

extract from: THE LITTLE BOOK OF THE BANDHAS

The bandhas are actually only concepts that describe somatic events that protect joints and muscles, while generating subtle but deep neurological and energetic effects. Like any concept they can be a help or a hindrance, depending on our understanding and application of them. It is important to recognise that despite their structural, physiological, energetic and spiritual effects the bandhas are mechanical events that take place in and as muscular contraction. It is the stillness of yoga postures that both gives them their unique power, and defines the mechanics of their muscular origins.

Just as we can distinguish between respiratory and motor muscles, we can also distinguish between motor and structural muscles. Respiratory muscles support breathing, motor muscles support movement and structural muscles support our posture. However muscles can not be categorised according to only one function. While the diaphragm is our primary respiratory muscle, it also functions as a structural muscle. Nevertheless, a muscle acts differently when providing respiratory, motor or structural support. Motor muscular contractions are brief, structural muscular contractions are prolonged and respiratory muscular contractions are rhythmical.

Human muscle tissue is binary: it is either active or passive: contracting or not. Muscles cannot intrinsically lengthen, they can only intrinsically contract. They lengthen only in response to the contraction of their antagonists, or on the release of contraction. The tricep extends when the bicep contracts, etc. This is common knowledge. Yet a fully extended arm requires extension in both the bicep and the tricep. This binary extension relocates the muscular action towards the joints.

by Godfridev

The purpose of a yoga posture, and its muscular activity, is to bring the bodimind to integrated stillness. We usually only come to stillness in simple postures, and usually with plenty of support: from a chair or a bed. In yoga posture practice the body has to become its own support: just as it does when standing still. Muscles that are more used to generating movement, must apply themselves to stillness. This requires neuromuscular re-education. Stillness requires more powerful neuromuscular pathways than movement within which the individual muscles must have the stamina to sustain their contraction over longer periods. This means that more of the individual muscle fibres need to be available and activated. However muscles never act alone, and many different muscles can, and often do, bring about the same action. The body usually has a choice of neuromuscular pathways for eliciting a specific action. An action can be maintained for longer by modifying the neuromuscular pathway sustaining it as individual muscles tire.

The neuromuscular pathways of stillness depend on a different use of the muscles to that required of movement. Rather than acting to move bones through space they need to prevent bones from moving at all. This requires a more integrated and refined muscular activity. While the bicep can pull the forearm towards the upper arm without much help, stabilising the relationship between the forearm and upper arm requires a more integrated muscular response involving all the muscles. In effect our motor muscles are used in yoga posture practice to provide structural support. Yet this means they must learn to act in a new way. The simple dualities of motion, agonist contracting antagonist lengthening, are inadequate to stillness. Instead of generating motion through them, joints need to be stabilised. Rather than contraction of a single muscle belly generating pull on the joint,

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contraction of smaller muscles at either side of the joint stabilises it. Within the overall muscular action there is shortening at the joints with lengthening in between.

This is the mechanical dynamic of the bandhas, longer muscles being sealed into the bones by smaller muscles acting nearer to the joints. When the muscles of the ribcage engage to lift and expand it, along with the spinal muscles, muscles in the lower abdomen contract to stabilise the lengthening of the spine: contraction at the top and bottom, with lengthening in between. When integrity is established in the relationships between each part of the body, it is brought about by this mechanical dynamic stabilising the bones and joints. However we do not have this kind of voluntary relationship to our muscles. We are not this precise in our intention towards specific muscles and their interrelationships, and we do not need to be. What we are able to do, and what we need to do, is deliberately make space, within and between body parts.

We do this by lengthening whatever can be lengthened, and broadening whatever can be broadened. For example we broaden our feet and palms, while lengthening our legs and arms. When we lengthen our arms fully, we lengthen in two directions. This creates space in their joints: wrists, elbows and shoulders. When we broaden our palms space is created between our finger bases. This space may not be enough for the external eye to measure, but it eases internal pressure and facilitates the flow of blood and energy. We need to make space in the joints of the whole body in order to establish it in integrity. This broadening and lengthening is the functional dynamic of the bandhas. This brings a dynamic lightness to the body within which blood, lymph and subtle currents are invited to deeply

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lubricate, rejuvenate and regenerate every joint and organ in the body.

Mobility in the joints, which effective movement requires, depends upon an absence of internal constriction or pressures. The functional dynamic of the bandhas generates space in the joints, without stretching or weakening them. This not only relieves pressure but allows blood, lymph and subtle currents to flow more freely and deeply. Lengthening the arm in two directions generates a primary opposition in the arms. Because of the tubular nature of the arms and their component muscles, when this dual lengthening is combined with the palms broadening it generates a secondary opposition as a twist through the elbow joint. This twisting, not only opens the elbow joint while simultaneously stabilising it, but opposes the upper arm to the forearm increasing the weight bearing capacity of the arm, like a rope. This secondary opposition establishes a spiral dynamic in the arms.

The spiral dynamic of the bandhas takes place in the whole body. A similar, though more elusive, spiral dynamic is generated in the legs by broadening and lengthening the feet from the balls of the big toes to the outer heels in two directions. Because gravity activates the lower abdomen when the ribcage is lifted, lengthening the spine also generates spiral dynamics in the trunk. Anatomically this can be felt as the opposition between the upwards momentum of the upper spine and the downwards momentum of the lower spine, shoulderblades and the skin on the ribcrests. Energetically it can be felt as three spiral vortices in the perineum (mulabandha), solarplexus (uddyanabandha) and throat (jalandharbandha). This is esoterically known as sushumna and is the energetic dynamic of the bandhas.

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