

# Spectrum

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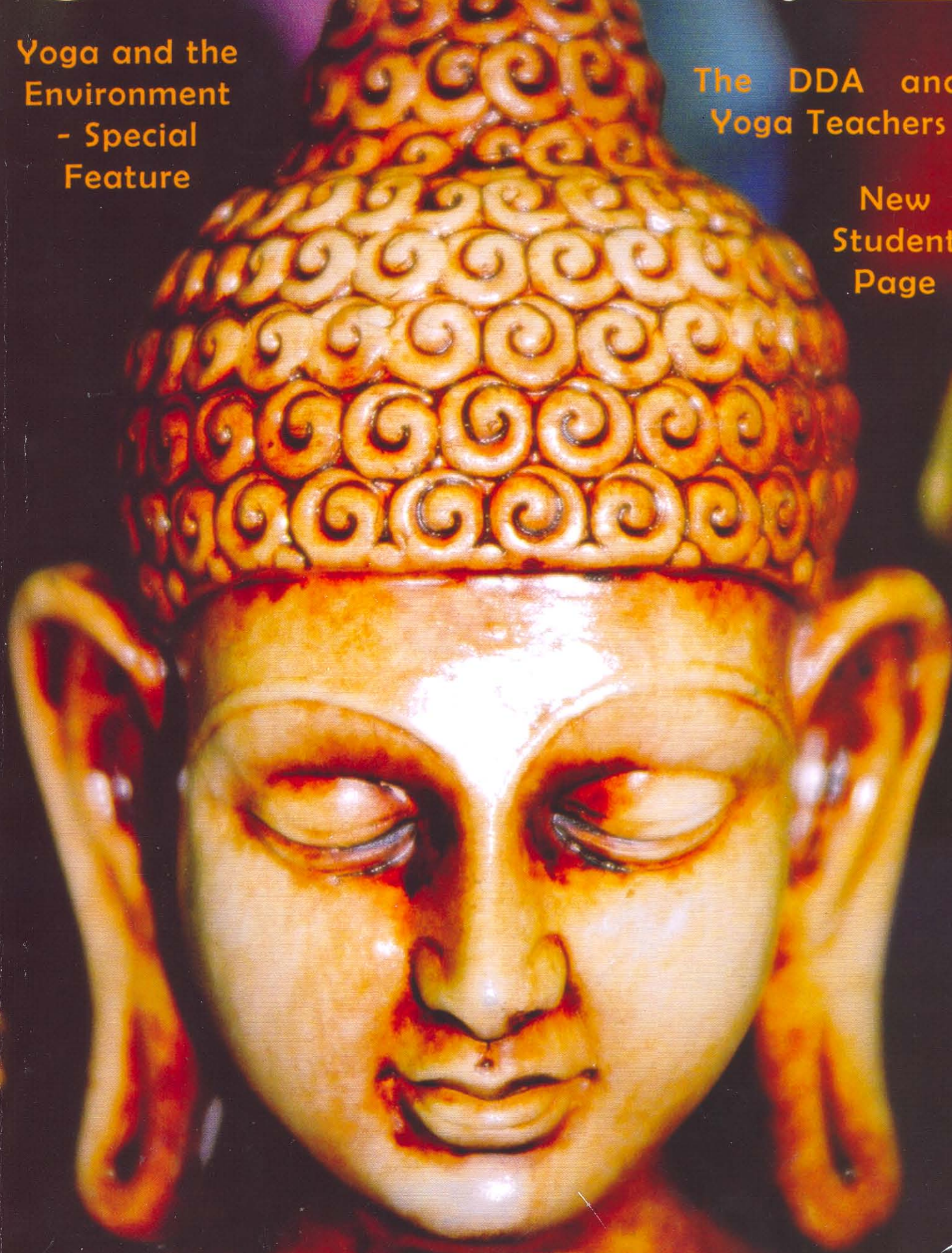
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# FREE YOUR

BY PAUL FOX

The shoulder region is one of the most functionally versatile parts of the body. Together with the arms and hands you could be threading the eye of a needle, watching your fingers dance over the keys of a piano, or bringing beauty and shape to a lump of clay on a potters' wheel. On another day your shoulders may be called into action to lift a heavy weight, dig the garden or – if you have a particularly fearsome Ashtanga teacher – hold chaturanga dandasana for an inordinate length of time.

The shoulder joint and shoulder girdle allow a range of function from the most delicate to the most physically challenging. They also offer an equally impressive range of movement due to their anatomical structure.

Human evolution saw us develop from distant ancestors who were scampering around on all fours, to bipeds standing up on two legs. Around the same time, we were developing the ability to speak (these events being closely related – after all, imagine trying to hold a meaningful conversation while staring at the ground!)

The shift from four to two legs has made the shoulder joint evolve away from being like the hip joint, which provides a lot of

stability and allows much weight bearing. The shoulder joint still bears many similarities to the hip joint. Both are ball and socket. However, the range of movement is much more in the shoulders and, combined with opposable thumbs, gives humans unique control over their physical environment (both for good and bad).

There are three joints involved in movement at the shoulder. Most important is the glenohumeral joint between the head of the humerus (upper arm bone) and the glenoid cavity of the scapula. A look at a plastic model of the shoulder reveals a very loose-fitting ball and socket arrangement which has to be pinned to stop the arms falling to the floor. In a living body, stability is provided by tendons

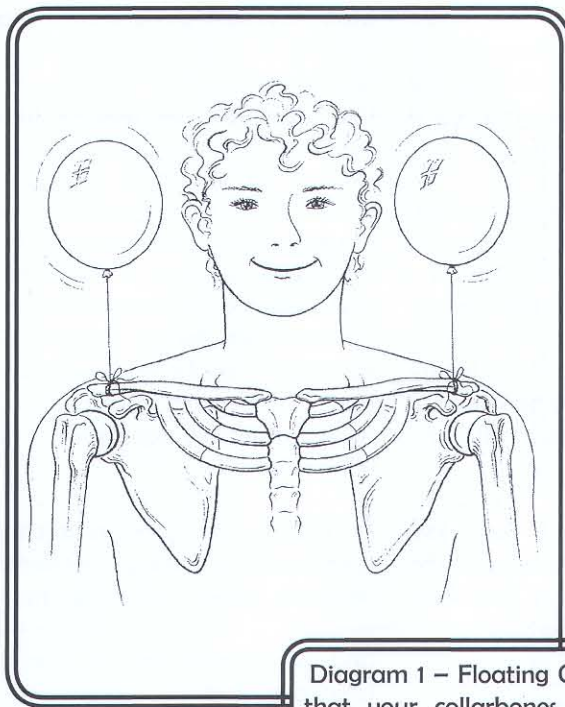


Diagram 1 – Floating Collar Bones – imagine that your collarbones are being carried by balloons.

The shoulder region includes the shoulder joint at the top of the arm and the shoulder girdle of the scapula, or shoulder blade, and the S-shaped clavicle or collar bone. Incidentally, all human beings emerged from Africa 150,000 years ago and, in the shape of the shoulder blade, we carry around on our backs a bone that is shaped very like that continent – a reminder to those who seek to divide us that, in origin, we are all Africans.

and muscles – particularly the rotator cuff group. There are also strong ligaments here, including the coracohumeral ligament and three glenohumeral ligaments. Around the joint itself is a loose folded capsule – again for range of movement – and a fibrocartilage ring called the glenoid labrum which sits like a washer between the humerus and scapula, sealing the joint.

The second and third joints of the shoulder are at either end of the



# SHOULDER

collar bone, which in humans is much longer than in other four-legged mammals, like cats and dogs. The reason is that the long clavicle pushes the joint out laterally, allowing a much greater range of movement. The clavicle acts as a lever, with small movements at its medial end, close to the body, translating into lots of movement at its lateral end where the shoulder joint resides.

connects to the manubrium of the sternum (breast bone), with an intricately shaped saddle joint. This allows flexion and extension, elevation and depression and limited rotation.

When understanding shoulder movements, we should distinguish between arm movements at the shoulder joint, and movements that involve both the shoulder

collar bone allow the scapula and the whole shoulder girdle to lift. This can be easily felt if you rest the fingers of one hand on the opposite collar bone and move the arm up and down.

Just by shrugging the shoulders we can feel in our own bodies the large amount of movement in the shoulder girdle. Cross your arms into Garudasana to feel the shoulder blades being drawn apart; clasp your hands behind your back and stretch the arms to feel the scapulae almost touching at the midline.

Shoulder problems most often affect the joint rather than the girdle. If the joint's range of movement is reduced, the girdle will be brought into play earlier than is normal – i.e. if someone cannot abduct to a right angle using the joint, they will lift the girdle, hunching the shoulder to make up for the lost component. This is obvious in a posture such as trikonasana, and teachers should be on the look out for shoulder problems coming from joint or girdle loss of range of movement.

A couple of things should be born in mind at this point. The only thing connecting your arm and shoulders to the axial skeleton is the relatively small sternoclavicular joint, which you can easily feel if you find the notch at the base of the throat and move your arm and shoulder around. No wonder, then, that

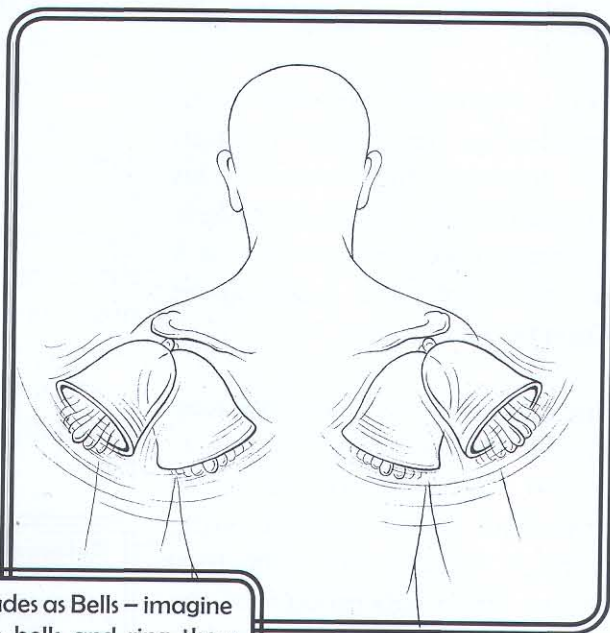


Diagram 2 – Shoulder Blades as Bells – imagine your shoulder blades are bells and ring them freely.

The clavicle's joints are, firstly, the acromioclavicular joint, which unites the distal end of the clavicle with the acromium process of the scapula. This is an oval-shaped joint, sometimes including a fibrous disc, which allows some gliding movement and an up and down movement opening and closing the angle between the collar bone and scapula.

Secondly, at the medial end of the collar bone, the clavicle

joint and the shoulder girdle. The shoulder joint allows us to take our arms straight out in front or out to the side up to 90 degrees (flexion and abduction). We can also extend the arm backwards a little way (extension) and can do internal and external rotation of the arm. Anything beyond this range of movement requires the help of the shoulder girdle. Further lifting of the arms beyond parallel to the front or sides is only possible because the joints of the



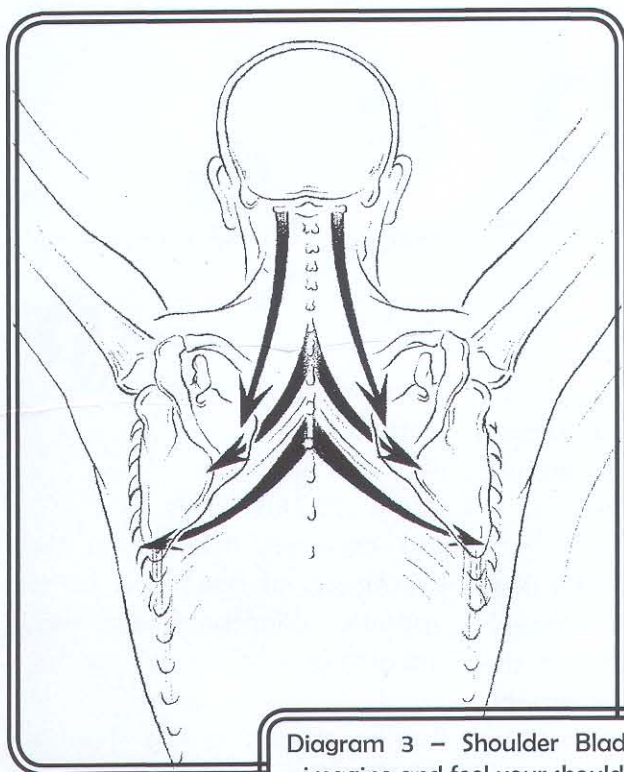


Diagram 3 – Shoulder Blades as Counterweights – imagine and feel your shoulder blades moving down and outwards as your arms float upwards effortlessly.

the delicate collar bone is the most frequently broken bone in the body as force coming up the arm or directly into the shoulder is transmitted down the collar bone to the sternum.

The shoulder is also prone to dislocation because of its inherent instability, particularly from a downward and inward force – the anterior and medial side of the joint having fewer supporting structures.

Once it is realised that the shoulder joint is basically sitting in a sea of muscles, ligaments and connective tissue it can be appreciated that tense or tight shoulder are going to severely limit range of movement and the feeling in the body when arm and shoulder postures are used in class.

Many students come to yoga classes for the release of stress and tension. Often we see this tension manifesting in shoulders that are tight and held too high instead of being allowed to release.

Eric Franklin provides an imaginative and clear method for relaxing this area in his excellent book, *Relax Your Neck, Liberate Your Shoulder*. Eric will be attending and teaching at Congress next Spring.

Eric explains very clearly the way in which the complex movements of the shoulder blade act as an important counter-weight to the arms. If muscles are tight they restrict these movements of the scapula and instead of a feeling of effortlessness and grace as the arms are lifted over head, students have to expend too much effort and quickly become tired. Just as a mechanical crane has a long arm and a counterweight behind its axis (the concrete blocks behind the crane driver's cabin), so the shoulder blade, when allowed to move freely, counterweights the arms when they are raised over head in a variety of movements.

To release the shoulders and neck, Eric has devised body imagery exercises based on the theory of

ideokinesis – positive images for the mind to focus on, leading to release in the physical body. Some examples of very helpful images from Eric's book that work well in yoga classes are shown in the accompanying diagrams.

Yoga practices can help to release long-held tension in the shoulders, but Eric's images are a powerful fast-track tool. Direct intervention in the form of bodywork, like back massage and Indian Head Massage, are also very helpful.

Eric suggests that a lot of tension in the shoulders results from the absence of movement. For example, we may get angry or frustrated at work but (wisely) don't hit the boss! However, that surge of energy, unexpressed in movement, results in tension. How, as yogis, should we deal with such a situation? Ideally we should cultivate calmness and equanimity of spirit to transcend the anger that would otherwise arise when we meet irritating people. However, if you are not ready for that yet, Eric has some alternative advice – go punch a pillow!

#### References

*Anatomy of Movement* by Blandine Calais-Germain  
*Relax Your Neck, Liberate Your Shoulders* by Eric Franklin

Paul Fox is a DCT and teaches Core Strength Yoga, Ashtanga Vinyasa Yoga and IST Days on Adjusting Students and Yoga Anatomy. Next Spring he is running a Yoga and Anatomy Course in Taunton, Somerset, with Dr Ruth Gilmore (see advertisement). Details at [www.corestrengthyoga.co.uk](http://www.corestrengthyoga.co.uk)

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