator of the knee
- Sartorius: Flexor and internal rotator of the knee
- Popliteus: Flexor and internal rotator of the knee, Prevents the femur from slipping forwards on the tibia during squatting
- Biceps femoris: Strong flexor and external rotator of the knee

Arthrokinematics of knee joint:

During knee extension: open chain - tibia glides anteriorly on femur, Tibia rotates externally and closed chain - femur glides posteriorly on tibia, Femur rotates internally on stable tibia

During knee flexion : open chain - tibia glides posteriorly on femur, Tibia rotates internally and closed chain - femur glides anteriorly on tibia, Femur rotates externally on stable tibia.

Biomechanics of Ankle and Foot:

The foot and ankle form a complex system which consists of 28 bones, 33 joints, 112 ligaments, controlled by 13 extrinsic and 21 intrinsic muscles. The foot is subdivided into the rearfoot, midfoot, and forefoot. It functions as a rigid structure for weight bearing and it can also function as a flexible structure to conform to uneven terrain.

The ankle or tibiotalar joint constitutes the junction of the lower leg and foot. The osseous components of the ankle joint include the distal tibia, distal fibula, and talus. The anatomic structures below the ankle joint comprise the foot, which includes:

- Hindfoot: Hindfoot, the most posterior aspect of the foot, is composed of the talus and calcaneus, two of the seven tarsal bones. The talus and calcaneus articulation are referred to as the subtalar joint, which has three facets on each of the talus and calcaneus.
- Midfoot: The midfoot is made up of five of the seven tarsal bones: navicular, cuboid, and medial, middle, and lateral cuneiforms. The junction between the hind and midfoot is termed the Chopart's joint, which includes the talonavicular and calcaneocuboid joints.
- Forefoot: The forefoot is the most anterior aspect of the foot. It includes metatarsals, phalanges (toes), and sesamoid bones. There are a metatarsal and three phalanges for each digit apart from the great toe, which only has two phalanges. The articulation of the midfoot and forefoot forms the Lisfranc joint.

Ligaments of ankle: The main stabilizing ligaments

- Medial ligament: Medially the deltoid ligament, consists of four ligaments that form a triangle connecting the tibia to the navicular, the calcaneus, and the talus. It stabilizes the ankle joint during eversion of the foot and prevents subluxation of the ankle joint.
- The anterior and posterior tibiotalar ligaments connect the tibia to the talus.
- The last two ligaments of the triangle are the tibionavicular ligament which attaches to the navicular anteriorly and the tibiocalcaneal ligament which attaches to the calcaneus inferiorly
- Lateral ligament: The anterior talofibular ligament connect the talus to the fibula, the weakest of the three lateral ligaments and thus the most frequently injured.
- The posterior talofibular ligament connect the talus to the fibula
- The calcaneofibular ligament connects the fibula to the calcaneus inferiorly.

Arthrokinematics of ankle and foot: Arthrokinematics refers to the movement of joint surfaces.

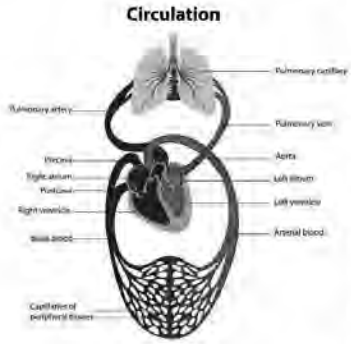
- Talocrural Joint – The talus rolls within the mortise during dorsiflexion and plantarflexion. During dorsiflexion, the talus rolls anteriorly, and it glides posteriorly. While with plantarflexion, the talus rolls posteriorly and glides anteriorly.
- Subtalar Joint – Secondary to the anatomy of the subtalar joint, the coupled motion of dorsiflexion, abduction and eversion produces pronation, whereas the coupled motion of plantarflexion, adduction and inversion produces supination. It presents two point of articulations – anterior talocalcaneal articulation and posterior talocalcaneal articulation.[16] During open kinetic chain inversion, the calcaneus rolls into inversion and it glides/slides laterally. And during eversion, the calcaneus rolls into eversion and it glides/slides medially.
- Midtarsal Joint – For the Talonavicular joint, the concave navicular moves on the convex talus and hence the roll and glide are in the same direction of movement. The calcaneocuboid joint is a saddle joint so the direction changes depending on the movement. During flexion-extension, the cuboid is concave, and the calcaneus is convex; Hence, the

roll and glide occurs in the same direction as the talonavicular joint. During abduction-adduction, however, the cuboid is convex, and the calcaneus is concave, and therefore the roll and glide occurs in the opposite direction.

- Lisfranc Joint – Secondary to the bony and ligamentous anatomy of the complex, the primary role is stability of the midfoot as it has very little movement. It has three distinct arches, and the main stabilizing structure of TMT joint is a Y-shaped ligament known as Lisfranc's ligament.
- MTP and IP Joints – Glide and roll is in the same direction as the movement for the MTP joints, as the concave base of the phalanx moves on the convex head of the metatarsal. The same is true for the IP joints, where glide and roll is in the same direction, as the concave distal phalanx moves on the convex proximal phalanx.

CHAPTER 4: PHYSIOLOGICAL EFFECTS OF MASSAGE

Importance of blood circulation:



Blood is so important that the massage therapist takes great effort to move it and to increase its presence in areas of hypertonicity (tightness). Without the movement of blood, there can be no therapy, no healing, no health, no life. Instead, pain, stagnation, disease, and accumulated waste products in tissues result. Stroking, for example, usually initiates profound parasympathetic (relaxing) effects on the body by aiding the release of hormones and other calming chemicals in the brain. By increasing circulation, the massage therapist supports the following important physiologic processes:

- Cellular oxygenation
- Healing and proper functioning of cells, tissues, muscle, and bone
- Removing waste products
- Regulating body temperature
- Fighting disease
- Moving hormones to their target organs

Biopsychosocial model of pain:

The Biopsychosocial Model states that pain is not simply a neurophysiological phenomenon, but also involves social and psychological factors. It says that factors like culture, family, nociceptive stimuli, and environment influence pain perception and thus ultimately affect a person's emotions, behaviors, and cognition.

Pain Gate theory:

Melzack has proposed a theory of pain that has stimulated considerable interest and debate and has certainly been a vast improvement on the early theories of pain. According to his theory, pain stimulation is carried by small, slow fibers that enter the dorsal horn of the spinal cord; then other cells transmit the impulses from the spinal cord up to the brain. These fibers are called T-cells. The T-cells can be located in a specific area of the spinal cord, known as the substantial gelatinosa. These fibers can have an impact on the smaller fibers that carry the pain stimulation. In some cases, they can inhibit the communication of stimulation, while in other cases they can allow stimulation to be communicated into the central nervous system. For example, large fibers can prohibit the impulses from the small fibers from ever communicating with the brain. In this way, the large fibers create a hypothetical "gate" that can open or close the system to pain stimulation.

According to the theory, the gate can sometimes be overwhelmed by a large number of small, activated fibers. In other words, the greater the level of pain stimulation, the less adequate the gate in blocking the communication of this information. There are 3 factors which influence the 'opening and closing' of the gate:

- The amount of activity in the pain fibers.
- Activity in these fibers tends to open the gate. The stronger the noxious stimulation, the more active the pain fibers.

- The amount of activity in other peripheral fibers—that is, those fibers that carry information about harmless stimuli or mild irritation, such as touching, rubbing, or lightly scratching the skin. These are large-diameter fibers called A-beta fibers.

Activity in A-beta fibers tends to close the gate, inhibiting the perception of pain when noxious stimulation exists. This would explain why gently massaging or applying heat to sore muscles decreases the pain.

Messages that descend from the brain. Neurons in the brainstem and cortex have efferent pathways to the spinal cord, and the impulses they send can open or close the gate. The effects of some brain processes, such as those in anxiety or excitement, probably have a general impact, opening or closing the gate for all inputs from any areas of the body. But the impact of other brain processes may be very specific, applying to only some inputs from certain parts of the body. The idea that brain impulses influence the gating mechanism helps to explain why people who are hypnotized or distracted by competing environmental stimuli may not notice the pain of an injury. The benefit of this theory is that it provides a physiological basis for the complex phenomenon of pain. It does this by investigating the complex structure of the nervous system, which is comprised of the following two major divisions:

- Central nervous system (the spinal cord and the brain)
- Peripheral nervous system (nerves outside of the brain and spinal cord, including branching nerves in the torso and extremities, as well as nerves in the lumbar spine region)

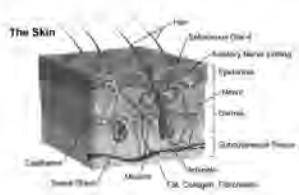
Effects on different body systems:

Body systems are groups of tissues and organs that work together to perform important jobs for our bodies. Here is a list of the positive physiological Effects of Massage on Body Systems; The Circulatory System, Nervous System, Musculo – Skeletal System, Digestive System, and the Respiratory System. Massage causes physiological changes in your body through:

- The relaxation response, which is an involuntary, yet predictable response of the nervous system to massage techniques and touch
- Mechanical responses, which are physical effects that occur in the body when pressure is applied to the soft tissues

Together, these responses can produce physical and emotional benefits.

Massage and the Skin (The Integumentary System)



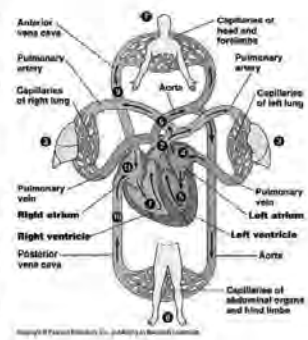
The skin is an incredible organ (your body's largest one in fact) which covers the entire outside of the body, and is filled with nerve endings, sensors, capillaries, glands, fat, and connective tissue. The sensors in the skin register touch and send signals to the brain to aid in relaxation; one example of this would be a nerve cell called Meissner corpuscles, which are a type of nerve cell that is sensitive to light touch.

As each of these different nerve cells are stimulated, they send signals to the brain which release endorphins that help us feel happy and relaxed. For instance, one of these is dopamine which is known as our 'reward hormone'. In addition to hormones, as our nerve endings are simulated, the capillaries dilate, widening the vessels allowing more blood to flow. This does several things. Firstly, it accelerates an exchange at the cellular level within the skin, which is helpful for skin elasticity and nourishment. If you are participating in a massage where oils are used, exfoliation and the removal of dead skin will take place too, which is also

beneficial for the skin. Finally, the manipulation, through squeezing, pressing and massage movements also causes deeper glands called the sebaceous glands to be stimulated (the effects of which are generally appreciated after a scalp massage). The stimulation of these glands is beneficial for the hair follicles, dry scalp and can lead to healthier scalp and hair.

Effects of Massage on the Circulatory System

When massage is applied to the body it increases the blood supply travelling around your body, to the area being treated. This in turn promotes an exchange of substances between the cells, which helps to bring fresh nutrients into cells and remove waste, keeping your body healthy and ready for action.

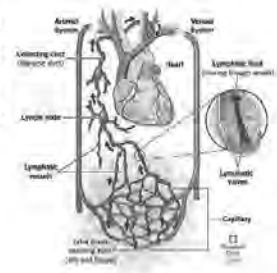


The direction of massage is also important, and all trained massage therapists will always massage in the direction of the heart, and thus with the natural blood flow (this is called the 'venous flow'), as well as assisting the blood flow throughout the body. This has a direct effect on the nervous system, causing a dilation in the blood vessels and often decreases blood pressure. The following lists the benefits and positive effects of massage on the body's circulatory system:

- Massage mechanically increases venous and lymphatic flow, helping clear metabolic wastes and by-products from tissue damage and inflammation.
- Massage indirectly assists arterial flow for efficient oxygen and nutrient delivery to the body's tissue cells.
- Stimulation of lymph node activity and release of muscle tension happens during a massage. The muscle tension impairs efficiency of the lymphatics, and a decrease in muscle tension helps our body to work more effectively and efficiently.
- Massage helps in the recruitment of capillary beds in tissue being treated. This in turn increases tissue perfusion and drainage. (Perfusion is the passage of fluid through the circulatory system or lymphatic system to an organ or a tissue, usually referring to the delivery of blood to a capillary bed in tissue.)
- Massage helps release restrictions on circulatory flow. Restrictions include fascial tension, muscle spasms, and restrictive scarring.
- General relaxation and increase of blood flow into peripheral tissues help reduce blood pressure.
- May help prevent or slow the development of varicosities.
- Reduces edema, bruising.
- Reduces congestion and helps normalize circulation in various injury/ disease states.
- Massage induces the parasympathetic response which causes slowing and strengthening of the heartbeat.

Effects on the Lymphatic System

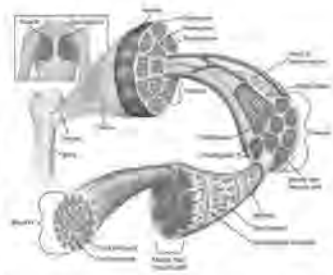
The lymphatic system is the system that contains lymph: this is fluid that transports white blood cells throughout the body (amongst other uses). White blood cells (also called leukocytes or leucocytes) are the cells of the immune system that are involved in protecting the body against both infectious disease and foreign invaders.



Massage aids the flow of lymph as the lymph system only relies on the bodies own movement to transport lymph around the body. Trained massage therapists will gently assist the transportation of lymph fluid which can assist in the removal of accumulated toxins and help improve your immune response.

Massage on your muscles (Musculoskeletal system)

When massage is applied to the muscles, it has mechanical effects as well as automatic effects.



Mechanical effects:

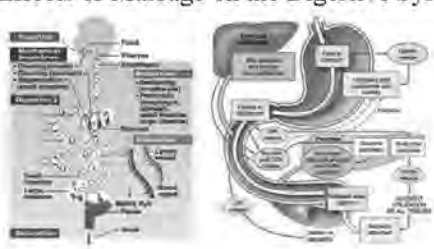
- Generation of heat, allowing tissues to become more pliable
- Increase in circulation improving the exchange of fluids to tissues
- Massage stretches muscles transversely as well as lengthways, which allows scar tissue, adhesions and fascia surrounding muscles to loosen or break down - this can both help in muscle repair as well as releasing muscle tension.
- Manipulation of muscles through massage techniques can help to reduce tightness and improve flexibility of the muscle.

Automatic effects: These effects are due to reflexes in our body and are automatically stimulated, to impact and improve our muscles:

- Massage stimulates receptors that transmit sensory signals to the central nervous system, and this in turn causes the reduction in tension in muscles and the feeling of relaxation
- Massage causes the release of endorphins which has been shown to reduce pain and muscle tension
- Massage can help to reduce irritated receptors in the muscles by reducing overactivity in the sympathetic nervous system

Because of the effects massage has on our muscles, this in turn has a knock-on effect with our bones. For instance, when muscular tension has been reduced, tension within the tendons is released and can help the skeletal frame to re-align. This can have a further beneficial effect on overall posture and mobility. Increase in circulation nourishes skeletal cells, particularly cells named osteoblasts that are responsible for making new bone as your body grows. Massage can also break down adhesions that can form between tendons and bone or ligaments and bone. This can be especially helpful after an injury when breaking down excessive scar tissue that can form which often limits proper functioning.

Effects of Massage on the Digestive System



The digestive system is responsible for the mechanical and chemical processes that provide nutrients via the mouth, esophagus, stomach and intestines. When ingesting food, this system breaks it down into usable nutrients. It is also responsible for eliminating waste from the body. One of the main benefits of massage includes the removal of waste from the large intestine. Just as blood can be

pushed around the veins and lymph fluid can be guided around the body, when massage is applied along the course of the intestines this can assist in the removal of waste. Applying pressure in clockwise motions around the stomach can do two things: it can offer relief to those suffering with constipation by assisting in the removal of waste and, conversely, it can calm diarrhoea. The second benefit is due to the calming effects massage has on the nervous system.

The following lists the benefits and positive effects of massage on body's the digestive system:

- Massage helps in the reflex stimulation of peristalsis (peristalsis is the series of muscle contractions that occur in the digestive tract).
- Massage helps in the induction of the parasympathetic state, which stimulates the digestive tract activity (Rest and Digest).
- Mobilization of joints and decreasing muscle tension related to the lower thoracic and lumbar spine from a massage, helps facilitate nerve feed to the various digestive organs.

A bit of science here: It is important to note that the peristaltic action is the squeezing muscle motion that moves food down your throat, and through your intestines. When the peristaltic action moves to fast, matter moves through your bowels too quickly and can result in diarrhoea. Massage calms and discourages over stimulation of peristaltic action, and thus helps ease an irritated bowel. In the same way massage can also calm premenstrual tension or period cramps with some simple circular motions.

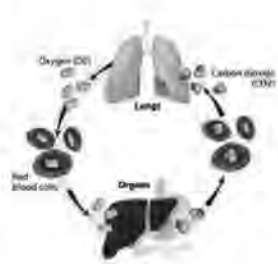
Massage and Your Hormones (the Endocrine System)

Massage's main effect involving the endocrine system are the effects involved with stress. When a person is stressed, the body increases many hormones, such as cortisol and vasopressin. Because massage has a calming effect on the autonomic nervous system, this has been found to help regulate this hormone imbalance and thus reduce stress.

Endorphins can give a feeling of euphoria and inhibit pain sensations, and massage often triggers a release of endorphins, however the level of this release varies from person to person. This means that each massage experience is unique to the individual, but usually can always have a powerful effect in improving our mood and decreasing stress levels, to whatever degree that may be.

How Massage Affects Your Lungs and Breathing (Respiratory System)

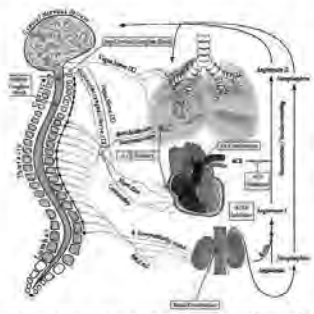
The respiratory system is a biological system consisting of a series of organs responsible for taking in oxygen and expelling carbon dioxide. The primary organs of the respiratory system are lungs, which carry out this exchange of gases as we breathe. When we breathe, our lungs filter in the oxygen and pass it through our bloodstream where it is carried into the tissues and organs. Our lungs also take out the carbon dioxide from our blood and release it into the air when we breathe out.



The effect on the respiratory system will differ depending on the type of massage technique applied. Stimulating movements such as cupping, hacking, beating, and pounding are all vigorous tapotement moves and are stimulating. This can be beneficial for those with chest congestion, as these stimulating moves will help to loosen phlegm and open the airways. Meanwhile, a relaxing back massage will have effects on the nervous system and in turn cause the breath to slow and encourage deep breathing, with the added potential for reducing blood pressure. The following lists the benefits of massage on the respiratory system:

- Relaxation of diaphragm tension and encouragement of deeper breathing in massage improve diaphragm function. This promotes gaseous exchange in the alveoli/ capillary beds.
- Massage therapy work adjacent to the thoracic spine improves nerve feed to the lungs and related tissue.
- Massage helps reduce tension in the muscles that support breathing. It lessens the hypertonicity and trigger points in the intercostal muscles (muscles between the ribs), scalene, pectoralis and serratus anterior as well as back muscles increases rib cage mobility.
- Massage helps increase metabolism in the lungs.
- Induction of parasympathetic response due to massage, produces deeper, more efficient breathing. This also decreases the symptoms of some respiratory tract diseases such as asthma.

Effect on the Neurological system



The nervous system is a complex network of nerves and cells that carry messages to and from the brain and spinal cord to various parts of the body. The nervous system includes both the Central nervous system and Peripheral nervous system. Our nervous system collects and processes information from the senses via nerves and the brain and tells the muscles to contract – which causes physical actions. The nerves also innervate (supply an organ or other body part) muscles and gives it tone. Massage typically has a calming and balancing effect on the nervous system. When massage is applied, the nerves and sensory receptors are stimulated, and messages are sent along the nerve pathways via the spinal cord to the brain. The parasympathetic system then slows down body activity, such as reducing the heart rate, lowering blood pressure, and decreasing the amount of sweat.

The following lists the benefits and positive effects of massage therapy on the body's nervous system:

- Generalized relaxation response from massage helps reduce strain on the nervous system. The relaxation response include decrease in heart rate and decrease nerve firing.
- Massage helps in the reduction of pain.
- Massage helps increase our parasympathetic response, which may help with insomnia.
- The reduction of fascial and muscular tension as well as reduction of joint stiffness from a massage can release impingement of peripheral nerves.

- Massage also helps reduce musculoskeletal signs and symptoms of various disease states (Cerebral Palsy, Parkinson's Disease, Buergers Disease, and other hyper/ hypotonicity syndromes and disease states).
- Massage helps reduce the body's time spent in "sympathetic overdrive". Note: The body's sympathetic nervous system is responsible for the "fight or flight" response. It is activated when our body perceives stress. It reduces blood flow to the brain, extremities, and digestive organs in preparation for a perceived survival situation. When a person is constantly stressed, their nervous system can be tilted into the state of sympathetic overdrive. If this only happens occasionally, the system usually has the resilience to recover. However, if the body is in a state of sympathetic overdrive, elevated levels of cortisol, the stress hormone, can lead to further damage to these tissues.

CHAPTER 5: CLASSIFICATION OF MASSAGE MOVEMENTS

Generally, the application of any massage stroke involves six elements or considerations: depth, speed, rhythm, duration, direction, and frequency. Beginning massage therapists will have to consciously work at incorporating these considerations into their massage. With practice and experience, however, these considerations will become second nature, and the mechanical feeling will evolve into one of fluidity.

- **Depth or depth of pressure** is the amount of force a stroke applies to the tissue. Regardless of what implement is used (thumb, heel of hand, or forearm), the amount of force you apply to the tissue depends on the desired result. Depth of pressure should be increased gradually and with great care. Depth of pressure also depends on the client's tolerance. You should periodically ask your client about the pressure. Always watch for signs of discomfort, such as the client making a fist, holding the breath, or tightening facial muscles. Clients do not often verbalize pain; they believe that you, as the trained professional, know what is best.

- **Speed of the stroke** is how fast or slow a stroke is performed. Depending on the desired response—relaxation or invigoration—any stroke may be applied slowly or quickly. Slow strokes soothe while fast strokes "wake up."

- **Rhythm** is the regularity or constancy with which a stroke is applied. As with speed, rhythm can be slow or fast, depending on the desired result. Rhythm can speak to the overall tone of the massage; therapists must refrain from working in a herky-jerky fashion.

- **Duration** is twofold; it can be the length of time each stroke lasts during its application or the length of time the stroke remains on any given body part. Again, if the desired result is relaxation, a slower and longer stroke is used. Longer, here, refers to the amount of tissue traversed, for example, the entire leg from foot to top of thigh. Second, the amount of time spent on any given area, such as the entire time spent on the leg, denotes duration.

- **Direction** is the path or track of the stroke. On the extremities, the direction is centripetally or toward the heart. (Blood flows to the heart through veins, which have one-way valves. Pressure on these valves must be exerted in one direction only; hence, application of any massage stroke pushing blood through these valves must be toward the heart.)

- **Frequency** is the number of times each stroke is performed. In general, the rule of three's applies: each stroke is performed three times before transitioning to another stroke or area of the body. To spread lubricant, for example, effleurage is applied three times, followed by transitioning to another stroke such as petrissage.

To practice massage, some understanding of the movements is critical to successfully performing a therapeutic massage. There are several massage movements and possible combinations of strokes, so a massage can be tailored to the specific needs of each client. The following movements are the fundamental manipulations used in massage and are the foundation of most massage styles practiced today. The massage practitioner must understand

the indications for and effects of the manipulations. The more mastery therapists have of the movements, the better they can choose and combine movements according to each situation.

The Strokes Definition

Effleurage: The current term for effleurage is "gliding stroke." Effleurage originates from the French verb meaning "to skin" and "to touch lightly on." The most superficial applications of this stroke do this, but the full spectrum of effleurage is determined by pressure, drag, speed, direction, and rhythm, making this manipulation one of the most versatile. There are two varieties of effleurage: superficial and deep. Superficial gliding strokes employ a very light touch. In gliding strokes, the pressure becomes firmer as the hand glides over the surface of the body. The technique of effleurage or gliding is accomplished either with the fingers, thumbs, palm of the hand, knuckles, or the forearm.

Superficial gliding strokes are generally applied prior to any other movement. This type of stroke accustoms the client to the practitioner's contact and allows the practitioner to assess the body area being massaged. Increased pressure adds a compressive force and drag to this stroke. Light stroking is done with the fingertips or palm of the hand. Small body areas such as the fingers can be grasped and surrounded as effleurage is applied to the entire area. The surface contact increases with full hand and forearm application of the manipulations. Superficial applications, which stay within the skin and subcutaneous layer, tend to have a more reflexive effect.

The term deep gliding indicates that the manipulation uses enough pressure to have a
Mechanical effect. Deep gliding strokes are especially valuable when applied to the muscles. It is most effective when the part under treatment is in a state of relaxation. This type of stroke has a stretching and broadening effect on muscle tissue and fascia. It also enhances the venous blood and lymph flow. Deep gliding generally follows the direction of the muscle fibers. On the extremities, the movements are always directed from the end of a limb toward the center of the body. When using deep gliding strokes, the practitioner must use good body mechanics to prevent strain and overuse syndrome injuries.

Another variation of a gliding movement is feather-stroking. Feather stroking movements use very light pressure of the fingertips or hands with long flowing strokes. The application of feather stroking, sometimes called "nerve stroking," is usually done from the center outward and is used as a final stroke to individual areas of the body. Two or three such strokes will have a slightly stimulating effect on the nerves, while many repetitions will have a more sedating response.

The more superficial the stroke, the more reflexive the effect. Slow, superficial strokes are very soothing while fast, superficial strokes are stimulating. If a deeper stroke pressure with a slower rate of application is used, the effect will be more mechanical. After the application of the initial touch or resting position, effleurage is often done next in sequence, especially if a lubricant is used. It is also a good method to use when evaluating for hard and soft tissue, hot and cold areas, or areas that seem stuck. Effleurage is the preferred method for abdominal massage. These movement being, link and complete the massage routine and are applied with

the entire palm, exerting even pressure over the area. Pressure is exerted in the direction of the venous and lymphatic flow. The return stroke should be extremely light and gentle, and hands must be flexible and under perfect control so that the entire palmar surface will be in contact and mould to the area being massaged. The movement include:

Superficial effleurage -
Stimulation of sensory nerve ending bring about a response in the skins circulatory network. Venous and lymphatic flow increased relaxation of contracted muscles may be obtained through the reflex response of stoking.
A general feeling of relaxation is accomplished which can be very sedative.

Deep effleurage

- Aids venous circulation by mechanical response to pressure
- Arterial circulation aided by removal of congestion in veins
- Lymphatic circulation is improved therefore waste products are removed
- Aids Desquamation
- Aids relaxation
- Re-establishes relaxation during massage routine when used to link more active movements.

Petrissage is from the French word Patri, meaning "to knead"; petrissage is also referred to as "milking" or "wringing". This stroke involves the use of the C part of the hand (between the thumb and first finger, or the "webbing") as the primary pressure point. Petrissage "goes for the muscle." Leaving behind superficial or broad work, the therapist uses petrissage to firmly grasp either individual muscles or groups of muscle to affect underlying tissues. Relying on previous tissue warming (effleurage is always used prior to this technique), petrissage begins the serious business of mobilizing and softening tissue. This stroke is performed rhythmically as the therapist squeezes and releases muscle tissue. Maintaining full hand contact, she grasps the muscle belly firmly with the palm of the hand, forcing the tissue up into the slightly arched fingers. Tissues are pumped with the one-hand or two-hand cephalic (toward the head) movement as the muscle is gripped, squeezed, and then released.

Various forms of petrissage include the following:
Knuckle kneading: The knuckles are used to deeply move the tissue.

Digital kneading: The fingers are used to deeply move the tissue.

Fist kneading: The entire balled first is used to deeply move the tissue.

Wringing: The tissue (normally part of an extremity) is grasped as if wringing out a large sponge, and pressure with two hands is applied in opposite directions.

Skin rolling: The skin is plucked up off the underlying muscle and rolled along to move the superficial fascia from deep fascia.

The desired results of petrissage include deep, lasting, warming effects on blood and muscle. The intelligent use of these techniques forms the basis of therapeutic massage.

Tapotement is derived from the Old French term tapir, meaning "light blow." Tapotement is a percussion stroke with the blow being immediately pulled off the muscle as soon as the hand strikes the tissue. By moving into tapotement, the therapist recognizes the necessity of periodically stimulating the body for either a localized or a systemic effect. Tapotement includes the following techniques:

Tapping: Using alternating quick, loose wrists, the therapist taps the fingertips on the skin, snapping the fingertips back quickly to affect superficial tissue only. Tapping is most effective when used directly on the skin.

Pincement: Using alternating loose wrists, the therapist plucks the skin between thumbs and fingertips wherever ample skin allows for lifting. The technique is superficial only and is applied directly to the skin.

Hacking: Using alternating quick, loose ulnar sides of the hands, the therapist applies as much pressure as the client will allow. Hacking can be performed directly on the body or through sheets.

Cupping/clapping: With semirigid, cupped hands but loose, alternating wrists, the therapist creates a little cup with each hand as it strikes the anterior, lateral, and posterior surfaces of the thoracic cavity. The technique is performed directly on the skin or through sheets, and the therapist is careful not to invade the breast tissue.

Pounding: With soft but clenched fists and quick alternating wrists, the therapist pounds the body with the soft ulnar surface with gently closed hands. Pounding is performed directly on the skin or through sheets.

The specific physiologic effects of light tapotement include:

1. Increased nervous system stimulation
2. Increased muscle tone
3. Rehabilitation of sensory nerve transmission
4. Loosening of mucus in the lungs
5. Desensitization of a local area of skin

Vibration comes from the Latin term for "shaker"; vibration is a stroke that ranges from quick shaking to rhythmic rocking. It is an excellent stroke to both wake up tissue and encourage a client to "let go" of a limb that is unconsciously held in partial contraction. Performed with two hands enveloping the muscle and quickly oscillating back and forth, vibration is a preparatory stroke that increases circulation to get the muscle ready for sports competition. Both fingertips and hands can be used to apply continuous movement. Vibration can be done lightly or vigorously for varying lengths of time. As with the other strokes, use and application depend on the client's needs. Vibration decreases hypertonicity in muscles by interrupting or distracting the receptors in the surrounding tissue or joint. It also stimulates nerve fibers and facilitates neuromuscular re-education or rehabilitation techniques.


CROSS-FIBER FRICTION
Cross-fiber friction can be performed at the point where a muscle turns into tendon (at the origin or insertion of muscle on bone), in the middle of the muscle belly itself, anywhere along the muscle mass, on and around scar tissue, at any location where muscles are deeply layered in the body, and at places where superficial muscles lie directly against bone.

The therapist performs cross-fiber friction using the tips of her thumbs, an elbow, or a knuckle. Here is the basic technique:
1. The therapist identifies a small, localized, focused area of tissue.
2. Using the thumbs or fingertips, the therapist begins rubbing "across the grain" of the muscle fiber using no lubricant or with a little lubricant.
3. The back-and-forth cross-fiber friction is continued until a localized area of hyperemia (redness) is noted on the skin; until the desired region, tendon, or muscle has reached an acceptably decreased level of hypertonicity (tightness); or until the client requests stopping the technique.
4. Cross-fiber friction is always preceded by effleurage and petrissage to warm and prepare the tissue. It is also always followed by effleurage and petrissage to "clean out" the effects of this aggressive but effective technique.


Thumb presses originate from Eastern modalities such as Thai massage and shiatsu and are used to hold pressure points. Thumb presses are performed with the pad of the thumb close to the nail (but not the nail).

Sequence & Flow

Although a massage can be organized in many ways in terms of sequence or order, it is the flow that unifies the massage. Transitioning from one massage stroke to another or from one body part to another requires fluid movements.

Sequence The client can be positioned on the massage table either prone (face down) or supine (face up). The decision to start either prone or supine may be dictated by many factors, such as the needs or desires of the client, the purpose of the massage, time parameters, and so on. In general, starting prone works well for most situations since many clients complain of back, shoulder, and neck pain. It is a good idea to address your client's chief complaint first, then work on other areas of the body (time permitting). A typical massage in prone position would begin with work on the back, followed by right leg and foot, then left leg and foot. You can also work on the right foot and leg, then left foot and leg, followed by the back. Starting with the feet and legs allows for application of a heat pack to the back, thereby warming the tissues before working deeply. A common sequence for beginning massage in the supine position

would be to start with the face, head, and neck, followed by the chest, right hand and arm, left hand and arm, left foot and leg, and right foot and leg.

Flow It is simplistic to say the massage must follow a logical sequence to flow. It is more accurate to say the individual parts must relate to the whole via the therapist's ability to make smooth transitions. Keep in mind that the sequence emanates from what the client's body tells you. Work may move around the body within one session, depending on what the body requires; sometimes, the work will be light, sometimes deep. Strive to maintain continuity throughout the massage by remaining in contact with the client's body as much as possible. Contact here is both physical and mental. It is impractical to always have physical contact; however, it is imperative you maintain mental contact by staying focused on the massage.

INDICATIONS & CONTRAINDICATIONS FOR MASSAGE:

First and foremost, such as Swedish massage, increases circulation. The individual cells of the body depend on an abundant supply of blood and lymph. These fluids supply nutrients and oxygen to the body as well as carry away wastes and toxins. So, massage simply helps promote overall good health. Massage facilitates the smooth flow of energy and communication among the cardiovascular, digestive, urinary, respiratory, lymphatic, and nervous systems—creating homeostasis (constancy and balance in the body). With reference to the integumentary system, massage can often enhance skin condition. Massage directly improves the function of the oil and sweat glands that keep the skin lubricated, clean, and cooled. Tough, inflexible skin can become softer and more supple following massage. A healthier, more youthful appearance may be the result. Massage facilitates the smooth flow of energy and communication among the cardiovascular, digestive, urinary, respiratory, lymphatic, and nervous systems—creating homeostasis.

Massage also aids recovery from soft tissue injuries, such as sprains and strains. The growth and repair of tissues are accelerated by efficient circulation in the injured areas and appropriate stimulation of the healing tissues. Therefore, massage therapy can often help accelerate and improve recovery as well as reduce discomfort from such injuries.

Contraindications

Contraindications may be general or local, specific to certain modalities, or determined by medication use. A contraindication for massage therapy exists when massage is inappropriate or unsafe to perform because the therapist could cause harm to the client. Various terms are used, describing "local" or "regional" and "absolute," contraindications.

Absolute Contraindications for Massage Therapy: The following are commonly accepted absolute contraindications:

- Thrombus (stationary blood clot) located anywhere in the body
- Medical conditions requiring immediate medical attention
- Unstable vascular damage
- Gangrene, kidney disease, or advanced heart disease
- Post–heart attack or post-stroke patients who have not yet been medically stabilized
- Severe headache of unknown origin
- High blood pressure that is not controlled by medication
- Fever
- Aneurysm
- Intoxication

- Most viral infections
- Measles and other immediately contagious diseases

Local Contraindications for Massage Therapy: The following are commonly accepted local contraindications:

- Frostbite
- Local contagious skin condition
- Local skin irritation of unknown origin
- Open wound, sore, or ulcer
- Recent radiation or recent burn
- Undiagnosed lump
- Acute arthritic flare-up
- Fracture

Areas of endangerment are areas of the body where no pressure or no deep application of pressure is recommended because of underlying structures such as nerves, arteries, veins, and vital organs. Most areas of endangerment are located at joints, such as the back of the knee (popliteal region) or inside of the elbow (cubital region). Following are the areas of endangerment:

- Inferior to the ear Location: notch posterior to the ramus of the mandible Structure of concern: facial nerve, external carotid artery, styloid process
- Anterior triangle of the neck Location: borders formed by SCM, trachea, and mandible Structures of concern: carotid artery, jugular vein, vagus nerve
- Posterior triangle of the neck Location: borders formed by SCM, trapezius, and clavicle Structures of concern: brachial plexus, subclavian artery, jugular, brachiocephalic vein
- Axilla Location: armpit Structures of concern: axillary, median, musculocutaneous, and ulnar nerves; axillary artery
- Medial brachium Location: upper inner arm between biceps and triceps Structures of concern: ulnar, musculocutaneous, and median nerves; superior ulnar artery, brachial artery, basilic vein
- Cubital area of the elbow Location: anterior bend of the elbow Structures of concern: median nerve, radial and ulnar arteries, median cubital vein
- Ulnar notch of the elbow Location: "funny bone" between the medial epicondyle of the humerus and the olecranon process of the ulna Structures of concern: ulnar nerve
- Femoral triangle Location: bordered by the sartorius muscle, adductor longus, and inguinal ligament Structures of concern: femoral nerve, femoral artery, femoral vein, great saphenous vein
- Popliteal fossa Location: posterior aspect of the knee bordered by gastrocnemius and hamstring Structures of concern: tibial nerve, common peroneal nerve, popliteal vein.
- Abdomen Location: midabdominal Structures of concern: aorta
- Back (Kidneys) Location: against the posterior abdominal wall at the level of T-12 to L-3 (under the twelfth rib); the right kidney is slightly lower than the left Structure of concern: kidney.

CHAPTER 6: HERBS AND HERB INFUSED OILS

Pain and inflammation are closely related, so reducing inflammation is important. Several herbs have excellent anti-inflammatory properties and following an anti-inflammatory diet will enhance the herbs effects. Herbal medicine has an important role in treating persistent or chronic pain. There are many ways of using herbs from which few are listed below,

Teas - There are several types of "teas," or herbal beverages. An infusion is made by steeping hot stems, leaves, and flowers of herbs to extract their benefits. Hard materials, like roots, woods, barks, and seeds, need to be boiled, then steeped, for best results. (This is called a decoction.) And a cold extract, which is recommended for the most delicate plants, is made by soaking the herbs in cold water.

Baths - By adding herbs to your tub, you can customize and boost the effectiveness of bath time. A good soak can cleanse, soften, and nourish the skin, rejuvenate a tired body and spirit, and address sore and aching muscles.

Oils - Infused herbal oils are easy to make and are most effective with massage. It is made simply by soaking dried or fresh herbs in high-quality vegetable, seed, or nut oils.

Poultices (PASTE) – Herbs are crushed or bruised to release their potency, then applied topically, often over a warm or cool piece of cheesecloth or other light fabric.

Food ingredient as salad or soups – Herbs are more beneficial when incorporated into your salads and soups. It helps you improve your functions of organ and make the body work effectively.

From ancient time, one of the more versatile use of herbs is mixing it to make infused oil. These oils work in two ways – causes emotional and physical response and penetrates the skin to underlying tissue and distributes their therapeutic properties. There are many herbs found locally who has amazing therapeutic properties and are used to make infused oil. Knowing some of the differences can be helpful to choose the best herb for the situation.

We have conducted a research study with back pain participants. Total 42 participants were involved in the study. They were screened with non-specific low back pain by filling out a questionnaire. Herb infused oil was used for treatment of pain here. It included garden cress seeds, oregano, sesame, Himalayan salt and olive oil. All the herbs had specific properties in relieving pain, inflammation and improving flexibility. The application of oil was explained to the participants. This included first cleaning of the area with lukewarm water and applying the oil directly (3 times a day and keep it on for 5 minutes) with firm pressure. The participants were asked to continue the application regularly, with other back pain preventive measures to be taken. After one week, the participants were assessed again by filling the same back pain questionnaire and results were compared. None of the participants received any kind of treatment during the one-week time which could affect the effectiveness of oil. There was significant decrease of pain at the end of one week for each participant. Thus, herb infused oil was effective in treatment.

We will share you the recipes for the above-mentioned ways. But, first let talk about the important herbs which will help reduce pain, inflammation and promote flexibility. There are few herbs which you will get in your kitchen who has amazing healing properties. Let's see their benefits,

Ginger – It has phytochemicals with excellent anti-inflammatory properties, which relieve pain in joints and muscles. It promotes the circulation of blood and acts as a cure for nausea, headache, and cramps. The easiest way to incorporate ginger in your diet is to have ginger tea. You can also grate the root, wrap cheesecloth around it, soak it in hot water for 30 seconds, and place it on your back for 20 minutes. It also reduces muscle pain and soreness. A topical application of the paste of ginger, cinnamon, sesame oil, and mastic can reduce pain and stiffness in muscles. Ginger also dramatically lowers blood sugar levels.

Feverfew - This plant grows throughout the year and belongs to the daisy family. It has an acrid smell, and it is used to treat rheumatoid arthritis, migraines, toothaches, stomach-ache, and headaches. It is available as tinctures, extracts, and capsules. Standardized products have at least 0.2% of parthenopid. There is not much information available about exactly why it works, but it has been a popular remedy for centuries. People report feeling much better after taking the herb. Besides, it doesn't have any significant side effects. These herbs are not ideal for consumption during pregnancy.

Turmeric - Turmeric has a chemical called curcumin, which helps fight pain because of its antioxidant and anti-inflammatory properties. However, turmeric contains only 3% of curcumin, which is quickly gets eliminated from the body. The liver processes curcumin in two hours and removes it. There is not much absorption that takes place. According to observations, the incorporation of curcumin increases by 2000% when you consume it with black pepper. Turmeric supplements contain not only higher percentages of curcumin but also black pepper to enhance their effectiveness.

Capsaicin - Found in plants belonging to the Capsicum genus like Chili Pepper, Capsaicin, has medicinal value. It comes in various forms such as ointments, gels, lotions, films, sticks, or creams. These products are basically for the skin. Leaving the lotion on the surface for a few hours offers a tremendous amount of pain relief. Substance P transmits the signals of pain from the peripheral nervous system to the central nervous system, making you aware of the pain. Capsaicin depletes substance P in two days after application. You will feel relatively that the pain has reduced tremendously.

Devil's Claw - A suitable alternative or even addition to turmeric would be Devil's claw. It belongs to the sesame family, and the seeds appear in a flowering plant. It has been used in Sub Saharan Africa for thousands of years as a painkiller. Devil's claw is also known to contain anti-inflammatory properties which relieve back pain. It also eases symptoms of gout, promotes weight loss, improves osteoarthritis, and reduces inflammation in all parts of the body.

Clove - Clove is a perfect home remedy for toothache since ages. Not many people know that it can also be a cure for back pain. It can be more effective when you consume it in your diet. It can also be used on your back, applied in the form of clove oil. Clove, which forms on the Eugenia Caryophyllids plant, has been shown to possess anti-inflammatory properties that relieve pain. This spice also kills bacteria, fungi, and viruses. These are the functions of the chemical called eugenol. Clove essential oil is quite inexpensive and very beneficial.

Willow Bark - The White willow bark has been a remedy for centuries to relieve fever, inflammation, and back pain. Nowadays, it is available as a dried herb which can be used to make tea. It is also sold as capsules and in liquid form as extracts. Avoid excess of willow bark. It can be poisonous for children. Salicin that comes in the willow bark is the same compound found in aspirin, and this explains why it works so well.

Valerian Root - Muscle spasms are associated with back pain and problems, which is where valerian root excels. This herb is a natural muscle relaxer that also reduces nerve sensitivity. Therefore, if you suffer with back pain that includes muscle spasms, this is one of the best herbs for back pain. Since it can make you drowsy, it is advised that you take it at night and only as directed to avoid overdose.

Eucalyptus - You might relate the eucalyptus herb as a remedy for the flu or for colds. While it does help with these conditions, it is also an effective herb for back pain relief due to its ice, cooling effect. The leaf contains tannins which are known to reduce swelling and inflammation, resulting in pain relief. The common use is as a topical pain relief treatment.

Oregano - Oregano is the herb found locally and widely used in the culinary arts. Besides from its taste this herb also serves in various ailments due to its anti-inflammatory and antioxidant properties. Oregano leaves are high in phenols, which are natural phytochemical compounds with beneficial antioxidant effects. The two most abundant phenols in it are thymol and carvacrol. Among these, Carvacrol — has antimicrobial, antitumor, ant mutagenic, analgesic, anti-inflammatory and antiparasitic properties, making it one of the most active components of oregano when infused in carrier oil.

Sesame - Sesame seeds are used for traditional remedy against various ailments for centuries. It has high antibacterial and antioxidant properties. Sesamol, Sesamolin and Sesamin are the antioxidant components present in its seeds. Among these, Sesamin is a lignin with anti-inflammatory properties which helps in pain relief, reduce spasm, and increase range of motion when applied to the affected area. Many studies have proved its therapeutic and healing properties that sesame seeds when infused in oil, applied to the painful area stimulate the blood flow due to its excellent emollient properties.

Garden cress seeds - also known as Lepidium Sativum is an edible fast-growing herb which has been used in ancient medicines for a long time. It seeds contains significant amount of plant sterols which are antioxidant and anti-inflammatory compounds. It also contains phenolic compounds which fights at molecular level and inhibits the substance involved in inflammation. The seed when infused in the carrier oil and applied to joints or muscle pain helps recover from muscle weakness, reduce muscle tension, and promotes pain relief.

Cramp Bark - Cramp Bark is also known as cranberry bush; this herb is popular due to its ability to treat spasms in the back and uterine pain. It comes in the form of liquid extracts, tinctures and capsules. Native Americans consume cramp bark since ancient time. Most people find it challenging to identify Cramp bark and Black Haw, which is also sometimes referred to by the same name. As the name suggests, it is used to relieve pain from all sorts of cramps. For acute pain, 30 drops of the tincture can be taken every hour until the pain subsides. Cramp bark contains chemicals that significantly reduce

muscle spasms. They also decrease heart rate and lower blood pressure. The bioactive compounds are extracted from dried bark and made into tinctures.

Gotu Kola - Gotu kola is an herb known to boost brain function and is an anti-inflammatory used to treat arthritis pain. While it is used to treat a variety of conditions, it is an effective treatment for back pain.

Boswellia - This herb is an extract taken from the gum resin of the Boswellia plant. Due to its anti-inflammatory properties, it is frequently used to treat arthritis and back pain.

Himalayan Salt - Himalayan Salt is the world's purest and richest, boasting 84 minerals and trace minerals. It's become increasingly popular nowadays, as many have attributed numerous health benefits to it. The healing properties of pink Himalayan salt are believed to restore restful sleep, relieve muscle aches, and increase energy in body. Other than being beneficial for muscle aches and pains, it can also be used to relieve muscle spasms. When infused the salt in carrier oil and applied to the surface, the natural antioxidants present can help to prevent free radical damage and thus reducing the possibility of future muscle pain.

Pepper - Black pepper contains essential oils like piperine, a naturally occurring alkaloid, which is the source of its bold character and heat,15 as well as the monoterpenes sabinene, pinene, terpenene, limonene, and mercene, which give this spice its aromatic qualities. All combined, these oils, when used in aromatherapy, can help ease aching muscles, chilblains, and arthritis, and have curative properties for constipation and sluggish digestion.

Mustard Seeds - Mustard seeds contain vitamins A, B6 and C (and other vitamins), dietary folate, omega-3 fatty acids, and minerals like magnesium, potassium, selenium, manganese, phosphorus, and copper.11 The seeds also have the following health-promoting plant compounds, which include Glycosylates and isothiocyanates: The former is a compound broken down by myrosinase enzymes to produce isothiocyanates. Sinigrin is also a precursor of a compound called allyl isothiocyanate (AITC), which is produced by the myrosinase enzyme when sinigrin mixes with water.

Using essential oils for back pain:
Apart from the list of herbs mentioned above, you can also use rosemary essential oil, eucalyptus peppermint essential oil, and lavender essential oil. These essential oils treat the back when gently massaged. Directly inhaling these oils also brings some amount of pain relief. Research suggests that these oils can be used in the body as the pain-relieving anti-inflammatory and antioxidant properties. With all the essential oil choices available, it can be confusing to know which ones can help with your back pain. The following oils could help.

Herbs	Benefits
Peppermint oil	Perhaps best-known for its menthol undertones, peppermint oil is one of nature's most potent analgesics. Pure peppermint oil has at least 44 % pure menthol content, which has been widely used for pain of a variety sources.
Wintergreen oil	A close relative to peppermint, wintergreen oil carries similar analgesic properties. Specifically, wintergreen contains methyl salicylate, which is like aspirin. Talk to a doctor if you're taking blood thinners or other medications, as wintergreen can increase the risk of bleeding.
Lemongrass oil	Lemongrass oil has been widely studied for its antifungal properties. One study in mice also evaluated its notable anti-inflammatory properties. Reduction of inflammation may lead to reduced pain, but studies are needed in humans.
Ginger oil	Often used in cooking, ginger has other effects outside of the spice cabinet. Its most notable benefits are anti-inflammatory properties, such as a 2016 study on rheumatoid arthritis showed.
Lavender oil	As one of the most widely studied and popular essential oils, lavender acts as a multipurpose oil for a variety of ailments. According to one clinical review, lavender oil can help alleviate headaches and muscle pain. Such benefits may transfer to back pain as well.
Eucalyptus oil	Known for both its anti-inflammatory and antibacterial properties, eucalyptus oilcan have analgesic effects in muscles and joints. A 2015 clinical review found that the oil has promise in treating ailments like arthritis, the flu, and wounds.
Roman and German chamomile oils	While chamomile is best known for its soothing and calming properties (the reason why many people drink chamomile tea when sick), the essential oil has other noted benefits. These include reduced muscle spasms and overall inflammation. Take care when using chamomile if you have a ragweed allergy, as the plants come from the same family
Rosemary oil	Rosemary is more than just a cooking herb. Rosemary essential oil has clinically proven benefits. These include reduced pain from rheumatic disorders and menstrual cramps. Such anti-inflammatory and analgesic effects may also be helpful for back pain.
Sandalwood oil	Sandalwood oil contains anti-inflammatory properties. Such effects have been studied for their similar effects to over-the-counter medications. Reducing inflammation in the back with sandalwood oil could possibly decrease pain, too.
Olive oil	Olive oil is valued not only for its flavor, but also for its range of wellness benefits. Olive oil is rich in oleic acid, a type of monounsaturated fat. Studies have shown that oleic acid is linked to reduced biomarkers of inflammation17 such as C-reactive protein. This oil when infused with herbs, doubles the benefits with its rich properties and gives the best results. Extra virgin olive oil is considered the highest-quality olive oil to be used as carrier oil with herbs. It is unrefined and contains more nutrients compared to other processed varieties.

RECIPES FOR NECK AND UPPER BACK PAIN

The first recipe:

Ingredients are,

3 teaspoons of turmeric powder,
Half a teaspoon of black pepper
A teaspoon of lemon peel
A teaspoon of Himalayan salt
¾ cup of regular drinking cups of olive oil

Method:

- Take all the ingredients and coarse grind in the mixture. Take the powder and add olive oil into it and stir it up. You can store this in a dark color bottle to prevent it from direct sunlight.
- Also, it can be placed in a refrigerator to ensure its protection.
- Take small amount of oil, massage on your upper back with gentle pressure, try working on the areas which are stiff.
- After massage, you can take a hot compress and gently wipe off your skin.
- Massage can be done once in a day.

Benefits:

- Relieves acute pain
- Stimulates blood circulation
- Stimulates and revitalizes nerves
- Reduces inflammation
- Moisturizes the skin and nourishes the muscle

The second recipe:

Ingredients are,

3 teaspoons ground dry olive leaves
6 teaspoons of dried sour grapes
3 teaspoons of dried wild thyme
Half a cup of drinking cups of extra-virgin olive oil

Method:

- Take the amount of dried olive leaves, thyme, and dried sour grapes, grind the dry ingredient until it becomes like powder.
- Then, add virgin olive oil and mix it well.
- And put in an airtight container, away from heat and sun or in the fridge
- Take small amount of oil, massage on your upper back with gentle pressure, try working on the areas which are stiff.
- Use it 3 to four times a day with gentle pressure on back.
- After massage, you can take a hot compress and gently wipe off your skin.

The third recipe:

Ingredients are,
A teaspoon of hot pepper
5 spoons of green tea
3 teaspoons of sesame seeds
2 teaspoons of salt
A full cup of extra-virgin olive oil

Method:

- Take all the dry ingredients and grind it in a coffee grinder until it becomes a fine powder.
- Add virgin olive oil to it and mix well.
- Place it in an airtight container, away from heat and sun and in the fridge
- Use 3 times a day (morning, noon, and evening) with gentle pressure on the back.
- After massage, you can take a hot compress and gently wipe off your skin.
- Make sure you stir the mixture before using.

Benefits:

- Eliminates pain directly
- Stimulates blood circulation
- It stimulates and revitalizes the nerves and aids in healing
- Eliminates inflammation
- Nourishes muscle and moisturizes the skin

The fourth recipe:

Ingredients are,
3 teaspoons of fine turmeric powder
3 teaspoons of sage powder
A teaspoon of cinnamon powder
A cup of regular cups olive oil

Method:

- Take all the dry ingredients and grind it in a coffee grinder until it becomes a fine powder
- Add virgin olive oil to it and mix well.
- Place it in an airtight container, away from heat and sun and in the fridge
- Use 3 times a day (morning, noon, and evening) with gentle pressure on the back.
- Make sure you stir the mixture before using.
- After massage, you can take a hot compress and gently wipe off your skin.

The fifth recipe:

Ingredients are,
3 teaspoons of sesame seeds
2 teaspoons of cinnamon bark
4 teaspoons of Cress seeds
Half a large cup of olive oil

Method:

- Take all the dry ingredients and grind it in a coffee grinder until it becomes a fine powder
- Add virgin olive oil to it and mix well.
- Place it in an airtight container, away from heat and sun and in the fridge.
- Take a small amount and Use 3 times a day (morning, noon, and evening) with gentle pressure on the back.
- Make sure you stir the mixture before using.

Benefits:

- Reduces the pain
- It activates the free nerve endings and blocks the pain receptors.
- Stimulates blood circulation
- Reduces inflammation and swelling

The sixth recipe:
Ingredients are,

A teaspoon of black mustard
A teaspoon of sesame
3 teaspoons of ground bay leaves
Half a large cup of drinking glasses of olive oil

Method:

- Take all the dry ingredients and grind it in a coffee grinder until it becomes a coarse powder.
- Add virgin olive oil to it and mix well
- Place it in an airtight container, away from heat and sun or store it in the refrigerator.
- Use 3 times a day (morning, noon, and evening) with gentle pressure on the back.
- Make sure you stir the mixture before using.
- After massage, you can take a hot compress and gently wipe off your skin.

Benefits:

- Reduces the pain
- It activates the free nerve endings and blocks the pain receptors.
- Stimulates blood circulation

- Reduces inflammation and swelling

The seventh recipe:
Ingredients are,

A teaspoon of chili powder
5 teaspoons of chamomile powder
3 teaspoons of turmeric
Half a large cup of extra-virgin olive oil

Method:

- Do not but any powders from the store. Instead use whole herbs to enhance more benefits.
- Take all the dry ingredients and grind it in a coffee grinder until it becomes a coarse powder.
- Add virgin olive oil to it and mix well.
- Place it in an airtight container, away from heat and sun or store it in the refrigerator.
- Use 2 times a day (morning, evening) with good pressure on the back.
- Make sure you stir the mixture before using.
- After massage, you can take a hot compress and gently wipe off your skin.

Benefits:

- Relieving acute pain
- Relaxes the muscle and calms the nerves, in addition to softening and lightening the skin
- Stimulates nerves
- Reduces inflammation

The eighth recipe:
Ingredients are,

5 teaspoons of mustard
5 teaspoons of black seeds
5 teaspoons of chia seeds
1 cup of olive oil

Method:

- Take all the dry ingredients and grind it in a coffee grinder until it becomes a coarse powder.
- Add virgin olive oil to it and mix well.
- Place it in an airtight container, away from heat and sun or store it in the refrigerator.
- Use 4 times a day with gentle pressure on the back.
- Make sure you stir the mixture before using.

- After massage, you can take a hot compress and gently wipe off your skin.

Benefits:

- Relieving acute pain
- Relaxes the muscle and calms the nerves, in addition to softening and lightening the skin
- Stimulates nerves
- Reduces inflammation

The ninth recipe:
Ingredients are,
5 teaspoons of ground ginger
2 teaspoons of fenugreek
3 teaspoons of bay leaf powder
2 teaspoons of wild thyme powder
Half cup of olive oil

Method:

- Take all the dry ingredients and grind it in a coffee grinder until it becomes a coarse powder.
- Add virgin olive oil to it and mix well.
- Place it in an airtight container, away from heat and sun or store it in the refrigerator.
- Use 3 times a day with gentle pressure on the back.
- Make sure you stir the mixture before using.
- After massage, you can take a hot compress and gently wipe off your skin.

Benefits:

- Relieving acute pain
- Relaxes the muscle and calms the nerves, in addition to softening and lightening the skin
- Stimulates nerves
- Reduces inflammation

The tenth recipe:
Ingredients are,
Half a cup of apple cider vinegar
5 teaspoons of table salt
A teaspoon of turmeric
2 teaspoons garlic powder
A cup of olive oil
Method:

- Take all the dry ingredients and grind it in a coffee grinder until it becomes a coarse powder.
- Add virgin olive oil to it and mix well.
- Place it in an airtight container, away from heat and sun or store it in the refrigerator.
- Use 3 times a day with gentle pressure on the back.
- Make sure you stir the mixture before using.
- After massage, you can take a hot compress and gently wipe off your skin.

Benefits:

- Relieving acute pain
- Relaxes the muscle and calms the nerves, in addition to softening and lightening the skin
- Stimulates nerves
- Reduces inflammation

The eleventh recipe:
Ingredients are,

7 teaspoons of bran
4 teaspoons cinnamon powder
3 teaspoons of wild thyme
2 teaspoons of laurel powder
Half a large cup of olive oil

Method:

- Take all the dry ingredients and grind it in a coffee grinder until it becomes a coarse powder.
- Add virgin olive oil to it and mix well.
- Place it in an airtight container, away from heat and sun or store it in the refrigerator.
- Use 3 times a day with gentle pressure on the back.
- Make sure you stir the mixture before using.
- After massage, you can take a hot compress and gently wipe off your skin.

Benefits:

- Relieving acute pain
- Relaxes the muscle and calms the nerves, in addition to softening and lightening the skin
- Stimulates nerves
- Reduces inflammation

RECIPES FOR ACUTE LOWER BACK PAIN

The first recipe:
Ingredients are,
A teaspoon of basil
4 teaspoons of green thyme
1 teaspoon of cumin
A teaspoon of garlic powder

Method:

- Take all the dry ingredients in a bowl and mix well.
- Add virgin olive oil to it and mix well.
- Place it in an airtight container, away from heat and sun or store it in the refrigerator.
- Use 3 times a day with gentle pressure on the back.
- Make sure you stir the mixture before using.
- After massage, you can take a hot compress and gently wipe off your skin.

The second recipe:
Ingredients are,
5 teaspoons of parsley
3 teaspoons of fennel
5 teaspoons bay leaf powder
2 teaspoons of moringa seeds
A large cup of olive oil

Method:

- Take all the dry ingredients and grind it in a coffee grinder until it becomes a coarse powder.
- Add virgin olive oil to it and mix well.
- Place it in an airtight container, away from heat and sun or store it in the refrigerator.
- Use 3 times a day with gentle pressure on the back.
- Make sure you stir the mixture before using.
- After massage, you can take a hot compress and gently wipe off your skin.

Benefits:

- Relieving acute pain
- Relaxes the muscle and calms the nerves, in addition to softening and lightening the skin
- Stimulates nerves
- Reduces inflammation

The third recipe:

Ingredients are,
2 teaspoons of cloves
3 teaspoons of sage powder
3 teaspoons of coriander powder
A teaspoon of honey

Method:

- Take all the dry ingredients and grind it in a coffee grinder until it becomes a coarse powder.
- Add honey to it and mix well.
- Add olive oil to it and mix well.
- Place it in an airtight container, away from heat and sun or store it in the refrigerator.
- Use 3 times a day with gentle pressure on the back.

Benefits:

- Relieving acute pain
- Relaxes the muscle and calms the nerves, in addition to softening and lightening the skin
- Stimulates nerves

The fourth recipe:

Ingredients are,

3 teaspoons of fenugreek
3 teaspoons of mustard
3 teaspoons of mint
A large cup of olive oil

Method:

- Take all the dry ingredients and grind it in a coffee grinder until it becomes a coarse powder.
- Add virgin olive oil to it and mix well.
- Place it in an airtight container, away from heat and sun or store it in the refrigerator.
- Use 2-3 times a day with gentle pressure on the back.
- Make sure you stir the mixture before using.

Benefits:

- Relieving acute pain
- Relaxes the muscle and calms the nerves, in addition to softening and lightening the skin
- Stimulates nerves

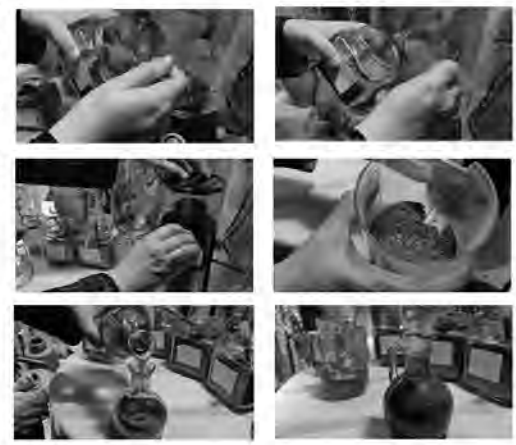
The fifth recipe:

Ingredients are,

6 teaspoons of chia seeds
3 tablespoons of flaxseed
2 tablespoons of green thyme
A large cup of olive oil

Method:

- Take all the dry ingredients and grind it in a coffee grinder until it becomes a coarse powder
- Add virgin olive oil to it and mix well
- Place it in an airtight container, away from heat and sun or store it in the refrigerator.
- Use 3 times a day with gentle pressure on the back.
- Make sure you stir the mixture before using.



RECIPES FOR CHRONIC LOWER BACK PAIN

The first recipe:

Ingredients are,

3 teaspoon mints
2 teaspoons of sage
3 teaspoons of green thyme powder
3 tablespoons of chia seeds
Half a large cup of olive oil

Method:

- Take all the dry ingredients and grind it in a coffee grinder until it becomes a coarse powder.
- Add virgin olive oil to it and mix well.
- Place it in an airtight container, away from heat and sun or store it in the refrigerator.
- Use 2-3 times a day with gentle pressure on the back.
- Make sure you stir the mixture before using.

The second recipe:

Ingredients are,

5 teaspoon turmeric
4 teaspoons of basil powder
4 teaspoons of cress seeds
6 teaspoons of mint
Half cup of olive oil

Method:

- Take all the dry ingredients and grind it in a coffee grinder until it becomes a coarse powder.
- Add virgin olive oil to it and mix well.
- Place it in an airtight container, away from heat and sun or store it in the refrigerator.
- Use 2-3 times a day with gentle pressure on the back.
- Make sure you stir the mixture before using

Benefits:

- Relieving acute pain
- Relaxes the muscle and calms the nerves, in addition to softening and lightening the skin
- Stimulates nerves
- Reduces inflammation

The third recipe:

Ingredients are,

3 teaspoons of fennel
5 teaspoons of chicory
10 teaspoons lemon peel and dry orange peel
Half cup of olive oil

Method:

- Take all the dry ingredients and grind it in a coffee grinder until it becomes a coarse powder.
- Add virgin olive oil to it and mix well.
- Place it in an airtight container, away from heat and sun or store it in the refrigerator.
- Use 2-3 times a day with gentle pressure on the back.
- Make sure you stir the mixture before using.

Benefits:

- Relieving acute pain
- Relaxes the muscle and calms the nerves, in addition to softening and lightening the skin
- Stimulates nerves
- Reduces inflammation

The fourth recipe:

Ingredients are,
3 teaspoons of honey
5 teaspoons of basil
4 teaspoons of turmeric
Half cup of olive oil

Method:

- Take all the dry ingredients and grind it in a coffee grinder until it becomes a coarse powder.
- Add virgin olive oil and honey to it and mix well.
- Place it in an airtight container, away from heat and sun or store it in the refrigerator.
- Use 2-3 times a day with gentle pressure on the back.
- Make sure you stir the mixture before using.

Benefits:

- Relieving acute pain
- Relaxes the muscle and calms the nerves, in addition to softening and lightening the skin
- Stimulates nerves
- Reduces inflammation

The fifth recipe:

Ingredients are,
3 teaspoons of bran
5 teaspoons of linden
3 tablespoons of juniper
5 tablespoons of violets
A cup of olive oil

Method:

- Take all the dry ingredients and grind it in a coffee grinder until it becomes a coarse powder.
- Add virgin olive oil and honey to it and mix well.
- Place it in an airtight container, away from heat and sun or store it in the refrigerator.
- Use 2-3 times a day with gentle pressure on the back.
- Make sure you stir the mixture before using.

Benefits:

- Relieving acute pain
- Relaxes the muscle and calms the nerves, in addition to softening and lightening the skin
- Stimulates nerves
- Reduces inflammation

The sixth recipe:

Ingredients are,
5 spoons of ginger
2 tablespoons of powdered milk
5 tablespoons of Moringa
3 teaspoons of wild thyme
A cup of olive oil

Method:

- Take all the dry ingredients and grind it in a coffee grinder until it becomes a coarse powder.
- Add virgin olive oil and honey to it and mix well.
- Place it in an airtight container, away from heat and sun or store it in the refrigerator.
- Use 2-3 times a day with gentle pressure on the back.
- Make sure you stir the mixture before using.

Benefits:

- Relieving acute pain
- Relaxes the muscle and calms the nerves, in addition to softening and lightening the skin
- Stimulates nerves
- Reduces inflammation

The seventh recipe:
Ingredients are,

3 teaspoons of cumin
6 teaspoons of turmeric
5 teaspoons of green thyme
A cup of olive oil

Method:

- Take all the dry ingredients and grind it in a coffee grinder until it becomes a coarse powder.
- Add virgin olive oil and honey to it and mix well.
- Place it in an airtight container, away from heat and sun or store it in the refrigerator.
- Use 2-3 times a day with gentle pressure on the back.
- Make sure you stir the mixture before using.

Benefits:

- Relieving acute pain
- Relaxes the muscle and calms the nerves, in addition to softening and lightening the skin
- Stimulates nerves
- Reduces inflammation

The eighth recipe:
Ingredients are,

6 teaspoons of cress seeds
5 teaspoons of turmeric
5 spoons of pepper
5 spoons of sesame
A cup of olive oil

Method:

- Take all the dry ingredients and grind it in a coffee grinder until it becomes a coarse powder.
- Add virgin olive oil to it and mix well.
- Place it in an airtight container, away from heat and sun or store it in the refrigerator.

- Use 2-3 times a day with gentle pressure on the back.
- Make sure you stir the mixture before using.

Benefits:

- Relieving acute pain
- Relaxes the muscle and calms the nerves, in addition to softening and lightening the skin
- Stimulates nerves
- Reduces inflammation

The ninth recipe:

Ingredients are,

5 spoons of camphor
3 tablespoons of cumin
6 tablespoons of mango
3 tablespoons of powdered milk
2 teaspoons of flour
Half cup of olive oil

Method:

- Take all the dry ingredients and grind it in a coffee grinder until it becomes a coarse powder.
- Add virgin olive oil and honey to it and mix well.
- Place it in an airtight container, away from heat and sun or store it in the refrigerator.
- Use 2-3 times a day with gentle pressure on the back. Put a hot towel after massaging.
- Make sure you stir the mixture before using.

Benefits:

- Relieving acute pain
- Relaxes the muscle and calms the nerves, in addition to softening and lightening the skin
- Stimulates nerves
- Reduces inflammation

The tenth recipe:

Ingredients are,
6 spoons of cloves
A normal cup of olive oil

Method:

- Add virgin olive oil to the clove and mix well.
- Let it cool down before using.
- Place it in an airtight container, away from heat and sun or store it in the refrigerator.
- Use 2-3 times a day with gentle pressure on the back. Put a hot towel after massaging.
- Make sure you stir the mixture before using.

Benefits:

- Relieving acute pain
- Relaxes the muscle and calms the nerves, in addition to softening and lightening the skin
- Stimulates nerves
- Reduces inflammation

The eleventh recipe:

Ingredients are,

3 teaspoons of lavender oil
3 teaspoons of coconut powder
3 teaspoons of pepper cone
3 teaspoons of mint
3 teaspoons of camphor
1 cup of olive oil

Method:

- Mix all the ingredients together and coarse grind it.
- Add lavender oil and olive oil to the mixture and mix well
- Place it in an airtight container, away from heat and sun or store it in the refrigerator.
- Use 2-3 times a day with gentle pressure on the back. Put a hot towel after massaging.
- Make sure you stir the mixture before using.

Benefits:

- Relieving acute pain
- Relaxes the muscle and calms the nerves, in addition to softening and lightening the skin
- Stimulates nerves
- Reduces inflammation

The twelfth recipe:

Ingredients are,

5 teaspoons lavender
3 teaspoons of sesame seeds
2 teaspoons of black seeds
2 teaspoons of pepper cone
2 teaspoons of salt
A full cup of extra-virgin olive oil

Method:

- Take all the dry ingredients and grind it in a coffee grinder until it becomes a coarse powder.
- Add virgin olive oil and mix well.
- Place it in an airtight container, away from heat and sun or store it in the refrigerator.
- Use 2-3 times a day with gentle pressure on the back. Put a hot towel after massaging.
- Make sure you stir the mixture before using.

Benefits:

- Relieving acute pain
- Relaxes the muscle and calms the nerves, in addition to softening and lightening the skin

CHAPTER 7: HERBAL TEAS FOR RELAXATION AND PAIN RELIEF

Herbal teas have been used for centuries, both for their health benefits and for pleasure. Some people claim that certain herbal teas have properties that can help reduce symptoms of stress, anxiety, and other mental health concerns. Some herbal teas may help take the edge off occasional stress and anxiety, while others may be better used as a routine complementary therapy for an underlying condition.

Herbal Teas	Benefits
Ashwagandha tea	• Reducing stress • Reducing anxiety and depression • Reducing fatigue and increasing physical endurance • Boosting immune system • Improving fertility • Promote longevity • Protecting the brain • Protecting digestive system
Barley Tea	• Boosts Your Immune System • Improves Blood Flow and Circulation • Prevents Tooth Decay • It Can Help You Unwind • Can Increase Weight Loss • May Boost Fertility in Men
Chamomile tea	• Slowing or preventing osteoporosis • Treating diabetes and lowering blood sugar • Reducing inflammation • Cancer treatment and prevention • Helping with sleep and relaxation • Treating cold symptoms • Treatment for mild skin conditions • Reducing menstrual pain
Cinnamon Tea	• Loaded with antioxidants • Lowers inflammation and may improve heart health • May help reduce blood sugar • May promote weight loss • Fights off bacteria and fungi • May reduce menstrual cramps and other PMS symptoms

Cranberry Tea	• Antioxidants • Urinary tract infection • Oral Hygiene's • Boost immune system and fights infection • Vitamin packed • Stress relief • Eye Health • Kidney health • Fat burning
Hibiscus Tea	• Packed With Antioxidants • May Help Lower Blood Pressure • May Help Lower Blood Fat Levels • May Boost Liver Health
Ginger Tea	• 1Blood pressure and heart health • Pain relief • Immune support and cancer prevention • Weight and blood sugar control
Rosehip Tea	• Rich in antioxidants • May have antidiabetic properties • May improve bone health • May have cancer-fighting properties
Lemon tea	• Natural antibacterial • Treats insomnia • Treats diabetes • Natural antibacterial • Lavender Tea Health Benefits • Improves Sleep
Lemongrass tea	• Relieving anxiety. Many people find sipping hot tea to be relaxing, but lemongrass tea may offer further anxiety-reducing properties. • Lowering cholesterol. • Preventing infection. • Boosting oral health. • Relieving pain. • Boosting red blood cell levels.
Valerian Root	• Insomnia • Menopausal Symptoms • Anxiety • Stress Management
Turmeric tea	• Eases arthritis symptoms. ...

	• Helps prevent Alzheimer's disease. ... • Helps prevent cancer. ... • Maintains ulcerative colitis remission. ... • Boosts the immune system. ... • Lowers cholesterol. ... • Can help treat uveitis.
TULSI	• High Cholesterol • Metabolic Syndrome • Anxiety
Sage tea	• Rich in anti-inflammatory and antioxidant compounds • May promote healthy skin and wound healing • Promotes oral health • May have anticancer properties • Improves blood sugar control
Rosemary Tea	• High in antioxidant, antimicrobial, and anti-inflammatory compounds • May help lower your blood sugar • May improve your mood and memory • May support brain health
Rose tea	• Naturally caffeine-free • Hydration and weight loss benefits • Rich in antioxidants • May alleviate menstrual pain
Honey bush	• Rich in antioxidants • May support a healthy immune system • May aid weight loss • May protect against heart disease
Rooibos Tea	• Low in Tannins and Free from • Caffeine and Oxalic Acid • Packed With Antioxidants • May Boost Heart Health • May Reduce Cancer Risk
Peppermint Tea	• May Ease Digestive Upsets • May Help Relieve Tension Headaches and Migraines • May Freshen Your Breath • May Relieve Clogged Sinuses
Olive leaves tea	• relax and ease arthritic pain • reduce bad cholesterol • lower glucose levels • lower blood pressure

	• strengthen the cardiovascular system – a heart tonic • stimulate the immune system • help fight infections

CHAPTER 8: HERBAL POULTICE (PASTE) RECIPES FOR PAIN RELIEF

What is herbal poultice (paste)?

A poultice is simply a way to apply herbal matter directly to the skin. Typically, the herbs are mixed with water or oil and applied much like a paste. If the herb is particularly potent, such as with onion, mustard, garlic, or ginger, the skin may be protected by a thin cloth, or the herbs might be placed in a cloth bag or a clean sock. Herbal poultices may be hot, which increases circulation in the area, or cold, which can quickly relieve the pain of a sunburn or the sting of an insect bite. Certain herbs can fight infection, reduce inflammation, draw poison from the skin, relieve aches and pains, or soothe chest congestion.

Precautions for using herbal poultice

- An allergic reaction is possible when applying any substance directly on your skin. Test a small area on your forearm before applying the poultice to the affected area.
- Do not apply any type of paste or cloth poultice to a wound that appears to be seriously infected.
- If you're making a heated poultice, it should be warm — not hot — to avoid burning your skin.
- Ten to fifteen minutes is the usual time for this poultice to be applied to the skin, and when it is removed a little olive oil should be applied.

Here are some recipes for herbal poultice for pain relief,

Neck and shoulder pain

Recipe 1: Figs with oats and turmeric

Ingredients

5 dried figs
1 cup of milk
3 tablespoons oatmeal
4 teaspoons turmeric

Method:

- Boil the oats with milk, add turmeric, and then mix well.




- Add figs in the mixture and blend it well until it becomes paste.



- Apply the paste directly to the neck without any barrier such as gauze or cloth three to four times a day.
- Keep the paste for 10-15 minutes. It can also be stored in container to be used several times later.

Benefits:

- Reduces pain
- Activates circulation
- Nourishes the muscle
- Relaxes the nerves and muscles
- Reduces inflammation.

Recipe 2: Banana and avocado with cinnamon

Ingredients:

1 banana
1 medium-sized avocado
1 teaspoon cinnamon
1/4 cup yogurt

Method:

- Mash the banana and avocado in a bowl.


- Add cinnamon to it and then mix everything with yogurt.




- Put on the gauze and apply 2-3 times a day and the duration of treatment an hour on the back.
- Can be applied for a week or until the pain ends.

Benefits:

- Relieves pain
- It helps the nerves relax.
- Nourishes the muscle
- Reduces inflammation.
- It activates circulation.

Recipe 3

Ingredients:

2 Egg outer covering or peel.
1/4 cup lemon juice
3 tablespoons cress seed
3 teaspoons honey
1 teaspoon pepper
3 teaspoons olive oil

Method:

- Grind the egg peel until smooth powder and then add lemon juice and olive oil and mix well.



- Add grounded pepper and cress seeds and finally add honey until a sticky paste is formed.



- You can apply it topically and on top of it a hot towel can be placed.

Benefits:

- Relieves pain in the neck and back
- Nourishes the muscle
- Activates circulation
- Stimulates nerves
- Reduces inflammation.

For Back Pain

Recipe 1:

Ingredients:

2 teaspoons ginger
1 cup of hot water
1 teaspoon cloves
1 teaspoon cinnamon
1/4 cup vinegar
3 tablespoons tahini
4 tablespoons oatmeal

Method:

- Boil the oats with water and then add cloves, cinnamon, and ginger.

- When it becomes a coherent mixture then add tahini on top of it.

- Apply directly to the area of pain and this is for the sharp back pain which can be in the lower or middle back.

Benefits:

- Relieves pain
- It reduces inflammation and stimulate the nerves.
- Activates circulation, nourishes the muscle.

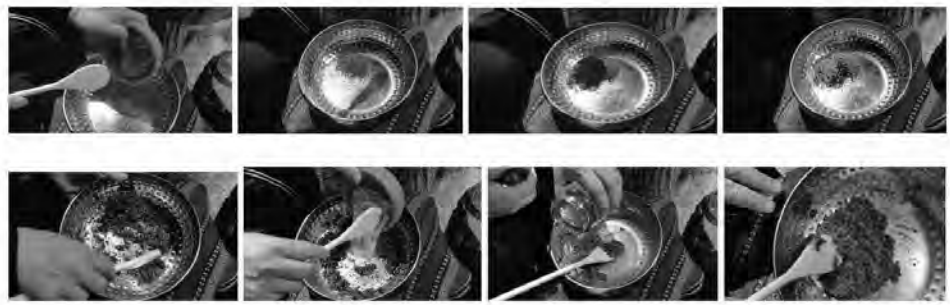
Recipe 2

Ingredients:

1 teaspoon camphor
2 tablespoons black seed
2 tablespoons thyme
3 teaspoons lavender oil
3 teaspoons mint
3 teaspoons basil
3 teaspoons honey
3 teaspoons flour or oatmeal

Method:

- Grind the materials well and then mix them with honey and flour or oatmeal to make a paste.



- Apply topically to the place 2-3 times a day for a week. Can be applied to the neck and back, for a month.

Benefits

- Relieve pain
- Activates circulation
- Stimulates nerves
- Reduces flames
- Nourishes the muscle

Recipe 3:

Ingredients:

3 tablespoons wheat flour
3 tablespoons ginger powder
3 tablespoons fenugreek
2 tablespoons chia seed
1/4 cup olive oil

Method:

Grind the material in a grinder and then add olive oil gradually until it becomes a paste, apply the paste directly to the area of pain.

Benefits

- Reduces pain
- Activates circulation

- Reduces inflammation
- Stimulates nerves
- Nourishes the skin and muscle

Recipe 4:

3 cloves garlic
Slice of aloe vera
Spoonful of cloves
1 teaspoon honey

Method:

- Beat garlic in mortar and pastel and mash it until it becomes like paste.




- Always use the paste through a screen may be a cloth, should not put directly on the skin for fear of allergic reactions.
- Can be used 3 times a day for a week until healing in case of severe pain. Should not use on neck.

Benefits:

- Reduces pain
- Stimulates nerves
- Activates circulation
- Nourishes the muscle.
- Reduces inflammation

CHAPTER 9: SCRUBS AND PEELING RECIPES TO REJUVINATE SKIN AND REDUCE PAIN

How peeling relieves pain?
Sugar and ingredients used peels the skin, provides it with different minerals, opens the pores, stimulates the flow of blood circulation, and purifies the body from toxins, as olive oil moisturizes the skin and removes stains. This overall promotes recovery from pain and nourishes the muscles.

For Head and Neck:
Recipe 1:
Ingredients:

- Half a cup of sea salt, Epsom or normal
- Half a cup of virgin olive oil
- 1 teaspoon grated lemon or juice
- 2 tablespoons honey
- 1 teaspoon of Turmeric, mint, green tea and dill.

Method:

- Mix the dry ingredients together, then add honey and mix well.

- After that, add lemon juice and mix well.

- Massage the body with mixture before bathing, making gentle circular movements.
- Shower with hot water after several minutes without using soap or wipe it with hot towel.
- Dry the skin, then apply a moisturizing cream or lotion

Benefits:

- Relieves pain and stimulates nerves
- Activates blood circulation and nourishes the muscle
- Reduces skin infections and nerve infections

Recipe 2
Ingredients:

- A teaspoon of chamomile.
- A teaspoon of anise.
- Five teaspoons of salt
- Five spoons of caraway.
- A teaspoon of sage.
- Half a cup of white vinegar
- 2 tablespoons honey

Method:

- Mix all the dry ingredients in a bowl and add honey.

- Add vinegar to the mixture and mix well.

- Massage the body with mixture before bathing, making gentle circular movements.
- Shower with hot water after several minutes without having to use soap.
- Dry the skin, then apply a moisturizing cream or lotion

Benefits:

- Reduces acute pain
- Activates blood circulation and relieves tension from the muscle.
- Stimulates nerve.

Recipe 3

Ingredients:

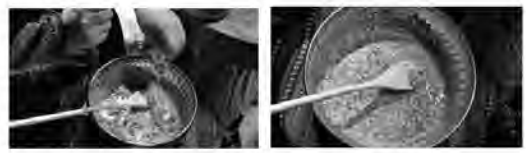
- 2 tbsp. sugar
- 2 tablespoons honey
- 2 tablespoons coarse salt
- 3 teaspoons oats
- Half a cup of lemon juice
- Half a cup of olive oil
- 1teaspoon of cress seeds, sesame, flaxseed, sage, and mint.

Method:

- Take the grains and grind and mix well.

- Add honey, sugar and salt together to lemon juice, mix and add to the dry mixture.

- Add olive oil to the mixture and stir it well.



- Massage the body with mixture before bathing, making gentle circular movements.
- Wash the area with lukewarm water or wet towel and then massage in circular movements.
- Shower with hot water after several minutes without having to use soap.
- Dry the skin, then apply a moisturizing cream or lotion

Benefits:

- Relieves pain and stimulates nerves
- Activates blood circulation and nourishes the muscle
- Reduces inflammation.

Recipe 4

Ingredients:

- 1/4 cup olive oil
- Three teaspoons of mint
- ¼ cup of sugar
- Three tablespoons of green tea
- 2 teaspoons turmeric
- Half a cup of table salt or Himalayan salt

Method:

- Mix all ingredients together until a rough paste is formed.

- Clean your skin, then apply the sugar mixture to it.
- Massage the neck and head using your fingers with circular movements on the area.
- For 5-10 minutes, you need one to two minutes on each part of the body.
- Wash your body using a moisturizing peeler with warm water.

Benefits:

- Relieves pain and stimulates nerves
- Activates blood circulation and nourishes the muscle
- Reduces inflammation

Recipe 5

Ingredients:
½ a cup of Oatmeal
½ a cup of brown sugar
½ a cup of honey
1 teaspoon of Thyme
1 teaspoon of lavender
2 teaspoon of cloves powder

2 teaspoon of ginger powder
¼ a cup of olive oil

Method:

- Mix all the ingredients together until a smooth mixture and then add the liquid ingredients and mix well until it becomes a dough.




- Clean with lukewarm water or a wet towel and then apply the scrub mixture to the area.
- Massage your skin using your fingers with circular movements for 5-10 minutes.
- Wash your body and apply a moisturizing lotion afterwards.

Benefits

- Activates blood circulation and flush out toxins from your body.
- Reduces inflammation.
- Relieves pain and stimulates nerves.

Recipes for acute back pain

Recipe 1
Peeled sea salt
Salt has antibacterial properties that can help treat certain skin diseases. Salt is also a preservative, so the sea salt peeler can maintain itself naturally. Use ground sea salt because coarse sea salt can be very harsh on your skin. Sea salt peelers may be too abrasive for sensitive skin. Be careful if you have a wound in your skin because salt can hurt it. Because there's no salt smell, you might want to add some of your favorite essential oils to your own salt peeler.

Ingredients:

- 1/2 cup sea salt
- 1/2 cup olive oil
- 2 tablespoons honey
- 2 tablespoons cinnamon
- 2 tablespoons chili
- 2 tablespoons of the cumin
- 2 tablespoons fennel

Method:

- Mix sea salt and oil in a mixing bowl.


- Mix the herbal materials and grind well and then add to the mixture and put two spoons of honey in the mixture.






- Massage the painful area in circular motion with fingers.

Benefits:

- Relieves chronic pain
- Reduce Inflammation
- Activates blood circulation and nourishes the muscle
- Reduces skin infections.

Recipe 2
Peeled sugar with green tea

Ingredients:

- 2Bags of green tea
- 1 cup hot water
- 1 cup brown sugar
- 1/4 cup olive oil
- A teaspoon of Hyssopus, Ginseng, Chamomile, Clove, Rosemary.

Method:

- Add the tea bags and herbal ingredients to hot water.


- Let the tea soak until cooled.
- Grind the cloves and mix it with the green tea. Mix well.

- Add the brown sugar with olive oil in a bowl.

- Massage the mixture to the body with gentle circular movements.

Benefits:

- Relieves pain and stimulates nerves
- Reduce Inflammation
- Activates blood circulation and nourishes the muscle
- Reduces skin infections.

Recipe 3

Peeled sugar with honey

Honey repairs skin tissue and protects against UV rays, and also helps kill germs on the skin. Honey can be easily blended with granules and oil to make a beneficial peeler for the skin.

Ingredients:

- 1 cup brown sugar
- 1 cup olive oil
- A tablespoon honey
- 1/4 cup apple cider vinegar
- Sesame, mint, seed seeds, linden sunflower seed.

Method:

- Add brown sugar, oil, honey, and vinegar in the mixing bowl.

- Grind the herbal materials

- Add to the oil mixture and mix well.

- Add more olive oil if the mixture is fragmented.
- Massage the mixture to the body with gentle circular movements

Recipes for chronic back pain

Recipe 1

Yogurt scrub: Yogurt scrub is suitable for dry skin, it contains ingredients that help clean the skin and get rid of dead cells, as it moisturizes the skin very well.

Ingredients:

- 1 tablespoon yogurt.
- A quarter cup of olive oil.
- A tablespoon of honey.
- ½ cup of salt or sugar
- Teaspoon of: Chamomile, basil, cinnamon, moringa and thyme

Method:

- Mix all the ingredients together until a rough paste is formed.

- Clean your skin, then apply the sugar mixture to it. Massage the place for 5-10 minutes.
- Then wash your body using a moisturizing peeler with warm water.

Benefits:

- Relieves pain and stimulates nerves
- Activates blood circulation and nourishes the muscle
- Reduces skin infections.

Recipe 2

Turmeric scrub: Turmeric is one of the most important elements used in natural cosmetics in India, it has antiseptic and antibacterial properties, and this keeps your skin young and can be prepared

Ingredients:

- 1 cup of salt
- 2 spoons honey.
- 2 teaspoons turmeric powder.
- 1/2 cup olive oil
- A teaspoon of the following ingredients: Fennel powder, coriander powder, black mustard powder, and cumin powder.

Method:

- Mix all the ingredients together until a rough paste is formed.

- Clean your skin, then apply the scrub mixture to it. Massage the place with your fingers with circular movement on the skin for 5-10 minutes.
- Wash your body using a moisturizing peeler with warm water.

Benefits:

- Relieves pain and stimulates nerves
- Activates blood circulation and nourishes the muscle
- Reduces skin infections and nerve infections

Recipe 3

Lemon sugar: Lemon contains large amounts of vitamin C, which is a nutrient for the skin, has a peeling effect, makes the skin soft, fresh, and can be prepared

Ingredients:

- Half a cup of sugar.
- A tablespoon of honey.
- Half a cup of lemon juice.
- Teaspoon of: Basil, Mint, camphor, chia seeds and fenugreek.

Method:

- Put the juice in a bowl and then add salt and honey then add ground herbs.

- Grind all the ingredients and mix all the rest of the ingredients together until a rough paste is formed and stir well.

- Massage the place with your fingers with circular movement on the skin for 5-10 minutes.
- Wash your body using a moisturizing peeler with warm water.

Benefits:

- Relieves pain and stimulates nerves
- Activates blood circulation and nourishes the muscle
- Reduces skin infections and nerve infections

Recipe 4

Coffee scrub: Coffee is still a common ingredient in many of the body peelers you make at home.

Ingredients:

- 1/4 cup ground coffee
- 1 cup hot water
- ¼ cup of olive oil
- 1 tablespoon of lavender oil.
- 1 teaspoon of the following ingredients: Thyme, sage, dandelion, aloe-vera gel.

Method:

- Make a paste of aloe vera.

- Add ground coffee and hot water to the mixing bowl. Mix the coffee mixture with the aloe vera paste.

- Mix all the other ingredients with the coffee mixture together with a spoon until a rough paste is formed and stir well.

- Add olive oil at the last and mix well.

- Massage the place with your fingers with circular movement on the skin for 5-10 minutes.
- Wash your body using a moisturizing peeler with warm water.

Benefits:

- Relieves pain and stimulates nerves
- Activates blood circulation and nourishes the muscle
- Reduces skin infections and nerve infections

Recipe 5

Brown sugar Peeler

Brown Sugar is an available, inexpensive ingredient that peels off your skin greatly, and is gentler on the skin than sea salt or Epsom salt. This makes it an ideal ingredient for peeling sensitive skin. Brown sugar granules may make your skin a little sticky, so make sure to rinse them thoroughly after peeling.

Ingredients:

- 1 cup brown sugar or 2 tablespoons honey
- 1 cup oil of your choice such as coconut, jojoba, olive or almond oil.
- 3 tablespoons salt available preferably Himalayan
- 1 teaspoon of the following ingredients: Basil Thyme, Turmeric, fenugreek, and black seed.

Method:

- To make the peeled mix, add brown sugar and oil in the mixing bowl.

- Mix well and grind all dry ingredients into a powder form and put it over the previous mixture.

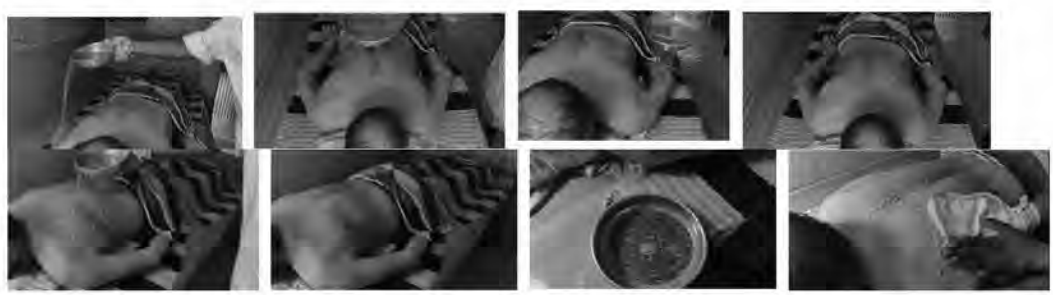
- Start the process of massage, add a drop or two of your favorite essential oil.

Benefits:

- Relieves pain and stimulates nerves
- Activates blood circulation and nourishes the muscle
- Reduces skin infections and nerve infections

How to do body scrub:

- When you are exfoliating, it's important to be gentle on your skin. You can make small, circular motions using your finger to apply a scrub or use your exfoliating tool of choice.
- If you use a brush, make short, light strokes. You can also use a thick cloth or a loofah. Avoid exfoliating if your skin has cuts, open wounds, or is sunburned.
- Always remember to clean the skin with lukewarm water or a wet towel and then apply the scrub mixture to the area.
- Massage your skin using your fingers with circular movements for 5-10 minutes.
- Wash your body and apply a moisturizing lotion afterwards.



Benefits:

- Relieves pain and stimulates nerves
- Reduce Inflammation
- Activates blood circulation and nourishes the muscle
- Reduces skin infections.
- Nourishes and softens the skin.

CHAPTER 10: HEAT AND COLD THERAPY

We treat everything from arthritis to muscle soreness to inflammation with icepacks or heating pads. Topical application of ice or heat can bring a surprising level of pain relief for most types of back pain. But the tricky part is knowing what situation calls for hot, and which calls for cold. Sometimes it includes both. As general rule of thumb, use ice for acute injuries or pain, along with inflammation and swelling. Use heat for muscle pain or stiffness.

Cold Therapy

How it works?

It helps improving the reduced blood flow to an injured area. This slows the rate of inflammation and reduces the risk of swelling and tissue damage. Acts as a local anesthetic. It slows down the pain messages being transmitted to the brain. Helps treat a swollen and inflamed joint or muscle. It is most effective within 48 hours of an injury.

Homemade Ice pack

- **A frozen towel.** To make a towel into a cold pack, place a folded, damp towel in a plastic bag and put it in the freezer for ten to twenty minutes. Then take the towel out of the bag and place it on the affected area.
- **Sponge.** Wet a sponge and put in the freezer. After it is frozen, take it out and put it in a baggie, then wrap it in a sock or a towel before applying it to the sore back.
- **Rice.** Another alternative is to fill a sock with rice and place it in the freezer, as rice will get as cold as ice but does not melt when used.
- **Gel-type pack.** Still another alternative is to fill a bag with liquid dishwasher detergent and freeze it, which gives it a consistency of a gel pack.
- **Frozen bag of peas.** If ice is needed quickly, it is easy to grab a bag of frozen peas or other vegetables out of the freezer, wrap it in a towel and apply it to the painful area.

Steps to make homemade ice pack at home:

- Place ice cubes in a big bowl and put some cold water in it.
- You can put some herbs like oregano, mint, lemon juice and vinegar to the water for pain relief.
- Take a washcloth or hand towel, and dip it in the ice-cold water.
- Now squeeze the towel with your hands to drain excess water.
- Place the homemade compress on your skin for up to 15 minutes.
- Dry the area with a towel after you're done.
- Reapply: For swelling, reapply the compress after two hours

How can you use ice?

- A cold compress should be applied to the inflamed area for 20 minutes every 4-6 hours for 3 days. Massaging the area with an ice cube or an ice pack in a circular motion from two to five times a day, for a maximum of 5 minutes only, to avoid ice burns.
- Helpful during the first 48 hours following an injury or stress that strains the muscles.
- Always check the area every 5 minutes to avoid ice burns.

When not to use ice?

- If there is an open wound or blistered skin
- If you have vascular disease or injury
- Hypersensitive to cold
- Should not be applied directly to skin or bones as can lead to frostbite

Heat Therapy

How it works?

"Warm" is the proper temperature. It should be between 76⁰ to 82⁰ Celsius. Improves circulation and blood flow to a particular area due to increased temperature. Relax and soothe muscles and heal damaged tissue. Increases flexibility

Homemade heat packs

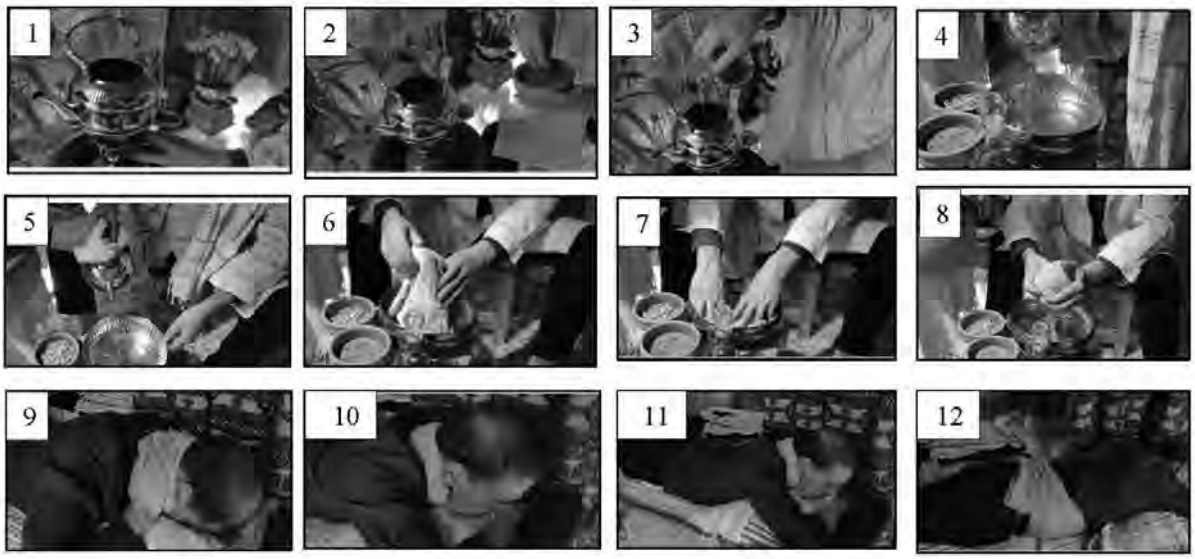
- Hot water bottle – tends to stay warm for 20-30 minutes
- Electric heating pad – maintains a constant level of heat if it is plugged in.
- Warming or heated blanket which could be wrapped around.
- Commercial adhesive wrap that sticks to the back and provides several hours of low-level heat.
- Fill a sock with rice and heat it in a microwave.
- Moist hot towel can be used for moist heat.

How can you use heat?

The duration that one needs to apply the heat is based on the type of and or magnitude of injury. For very minor back tension, short amount of heat therapy may be sufficient such as 15-20 minutes.For intense injuries, longer sessions of low-level of heat may be more beneficial such as 30 minutes to 2 hours or more. Applied to head and forehead which reduces spasms and relieves headache. If you are diabetic or having any underlying skin conditions, always check after every 5 minutes for burns.

How to prepare hot pack with a towel:

1. Fill the bowl with water that feels hot, but not scalding, to the touch.
2. You can put some herbs like oregano, mint, 2 teaspoons of salt, freshly squeezed lemon and 2 teaspoons of vinegar.
3. Soak the towel in the hot water, wringing out the excess.
4. Fold the towel into a square and apply it to the area that's in pain.
5. Hold the towel to your skin for up to 20 minutes at a time.



When not to use heat:

- If you have swelling or bruises on the area to the applied
- Diabetes as the skin becomes more sensitive and there is chance of getting burns. Check at regular interval for burns in this case.
- Open wound
- Vascular conditions

Contrast Bath:

Contrast bath therapy is a physical therapy treatment in which all or part of the body is immersed first in hot water, then in ice water, and then the procedure of alternating hot and cold is repeated several times. The contrast bath can help improve circulation around your injured tissue. This is one of many whirlpool treatments physical therapists use to help decrease pain and muscle spasm, increase range of motion and strength, and improve functional mobility.

Goals of Treatment

The goals of treatment will most likely include:

- Decreased pain
- Decreased swelling
- Controlled inflammation
- Improved mobility

How does contrast bath therapy work?

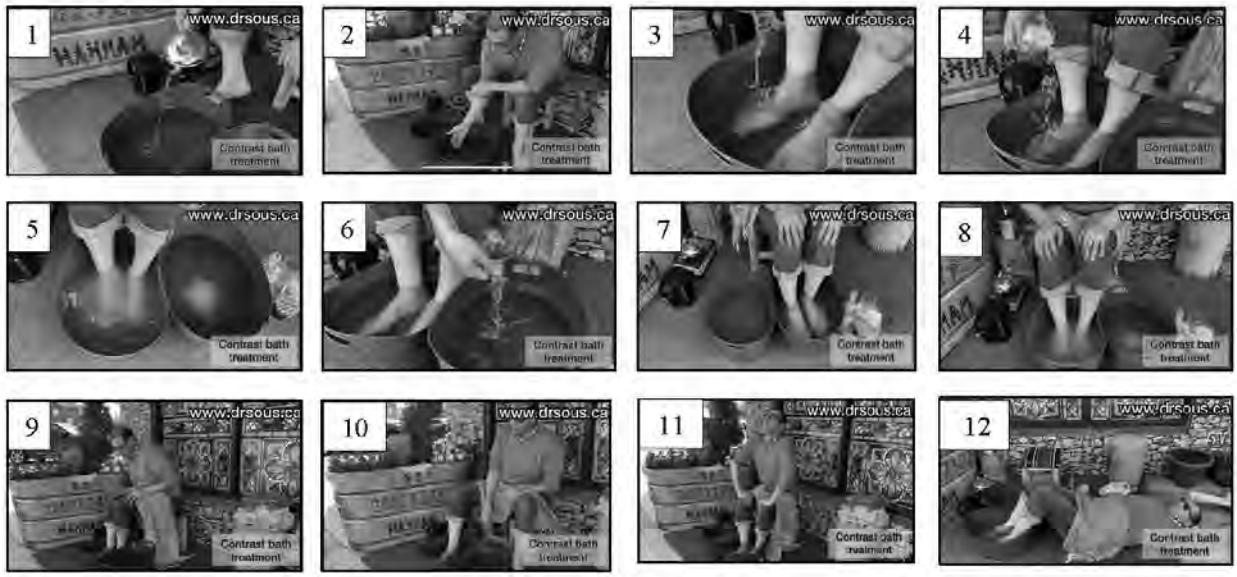
The key to contrast bath therapy is in the rapid changes produced in your circulatory system when you go from very warm water to very cold water. When you submerge part or all of your body in cold water, small blood vessels called capillaries respond to the cold by getting smaller. This is known as vasoconstriction. When you immerse yourself in warm water, the opposite happens. Your blood vessels open up. This is known as vasodilation. This rapid opening and closing of blood vessels near the site of your injury creates a pumping action that's thought to help decrease swelling and inflammation around injuries. Decreasing the swelling and inflammation helps alleviate pain and improve mobility.

How Contrast Bath Therapy Is Administered?

To perform a contrast bath, you need two tubs. One tub should be filled with warm water, and one tub with cold. The warm tub should be between 98-110 degrees Fahrenheit, and the cold tub should be 50-60 degrees Fahrenheit. Once both tubs are the correct temperature, you have to place your injured body part in the warm tub first, where it should stay for 3-4 minutes. You can do gentle motion exercises during that

time. You'll then quickly move the part being treated to the cold tub or bucket. Typically, you'll stay in the cold water for about one minute. This sequence of moving from warm to cold and back again is generally repeated for 20-30 minutes. Contrasting should follow the following basic pattern: three to six alternations between heating and cooling.

- About 2 minutes of heating: comfortably hot
- About 1 minute of cooling: cool, not cold
- About 2 minutes of heating: hotter!
- About 1 minute of cooling: colder!
- About 2 minutes of heating: hot as you can handle
- About 1 minute of cooling: cold as you can handle



A few tips and rules of thumb for contrast bathing

- Stay warm. You generally want to be more thorough with your heat: at least a minute, but if five minutes depending on how efficient your heating method is. Heat is more comforting and relaxing than cooling, obviously, and inadequate heating is the most common thing people do wrong with contrasting.
- Finish with cold. You should usually finish a contrast session with cold, particularly if you suspect that you might be a little inflamed. Never finish with heat if you're concerned about aggravating inflammation. You might choose to finish with heat if your priority is to have a more relaxing experience.
- Stretch when hot. If you choose to stretch, do it after or even during the heating.

Tips to combine heat and cold therapy in daily routine:

- Keep a heat patch near your bed and use it first thing in the morning to warm up your muscles if you wake up with an achy or stiff back.
- Apply a cold patch before bed if you have exerted your back.
- Use heat therapy after and before sleep if suffering from chronic pain.
- Carry a couple of self-activating heat patches and ice packs in your bag or car while driving or at work.

GENERAL STRETCHING TECHNIQUES

Why stretching is important?

Stretching keeps the muscles flexible, strong, and healthy, and we need that flexibility to maintain a range of motion in the joints. Without it, the muscles shorten and become tight. Then, when you call on the muscles for activity, they are weak and unable to extend all the way. That puts you at risk for joint pain, strains, and muscle damage.

Which muscles should you stretch?

As a rule, if it's not tight and it's not causing you any problems, you don't need to stretch it.

When to Stretch?

Most people understand the importance of stretching as part of a warm-up or cool-down, but when else should you stretch? Stretch periodically throughout the entire day. It is a great way to stay loose and to help ease the stress of everyday life. If you want to improve your range of motion, when is the best time to stretch? One of the best times to stretch is after your exercises, as part of your cool-down. Another great time to stretch is just before going to bed. This works at a neuromuscular level, as the increased muscle length is the last thing your nervous system remembers before going to sleep. Sleep is also the time when your muscles and soft tissues heal, which means your muscles are healing in an elongated, or stretched position.

Stretches for neck and upper back


Sides of neck stretch – Put your hand overhead and bend your head to the side. Hold the position for 10 seconds and repeat it for 3-4 times on both the sides.

Posterior neck stretches – Clasp your hands and put it behind your head. Pull your head down gently, keeping your back straight. Hold the position for 10 seconds and repeat it for 3-4 times.


Rotation stretches – Look at an ankle of 45 degrees, put your hand on the head. Pull your head down diagonally and hold for 10 seconds. Repeat for 3-4 times.





Upper chests stretch – Take a corner of the wall. Stand with your elbows rested on the wall with one leg forwards as a stance position. You need to open your chest while moving forward and close to the wall. Hold the position for 10 seconds and repeat it for 3-4 times

Stretches to relieve your nerve compression: To stretch the median nerve, place open palm on wall with fingertips pointing away from trunk and parallel to the floor. Rotate trunk away from wall keeping the elbow straight and feel the stretch in arm and forearm. Return to the starting position and repeat on the other side.



Straighten your arm with your palm facing down and bend your wrist so that your fingers point down. Gently pull your hand toward your body until you feel a stretch on the outside of your forearm. Hold the stretch for 15 seconds. Repeat 5 times, then perform this stretch on the other arm.



While keeping your head in a neutral position begin with your arm out, palm side of the hand facing up. Bend the elbow toward you, palm side facing you. Rotate the palm of your hand outward and bend your wrist so that the fingers are pointing towards you. Hold the stretch for 15 seconds. Repeat 5 times, then perform this stretch on the other arm.

Child pose - Begin in tabletop position on your hands and knees, with your hands directly under your shoulders and knees under your hips. Extend your arms out in front of you, placing your palms flat on the floor. Slowly sit your hips back toward your heels, dropping your head and chest downward as your arms extend further and reach for the wall in front of you. If this stretch is too much, place a pillow under your belly to prop yourself up a bit and lessen the stretch of the low-back muscles. Hold this pose for 20 to 30 seconds or even longer.




Cat and cow stretch - Begin in tabletop position on your hands and knees, with your hands directly under your shoulders and knees under your hips. Your spine should be parallel to the ground in this position. Then, round your back, stretching your mid-back between your shoulder blades—like how a cat stretches by rounding its back. Hold for five seconds, then relax and let your stomach fall downward as you gently arch your low back and hold here for another five seconds. Repeat these movements for 30 seconds or longer.

Knee to chest stretch - Begin by lying on your back with your knees bent and feet flat on the floor. Bring your hands to rest either behind your knees or right below your kneecaps. Slowly bring both knees toward your chest, using your hands to gently pull your knees. Hold here 20 to 30 seconds and try rocking your hips side to side and up and down to help massage your low back, then return to starting position.


Supine figure of 4 stretch - Lie on your back on a yoga mat with both knees bent and feet planted on the floor. Lift your right leg, flex your right foot, and cross your right ankle over your left thigh. If this is enough stay here or draw your left knee in and hold behind your left thigh to increase the intensity. Hold for 10 to 15 breaths and then switch to the other side.




Hamstrings stretch lying down- Lie on your back and lift your right leg up towards your face. Interlace a towel behind your thigh or calf, depending on how tight your hamstrings feel. Keep your opposite leg active and your opposite hip grounded. Your head and shoulders should stay on the ground. Hold for 10 breaths. Now, keeping your opposite hip grounded, let your right leg lower out to the right. Only lower the right leg out to the side so far as you can without the opposite hip lifting.


Hamstring stretch in sitting – Sit with your legs extended in front of you. Lean forward with your hands extended and try reaching your toes. Hold the position for 30 seconds. Repeat each for 3 times. Make sure you don't raise your knees while touching your toes.

Thoracic stretch (Thread in needle) – Begin in tabletop position on your hands and knees, with your hands directly under your shoulders and knees under your hips. Your spine should be parallel to the ground in this position. Take your hand and put it inside your opposite shoulder as if you are threading the needle. Reach until the end and hold the position for 30 seconds. You will feel a stretch at your mid back as if your spine is getting unlocked. Repeat this for 3 times on each side.

Calf stretches – Sit with your legs extended in front of you. Take a towel and hold it from your foot. Pull your ankle with the towel towards you. Hold the position for 30 seconds and repeat it for 3 times.

Bending Back - Stand pressing hands-on hips to support upper body, elbows lengthened away from armpits. Turn on inner core muscles to support body. Turn on lower buttock muscles to hold pelvis and hips still. Push upper body backwards, feeling breastbone sliding forward and upward. Hold on the position for 10 seconds.

Thoracic stretch on chair – Place your hands on a chair. Walk backward, lowering your chest to the ground. Once your hips are behind your ankles, straighten your legs. Relax the muscles in the fronts of the thighs and gently lift your tailbone. Hold your arms in place and keep pressing your armpits toward the floor. Hold for five to 10 breaths. Take a short break, then repeat two or three times.

Back extension against wall - Stand against a wall, with your heels and buttocks touching the wall. Squeeze your shoulder blades together. Hold for 5 seconds, then relax. Repeat.

Prone extensions - Lie on your stomach. Slowly prop yourself up on your elbows so your chest is off the ground. If you're able, straighten your arms. Hold for 10 to 20 seconds, then return to start position. Repeat.


Side stretches in sitting - To start, sit in a chair with your feet flat on the floor. Shift your weight slightly forward to avoid rounding your back. Relax. Keep your ears, shoulders, and hips aligned. Stretch your right arm overhead. Slowly bend to the left. Don't twist your torso. Stay within your pain limits. Hold for 20 seconds. Return to starting position. Repeat 2 to 5 times. Then, switch to the other side.

Side stretches in standing - To start, stand with your feet flat on the floor. Keep your ears, shoulders, and hips aligned. Stretch your right arm overhead. Slowly bend to the left. Don't twist your torso. Stay within your pain limits. Hold for 20 seconds. Return to starting position. Repeat 2 to 5 times. Then, switch to the other side.


Passive range of motion Exercises:

These exercises can help to improve the range of movement and decrease stiffness/pain at the joints.

- Have the person lie on his her back on a bed. He or she should wear loose clothes that allow for easy movement.
- Do all movements slowly and smoothly. Don't force the body to move beyond its comfortable range.
- The person should not use his or her muscles to assist in the movement.
- Movement should be pain-free

Shoulder

Flexion/extension: Support the arm at the wrist and elbow and lift the arm toward the ceiling. Continue lifting the arm over the client's head until you feel resistance. Slowly lower the arm to the client's side.

Abduction/adduction. Support the arm at the elbow and shoulder and move the arm out to the side. Continue moving toward client's head. Slowly move the arm back toward the center of body.

Internal/external rotation: Move the arm away from the body to shoulder level. Bring the hand forward to touch the bed and then backward to touch the bed

Elbow:

Flexion/extension: Bend the arm at the elbow, touch the shoulder, and then straighten the arm. Bend the arm at the elbow and touch the chin, then straighten the arm.

Supination/Pronation: Hold the client's hand in a handshake position; support the arm at the elbow joint. Turn palm of the hand toward the floor and then toward the ceiling.

Wrist:

Flexion/extension/hyperextension – Support arm and hand; bend the wrist forward, straighten it, and then bend it backward.

Abduction/adduction – Move the hand from side to side at the wrist.

Fingers:
Flexion/extension –support the hand at the wrist. Clenched fist and then relax it. Make sure that the thumb is on top of the hand fully.

Abduction/adduction – move each finger away from the nearest finger and then return it.

Thumb opposition – bend the little finger toward inner hand and stretch the thumb toward the little finger and move it to the base of the little finger and back. Repeat with each finger.

Thumb rotation – move the thumb in a circle one direction and then the other direction.

Hip and Knee:
Flexion/extension - Support the leg at the knee and ankle joints and keep the knee straight. Raise and lower the leg. Bend the knee and move toward the chest; slowly straighten the knee.

Abduction/adduction - Move the leg straight out to the side of the body until you feel resistance. Slowly move the leg back toward the center of the body.

Internal/external rotation – Support knee and ankle joints; move the ankle in toward the opposite leg and then outward.
Ankle and Foot:
Inversion/eversion – support the foot at the ankle joint and turn the foot toward the opposite foot and then way from the opposite foot.

Dorsiflexion/plantar flexion – bend the foot up toward the knee then down toward the floor.

Flexion/extension – Bend and then straighten the toes. Abduction/adduction – Move each toe toward the next toe and then away from the next toe.

Active range of motion exercises:

Active range of motion is movement of a joint provided entirely by the individual performing the exercise. In this case, there is no outside force aiding in the movement.

Purpose
- increase strength
- maintain/improve endurance
- promote circulation
- maintain/increase range of motion (ROM)

Instructions
- exercises should be done at least once per day
- do one arm at a time
- perform exercises slowly

Shoulder:
Flexion: Begin with your arms straight at your side. Keeping your elbow straight, lift one arm up over your head as far as possible.

Abduction: Lift your arm out to side with palm up. Keep elbow straight.

Shoulder rotation: Bring arm(s) behind head. Bring arm(s) behind back.

Horizontal shoulder abduction and adduction: Hold arm out to side at shoulder height. Reach hand out and bring it in across your body. Keep elbow straight.

Shoulder circumduction: Hold arms out to side at shoulder height. Move arms in a circle, clockwise, five times; then counterclockwise five times.

Shoulder extension: Move arm(s) backwards. Do not lean forward.

Elbow:
Flexion and extension: Bend elbow. Straighten elbow and hold.

Elbow extension: Hold arm above head, elbow pointing to ceiling. Straighten elbow.

Forearm pronation and supination: Turn palm up. Keep elbow at side. Turn palm down and hold.

Wrist flexion/extension: Begin with palm down, raise hand up and then bring down.

Hip:
Flexion: Sit on a chair with feet on the ground. Raise your leg up keeping the knees bend and then bring down.

Abduction/Adduction: Begin with knees bend and take your hip outside. Knee away from the body. Slowly, bring it back.

Internal rotation: Sit on a chair with feet on the ground. Bring your foot out, away from the ankle of opposite side with keeping the knees bent.

External rotation: Bring your foot inwards to the opposite ankle.

Knee:
Flexion/Extension: Sit on a chair with knees bent. Slide your heel towards the chair for flexion. Straighten your leg from knee to the original position for extension.

Ankle:
Plantarflexion/Dorsiflexion: Raise your toes. Raise your heel.

Resisted movement exercises:
The following movements are performed in the sitting position:
Shoulder Abduction

- Ask patient to abduct the shoulder as much as they can with the elbow extended. If patient able to abduct greater than 90 degrees, ask the patient to position the shoulder to 90° with the elbow flexed and the forearm pronated.
- Provide stabilization proximal to the shoulder or on the opposite shoulder to prevent any tendency to lean in the opposite direction.
- With shoulder in 90o of abduction, apply resistance at the elbow.

Elbow Flexion

- Ask patient to bend the elbow and touch the shoulder with the forearm supinated.
- (Observe for substitution, specifically rotation of forearm to mid position -brachioradialis).
- Provide stabilization under elbow or anterior to the shoulder at proximal end of the humerus.
- Position elbow at 120o of flexion and apply resistance at wrist to straighten the elbow.

Wrist Extension

- Place patient's arm by his side, elbow flexed to 90o forearm pronated.
- Ask patient to extend his wrist from flexed position keeping fingers relaxed.

- Support forearm proximal to the wrist to maintain 90o. Apply resistance on dorsum of hand.

Wrist Flexion

- Position patient's arm by his side, elbow flexed to 90o, forearm supinated.
- Ask patient to flex wrist with fingers relaxed.
- Support forearm proximal to wrist to maintain 90o and give resistance on the palm of the hand.

Common Finger Extensors

- Place patient's arm by his side, elbow flexed to 90o forearm pronated.
- Ask patient to extend all digits with fingers adducted.
- Support wrist
- Apply resistance just distal to the PIP joints

Long Finger Flexors Thumb (Flexor Pollicis Longus)

- Patient in sitting with elbow flexed and forearm supinated as much as possible.
- Stabilize the metacarpal bone and proximal phalanx of the thumb in extension.
- Ask the patient to flex the interphalangeal joint of the thumb. Using index finger
- Apply pressure at the palmar surface of the distal phalanx of the thumb in the direction of extension.

Hip Flexion

- Ask patient to sit up straight and support trunk with arms supporting trunk with no greater than 20 degree of trunk extension. 2. Ask patient to bring his knee towards his chest. Patient should be able to flex to 30o. During this test, the patient should be discouraged from leaning sideways and the thigh should remain in neutral rotation. Do not allow patient to maintain hip flexion by pressing the belly of the calf muscle on the edge of the exam table.
- Provide stabilization or counter pressure against the shoulder.
- Apply resistance on distal surface of the thigh in the direction of hip extension.

Knee Extension

- Ask patient to sit up straight and support trunk with arms propped with no greater than 20 degree of trunk extension. 2. The examiner may put his hand or a rolled towel under the distal end of the thigh to cushion it.
- Patient is then asked to extend the knee.
- Place the knee in 20° of flexion from full extension to avoid mechanical locking of the joint.
- Apply resistance just proximal to the ankle.

Ankle Dorsiflexion

- Ask patient to bend the foot up from plantar flexed position. (It is helpful to watch posterior ankle joint for movement; ankle inversion or great toe extension may appear with attempts at substitution.
- Stabilize leg proximal to ankle.
- If AROM is full within available ROM, apply resistance on dorsum of the foot at maximum available ROM.

POSITION 2: SIDE-LYING

Hip Abduction

- Ask patient to lie on his side, bottom leg slightly flexed to increase the base of support. Patient may hold on to table to provide more stability.
- Stand behind the patient, place the top leg in extension and stabilize the pelvis with one hand to prevent forward or backward rotation.
- Ask patient to lift leg as high as possible without bringing it forward or back or rotating it.
- Apply resistance at knee.

Hip Adduction

- Ask patient to lie on his side.
- Stand behind patient, support the top leg in abduction (cradled in arm), and ask patient to lift his bottom leg.

POSITION 3: PRONE

Neck Extension

To ensure patient safety make sure patient does not have pain or stiffness related to neck movements. Use clinical judgement to determine whether to perform the test.

- Patient lying prone with arms at their side. Examiner holds the shoulders stable.
- Patient is asked to lift his head up as high as he can. Patient should be able to get his face perpendicular to the table.

Place one hand over the occiput. As a safety measure, keep the other hand below the patient's chin and apply pressure in the direction of neck flexion.

Shoulder External Rotation

- Patient is lying prone with head in neutral (if possible). Arm is placed in 90 degrees of shoulder abduction, elbow flexed, and forearm pronated.
- Examiner stabilizes under the distal humerus.
- Ask the patient to rotate his shoulder, assess for full ROM
- If full ROM antigravity, apply resistance proximal to the wrist and in the direction of internal rotation.

Hip Extension

- Check the available range of hip extension and demonstrate the required motion.
- Ask patient to bend his knee to 90o and then extend the hip.
- Stabilize the lower trunk with one hand.
- Apply resistance on the thigh with the other hand.

Knee Flexion

- Place patient prone on the table with a pillow under his head and head turned to either side.
- Ask patient to bend the knee to 90°. Observe ankle to make sure that ankle dorsiflexion is not used to initiate movement.
- Then place the knee in 70o of flexion.
- Stabilize the thigh proximal to the knee.
- Apply resistance just proximal to ankle.

Ankle Plantar Flexion

- Maintain Knee flexion at 90o passively.
- Ask patient to bend foot towards the ceiling.
- Stabilize the ankle by holding the leg around the malleoli.
- With the other hand give downwards pressure on the foot.

SUPINE

Neck Flexion

- Passively perform the motion, thus checking for range and any discomfort
- Ask patient to flex the head and neck until the chin touches the chest.
- Apply pressure with one hand on the patient's forehead. For safety, hold the other hand just under the patient's head.

Elbow Extension

- Support the patient's upper arm in 90° of shoulder flexion so that the elbow is pointing toward the ceiling. The forearm is in neutral position and lies across the patient's chest.
- Ask patient to straighten/extend the elbow.

- Place the elbow in 20o of flexion and apply resistance just proximal to the wrist.

CHAPTER 11: APPLICATION OF MASSAGE THERAPY

Guidelines for therapist

- First, and foremost, find your center of gravity. If you are unaware of its presence in your body, develop a feel for it through yoga, T'ai chi, martial arts, dance, gymnastics, or a similar practice.
- All movements should emanate from this center as well. Keep weight equally balanced over the pelvis and legs, with knees "soft," when standing symmetrically.
- When you are standing asymmetrically, such as when performing effleurage up the leg from the side of the table, always keep your weight balanced between your front and back legs with emphasis on the back foot and leg.
- Do not allow the knee to bend more than 90 degrees, moving past the ankle, as this could cause in- jury to the knee.
- Shoulders should remain over or slightly in front of hips. The length in the back should continue up through the cervical spine. Remember, the head can weigh up to 6 pounds; occasionally look up and straight ahead rather than down at the body you are working on to lessen neck strain. Shoulders should be relaxed and down.
- If using the forearm in a technique, keep the shoulder over or slightly behind the elbow to avoid putting pressure on or damaging the shoulder joint.
- The pad toward the tip of the thumb is used for all work, not the nail tip or first joint.
- With developed palpation and usage skills, the elbow is a great substitute for the thumb. Some therapists also find it more comfortable to use a knobble of a T-Bar for holding pressure points. When using the heel of the hand, do not put undue pressure on a hyperextended wrist.
- Keep your back as straight as possible without being rigid, with shoulders slightly in front of the hips. Weight can be shifted forward to move a part of the client's body via a lunge (one knee on the floor, one knee off with a 90-degree bend).
- For any pressure-point holding, position your body above the point with thumbs, wrists, elbows, and shoulders soft and in alignment. Do not allow your head to drop; this will help to prevent the neck muscles from becoming tired.
- Do not allow your head to drop; this will help to prevent the neck muscles from becoming tired.
- A general rule of thumb is fingertips or knuckles should brush the top of the table as you stand next to it; set it on the higher side for lighter work or smaller bodies and on the lower side for deeper work or larger bodies.
- Be sure to familiarize yourself with the basic strokes, elementary anatomy, indications and contraindications, and basic safety precautions before beginning to practice a full sequence.

Preparation client for massage:

- Ask your client to sit in the middle of the table, then lay on her side, using the arms to support her weight while lying down.
- Have her turn onto her stomach with her face in the face cradle. Place a bolster under the ankles and adjust the drape.
- Deep, rhythmic breathing by you, the therapist, throughout the massage will help you maintain your focus, connect with your client, and facilitate the flow of the massage.

Back (Approximately 20 Minutes)

- Draw the drape down to the low back/pelvic crest. Place your right hand at the inferior angle of the scapula; cross your left arm over your right arm and place your left hand on the flesh of the buttocks (gluteal) with fingers pointing laterally.
- Perform a myofascial stretch. Switch. Standing at the head of the table, place your fists on either side of, but not directly on, the spine between the shoulder blades; apply direct pressure for a deep tissue sculpting move (a technique per- formed without lubricant).
- Ask your client to inhale and exhale; allow your fists to slide down as the muscle "melts." Change to the ulnar side of the fist before your wrists "break over" and finally to the palmar surface of your hand at the pelvis; hold traction.
- With lubricant, effleurage the entire back several times. Effleurage on one side of the spine (over the paraspinals) with one hand placed on top of your other hand; fol- low with the same movement on the other side.
- Move to the opposite side of the table; with palmar surface of the hand, glide laterally and medially over the right quadratus lumborum. This last stroke draws your hand over to the left quadratus lumborum and puts you in position to work on the left quadratus lumborum. Repeat all movements.
- Step to the right side of the table; with fingertips, glide up the paraspinals and over the latissimus attachment.
- Thumb glide intercostals and up under the scapula. Stepping to the head of the table on the client's left side, use one or both thumbs to glide and friction rhomboid attachments along the vertebral border of the scapula and spine, thumb glide rhomboids.
- Stepping back to client's right side, carefully remove the client's hand from the low back and lower the arm off the table. Compress the infraspinatus; use thumb glide and friction. Glide your hands down the arm to pick it up and place back on the table.
- Step to the head and palpate the supraspinatus. Step to the left side of the client and petrissage the right upper trapezius, flowing over to the left. Perform the same movements on the left shoulder.
- Effleurage the upper trapezius and neck. Use the back of loose fists to further effleurage. Hold pressure points across the trapezius (using both thumbs, simultaneously hold points nearest the neck, move laterally and hold two more points, move laterally, and hold two more points, then move back medially on same points). Effleurage. Glide the palmar surface of your left hand up the neck to the occipital ridge and hold the ridge.
- With your right thumb, glide from occiput to levator attachment at the scapulae; move laterally and glide from the occiput over the trapezius. The palmar surface of your right-hand glides over the shoulder and up the back of the neck to the occipital ridge to position your left thumb to perform the same movements on the left side of the neck. Effleurage the trapezius and neck.
- some clients will roll over on the side that is easiest for them, so make sure you stand and hold the drape up on the side that will not exacerbate an injury. For example, in the prone position, if the client has a right arm or shoulder injury, stand on his right side, and ask him to roll over toward you using his left arm.

UPPER BACK

MIDDLE BACK

LOWER BACK

Feet and Legs (Approximately 10 Minutes)

- Gently place your hands on the client's heels to initiate touch. Undrape the client's right leg.
- Effleurage the entire foot and leg several times to spread the lubricant and warm the tissues.
- Work on the bottoms of the feet using alternating one-handed petrissage, horizontal and vertical thumb glides, and static pressure on acupressure points (six points: starting under the middle toe, move one thumb's width down toward the heel for point 2, move one thumb's width down for point 3, move one thumb's width over toward the arch for point 4, move one thumb's width up for point 5, move one thumb's width up to just under the big toe for point 6).
- Use compression/broadening on the heels, followed by sliding the ulnar side of the hand back and forth over the Achilles heel.
- Follow with hand over hand up the gastrocnemius and soleus. Petrissage the center, medial, and lateral aspects of the lower leg from ankle to just below the knee; follow with thumb glides, stopping to friction any spasms. Use compression/broadening and effleurage to complete the lower leg.
- Use the back of a loose fist (with pressure) to glide from just above the knee to the buttock. Petrissage the center, medial, and lateral aspects of the thigh, follow with thumb glides, and friction all the hamstring muscles. Follow with compression/ broadening and wringing.
- To finish, effleurage the entire foot and leg once again, giving it a gentle rocking motion (with no pressure) coming down the leg. Cover with the drape.
- Begin again at the feet. Undrape the left leg. As with the prone position, all strokes are performed with venous flow. Effleurage the foot and leg to spread lubricant and warm the tissues.
- Use alternating one-handed petrissage and thumb glides between the metatarsals of the foot.
- Use finger circles around the ankles followed by hand over hand up the shin. There is not much to work on the lower leg; petrissage the medial gastrocnemius again and thumb glide up the tibialis anterior muscle.
- Effleurage up the thigh; petrissage the thigh. Use the back of alternating loose fists to glide from above the knee to the hip, covering each of the quadriceps, adductors, and IT band. Follow with thumb glides and stripping, compression/broadening, or wringing. Effleurage up the entire leg with a gentle rocking motion (no pressure) coming down. Move to the right leg and repeat the movements.

FOOT

KNEE AND LOWER LEG

THIGHS

Abdominals (Approximately 1 to 2 Minutes)

- Drape the client as shown; this provides privacy for female clients while al- lowing easy access to the abdomen and rib cage area.
- Always massage in the direction of peristalsis (normal rhythmic waves of muscular contraction in the digestive tract) or in a clockwise direction, beginning with palmar circles and followed with more specific work done with the fingertips.

- Lightly hold six points on the abdomen (1 and 2 are either side of the navel, 2 and 3 are just to the side of the navel, and 5 and 6 are just below the navel). Use thumbs to glide and friction between ribs; be careful not to damage the xiphoid process.

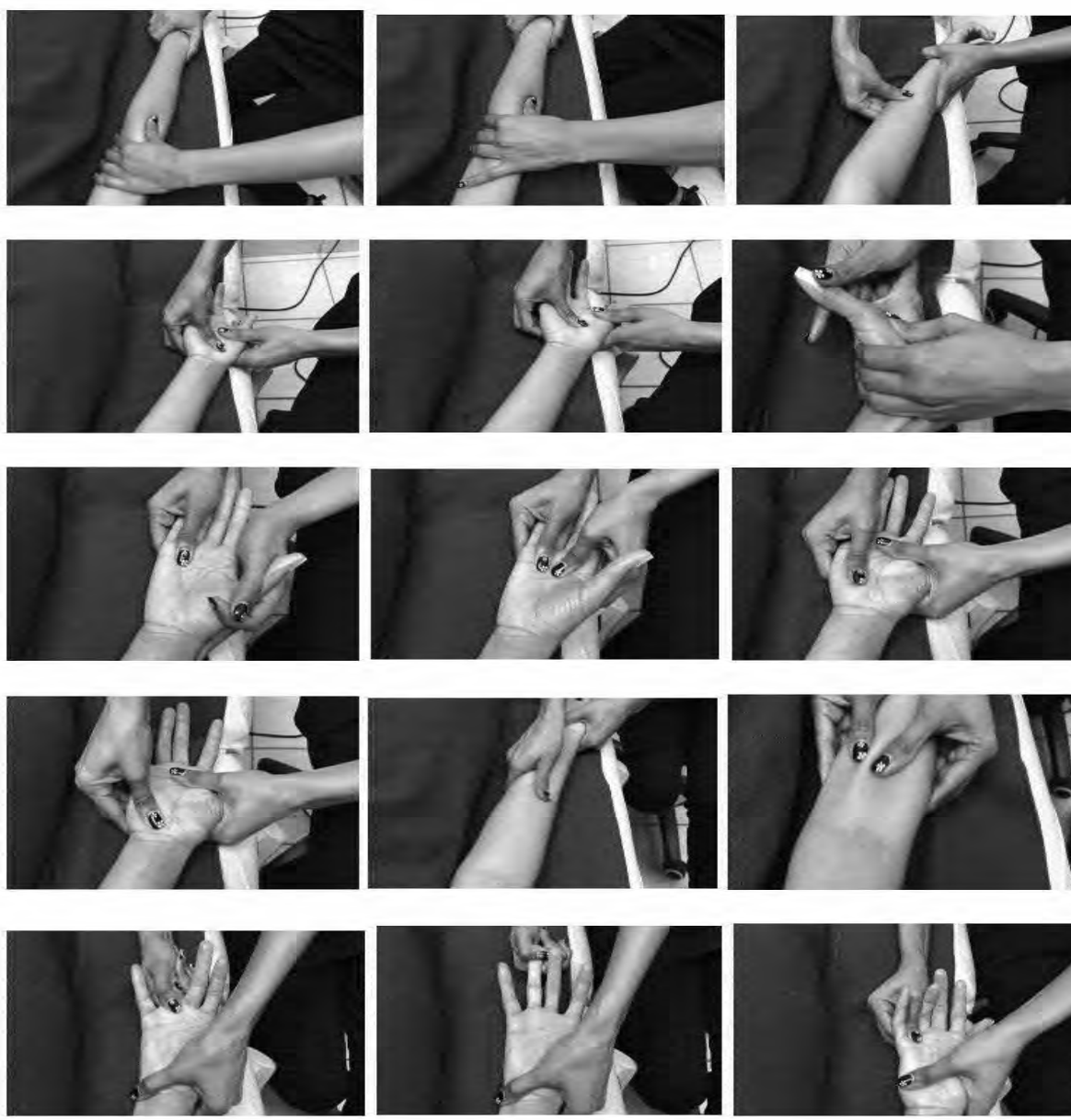
ABDOMEN

Hands and Arms (Approximately 8 Minutes)

- Effleurage the client's right hand and arm several times to spread lubricant and warm the tissues. Use alternating one-handed petrissage on the palm and thumb glide between the metacarpals.
- Turn the hand over: slip your little finger in between the client's middle and ring finger, and your fourth finger between the client's ring and little finger.

- lip your other little finger between the client's middle and index finger, and your ring finger between the client's index finger and thumb. Open the palm of the hand and work with thumb glides; hold acupressure points (unlike the foot, these points are held two at a time: hold 1 and 2 at the palm heel, move one thumb's width toward the fingers for 3 and 4, move one thumb's width toward fingers for 5 and 6, and move back down).
- Release the fingers and hold the hand with one of your hands; draw the forearm up to a 45- degree angle, elbow resting on the table. Use one-handed petrissage on the forearm, alternating hands. Thumb glide and friction the forearm.

FOREARM AND HAND



SHOULDER

Chest (Approximately 1 to 2 Minutes)

- Effleurage the chest (pectoralis) with fingers pointing toward the sternum (not down toward the breasts), out over shoulders, around the back of the upper trapezius, and up the back of the neck.
- Repeat several times; give the neck a gentle traction as you draw the hands up the neck. Thumb glide from clavicles downward slightly (staying on the pectoral muscle and above the breasts).

- Work one side of the sternum and then the other. Step to the client's left, lay the right arm out to the side, and glide with your fingertips over the pectoralis from sternum to shoulder, changing to a flat hand over the shoulder joint. Maintaining con- tact with the shoulder, walk around to the other side, slide the hands down the arm to place it back on the table. Repeat the movements on the left side of chest (pectoralis).

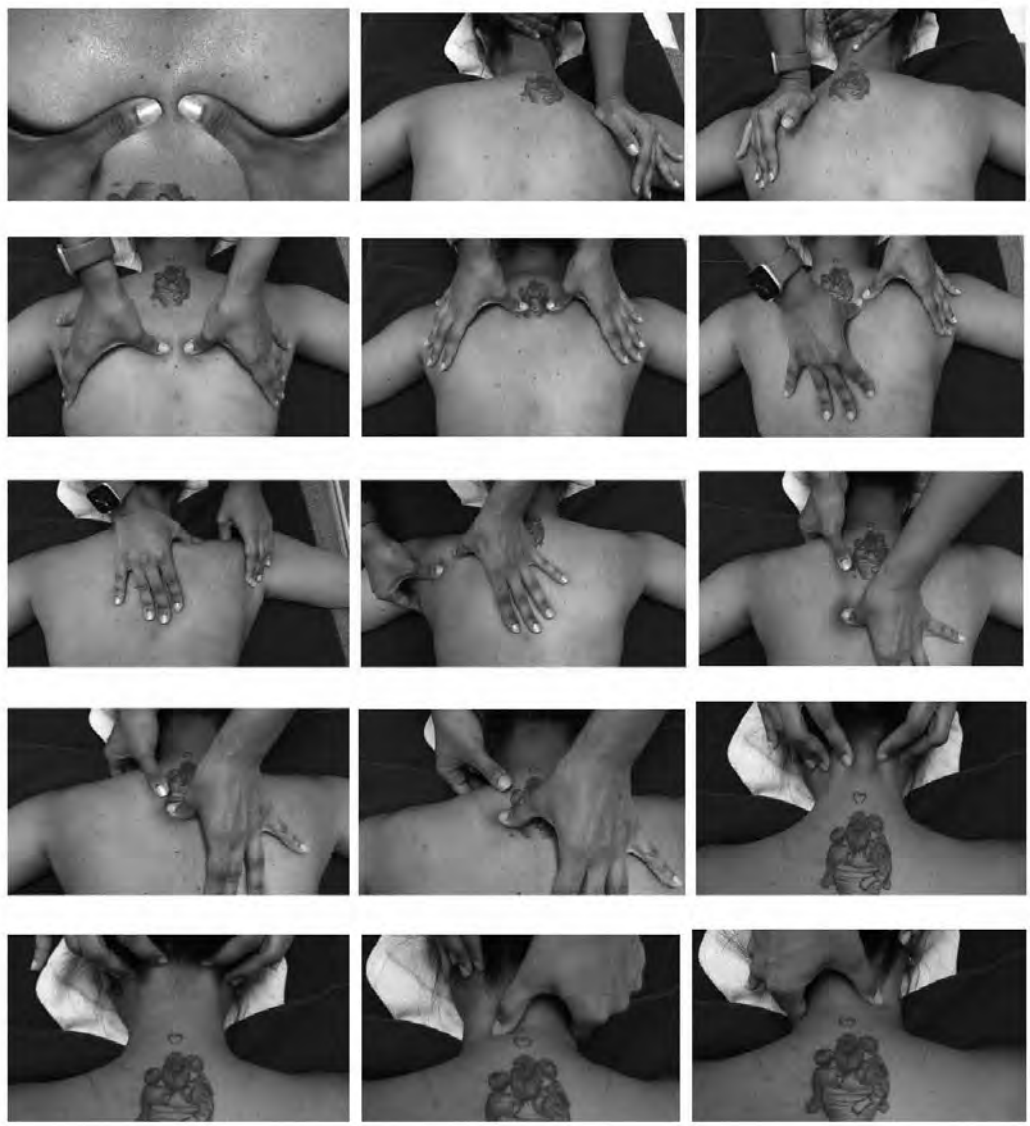
CHEST

Neck and Head (Approximately 10 Minutes)

- Effleurage the shoulders and up the back of the neck several times. Slip your hands and arms under the back as far as you can reach (palms are up, fingers press up, and hands are on either side of the spine).

- With fingertips starting at the superior angle of both scapulae, press and hold these points; continue to move medially and up the back of the neck, back of the head, and over the top of the head (switch to the thumbs to press across the top of the head).
- With thumbs, press two points on the forehead, gliding down to the temples for thumb circles. Repeat two more times.
- Press under the cheekbones at the nostrils, gliding up to the temples and doing thumb circles; press at the chin and glide up to the temples for thumb circles. Massage all over the scalp with fingertips.
- Effleurage across the shoulders and up the back of the neck a few times. Gently slide the client's head laterally with left ear to left shoulder, back to neutral, and right ear to right shoulder.

HEAD AND NECK



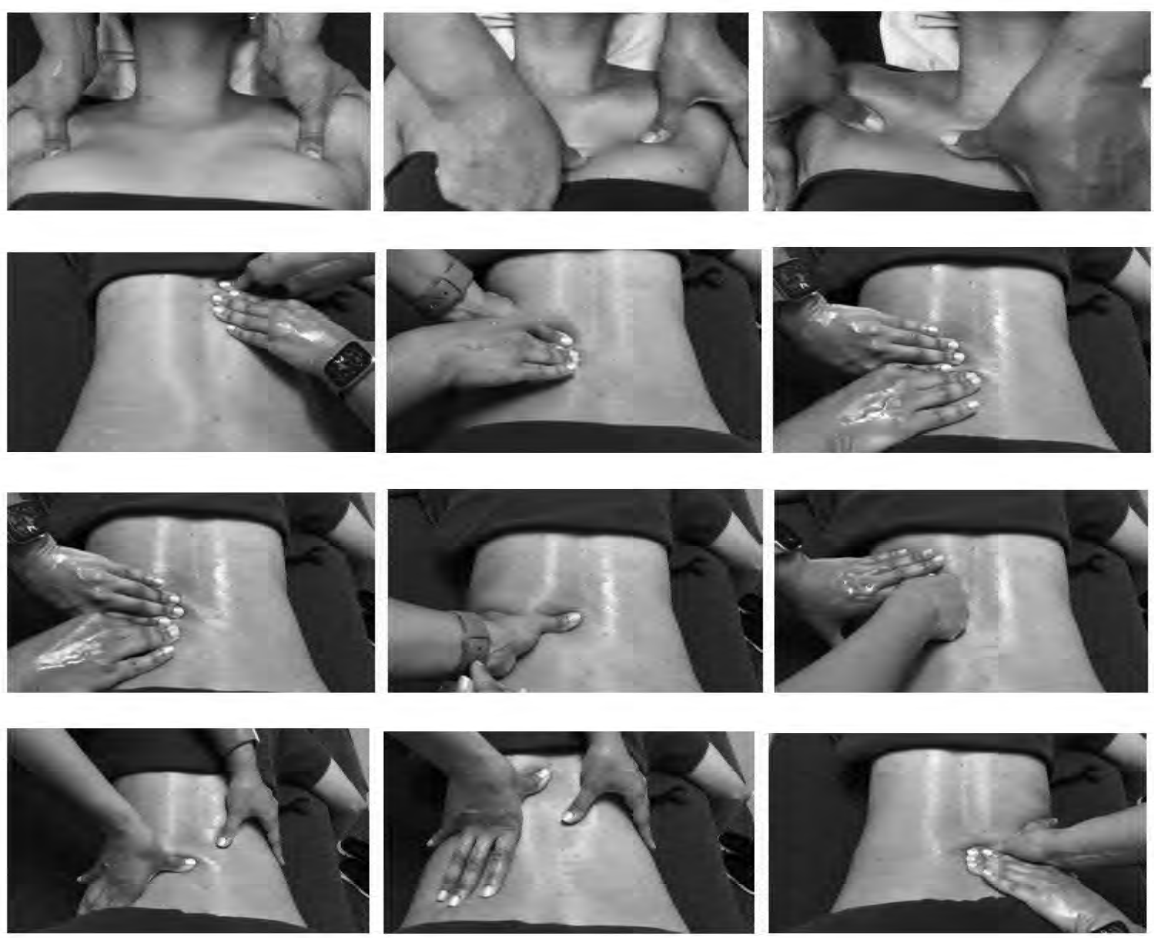
FACE





CHAPTER 12: SPECIAL CONDITIONS

ANKYLOSING SPONDYLITIS: It typically begins at the sacroiliac joints with cephalic (toward the head) progression; hip and shoulder joints are affected less commonly, while peripheral joints are affected least of all. Inflammation occurs at the sites along the spine where the tendon and ligament attach to bone. This inflammation causes damage and erosion of vertebral bone tissue, leading to fusion of the spine. Although the etiology is unknown, the presence of large macrophages (white blood cells that destroy foreign cells in the body) during the acute stage indicates a probable autoimmune response. Fibrosis, calcification, ossification (tissue turning into bone, in this case, abnormally), and stiffening of the joints are common. The inflammatory nature of this disease is not isolated to bone and may spread to major organs, including the eyes, lungs, heart, and kidneys.



Massage protocol:

Greet the patient's body with general warming compression. (The patient is side lying.)

- Use this time to evaluate tissue and the patient's response to your touch.
- Note any differences from previous treatment.

Effleurage, medium pressure, evenly rhythmic

- Anterior, lateral, posterior thoracic region

Digital muscle stripping, medium pressure, evenly rhythmic

- Intercostal muscles
- Work anterior, lateral, and posterior intercostals from the sternum to the posterior thoracic vertebrae
- Include serratus anterior muscles, pectoralis major and minor
- Watch your body mechanics; walk around the table to get at the rib cage effectively without hurting your wrists or back

Kneading, medium pressure, evenly rhythmic

- Pectoralis major and minor
- Transverse abdominis
- Quadratus lumborum

Digital diaphragm kneading, working as if you are trying to move that muscle away from the bottom ribs

Rocking, gentle, rhythmic

- Thoracic cavity while the patient slowly and evenly breathes deeply
- During inhalations, instruct him to stretch his arm over his head near his ear.
- During exhalations, instruct him to stretch his arm as far behind himself as he can. Four inhalations and exhalations in this position. (Be careful, this will be difficult work for him; don't let him overexert.)

Fist or forearm kneading, evenly rhythmic, medium pressure

- Gluteal muscles with pressure working medially (down toward the table if side-lying) toward the sacroiliac joint
- Kneading, medium pressure, evenly rhythmic
- Proximal hamstring muscles that insert up under the gluteal muscles
- 5 minutes
- Digital kneading, medium pressure, evenly rhythmic
- Sacrum, all the way from the coccyx (ask the patient's per- mission before working in this area) to the sacroiliac joint. Finish with large kneading strokes and effleurage of the gluteal complex.

Digital kneading, medium pressure

- Every vertebra starting at L-5 and working to C-2, as high as you can palpate
- Work cephalically (toward the head) with medium digital pressure into the laminar grooves. Pay great attention to detail.

- Follow with rhythmic light effleurage to the spine.

Effleurage, rhythmic, pressure to tolerance

- Erector spinae complex and entire back, working off onto the posterior deltoid

Carefully turn the patient over and repeat the protocol on the other side. End the massage with soothing techniques, such as slow-stroke back massage, stroking the legs, quietly placing your hand on a body part, or a gentle head massage.

Contraindications:

- Because ankylosing spondylosis is an inflammatory disease and can spread during the acute, inflamed stage (when the patient is in extreme pain, may have a fever of 100.5°F or higher, and medications are not easing the pain as usual), perform massage therapy with caution only during the subacute stage (no active signs of fever or increased pain).
- You must develop an ongoing professional relationship with the patient's physician or health care team and become comfortable asking about symptomatic flare-ups.
- Spinal fracture is a complication of ankylosing spondylosis, especially in the cervical spine.
- Any recent trauma or unusual increase in neck or back pain signals a referral to a physician.
- Unusual increases in movement or changes in spinal position may indicate a spinal fracture and signal a physician referral.

BELL'S PALSY: The facial nerve, which is affected by Bell's palsy, travels from the brain to a wide area of muscles in the face. This nerve controls the movement of the eyelids, the muscles around the mouth, and the muscles for tearing (eyes), chewing, and facial expression, among other actions. Paralysis of the facial nerve is believed to result from either edema (swelling) or ischemia (temporary reduced blood flow), both of which compress the nerve against bony areas in the base of the skull where it travels from the brain to the muscles of the face. The reason for the presence of edema and/or ischemia continues to be the subject of debate. There are usually no warning signs or symptoms. However, similar symptoms may be caused by a stroke or tumor. Therefore, the final appropriate diagnosis of Bell's palsy must be made by a physician to rule out more serious conditions.



Massage protocol:
Position your client comfortably supine (laying on her back, face up). The absence of a pillow makes it easier for you to per- form your work, but the client's comfort is paramount. Seat yourself at the client's head for most of this protocol. Remember these guidelines:

- Clean hands, short fingernails, and no jewelry are essential.
- Do not use lubricant.
- Your hands must be scent-free.
- After massaging the muscles of the scalp, rewash your hands before returning to work on the face.

You will spend no more than 30 minutes focused on the facial muscles. Place your hands on either side of the client's face as if to embrace it. Rest here for a moment before beginning your therapy. No pressure, just simple presence.
Compression, light pressure, using your whole hand

- Both sides of the face
- Covering every inch of the face from the hairline to under- neath the mandible

Digital kneading, medium pressure, circling clockwise and counterclockwise

- Entire forehead from the hairline to above the brows
- Both sides of the forehead, including the temple region
- Do not engage the hair or scalp (cross-contamination risk when you return to the face)

Digital kneading, medium pressure, circling toward the chest; small, slow circles

- Work down the lateral perimeter of the face, from the temples to the medial, anterior mandible
- Repeat the sequence twice.

Digital kneading, medium pressure; tiny, slow circles per- formed with finger pads, not fingertips

- Entire bilateral bony ridges of the orbit
- Do not invade the soft tissue near the eyeball; stay on the bony ridge.
- 1 minute

Digital kneading; slow, small circles; medium-to-deep pressure (This is the first time "deep" pressure is applied: "go for the bone" to the client's tolerance; this work must be deep to be effective.)

- Bilateral zygomatic arches
- Work out to the TMJ and in to about 0.5-inch lateral to the nose

Digital kneading, using finger pads; slow, small circles

- Maxilla region below the nose (the mustache ridge)
- Do not invade the nose or the mouth or touch the upper lip

Digital kneading, using finger pads; slow, larger circles; medium- to-deep pressure

- From the TMJ to the anterior middle of the maxilla

Stop a moment. Stroke the entire face using both open hands simultaneously, moving from the midline of the face to the lateral hairline. Finish this resting period with soft compression of the entire face. Ask the client how she is doing. Reconfirm comfortable positioning.
Digital kneading, a little faster but still very smooth; larger, deeper circles on the entire surface of the face.

- From the hairline to mandible, from the base of the nose to the TMJ, all cheek muscles; include the maxilla region

Pincement or plucking. Quick, light, careful but thorough enough to displace more than superficial tissue

- Start at the mandible.
- Use the procedure on every part of the face that allows you to grasp a little muscle or skin; even try to engage the small thin muscles of the forehead.
- Do not use Pincement around the eyes or nose.

ROM and gentle resistance of all facial muscle actions

- Ask the client to wrinkle her forehead by raising her eye- brows; return to normal.
- Place your fingertips along the superior ridge of the fore- head just below the hairline.
- While providing very gentle resistance against the movement of the frontal muscle, ask the client to wrinkle her forehead again and gently push against her movement. Re- turn to normal. Repeat 5 times.

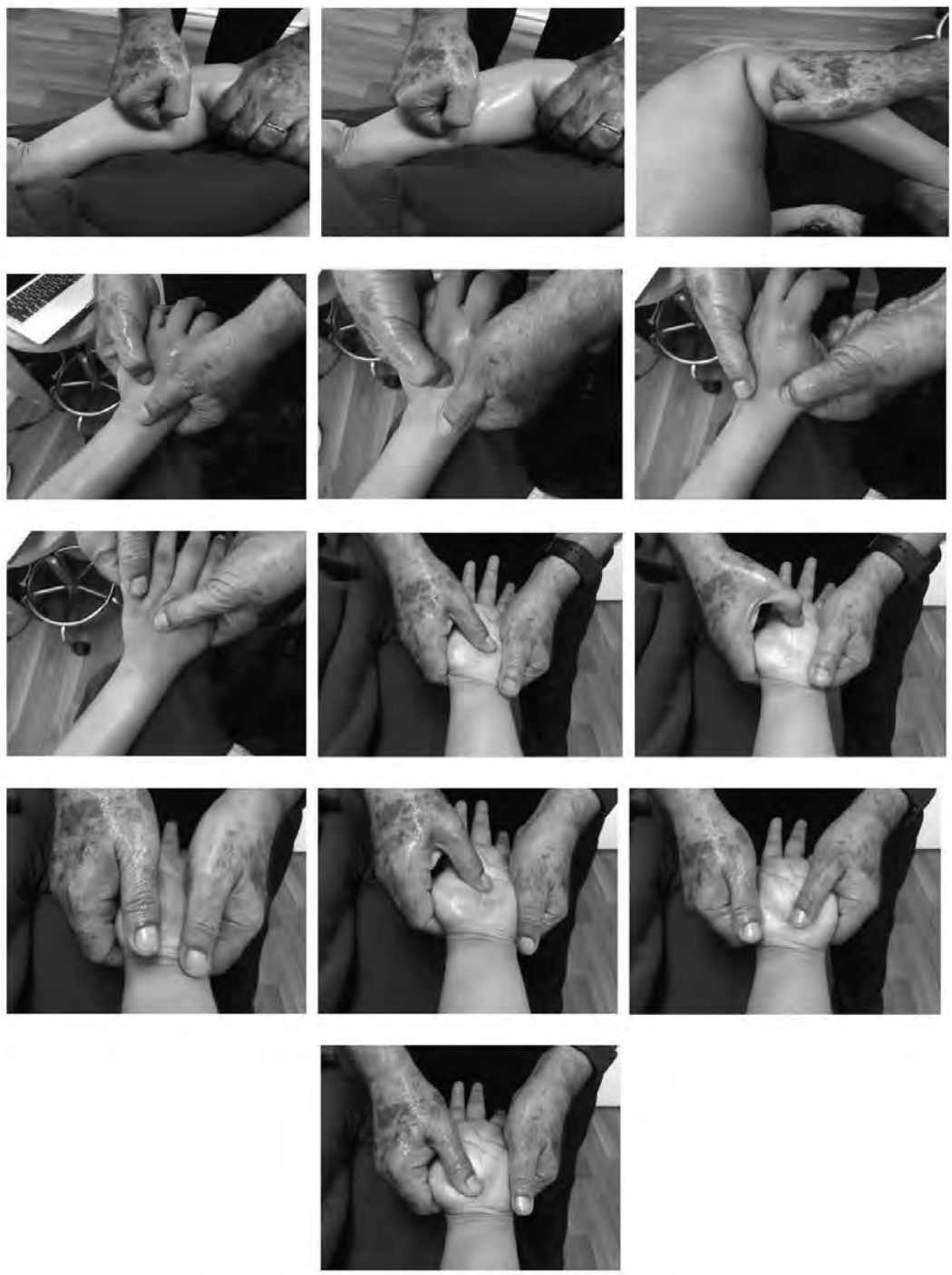
Allow the client to rest from these exercises, and gently massage the face with large, slow, progressively deeper circles. Stroke the face when the therapy is finished. Massage the superficial muscles of the neck lightly and massage the superior trapezius. (Remember to apply no pressure to the occipital ridge; a contraindication for this work.) You are taking focus away from the face for a moment and allowing the client to take a break. Inform the client that the therapeutic face work has ended and ask her which area of her body she would like to have massaged, simply for relaxation, for the remaining 30 minutes.

Contraindications:

- Do not proceed with this therapy until stroke and tumor have been ruled out by a physician.
- Bell's palsy clients experience good days and bad days based on swelling, discomfort, acute hearing, lack of sleep, eye pain or discomfort, side effects of medications, and self-image.
- Do not perform therapy if the face is extremely sensitive or if the client is experiencing pain. As in all massage therapies, "no pain, no gain" is not our motto, and it certainly applies to work on the face.
- Do not apply deep pressure near the styloid or mastoid processes at the lateral bases of the skull during the scalp massage or when positioning the client's head; allow the client's head to rest in midline, with little pressure to the base of the skull for most of the treatment.
- Roll the head from side to side only when necessary. The facial nerve exits the brain at a small hole near the base of the skull behind the earlobe, and pressure on this area can further inflame or compress an already agitated nerve.

CARPAL TUNNEL SYNDROME: Acute CTS can develop after a fracture or trauma, such as a crush injury, or when chronic CTS remains untreated. Chronic CTS, also termed fibrotic CTS, can result from an abnormal bony growth or a slowly growing tumor that increases pressure within the carpal tunnel.





Massage protocol:
Effleurage, petrissage, compression, medium pressure

- The entire unaffected upper extremity
- Start proximally at the deltoid

- Work down to the forearm and then the fingers and wrist
- Remember, you are "slaying the dragon" by beginning on the least painful limb and getting the body used to your approach

Effleurage, petrissage, compression, medium pressure

- The entire affected upper extremity. (The remainder of this
- protocol will focus on the affected extremity.)
- Remove the hot pack when you approach the forearm.
- Perform no special techniques at this point; simply warm the tissue and prepare it for deeper, more aggressive work.

Slow stroking, moderate pressure, using your fingertips

Muscle stripping, medium pressure

- Use your fingers and imagine you are trying to separate the flexor muscles by firmly using a raking technique.
- Work wrist to antecubital fossa.
- Repeat slowly, multiple times.
- Make sure you use sufficient lubricant to avoid irritating or pulling the skin too tautly.

Effleurage, medium pressure

- Wrist to antecubital fossa

Wringing, medium pressure

- Wrist to antecubital fossa
- Pretend you are literally trying to "wring out" the muscles of the forearm by gripping them firmly and moving your closed fists, which are gripping the forearm in opposite directions.

Cross-fiber friction, deep work to the client's tolerance

- Focus on the carpal tunnel itself by approaching the flexor retinaculum of the wrist.
- Use your thumbs to cross-fiber friction the fully extended wrist.
- Now, ask the client to hyperflex the wrist and perform cross-fiber friction.
- Finally, ask the client to hyperextend the wrist and perform cross-fiber friction.
- Remember, stop immediately if the client experiences pain during your work.

Digital and/or knuckle kneading, deep pressure

- The palm of the hand, paying particular attention to the thenar eminence

Digital kneading, deep pressure

- Each finger and thumb

Compression, deep pressure

- Fingers, thumb, palm, and forearm

Effleurage, deep pressure

- Wrist to antecubital fossa

Stroking, light pressure

- Using your fingertips
- Fingers to antecubital fossa, spending a few extra seconds in the antecubital fossa for this final step

You have now completed the specific therapy for the localized symptoms of CTS; however, the entire cervical spine region, base of the skull, superior trapezius, and shoulder region must be addressed for the remaining time.

- Use deep effleurage, petrissage, kneading, and compression techniques to the client's tolerance.
- Grasp and nudge the scapula purposefully and carefully.

- Digitally knead around the entire perimeter of the scapula.
- Digitally knead deep into the laminar grooves of the cervical spine.
- Digitally knead into the base of the entire occipital ridge.
- Petrissage and effleurage often and with depth to tolerance.

Precautions and contraindications:

- When any massage technique or pressure used directly on the client's wrist elicits pain, all work must immediately stop.
- Although you will not work on a client who has acute CTS, there is a fine line between chronic and acute symptoms. If the condition is unstable enough to produce exacerbations during normal pressure on the median nerve, avoid that area completely.
- A decision must be made between client, physician, and massage therapist about whether to continue therapy.

CONSTIPATION: There are two basic categories. Functional constipation is a secondary result of easily recognizable causes, such as diet, exercise, medications, or medical conditions. Idiopathic constipation is due to a more serious medical condition or blockage, such as pelvic floor dysfunction, descending perineum syndrome, or retrosigmoid obstruction. The average transit time for food to pass through the digestive system, from the mouth at the time of ingestion to the rectum at the time of evacuation, is 24–48 hours. If food remains in the body for much longer, more water is absorbed through the walls of the colon, the feces become harder and therefore more difficult to pass, and constipation can result. If the transit time is substantially shorter, not enough water is absorbed into the body, and liquid stool, or diarrhea, can result.




Massage protocol:

Position the client prone with a small pillow under his abdomen; support his ankles with a bolster. Ask permission to work on his gluteal muscles.

Compression, medium pressure, evenly rhythmic, using your entire hand

- Superior hamstring muscles
- Lumbar spine region
- Entire gluteal complex from the gluteal fold to the sacro- iliac joint to the lateral head of the femur
- Work bilaterally.

Digital or heel of the hand kneading, deep pressure, evenly rhythmic

- Along the border of the ischial tuberosity
- Gluteus maximus, medius, and minimus
- Piriformis muscle
- Muscles in the lumbar spine region Work bilaterally.

Position the client supine, knees bent, feet flat on the table, head resting on a pillow. Drape appropriately: The area from the bottom of the rib cage to the top of the mons pubis should be exposed. Explain the colon massage protocol to your client when he is comfortably positioned. In a trusting, nonthreatening overture to a very aggressive protocol, place your hand on his abdomen and begin stroking with a flat, firm hand in a clockwise direction over the entire abdomen as you speak. Once he is relaxed and understands the protocol, you can begin the actual sequence.

Digital scooping, light pressure. Place all four fingertips of one hand directly over the region of the sigmoid colon; place the other hand on top of these fingers for both support and added pressure. Now begin a scooping motion, performing about five stationary scoops, in the direction of the rectum. (This hand–finger placement is used for the entire protocol.)

- Directly over the sigmoid colon

Digital scooping, light pressure, moving up toward the left lower rib cage, about 2 inches at a time, using five stationary scoops at each stop along the way, pushing in the direction of the rectum

- Entire descending colon

Digital scooping, light pressure, moving across the bottom of the rib cage, about 2 inches at a time, using five stationary scoops each stop along the way, moving your fingers in small right-to-left scoops.

- Entire transverse colon

Digital scooping, light pressure, moving up the ascending colon, about 2 inches at a time, using five stationary scoops each stop along the way, moving your fingers in down–up scoops in the direction of the bottom of the right rib cage.

- Entire ascending colon

Stroke with a firm, flat hand, clockwise, while checking in with the client to make sure he is comfortable before you advance to the next, deeper step.

- The entire route of the colon

Digital scooping, medium pressure, at least five stationary strokes

- Directly over the sigmoid colon

Digital scooping, medium pressure, at least five stationary scoops at each point along the route

- Entire descending colon

Digital scooping, medium pressure, at least five stationary scoops at each point along the route

- Entire transverse colon

Digital scooping, medium pressure, at least five stationary scoops at each point along the route

- Entire ascending colon

Stroke with a firm, flat hand, clockwise, while checking in with the client to make sure he is comfortable with your moving to the next, deeper step.

- The entire route of the colon

Digital scooping, deep pressure, at least five stationary strokes • Directly over the sigmoid colon

Digital scooping, deep pressure, at least five stationary scoops at each point along the route

- Entire descending colon

Digital scooping, deep pressure, at least five stationary scoops at each point along the route

- Entire transverse colon

Digital scooping, medium pressure, at least five stationary scoops at each point along the route

- Entire ascending colon

Stroke with a firm, flat hand, clockwise, while thanking the client for cooperating with this protocol.

- Entire abdominal region

Cover the client's abdomen and ask him to rest for a while before getting off the table.

Contraindications and precautions:

- Active irritable bowel syndrome, Crohn's disease, or any intestinal inflammatory disease is a contraindication; however, because of the chronic constipation secondary to these conditions, the protocol could be performed with a physician's approval.
- A history of appendicitis-like symptoms and/or localized acute pain and fever are absolute contraindications.
- The complete absence of defecation after 3 days and/or the absence of defecation accompanied by fecal leakage are contraindications.

- Distention of the abdomen accompanied by nausea, pain, or vomiting is a contraindication.
- Pregnancy is a contraindication.
- A history of high blood pressure or cardiac compromise is a contraindication.
- Hydrotherapy should not be used unless the therapist has received specific training in the effects of heat and cold on the abdomen and bowel, and only if the client does not have any blood pressure or cardiac abnormalities.
- It's not wise to perform this protocol on a client who has just eaten a large meal.

FIBROMYALGIA: Symptoms are exacerbated by overexertion, stress, long periods of immobility, depression, insufficient sleep, extreme weather changes, and the presence of simultaneous infectious illnesses.

Massage protocol:
Starting with the patient supine, ask her to inhale deeply, hold it for a few seconds, and then forcibly exhale. Repeat 3 times.
Compression, light pressure, using your whole hand

- Entire anterior surface of the body, including the head and neck

Taking one of the patient's arms and cradling it securely with both of your hands, perform gentle stretching and ROM. Work slowly and rhythmically

- At the shoulder joint
- At the elbow joint
- At the wrist joint

Ask her to make a tight fist and to open her hand several times. Attempt to stimulate and to engage every muscle and joint of the upper extremity. Repeat on the contralateral arm.
Taking one of the patient's legs and cradling it securely with both of your arms, perform gentle stretching and ROM. Work slowly and rhythmically

- At the hip joint
- At the knee joint
- At the ankle joint

Ask her to tightly curl and uncurl her toes several times. Attempt to stimulate and to engage every muscle and joint of the lower extremity. Repeat on the contralateral leg.
Ask your patient to inhale deeply again, hold it for a few seconds, and then forcibly exhale.
Turn the patient prone. Apply a moist hot pack to the bilateral suprascapular region.
Compression, light pressure, using your whole hand

- Entire posterior surface of the body, including the head and neck
- Move the hot pack to the lumbar region.
- Using the technique described previously, place your fingers on the tender point above the spine of the left scapula. Compression, light-to-medium pressure, using your fingertips, no muscle involvement.
- Away from the central area of the tender point Compression, medium pressure, using your fingertips.
- Working into the muscle as deeply as the patient will allow Stretch the deep tissue, using your hand

Effleurage, slow, even, rhythmic strokes

- Toward the ipsilateral axilla Repeat on the right side.

Allow the patient to rest, untouched, or ask if there is one more relaxation technique she might enjoy for the final few minutes.

Precautions and contraindications:

- Deep work or aggressive overstretching is usually contraindicated.
- Modify pressure based on the patient's medication intake.
- Sleep may be induced because of the massage therapy session, so be sure driving arrangements have been made for the possible groggy patient post-session.
- Some research indicates a parallel between FMS and joint hypermobility. When performing stretching exercises, be aware if the patient moves too easily into hyperextension or hyperflexion and adjust ROM and stretches accordingly.

FROZEN SHOULDER: An inflammatory process (of unknown origin) in the joint's synovial tissue creates a thicker synovial membrane, leading to tiny tears as the head of the humerus

moves through normal ROM at articulating surfaces, where bone contacts bone. This low-level chronic inflammation leads to further local fibrosis (scar tissue), causing more inflammation upon movement as the cycle continues. Postoperative pathologic specimens support the preceding theory; however, similar reliable evidence is not available to indicate a strong inflammatory presence in the earlier stages of the condition.

Massage protocol:

Position the client side-lying with the unaffected side on the table. Place a small pillow under her neck and a larger pillow between her arms so the cervical spine is aligned and the affected shoulder rests in a correct anatomical position. Place a moist hot pack at the location of the head of the humerus so it drapes across the anterior and posterior portion of the shoulder girdle. Leave the pack in place; ask the client where she would like you to perform a few minutes of simple relaxation techniques. Remove the hot pack.

Effleurage, medium pressure, evenly rhythmic.

- Pectoralis major, pectoralis minor, below the clavicular ridge all the way from the manubrium to the acromion process.

Effleurage, medium pressure, evenly rhythmic.

- All muscles, tendons, bony prominences, and articulating joints of the shoulder girdle, especially focusing on the head of the humerus.

Effleurage, palmar and digital kneading, deep pressure, evenly rhythmic.

- All muscles, tendons, bony prominences, and articulating joints of the shoulder girdle, especially focusing on the head of the humerus.

Ask the client to pinpoint where her shoulder feels "stuck" as you passively move her arm through its arc of ROM. Return the arm to its comfortable position. Follow these steps:

- Warm the region using deep effleurage.
- Move the arm to its painful or stuck point.
- Stop movement and securely hold the arm.
- Perform deep, slow, focused cross-fiber friction and kneading as near to the restricted area as the client's anatomy will allow.
- Return the arm to a comfortable position and allow it to rest a moment.
- Return the arm to the stuck or painful point following your client's input.
- Ask the client to take a deep breath.
- Move the arm to at least 1 inch beyond its previous poin of pain or immobility; hold this position for a few seconds.
- Return the arm to a relaxed position.
- Effleurage, medium-to-deep pressure, to this entire area.

Effleurage, slow, medium pressure.

- Anterior and posterior shoulder girdle area.

Find another area of shoulder restriction or pain and repeat the enumerated steps.
Position the client supine, maintain the pillow under her neck, remove the "teddy bear" pillow, reapply the hot pack to the anterior surface of the head of the humerus/shoulder girdle region (do not allow the client to lie on the hot pack). Ask the client to perform three rounds of deep breathing as she inhales deeply, holds the breath for a few seconds, and then forcibly exhales.

- Effleurage, petrissage, effleurage, knead, effleurage.
- The entire shoulder girdle and pectoralis major and minor complex of the unaffected shoulder.

Perform a few minutes of relaxation techniques before the client leaves the table.

Contraindications and precautions:

- The presence of scar tissue, the client's desire to increase ROM, and her frustration with a "stuck" shoulder may tempt you to use more aggressive measures than are justified. It is not your job to "break up adhesions" or perform excessive scar work.
- Pain relief and increased ROM will occur slowly in response to a combination of techniques. Neither you nor the client should expect immediate results.
- Shoulder problems mimicking frozen shoulder symptoms include fracture, dislocation, rotator cuff tear, tumor, and infection.
- Do not treat self-diagnosed frozen shoulder until a physician has ruled out other more serious conditions. An impingement is indicated if the client reports pain in the midrange of flexion or abduction ac- companied by no pain at the beginning or end of the movement arc. Refer her to a physical medicine specialist.
- Recent shoulder intra- articular corticosteroid injections are a contra- indication for local mas- sage therapy.

HEADACHE/MIGRAINE: A vascular theory proposes that the migraine "trigger" (a substance or event that initiates the headache) creates cerebral vasoconstriction (constricted blood vessels in the brain), followed by dramatically responsive cerebral vasodilation. The rush of intracranial pressure from the vasodilation causes profound pain. Interestingly, prodromal

euphoria, irritability, yawning, depression, and/or excitability are also thought to be related to this change in intracranial pressure.

Massage protocol:

With the client positioned supine, well-supported by pillows, place a cold pack on her neck or head, as she directs. Leave it in place for this opening technique. Greet the body with general warming compression. Do not touch the face, head, or neck at this point. Work slowly, not rhythmically; vary your rhythm, trying not to rock the body.

- Start at the feet
- Work up the legs
- Include the abdominal region
- Work the arms and hands
- Include the pectoral region

Stroking, even, long, careful, rhythmic strokes

- Through the entire length of the hair from the scalp to the ends of the hair, over the entire head region

Digital kneading, medium pressure, evenly rhythmic

- Bony prominences of the frontal, ethmoid, maxilla, and sphenoid (sinus configuration)

Digital kneading, medium pressure, not rhythmic

- Posterior bony prominences of the cervical spine and

posterior and lateral neck muscles

- Include the insertions and origins of the sternocleidomastoid (SCM) on the mastoid and the sternum

Effleurage, medium pressure, rhythmic • All neck muscles

Effleurage, petrissage, effleurage, medium pressure, rhythmic

- Bilateral superior trapezius muscles
- Work away from the midline, out from the middle of the body to the lateral portion of the body

Effleurage, medium pressure, vary your rhythm

- The face
- The neck
- The superior trapezius

Stroke, evenly rhythmic

- Through the hair, from the scalp to the tips of the hair

Whole-body compression, evenly rhythmic

- Starting at the feet
- Working up the legs
- Including the abdominal region
- Working the arms and hands

Plantar fasciitis: The plantar fascia is a very tough aponeurosis (fibrous sheet or flat, expanded tendon that facilitates muscular attachments) located on the foot's deep plantar surface. It functions with every step as it absorbs shock and serves as a bowstring to hold up the foot's longitudinal arch. It inserts into the base of the calcaneus (large heel bone), weaves into the deep transverse metatarsal ligament, and attaches to the proximal phalanx of each toe. Overuse, combined with biomechanical foot abnormalities, causes straining, tiny tears, and sometimes inflammation of the fascia. This leads to further inflammation, occasional swelling, and persistent, often excruciating, pain. Plantar fasciitis is not technically an inflammatory condition as the "itis" indicates. The pain, previously believed to be inflammatory, often occurs because of degeneration of the aponeurosis and may or may not be accompanied by inflammation.

Massage protocol:

Do nothing more than hold the foot. Because of his acute pain, the client will resist any therapeutic attempts if trust is not initially established. While holding the foot, let him talk about his symptoms and discomfort. Continue holding the foot, and slowly and gently apply a cold pack. Tell the client what you are going to do; apply it gently and position it securely so the cold contacts the plantar sur- face. Tell him you're going to leave it in place for 5 minutes or until the discomfort from the cold is unbearable. Once the pack is secure, use compression, slow effleurage, petrissage, effleurage, medium pressure.

- Entire gastrocnemius and soleus muscles
- From the Achilles tendon to just below the popliteal fossa

Remove the cold pack. Gentle finger compression, squeezing, and ROM. Make no contact with the plantar fascia yet; do not tug on the plantar fascia.

- Every toe

Stroking, using your whole, flat hand, working in all directions, slowly with gentle pressure (not too light, to avoid a sympathetic response)

- Entire plantar surface of the foot
- Entire dorsal surface of the foot
- All toes

- Malleoli

Using lubricant, effleurage, using your whole, flat hand, work- ing in all directions, slowly, with more depth than the previous step but not moving to a firm pressure yet. Carefully gauge the client's response; do not cause pain.

- Entire plantar surface of the foot
- Entire dorsal surface of the foot
- All toes
- Malleoli

Replace the ice pack. Return to the gastrocnemius. Effleurage, petrissage, effleurage, gentle tugging from proximal to distal while gripping the belly of the muscle, firm pressure, working slowly, but creating no discomfort.

- Entire gastrocnemius and soleus muscles
- From the Achilles tendon to just below the popliteal fossa

Remove the cold pack. Effleurage, petrissage, effleurage, com- pressions, slow, medium pressure

- Hamstring complex

Long, slow, smooth, effleurage, firm pressure, working cephalically

- From the Achilles tendon to the ischial tuberosity

Long, slow, smooth, stroking using light but full hand pressure (avoiding a sympathetic response), stroking cephalically

- From the Achilles tendon to the ischial tuberosity

Stroking, using fingertips only, slowly, very lightly, working in a cephalic direction

- In the popliteal fossa only

Instruct the client to perform ROM exercises at his ankle, point and flex his toes, point and flex at the ankle, bend his toes to- ward his knee just to the point of pain, and then release. Teach him how to deeply massage his calf muscles.

Precautions and Contraindications:

- If the client complains of numbness and tingling through the lower extremity, nocturnal pain, heat, or swelling anywhere in the leg, he should see a physician.
- Cross-fiber friction should be avoided if the client suffers from painful inflammation or if he is taking anti-inflammatories or anticoagulants.
- Deep work to the heel is contraindicated if the client has received an injection to the heel within the last week. (This does not mean you cannot treat the rest of the plantar fascia and/or compensating structures.)
- Frequent monitoring of the pain level by using the 0–10 pain scale will help you modify your work.

Osteoarthritis of Knee: is a group of chronic, degenerative conditions that the affect joints specifically, the articular cartilage and subchondral bone. Osteoarthritis, commonly called 'arthritis' is a gradual condition, known as 'wear and tear'. Osteoarthritis occurs almost exclusively in weight-bearing joints (joints in the hands, knees, hips, and spine) mostly the knees. Joint pain during or after movement Tenderness in the joint when light pressure is applied to it. Stiffness and loss of flexibility. Patient may not be able to move the affected joint through its full range of motion. Grating sensation. You may hear or feel a grating sensation when you use the joint bone spurs.

Massage protocol:
Pain free rhythmic mobilization, rocking, shaking. Proximal to distal treatment. MFR Myofascial Release Techniques. Soothing Swedish tech – effleurage, stroking, petrissage to reduce hypertonicity. Trigger Point treatment with deep muscle stripping and ischemic compressions. Traction joint. GTO to muscle crossing joint. Joint play to affected joints.

Precautions and contraindications:

- Avoid heat hydrotherapy if inflammation is present
- Caution when applying overpressure with late-stage Osteo Arthritis due to osteophytes

But first let us understand how soaking helps?

Salt is considered a home remedy for generations. Soaking the foot with it relieves aches and pains, reduces inflammation, improves blood circulation, reduces, or removes unpleasant odors from the feet, and has anti-fungal and microbial properties. It helps with skin infections and wounds, including athlete's foot, nail fungus and small wounds. In addition, there is a lot of research indicating that it helps to remove toxins from the body and relieve stress. Skin absorption of minerals relieves cramping and foot pain, enhances the absorption of magnesium through the skin, which helps relax muscles and nerves and relieves foot pain. It has antibacterial and antifungal properties, improving blood flow to the skin, thus enhancing the chances of recovery.

Recipes for body soaking

Recipe 1

Ingredients:

A cup of Epsom salt/Dead Sea or homemade table salt
Half a cup of apple cider vinegar
Dry chamomile, mint, basil, and thyme

Method:

- Mix all the dry herbs and boil it with water until simmers.



- Add warm water and stir well.


- Add salt, apple cider vinegar and stir well.


- Soak your body in tub filled with this mixture every evening for 15-20 minutes. (You can be there for longer time if you need).


Benefits:

- It reduces toxins present in the body and lessens the pain
- Reduces infections, bacteria, and fungus
- Stimulates blood circulation
- Nourishes the skin and make it smooth.

Recipe 2

Ingredients:

Half a cup of Dead Sea Salt or Epsom salt
10 teaspoons of dry or fresh mint leaves
10 teaspoons of dry or fresh mint leaves
10 teaspoons of rosemary
5 Λ cup of apple cider vinegar
teaspoons of chamomile

Method:

- Mix all the dry herbs in a bowl.




- Add warm water, salt, and apple cider vinegar into it and mix well.





- Soak your body in tub filled with this mixture every evening for 15-20 minutes. (You can be there for longer time if you need).

Benefits:

- It reduces toxins present in the body and lessens the pain
- Reduces infections, bacteria, and fungus
- Stimulates blood circulation
- Nourishes the skin and make it smooth.

Recipe 4

Ingredients:
A large cup of dead sea salt, Himalayan salt, or Epsom salt
4 teaspoons of ginger

4 teaspoons basil
5 teaspoons of olive oil
A cup of apple cider vinegar

Method:

- Mix all the dry herbs in a bowl.



- Add warm water, olive oil, and apple cider vinegar into it and mix well.



- Then, soak your body in tub filled with this mixture every evening for 15-20 minutes. (You can be there for longer time if you need).

Benefits:

- It reduces toxins present in the body and lessens the pain
- Reduces infections, bacteria, and fungus
- Stimulates blood circulation
- Nourishes the skin and make it smooth.

Recipe 5

Ingredients:
10 teaspoons of table salt
A large cup of apple cider vinegar
3 teaspoons of mint
3 teaspoons of sesame
5 teaspoons of wild thyme
5 teaspoons of black seed powder
5 teaspoons of flaxseed

Method:

- Take flax seeds, black seeds, sesame seeds, and grind it well. Take it in a bowl.

- Mix all the dry herbs (mint, thyme, and salt) in a bowl.

- Add warm water, olive oil, and apple cider vinegar into it and mix well.

- Then, soak your body in tub filled with this mixture every evening for 15-20 minutes. (You can be there for longer time if you need).

Benefits:

- It reduces toxins present in the body and lessens the pain
- Reduces infections, bacteria, and fungus
- Stimulates blood circulation
- Nourishes the skin and make it smooth.

Recipes especially for foot soaking:

Recipe 1

Ingredients:

2 teaspoons of fennel

3 tablespoons of mint

5 spoons of ginger

4 tablespoons of sage

4 tablespoons of table salt

A cup of white vinegar

Method:

- Mix all the dry herbs in a bowl.

- Add warm water, olive oil into it and mix well.

- Then, soak your feet in tub filled with this mixture every evening for 15-20 minutes. (You can be there for longer time if you need).
- Prefer a bowl or tub which is non-metallic.

Recipe 2

Ingredients:

3 tablespoons of ginger

2 tablespoons of lavender
4 tablespoons of mint
3 tablespoons of cumin
2 tablespoons of hot pepper
7 tablespoons of table salt
A cup of food vinegar, preferably white

Method:

- Mix all the dry herbs in a bowl.

- Take hot pepper and grind it well. Take it in a bowl and mix with the other herbs.

- Add warm water, olive oil, and lavender into it and mix well.

- Then, soak your feet in tub filled with this mixture every evening for 30 minutes. (Repeat it for 2 times a day).
- Prefer a bowl or tub which is non-metallic.

Recipe 3

Ingredients:

A cup of apple cider vinegar
3 teaspoons of Moringa
3 teaspoons of sesame seeds
5 teaspoons of cinnamon
A quarter cup of olive oil

Method:

- Mix all the dry herbs (moringa and cinnamon powder) in a bowl.

- Take sesame seeds and grind it well. Take it in a bowl and mix with the other herbs.

- Add warm water, olive oil into it and mix well.

- Then, soak your feet or the whole body in tub filled with this mixture every evening for 15-20 minutes. (You can be there for longer time if you need).

Benefits:

- It reduces toxins present in the body and lessens the pain
- Reduces infections, bacteria, and fungus
- Stimulates blood circulation
- Nourishes the skin and make it smooth.

Recipe 4

Ingredients:

A cup of apple cider vinegar
3 tablespoons of coriander seed
5 spoons of moringa sowing
5 spoons of cinnamon

3 tablespoons of basil
2 tablespoons of thyme
A cup of extra-virgin olive oil

Method:

- Mix all the dry herbs in a bowl.

- Add warm water, olive oil into it and mix well.

- Then, soak your feet or whole body in tub filled with this mixture every evening for 30 minutes. (Repeat it for 2 times a day).
- Prefer a bowl or tub which is non-metallic for foot.

How to prepare foot soak:

To best ease soreness, a foot soak should be between 92°F and 100°F. foot soak involves immersing the feet in warm water. Follow these steps to perform a foot soak:

1. Fill a basin or foot spa or a bucket with enough warm water to cover the feet up to the ankles.
2. Add any of the following ingredients mentioned above for foot soak, according to your conditions to the water.
3. Place the feet in the soak for about 20 to 30 minutes.
4. Dry thoroughly after the soak and then moisturize the feet.

An Epsom salt foot soak can dry out the feet, so it is best not to do it every night. Try soaking the feet once or twice a week to make sure it does not cause dryness. Always end your foot soak with moisturizer.

Benefits:

- It reduces toxins present in the body and lessens the pain
- Reduces infections, bacteria, and fungus
- Stimulates blood circulation
- Nourishes the skin and make it smooth.

Dr. Mahmoud Sous – Ph.D.

During the period of 1995-1999, I went to the medical school in Poland to research about the various methods of back pain treatment. After finishing my PhD, I took variety of courses including naturopath, acupuncture, and manual techniques. This gave me an idea that exercises, and massage could be helpful in treatment of chronic pain. But my findings didn't stop me here, I also worked as a naturopath practitioner in Canada where I got familiar about treatments with Chinese medicines, osteopath techniques and some other manual therapies which helps in pain management.

Fixing injuries requires an understanding of anatomy and biomechanics. That is why my research and treatment belong to the holistic approach of using different techniques and remedies for the treatment of back pain. In 1990, I realize that there are some complex spinal aspects and issues which leads to of back pain. So, from my case studies I formulated a guideline which is clear and easy to understand and will fix your issues.

My goal is to help people visualize how the body functions and what happens inside when you experience pain. Healing requires to focus on one's action because pain results due to faulty actions and movements. This thought motivated me to work on a book which will include all home remedies where people can treat themselves to fix their pain. I have included knowledge based on my clinical research using manual massage therapy, food habits, nutrition facts, heat, sauna, hydrotherapy, cold water treatments which overall helps in pain management. It gives me pleasure to introduce this book to the community where I have shared all my experienced treatment plans.

Priyanka Yadav (Physiotherapist)

I started my career in 2011, since then I have worked as a Physiotherapist in several clinics and hospitals in India. Working mostly in the Outpatient department made me realize that Physio's role is extremely crucial in the rehabilitation and recovery process of a patient. My desire to reach out to more people motivated me to work for this book. Have worked with Dr. Mahmoud on several research books on self-pain management. We have been constantly working on curating the best suited protocol for various Musculoskeletal conditions. Additionally, we have also included approaches with alternative medicine.

Bhoomika Pathak (Physiotherapist)

After graduating in 2014, I have been working with various clinical conditions like sports injury, musculoskeletal injury, and neurological disorders for more than 5 years. Along with Dr. Mahmoud & colleagues I have worked on treatment and pain management for various musculoskeletal injuries and pain population. With all the successful outcomes till now, we have designed this book with stagewise guide to treat your knee pain.

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