

Embryology - What can it tell us

An excerpt from *The Bowen Technique - the inside story*, the new book by UK Bowtech Instructor, Mr John Wilks. For more information contact John Wilks, mail@jwilks.co.uk

When Bowen therapists talk about a treatment allowing the body to re-orient to an original 'blueprint' or an organising principal, the question might be asked – what exactly is the body trying to orient to and when and how did this original blueprint arise?

Osteopaths have written for many years how the forces that moulded the development of the embryo continue to express themselves right throughout life and if the practitioner can tune in to them, it allows the body to begin to re-organise itself to those forces.

James Jealous, an osteopath teaching in the USA wrote recently:

"The Original design and function is in the fluids of the embryo... The Original matrix is a form that is carried through the potency of the breath of life around which the molecular and cellular world will organise itself into the Original pattern set forth by the Master Mechanic"

This might need some explanation. What Jealous is talking about is an organising force that is held in the fluids of the embryo – not necessarily just in the genetics. Interestingly, a number of eminent embryologists, including Bleschmidt and Jaap van der Wal have questioned current thinking about the role of genetics in determining our structural and psychological make-up.

If one looks carefully at the first few days of embryological development, one notices that some very interesting events occur. At the moment of conception, there is a merging of the mother and father's DNA to form a single cell. After a moment of calm, there then occurs rapid cell division which happens within the outer 'shell' of the embryo, the zona pellucida.

Around day 15, a highly significant event occurs. A primal midline is established in the form of a furrow in the developing embryo. This primal midline is called the 'primitive streak' and it starts its uprising journey towards our embryonic heart from around the level that is later to become the coccyx and sacrum in the adult.

Why is this important? Firstly, the midline arises from something outside of natural cell division. What exactly initiates it is something of a mystery, but it forms the basis around which the whole body organises itself. Jaap van der Wal calls the emergence of the primitive streak, the 'finger of God'. If one sees a movie of this, the nearest thing it looks like is someone has drawing a line or furrow in the sand with a finger.

For a start it establishes a reference line for front/back, left/right and top/bottom. The primitive streak is referred to as an 'embryonic organiser' as it establishes a basic 'body plan'. Different levels of the primitive streak determine the development of different areas of the body. For example the 'head centre' goes on to form the heart, brain and eyes, the middle centre the gut and trunk and the tail centre the pelvic organs and the neural tube.

In terms of left and right, it determines for example the fact that the liver is on the right and the stomach on the left and the fact that the apex of the heart points to the left.

The primitive streak is something of a mystery to embryologists - it has been discovered that grafting of the primitive streak can cause an entire secondary axis to form around which cells will organise.

What is interesting for us as Bowen therapists is the importance of the primitive streak in terms of developing bones, muscles, organs and connective tissue. What happens is that as it emerges, it generates 3 definitive germ layers from the epiblast – endoderm, mesoderm and ectoderm.

The mesoderm goes on to form somites at around day 20 when they first appear either side of the midline. These somites then go to form the vertebrae and the limb buds of the arms and the legs.

Many Bowen therapists have remarked on the power of the first 2 Bowen moves (the bottom stoppers) to awaken a 'tissue memory' of health in the body. It is interesting to observe the sensations that start arising in the client after just these 2 moves. Many will have sensations of heat or an uprising force within the spine.

The fact that so many clients experience an uprising force is interesting as their sensations correspond exactly to embryonic development as though those embryological forces are still present within the adult body. In Craniosacral therapy it is quite possible to palpate this uprising force by tuning into the notochord whose remnants still exist in the centre of the inter-vertebral discs and the apical ligament which connects the axis with the occiput.

In embryological terms what happens is that after the emergence of the primitive streak the midline it creates enfoldings in on itself (literally bowing to the heart) to form the neural tube which then goes on to form the brain, spinal cord, the autonomic nervous systems (sympathetic and parasympathetic) and the neural crest.

Neural crest cells are very interesting as they migrate to various areas of the body during the development of the embryo. For example they help form the inner membranes surrounding the brain and spinal cord (particularly the pia and arachnoid membranes) as well as myelin sheaths of nerves. In the coccyx procedure we move directly over the dura, arachnoid and pia membranes as they attach to the coccyx in the form of the filament terminalis – the only place in the body where all the 3 layers of membrane come together.

Because of the coming together of these three layers of dura, arachnoid and pia, this sends a very powerful impulse up the spine towards the cranium.

Embryological development of tissue is very important in terms of referred pain. 'Head' zones are well known phenomena where for example someone might experience pain in their right shoulder as a result of a problem with their gall bladder. This is as a direct result of the embryology of the development of mesoderm, endoderm and ectoderm.

Another consequence of embryological development is the fact that blood supply and nerve supply to tissue is inextricably linked because of their derivation from the same embryological tissue.

Both L4 and C7 are also both highly significant in terms of the legs and arms in that these levels of the spine are where the buds which form the legs and arms grow out of. These levels are sometimes referred to as axial midlines.

When we talk about accessing a tissue memory of deep embryological organising forces, we are talking about cellular memory, particularly in the fluids and the liquid crystalline connective tissue of collagen fibres. The embryological development of collagen fibres is fascinating as it starts in the mesoderm (the middle layer between the ectoderm and endoderm) as fibrils called reticulin, differentiates out to form different kinds of connective tissue in the body and then infuses all the layers of ectoderm and mesoderm. In other words it becomes intricate to tissue throughout the body. It is well researched by Mae Wan Ho and others that collagen holds memory and that it is highly adaptable at registering new experience.

Is it possible that by stimulating the fascia we are in some way allowing the body to access and re-orient to these deep embryological ordering forces held in the collagen at a cellular level in the body? From clinical observation, something of this kind certainly seems to be happening.