Excerpt from PTX Therapy Education and Training Manual (Volume I)

Foundation

The method of PTX Therapy™ (PTX) is a therapeutic exercise approach that emphasizes restoring optimum anatomical, physiological and neurological function to the human body. This is accomplished by re-educating the body to operate as it is designed. Structural and mechanical deviations are reduced and the body readily heals and functions more efficiently. Clinicians trained in this unique method of evaluating and treating chronic pain are called "PTX Therapists," derived from the extensive study of anatomy, kinesiology, functional biomechanics, kinetics, and postural therapy.

Application

Clients, whether in clinic or online, provide a history of their physical condition and are then given a postural deviation and muscular imbalance assessment. Gait evaluations are given for those seen in-clinic. Clients are then placed on a series of functional demand exercises that address their specific postural, muscular, and biomechanical dysfunctions. All exercises include both a stretch and strength component, and require no special equipment. Resistance is provided by the client's own body weight and gravity. Sequencing is of utmost importance – "the science is in the sequence". There are no drugs, modalities, or manipulations using this therapeutic technique. PTX is for self-administered musculoskeletal pain elimination and addresses the root problems of disorders by incorporating many physical therapy principles established in the early 1900's. All exercises and protocol sequences are results-proven from the most up-to-date literature on physical therapy (specifically therapeutic exercise), biomechanical kinesiology, functional anatomy, exercise physiology, and the medically known structure and function of the neuro-musculoskeletal system.

Client's Responsibility

The client is expected to perform their exercises on a daily basis. It is recommended that they return, online or in clinic, for a re-evaluation once each week. During each subsequent visit, the client will receive a new therapy routine based on their body's progress and symptom report. Clients are seen for an average of 4-6 weeks. When a client reaches satisfactory progress, they are then put on a maintenance schedule, which continues to reinforce their new postural position.

Client's Profile

PTX Therapy clients can range from age two to ninety plus years. Physical characteristics encompass professional and world-class athletes to those born with cerebral palsy or other ailments which might affect the functionality of the human body. This method addresses concerns dealing with orthopedic, circulatory, digestive, respiratory, and neurological abnormalities. However, the majority of visits are concerns involving orthopedic problems.

Synopsis

The method of PTX Therapy™ (PTX) is an approach that is based on fundamental anatomical, physiological and biomechanical principles. By using the designed **"blueprint"** of the human body as a guide, the goal of this therapy is to bring about a state of muscular balance and internal homeostasis to the individual. It is **not** a form of treatment that seeks merely short term, symptomatic relief. A client's symptoms do not dictate an instant formula for treatment, but instead provide a beginning frame of reference based on each individual's unique limitations. Our **primary objective** is equally applicable to everyone we treat. That objective is to remove the person's structural dysfunctions and limitations. By accomplishing this primary objective we experience unsurpassed success in the mitigation and eventual removal of symptoms. For those individuals who are asymptomatic, this therapeutic technique is a means of prevention and offers high demand strength and conditioning routines to increase athleticism, power, speed, and cardiovascular endurance.

POSTURE COMMITTEE OF AMERICAN ACADEMY OF OTHROPAEDIC SURGEONS (1947):
"Posture is defined as the relative arrangement of the parts of the body. Good posture is that state of muscular and skeletal balance which protects the supporting structures of the body against injury or progressive deformity irrespective of the attitude (erect, lying, squatting, stooping) in which these structures are working or resting. Under such conditions the muscles will function most efficiently and the optimum positions are afforded for the thoracic and abdominal organs. Poor posture is a faulty relationship of the various parts of the body, which produces increased strain on the supporting structures and in which there is less efficient balance of the body over its base of support. Postural faults can give rise to discomfort, pain or disability. The range of effect from discomfort to incapacitating disability is related to the severity and persistence of the faults."

To further add to the Committee's position:
Posture is determined by stabilizer/fixator muscles that dictate the relative arrangement of the parts of the body. These muscles and muscle groups attempt to maintain adequate tonicity in keeping the body's center of gravity over its base of support in a standing static position. Upon movement, these same muscles attempt to act in accordance with the inert structures (i.e. thoracic and abdominal organs) by allowing optimum positions to be afforded. Therefore, the relevance of posture, with and without postural faults, is paramount in dictating biomechanics.

The "blueprint" for posture is familiar to all health professionals; the correct standing anatomical position. In the coronal plane, the axis of the hip, knee, and ankle joints are directly aligned. The head sits evenly between the shoulders and the hips are level, thus the spine maintains a centrally aligned vertical position between the pelvis up to the base of the skull. In the sagittal plane, the mastoid process sits directly over the shoulder joint and the shoulder, hip, knee, and ankle joints should be vertically aligned and falling in the plumb-line (line of gravity), with the hips in proper tilt allowing for the spine to maintain its proper S-curve. In the transverse plane, there should be no rotation of the torso on a fixed pelvis, neither should there be a rotation of the pelvic girdle. There should be no rotation of the humerus, femurs, or shank, outside what is considered appropriate in anatomical literature. An individual whose body deviates from this design must do so for a reason. That reason includes muscular imbalances in strength and/or flexibility. These imbalances result from dysfunctional muscles, biomechanical compensations, habitual postures, surgery, work environment, trauma, disease, improper training, and in some cases congenital abnormalities.

Society has become increasingly dependent on modern transportation and technology to perform daily tasks. The continued surge in online usage at work and at home, society's requirement for computer use is just one of many reasons for the epidemic of chronic pain and acute injuries that we see today. By extended periods of sitting, the body loses its ability to develop and maintain itself through motion. Thus, pain and physical limitations are inevitable. The postural and structural muscles of the body deteriorate when the stimulus of proper movement ceases to exist. As a result, these muscles become dysfunctional and the body experiences compensations, limitations, and a myriad of ailments which affect physical and mental performance.

The impact of postural changes affects individuals in different ways and at different rates. A person's age, activity level, occupation and weight are just some of the factors that will help determine where and to what extent a person will be affected anatomically. What is certain is that a given individual is highly susceptible to specific symptoms. The process begins with an alteration of normal joint mechanics. This alteration (or compensation) leads to a decrease in performance. That decrease in performance could be expressed in the way you deliver your curve ball to difficulty rising from a chair. Often these changes go unnoticed because the body subconsciously avoids the pain stimulus or the extra muscular demand. These compensatory factors and mechanical deviations eventually manifest themselves into a variety of pathologies and disorders if allowed to continue. These can include, but are not limited to, inflammatory responses to overstressed tendons and bursa, non-congruency of joints' surfaces leading to calcifications and arthritic conditions, unequal loading of the intervertebral discs leading to bulges, herniations and nerve impingement, laxity of ligaments, muscle spasms, edema, and ischemia.

These problems are **not limited to** the musculoskeletal system. As the foundation of the body is removed from its most efficient position, the nervous, circulatory, respiratory and digestive systems can all be affected. The viscera can thus become misaligned or compressed, neural pathways are disrupted or impinged, and venous and arterial flow can be compromised. Any one or a combination of these scenarios can contribute to a multitude of medical problems.

Unfortunately, much of the medical care community works in an acute-care system and has adopted a symptomatic window for diagnosis and treatment. Simply put, wherever the pain exists is where the focus of traditional treatment occurs. The use of drugs, surgical procedures, and many forms of therapeutic treatments, including all forms of ergonomics training, most often fail to address the cause of the problem. Thus, if symptom relief is achieved it's only temporary, while misalignments and compensations remain. When a PTX Therapist is presented with a symptomatic client, our initial assessment is **markedly different** than that of an orthopedist, physical therapist, chiropractor, athletic or personal trainer, or most any other practitioner. Conventional procedures entail evaluation of exactly which structures are involved, and development of a plan to provide symptomatic relief through the available modalities (i.e. drugs, ultrasound, electric stimulation, therapeutic exercise or massage, surgery, etc.). The rehabilitation then focuses specifically on the affected area, and if applicable, the joints directly above and below. Our assessment requires looking past the symptom, since the symptom **never** dictates our approach to therapy but is instead a temporary obstacle.

The body is a highly integrated structure. By focusing on an area of pain or abnormality (i.e. edema, muscle tightness, etc.), a clinician is ignoring the rest of the factors in a very large equation.

The body also has a tremendous capacity for self-healing. To facilitate that healing, one must first remove the noxious stimulus that has disrupted normal function involving the body's kinetic chain.

An individual who has experienced either some sort of trauma or who has had surgery, or both, is not beyond benefit from PTX. This individual has had some external forces placed upon their existing dysfunction. The combination of the layers of dysfunction can seriously impede the healing process. Traditional surgery and/or rehabilitation following a trauma is often much slower than expected and both client and physician are unhappy with the recovery. This is because although the trauma created the symptom, or accelerated its appearance, the body's structural/mechanical dysfunctions will not allow it to heal optimally. The noxious stimulus is never removed. Even if a person's body has been physically altered due to surgery or trauma, the rest of the body is not relieved of its responsibility to execute its proper function. A body that lacks one of its integral components (i.e. meniscus, cartilage, fused vertebrae etc.) needs the rest of the body to function as efficiently as possible to minimize the deficiency imposed upon it.

We must then return to our "blueprint" and compare the client's structural integrity. The therapist is highly trained to recognize structural and mechanical deviations of the body as a whole and does so without the use of diagnostic machines or specific manual muscle tests. Based on the client's self reported history and the therapist's observations, a series of functional demand exercises are personally developed by a PTX Therapist. All exercises and their particular sequence within a program are designed to address the imbalances leading to an individual's symptoms and limitations. The exercises emphasize the deeper (fixator/stabilizer) muscles of the axial skeleton and the pelvis as well as the more superficial muscles. They require no special equipment and are designed to strengthen the body functionally. Our primary source of resistance is a person's body weight and the force of gravity. A PTX Therapist does not administer hands-on therapy. The client is instructed in a series of personalized exercises and then is expected to continue them at home. Modifications are readily made whenever necessary. The home program prevents the client from developing a dependency on someone else while pursuing their own well-being. Thus, they assume responsibility for their own health, which becomes invaluable for life.

The exercises alone are not the sole determining factor in improving structural/mechanical function. There are three primary components: **1) Proper exercises:** The application of specific exercises to a given individual's dysfunction. PTX Therapists have generated a catalog of almost 1,000 different exercises, many of which have been designed specifically with this therapeutic approach in mind, and some of which are slight variations of standard yoga or traditional physical therapy body positions or movements. Only those exercises which apply specifically to that individual will be of benefit in PTX Therapy. **2) Proper Sequencing:** The sequencing of the exercises within a given routine is critical - ***The science is in the sequence™.*** *B*y applying the correct body positions and exercises in the proper sequence, joint articulations change, muscular imbalances are corrected, inflammatory responses are removed, and pain is eliminated. None of the routines administered by an PTX Therapist are generic protocols. Each therapy session has a given objective. That objective can only be reached through a properly designed routine. The exercises must be sequenced such that one exercise prepares the body for the next, and that a successive exercise does not negate what a prior exercise has accomplished in removing a dysfunction or reinstituting structural integrity. **3) Progression:** Ideally the exercise sequence is performed for an average of seven to fourteen days. At this point there is a re-evaluation of the client and a re-design of the routine accordingly. Often the exercises are initially of lower demand, and as the neuromuscular efficiency of the client improves the exercises become less effective. Consequently, the body must be put under a new stimulus of varied demand to adjust to the changes that have occurred as a result of the prior routine. The change in stimulus allows for continued progress even if the symptoms have abated. For any particular symptom, clients on average are seen for five sessions, and are then placed on a maintenance schedule of alternating routines.

To elaborate further on the science of sequencing in PTX, we need to take a look at principles of physics and the branch of mechanics that is concerned with the effects of forces on the motion of a body or system, called *kinetics*. Certain forces applied or exerted on the human body can reinforce an existing position, or, strengthen and stabilize an individual in a new position. In order for the latter to take place, one must apply very specific forces in a very specific sequence that reduces dysfunctions. PTX applies the following two theorems: *DEVIATION REDUCTION THEOREM: Postural deviations are reduced or eliminated by performing an exercise that is in the direction of plane of motion from which the body deviates. MUSCULAR HOLD THEOREM: Muscular imbalances that lead to postural deviations and biomechanical compensations can be reduced or eliminated only if exercises are performed in a sequence that first addresses a dysfunction and then applies a strong "hold" that doesn't allow the push or pull of muscles or muscle groups to reengage the dysfunction.* In applying both theorems, PTX uses frames of reference (floor, wall, chair, etc.), right angle position of joints, as well as closed and open kinetic chain exercises. Such positional exercise muscle work changes postural deviations; such changes become permanent to the body's position and function. By performing exercises in a position foreign to the body while in its dysfunctional state, moving the body in sequence from disorder to order, proper alignment and muscular balance is achieved, and as a result pain dissipates.

PTX Therapists typically hold a Bachelor of Science degree, in at least one of the exercise science fields (i.e. biomechanics, kinesiology, exercise physiology, athletic training, physical therapy, etc.). Training in this method consists of observation, exercise execution, and a broad understanding of the concepts and methods that separate this therapy from other forms of treatment. This includes participation and testing in educational meetings, and clinical application of the therapy. To perform this therapy effectively requires a minimum of one year, and upwards of two years no matter previous educational background or training, to develop in a therapist.

The method of PTX Therapy has had enormous worldwide success in helping people overcome their physical ailments. It is a technique that is attractive to many people because it is a natural, common sense approach to the human body. The individual can see and feel the physical changes that take place as a result of their efforts. An increased feeling of confidence and energy accompanies the improved health.

A major concern of health care today is that of reduced costs and prevention. PTX Therapy is *not* disease management; *it is* healing and condition prevention. It requires no hands on treatment, no special equipment or machines, no drugs, and no dependency on anyone other than oneself. PTX does not merely treat the symptom, but instead looks to restore optimum function to the human body; as a result, healthcare is put back into the hands of the individual with less reliance on a practitioner or system, and **healing *and* prevention** are dually accomplished.