

# No 3 STANDING and LENGTHENING AGAINST GRAVITY

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1. The last couple of times we have been looking at gravity – the force by which everything is pulled downwards towards the centre of the earth. We also look at various aspects of muscle use and the useful distinction between the flexors which bend and the extensors which straighten.
2. We looked at the three ways in which the muscles are controlled: conscious control, reflex and habit.
3. We also looked at the way muscles tend to act in antagonistic pairs. Taking the example of the upper arm, the biceps flexes it and triceps extends it. The same applies to joints all around the body.
4. Normally when we flex something, the extensors release automatically to allow it to happen – called Sherrington's Law of Reciprocal Inhibition. We also saw how we can override the automatic release and tighten both flexor and extensor in order to stiffen the joint.
5. Today, I am going to try to pull these things together and see how it applies to the question of posture and particularly the case of standing.
6. It is worth saying a few words about posture. As AT teachers we are very cautious about using the word posture, not because it is unimportant, but because it is important and is so widely misunderstood.
7. We all know the common reaction we get when we mention to people that we are connected in any way with the Alexander Technique. They straighten themselves up, stiffen their necks, pull in their stomach and say *"Must watch my posture when I'm with you."*
8. This is, of course, complete nonsense. Properly understood, posture is extremely subtle, complex and dynamic. It is about the disposition of the body parts relative to each other when we are not holding a pose or actively carrying out a particular task. It is how we are when we are awake, alert, ready to go into action but still in repose.
9. There is also a lot of scientific background on posture as we AT people understand it. Sir Charles Sherrington believed that posture provided a very useful entry point into the study of the

whole neuromuscular system. In his book *The integrative action of the nervous system* he wrote:

*...much of the reflex reaction expressed by the skeletal musculature is postural. The bony and other levers of the body are maintained in certain attitudes both in regard to the horizon, to the vertical, and to one another...Innervation and co-ordination are as fully demanded for the maintenance of a posture as for the execution of a movement.*<sup>1</sup>

10. I think it is an interesting coincidence that this book of Sherrington's which is regarded as the founding text of neuroscience was published in 1906, just two years after Alexander arrived in London.

11. Soon after that, inspired by Sherrington, Rudolph Magnus began his major studies into animal posture which were published in 1924. The original book was in German but when the English translation came out it was entitled *Body Posture*.

12. Although there was little contact between them over the years, Sherrington was aware of Alexander's work and in a book he published forty years later, in 1946, he said

*Mr Alexander has done a service to the subject by insistently treating each act as involving the whole integrated individual, the whole psychophysical man. To take a step is an affair, not of this or that limb solely, but of the total neuro-muscular activity of the moment – not least of the head and neck.*<sup>2</sup>

13. Here is a quotation from Sherrington which Alexander included in *The universal constant in living*:

*Take this act of "standing." Suppose my mind's attention be drawn to it, then I become fully aware that I stand. It seems to me a fairly simple thing to do. I remember, however, that it cannot be very simple. That to execute it must require among other things the right degree of action of a great many muscles and nerves, some hundreds of thousands of nerve fibres and of perhaps a hundred times as many muscle fibres...*<sup>3</sup>

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<sup>1</sup> Sherrington (1906)p339

<sup>2</sup> Sherrington (1946)p89

<sup>3</sup> Sherrington (1951)p117

14. So bearing in mind that we are being pulled downwards by the force of gravity towards the centre of the earth and want to stay upright the question is how, in fact, do we stand.
15. There are any number of ways of answering that question but one useful way of thinking about it is to say we need to achieve the proper balance between our flexors and our extensors. The flexors pull us down and in and sideways. The extensors straighten us up.
16. I remember when I was doing my training one of my fellow trainees seemed convinced – at least for a while - that the flexors were bad muscles and the extensors were good. He was all for discouraging the flexors and encouraging the extensors but it is obviously a bit more complicated than that.
17. Both are obviously necessary. We want to be able to bend down to tie our shoelaces and to straighten ourselves up after we have done so. What we need is the proper balance between the two sets.
18. When we are in that state of balance, we have minimised the amount of muscular activity involved in standing. Feldenkrais had a nice expression: *parasitic muscular activity*. That is the kind of unnecessary tightening and damaging muscular activity which people engage in when they are doing things.
19. So when we standing properly we have cut out the parasitic muscle activity and only the minimum necessary is being used.
20. But standing properly does not mean being rigidly unmoving. There are little bits of movement as we breathe, as we shift our weight gently between muscles evening out the work they are doing, as we allow ourselves to receive the sensory input from our ears and eyes and the vestibular system.
21. There is a small but particularly important bit of activity in the neck muscles, the anti-gravity muscles which keep our head from tipping forward. This keeps our sub-occipital muscles alive to their job of monitoring the head-neck relationship.
22. So our kind of standing is not rigid or frozen. It is a state of dynamic equilibrium in which the muscles are delicately keeping us in this nicely balanced state. The flexors in the front are not pulling us down and in. The extensors in the back do not have to pull against them.
23. When we have that balance, something quite interesting happens in relation to gravity. The muscles align the bones of

the skeleton so that the weight goes down through them in exactly the way it should. There is no pull or twist. We are using the minimum amount of muscular energy.

24. This brings us to the idea of lengthening against gravity. When we standing in this nicely balanced way, and our muscles are no longer tightening unnecessarily, they lengthen towards their naturally optimum state.
25. Since the muscles we are talking about mostly run in spirals down the length of the body, when they lengthen, they do so in an upward direction. We lengthen upwards. You can certainly say, if you wish, that they are lengthening against gravity.
26. When Walter Carrington was giving you a lesson, he would often begin it by facing you to the window and putting a hand on the back of your neck and saying "*Allow standing to happen.*" You would find yourself quietening and lengthening. But not always.
27. You remember I mentioned the three ways we have of controlling the skeletal musculature: conscious control, reflex and habit.
28. Even when Walter had his hand on you, it often took some time before you stopped doing your best to impress him by consciously trying to put yourself into what you thought was a good posture.
29. That is something that our pupils all tend to do and you have a deal with as a teacher. You will find that your pupils have all kinds of strange ideas about how they should stand. And when you ask them to allow standing to happen, they take that as an instruction to put these ideas into practice.
30. Much of the time, they will close their eyes so they can concentrate on getting it right. For many of them, concentration also involves tightening the neck and eyes and may even involve pulling in the stomach.
31. In many ways this kind of conscious misuse is fairly straightforward to deal with. We can tell people they are doing too much. We are asking them to allow standing to happen. In effect, we are trying to create the conditions in which the natural postural reflexes are allowed to their job.
32. This is the background to the AT expression *If you stop doing the wrong thing, the right thing will happen.*

33. But this is not as simple as it may sound because we then run into the third skeletal muscle control system I mentioned earlier. We are all caught up in our habits and these habits have very often overridden our reflexes.
34. So when we stop “consciously doing” our standing, instead of finding the correct thing doing itself, we are quite likely to lapse into our habitual way of doing it.
35. Habit is really interesting. The paradox of habit is that it begins with conscious control. This is how we train ourselves to play tennis or dance or use a computer keyboard. We copy or follow instructions until the action becomes automatic.
36. In our normal daily life we are also training ourselves all the time by the repetition of the common things we do. We train ourselves, without being aware of it, into the way we stand and sit on a chair, hold a pen, ride a bicycle or whatever. After a while the way we do these things becomes automatic. We are no longer aware of how we do them.
37. People tend to think of habit as a bad thing. But habits are absolutely essential to the way we live our lives. We could not function if we had to work out how to do everything from the beginning. Using a knife and fork, going up stairs, speaking and so on.
38. Sometimes when people have a stroke they find there are all kinds of things they have to relearn. Normal life is impossible.
39. So when we ask someone to *Allow standing to happen* there are several problems that have to be solved. The first is that the pupils need to be persuaded not to do it in what they think is the correct manner. They have to allow it happen.
40. But if they have been misusing themselves in a way which has become habitual, this has become their default. So when you have persuaded them not to do what they think you want them to do, and just *allow standing to happen* they are likely to fall into their habitual patterns of using themselves.
41. This is not a trivial problem and it brings us back to the work of becoming and continuing to be an AT teacher. Before we can steer our pupils through the competing demands of their erroneous ideas about what is the right way to do things – stand up straight pull your tummy in and your shoulders back – and allowing the standing to happen while ensuring it is not just

falling into a deeply engrained bad habit, we have quite a lot of work to do on ourselves.

42. This is why it takes three years to get a certificate. And that is just the beginning of unpeeling of layers of habitual misuse which we have accumulated.
43. It is a never-ending task but luckily, most of the people whom we encounter as pupils have so little idea about what they are doing to themselves that we are able to make major improvements in the way they use themselves from the day we start teaching.
44. But no matter how long we have been qualified, the force of gravity and the tendency to fall into sub-optimal habits of dealing with it are always acting on us. The price we pay for being a good teacher is eternal vigilance. Not only our pupils but we ourselves are always producing new and ingenious ways of misusing ourselves.
45. And even when we are able to identify how people are misusing themselves and show them how to get out of it, they may prefer to stick with it. I was recently working with an actor who had terrible use of herself but she said she was happy with it. She said was able to drop the habits and function perfectly professionally when she was on stage.
46. This is obviously not true. She would be better on stage if she did not have these underlying habits of misuse but I was not going to persuade her of that.
47. This is among the problems you will find challenging, and sometimes defeating you as a teacher. But do not get depressed. These things happen. The main thing is not to get into habits of misuse of your own as you deal with them.

## **REFERENCES**

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