



## Red Light Reflex

### WHAT IS THE RED LIGHT REFLEX?

The Red Light Reflex, or withdrawal response, is a primitive response that protects the body from attack. When we sense danger, a series of automatic physical reactions take place: our jaw contracts, our shoulders lift up, our head comes forward, our eyes and brow contract, our elbows bend, our arms rotate inward, our abdominals contract, our inner thigh muscles and hamstrings tighten, and our knees and ankles roll inward. The withdrawal response pulls our extremities inward and brings us into a fetal position, protecting the most vulnerable parts of our body from attack. It is so universal that organisms throughout the animal kingdom, even amoebas, exhibit some form of the withdrawal response.

The withdrawal response has helped us survive and get to where we are today. But for those of us now living in industrialized societies in which our lives are not being threatened on a regular basis, the withdrawal response is not doing us any favors. The never-ending demands of work, family life, financial responsibilities, and social expectations are constantly present in our minds, and we perceive these stressors to be life-threatening.

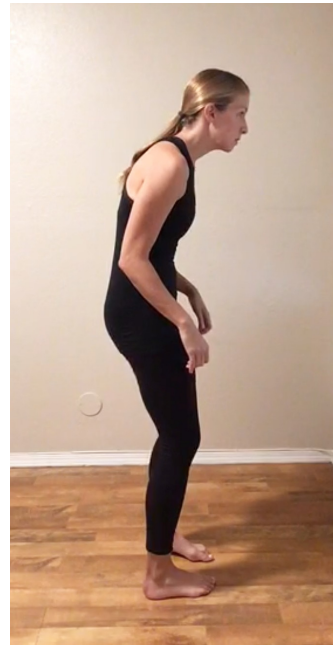
When we experience these types of chronic psychological stress our withdrawal response is constantly activated, contracting our abdominal muscles and bringing us into the rounded posture we associate with aging. When this posture becomes habitual, we experience back and neck pain as well as a host of other physiological dysfunctions including shallow breathing, high blood pressure, and digestive issues. As Moshe Feldenkrais said, "Should the environment change too sharply, the reflex reaction may be the doom of the species as surely as it has served it."

Thomas Hanna coined the term **Red Light Reflex** to refer to the withdrawal response. "Red light" means stop, and the withdrawal response is our instinctive way to protect ourselves and avoid confrontation. In your Somatics teaching, you can use the terms Red Light Reflex and withdrawal response interchangeably; both can be described as **a tightening of the muscles in the front of the body in order to protect oneself.**

## RED LIGHT REFLEX POSTURE

The full expression of the Red Light Reflex or withdrawal response is:

- head forward
- jaw clenched shut
- shoulders rounded forward and chest collapsed
- arms rotated medially (inward)
- elbows bent
- trunk bent forward
- pelvis tucked under
- hips rotated medially (inward)
- knees bent
- knees and ankles rolled inward



Most people in Red Light Posture will balance out the weight of their body in some way. For example, they will likely pull their head backward to balance out the weight of their body being pulled forward by the reflex; this results in tight neck muscles and cervical disc issues. Likewise, many people in Red Light Posture will experience back pain because their back muscles have to work extra hard to keep them standing upright.

## ANATOMY OF THE RED LIGHT REFLEX

Listed below are the muscles primarily at work in the Red Light Reflex or withdrawal response. While these muscles do more actions than what is described, listed below are the actions that they perform in the Red Light Reflex/withdrawal response.

**Muscles that flex the spine:** Rectus abdominis, Internal and external obliques, Transverse abdominis (compresses abdominal contents)

**Muscles that flex the cervical spine:** Sternocleidomastoid, Anterior scalene, Longus capitis, Longus colli

**Muscles that elevate the mandible** (close the jaw): Masseter, Temporalis, Medial pterygoid

**Muscles that rotate the arms inward:** Deltoid, Latissimus dorsi, Teres major, Subscapularis, Pectoralis major

**Muscles that flex the elbows:** Biceps brachii, Brachialis, Brachioradialis, Flexor carpi radialis, Palmaris longus

**Muscles that flex the hips:** Rectus femoris, Gluteus minimus and medius, Tensor fascia latae, Sartorius, Psoas major, Iliacus

**Muscles that flex the knees:** Hamstrings, Gracilis, Sartorius, Gastrocnemius, Popliteus

**Muscles that rotate the hips and knees inward:** Semitendinosus, Semimembranosus, Gluteus medius and minimus, Adductor magnus, Adductor longus, Adductor brevis, Gracilis, Pectineus, Tensor fascia latae, Sartorius, Popliteus

## CAUSES OF RED LIGHT POSTURE

You will commonly see Red Light Posture present in people with the following traits, lifestyles, or physical training:

- Stressed out, tired, overworked, shy, not confident, fearful, sad, negative
- Long hours spent at the computer, on phone, or driving
- Very tall
- Training such as gymnastics, swimming, weightlifting, or anything that results in the abdominals and chest becoming chronically contracted

## CONDITIONS RESULTING FROM RED LIGHT POSTURE

Red Light Posture causes or contributes to the following conditions:

Back tightness and pain  
Shoulder tightness and pain  
Thoracic outlet syndrome  
Neck tightness and pain  
Cervical disc problems  
Headaches  
Temporomandibular joint disorders  
Bruxism  
Hyperkyphosis  
Shallow breathing  
High blood pressure  
Digestive problems  
Constipation  
Frequent urination  
Impotence  
Hip, knee and ankle pain  
Tight hamstrings  
Bunions