



The Possibilities of Stretching? Stationary? Static? Dynamic?

By; Natural Motion Systems

Understanding the function of Different types of stretching.

NMS Health Sciences is an INTEGRAL aspect of our training/practice.

Lao Tzu in In the Tao Te Ching

Seventy-six

a man is born gentle and weak.

At his death he is hard and stiff.

Green plants are tender and filled with sap.

At their death they are withered and dry.

Therefore the stiff and unbending is the disciple of death.

The gentle and yielding is the disciple of life.

Thus an army without flexibility never wins a battle.

A tree that is unbending is easily broken.

The hard and strong will fall.

The soft and plasticity will overcome.

Scientist and physician Alexander Bogomoletz said wisely, "Man is as old as his connective tissues."

If rely on tissue elasticity for flexibility, you'll lose it. You must master the regulation of muscular tension in order to gain dynamic tendonous strength. Tendons do not have to be maximally stretched to be torn. Tears are the result of a special combination of sudden stretch and muscular contraction.

A stretch from one side and a simultaneous contraction on the other. This involuntary neurophysiologic event is called the "stretch reflex:" a muscle that is stretched by an external force too far or too fast will contract to oppose the stretch. (Relative Balance-Tai Chi)

Before beginning dynamic tendonous strengthening exercises to develop plasticity, you must learn to regulate the muscular tension. This is not as difficult as it sounds, but requires a paradigm shift in training methodology.

The concepts of Flexibility and Elasticity.

Flexibility is a measurable range of motion in one specific direction. To increase the flexibility of a tissue, you must apply a force pulling the tissue in an isolated range of motion until the stress causes a permanent deformation of the tissue, where it will not return to its original state.



However, over years and a lifetime, we cause micro trauma to our muscles from activity. The muscle heals, but only after scar tissue has formed. In healing the scar tissues mend the wound together by pulling and shortening the muscle tissue. Tendons and ligaments are composed of collagen (lending Tensile Strength) and elastin (lending Elasticity). Elasticity is a material's ability to return to its original state following deformation after removal of the deforming load. To increase the elasticity of a tissue, you must apply a load to the tissue in a range of motion, and remove the load, after the initial stiffness ceases (discomfort, not pain), before the tissue is permanently deformed, so that the tissue returns to its original state. This stress increases the capacity for storage of elastic energy.

The Viscosity of a tissue is its resistance to the force: the greater the viscosity, the greater the force and time required to cause deformation. To understand this, pull a rubber band in two opposite directions. The more that you pull, the harder it is to pull.

Tissues adapt to both the intensity and the duration of the stress placed upon it. So, two things can occur, (which I will expand upon in later articles on Dynamic Flexibility through Plyometric and Isometric Training).

The Stretch Reflex is where a muscle that is stretched by an external force too far or too fast will contract to oppose the stretch.

This is why dynamic flexibility may not be gained through static stretches. Flexibility is speed specific.

NMS Health sciences training system is - to be flexible in motion, you must dynamically stretch in motion and eventually at your sport's velocity. We should concentrate on overcoming the SRS, but not proceed to deformation of the tissue. Static stretching may not be the best means for permanently remaining flexible. Attempting to alter the mechanical properties of our tissues may work when we are children, but not in developed adults. The goal of allowing the organism to be permanently flexible is through the regulation of muscular tension - to govern the stretch reflex.

N M S "Dynamic Relaxation- Active Recovery"

Plasticity is the quality of a connective tissue, such as a ligament or tendon, when subjected to ballistic, prolonged, or sudden forces, exceeding the elastic limits of the tissue, the tissue does not return to its original state after the deforming load is removed. You understand what is a productive and unproductive level of stress. For instance, discomfort is productive; pain is unproductive - this is completely subjective. (Stationary or Static) we do not stretch in isolation for its own sake. We do not stretch in isolation to induce permanent deformation of the tissue to increase flexibility. To begin increasing the plasticity of the body, we stretch in isolation until the Short Range Stiffness is removed. This is a very short and insignificant aspect of preparation. Then we move to engage the organism through a complete range of motion- "Bio-mechanical Exercise". There are simple bio-mechanics involving one joint matrix (such as large arm circles through the 135 degree range of motion) and there are complex ranges of motion



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comprising multi-joint matrixes, which require lengthy text to describe, but must be modeled and then experienced kinesthetically (Open and Closed Kinetic Chain) .
NMS tool for research and practice gain insights on how to develop and augment your personal health regimen.

Regulation of the Stretch Reflex through sensitivity to muscular tension and the cultivation of Plasticity and Viscoelasticity of tissues through Biomechanical Exercise.
Example: Ballistic Movement, called "Biomechanical Exercise" Dynamic Flexibility through Plyometric and Isometric Training.