Staying agile and pain-free as you age

*Please note that the following exercises are shown in video form, on Kit Laughlin's YouTube Channel - **www.KitLaughlin.com** – there you will find clips of all the exercises he talks about, as well as a number of DVDs and CDs that you may find helpful in staying supple.*

As a culture, we are obsessed with our body's appearance, and it's not possible to open a magazine without seeing articles on obesity, how to lose weight, and a bewildering variety of dietary regimens that are presented and seem to contradict one another (high fibre, high protein, high carb, and high fat diets – and all backed up by science, too, apparently).

Yet an even more life-threatening condition threatens the middle-aged and elderly daily: the insidious loss of strength and balance that can make many ordinary activities potentially life-threatening events. And we know that osteopini, or osterporosis (significant loss of bone mass) are on the increase too, which means that any fall can have very serious consequences.

In 1995 in Australia, 13.4 per cent of all deaths were from falls, and the majority of these were sustained by those aged over 45 (see reference below). There is no doubt that a reduced capacity to balance, a reduced capacity to react effectively to a loss of balance, and reduced strength overall contributes to this trend. And a much larger fraction of the ageing population suffer neck and back pain, and many complain of an overall loss of suppleness in their middle and later years. Is this the future we can look forward to?

No, definitely not. The capacity to balance and to recover one's balance if one loses it, are skills that can be enhanced with simple exercises that require no equipment at all. 'Balance' is a capacity that emerges from a neural system that is awake, and aware of what's happing inside and outside the body without concentration being directed specifically to this task. As well, one's neural and muscular system needs to be able to react quickly as conditions change, and this capacity needs to be 'tuned' in an on-going way.

There's more to the story, though. We lose around 0.5 – 1 per cent of our muscle mass annually after the age of 25 – and as this is compounded over time, the result can be the loss of half one's muscle by age 50 – a frightening thought. Similar processes are responsible for bone mass loss, too. Reduction in whole-body strength coupled with reduced range of movement in all the joints of the body are the major causes of hip, lower back, and neck pain, as well.

Many of the most dangerous falls happen in the shower or bath, so one of the most effective ways to protect yourself is to install safety handles at the recommended height. These inexpensive installations will allow simple and effective exercises to be done too, and this is where we will begin. Note that any stable support (the edge of a solid table, any rail that you can hang on to safely, or a column – even the edge of a door frame) will do for this purpose.

It is conventional to begin any article on exercise with a caution like "check with your physician or health professional before beginning any exercise routine" – and you may care to do that, but if you have no obvious health problems, and you are presently walking around unaided, these simple exercises may be embarked upon immediately. They are not taxing aerobically, and affect coordination and neural patterning more than other aspects of the mind/body complex.

The Shower Squat

Now, back to the bathroom, or wherever you will practise. All exercises, in the bathroom or otherwise, are to be done in **bare feet,** and the numbers and frequency will be discussed at the end of the article. Stand squarely to the support and hold with both hands, with your feet flat on the floor and about hip width or a bit wider – whatever feels strongest and most comfortable to you. Make sure you are holding on securely!

Take in a breath, lift the chest slightly (this straightens the upper back), and let the knees bend under control. Lower yourself until you feel the heels about to lift. Pause momentarily and stand up, breathing out. Do the standing up part as smoothly as you can and try to feel the muscles being used. If it's only the front of the legs (quadriceps, or 'quads') you can emphasise the bottom muscles (gluteus maxims, or 'glutes') by thinking about pressing the floor away from you, using the heels. Try this now and see if you can feel the difference in which muscles are working the hardest.

Repeat the sequence, this time trying to go deeper in the movement; in time, this will improve the flexibility of your ankles and you will be able to descend noticeably lower. And as you go lower, you will feel that it takes more effort to stand up – this is one of the reasons adults rarely squat – yet if you watch babies and young children, squatting deeply until the bottom is on the heels is their preferred way of bending down.

Eventually, you will be able to squat all the way down, and when you can, pause in the position (holding the support all the while) and feel how this position stretches the lower back in a pleasing way. If you are practising in the bathroom, and your shower allows it, increase the heat in the water and let it play over the lower back while you stretch in the squat position; this feels marvellous to do first thing in the morning, I find.

Once you are in the squat position, at a later session, you can try pulling your trunk gently forwards with respect to the feet: this will both increase the lower back stretch and also the stretch in one of the calf muscles (soleus); loosening these muscles (along with ligaments, tendons and fascia) will improve your ankle flexibility markedly, and moving around and walking generally will feel more fluid and relaxed.

The purpose of this first exercise is to loosen the ankles and to gently stretch the lower back; as well, there is a gentle strengthening effect in the legs, too. These changes will assist progress in the next exercise, our first explicit balance work.

shower squat

drawing with feet

advanced version

Drawing with your feet!

Before we begin, have you noticed that it is easier to balance on one leg in preference to the other? If you haven't, just try now: stand up, and lift one foot off the floor and see what that feels like, and repeat for the other side. The point is we want to begin the next exercise on the leg that feels harder to balance on, and we will be doing the exercise for this leg once again, so that, in time, your balance will have improved more on this leg.

Standing on the 'lesser' leg, make sure that your alignment is as vertical as possible; lift the chest a little to make sure. Take the other leg out to the front a little (about 300mm is a good starting place), holding it straight at the knee, and balance as well as you can. If you are really wobbly practise next to a wall so that you can reach an arm out for additional support if necessary (or, better, just a fingertip) – but if you can do without it, so much the better. Your progress will be much faster if you do not use a support. Put all your attention into the support leg and its foot, and feel how many small movements the whole body does just to stay upright!

Now the exercise begins: while balancing on one leg, carefully and slowly draw a horizontal 'figure of eight' out in front of you, while trying to keep the rest of the body as still as you can. This is the essence of training your balance skills: perform a task with full awareness of what the body is doing as it achieves the task (however well, or poorly, you do in the early attempts!). For early attempts, draw one figure of eight in one direction, then slowly reverse it and draw the other way.

Rest the drawing leg for a moment. Then stand on it, and repeat the exercise on the other leg: if you have chosen the leg with the lesser balancing skills for your first attempt, you will be surprised how comparatively easy it is to do the exercise on the second leg. This too is part of awakening awareness in the whole body.

Once you have repeated the exercise for the second leg, go back to the first. This time, try to draw the figure of eight (or you can try a circle; try to make whatever shape you choose as smooth as you can), but with the leg out to the side, instead of to the front. This will be harder, very likely. Again, once you have made the attempt on the first leg, put it back on the floor and try with the second leg.

The last version of this exercise is the hardest, because you will not be able to see the drawing leg. As before, stand with good posture, and reach the drawing leg out behind you – you will feel a stretch down the front of the leg as you reach it behind you; this is good – this is a hip flexor stretch. Try not to lean forward from the waist to get the leg a little behind you (this is how everyone will try to accommodate the requirement!); instead, try to maintain the alignment and reach the leg behind you. Once you have reached it out, again try to draw the shape you have chosen, while keeping the whole body as still as you can.

To finish this part of the sequence, go back to the first leg, and re-do the movements you used, as many or as few as you did the first time. In this way, as you practise over time, your lesser leg will even up and eventually feel as good to balance on as the other: this is the essence of how to achieve functional balance in the body.

This is the first exercise in the balance series. The sequence can be made harder in two ways, once you have mastered the individual positions: the first is to do all positions (front, side, and back) on the one leg, one shape and position after the other. Having to balance for 30" or a minute while disturbing the body's balance by moving the other leg from front, side, then behind, will be quite difficult in the beginning, but persevere: you are acquiring new skills every attempt you make. The second way to make the exercise more difficult is to bend the supporting leg (just slightly, in the beginning): make sure you can feel both the inside and outside of the foot as you balance, too: if you can see the support leg's foot, you will notice that, just to take the other leg off the floor, the body automatically presses more weight on the outside of the foot, and your ankle will be better aligned. Most people pronate under load (this is when the arch of the foot flattens, and the ankle rolls inward). One of the other great virtues of this sequence is that, in time, your body will show an improvement in alignment; your feet will feel better, and for many people, inner knee pain in daily movement will be reduced.

The Chair Squat

Our last exercise combines the strength and balance requirements from the first two, and allows you do develop these attributes with no limits: you literally can get as strong as you want, and without any equipment at all. Here's how it's done. You may use a support (like a broom stick) in one or both hands.

Find a heavy chair and place it behind you, preferably with its back against a wall so it can't move. Find the distance in front of the chair you need by standing with your back to the chair seat, and experimentally lowering your bottom by bending the legs. If you are not strong enough to lower yourself all the way to the seat under control, place a cushion on the seat and try again. Do not rest in the sitting position: the cushion, or the seat itself, is there only as a 'depth guide': you want to just feel the edge of the chair under your bottom as lightly as you can; as soon as you do, stop, and press the heels into the floor to lift you back to the starting position. As well, try to let the knees go forwards as far as you can, while keeping the body upright (this emphasis makes the quads and the glutes both work, rather than quads alone; this is important). And as with the bathroom squats we started with, we breathe the same way: in at the top while standing upright, and checking posture at the same time, hold the breath in as we descend; touch the chair with the bottom and press up, breathing out. Don't rush this; control and alignment are the key form goals. Work up to 20 or 30, done slowly and rhythmically.

Now the last variation: this is a major exercise, and many of your much younger colleagues will not be able to do this! We will be attempting the single-leg chair squat (again, if you find that you can't go the full depth of the seat of the chair in the beginning, use whatever thickness cushion you need to maintain control over the bottom-most position). Again, I recommend that you do all these exercises in bare feet: we are trying to maximise the proprioception capacity of the feet; awakening this sense this is the number one goal for good balance!

To begin, hold one leg out to the front as with the figure of eight drawing exercise. Check your posture: upright trunk; slightly lifted chest, and a breath in. Now, balancing all the while, let the support leg bend just a little, then stand back up. Try a few like this to get the feeling of the necessary effort and balance needed. Then, when you're ready, let the support leg bend until the bottom touches the cushion, or the chair itself. Resist the temptation to let the body relax; instead, just touch the bottom to the chair, and press the heel down into the floor to come back to the starting point. You have just done your first one-legged squat!

chair squat start position

chair squat second position

Kit Laughlin is the author of a number of books, including the best-selling ***Overcome Neck and Back Pain*** *(now in its fourth edition) and* ***Stretching & Flexibility****. He has run the Posture & Flexibility and Strength & Flexibility courses at the Australian National University over the last 23 years.*

How often and how many?

From a balance and strength point of view, this is the #1 exercise, better than anything you can do with machines in the gym. I am sure you can all see how this can be progressed: simply use lower supports. And as above, work up to 10, or 20, repetitions before lowering the depth of the support: you need to feel that you are in 100 per cent control of the movement before making it more difficult. Make any change to the height of the support small, in the order of 20 to 30mm only; even small amounts like this make a big difference in intensity. Not only are these truly excellent strength and balance movements, they will help to slow, or even reverse, bone density loss, through compression of the long bones of the body, as well.

Finally, a note about frequency of exercising. The bathroom squat can be done every day: this is a mobilising movement that will return you to yesterday's flexibility. The balancing on one leg drawing shapes exercise can be done a few times a week; this is simply to remind the body how to access its innate balance skills. And the chair squat (whether two- or one-leg versions) is best done twice a week with as much rest in between as you can – this is to allow the body to recover fully. If you find the muscles are still a bit sore from the previous workout, skip this one – it is a fact that you can get stronger exercising only once a week. Good luck, and persevere: changes happen in the body over time, and often we cannot discern the improvements – just one day we find that we can do something that, only weeks ago, we couldn't. All you need to do to improve your balance and strength is spend a few minutes a week, every week. It is what the body does (or does not do!) over time that makes you what you are. Six months in the future, a different you awaits!

Reference: http://www.nisu.flinders.edu.au/pubs/bulletin17/bull1701.html