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Alexander Technique and Focal Dystonia

How and Why the AT Can Be Valuable in Dystonia Re-Training

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How it started – My own story

When I was 27, I was sitting in a night bus, travelling along the bumpy road from Kathmandu to the south of Nepal. At the time I was working on my PhD with the support of an Austrian grant. I had a boyfriend who resented my dedication to my work and loving parents at home in Austria, who had adopted me as a baby. So here we are: with childhood trauma, ambition and conflict, a strenuous journey, and a throat that had felt vulnerable for years. I stepped off that bus with a very sore throat and what seemed like laryngitis, met a researcher who expected me to pay him for his information (more stress), went on another night bus back to Kathmandu (more fatigue), and was soon to discover that my voice did not come back. When I tried to speak, the throat closed, producing a strained and strangled sounding voice. The harder I tried to speak well, the worse it was. Doctors were unable to give me an explanation, so I just had to live with the condition of not being able to speak without great strain and shame.

It was then that I discovered the Alexander Technique (AT) through a workshop. The teacher, aware of my sad condition, suggested to see a Mr Walter Carrington. Coincidentally, I had work to do in London and without knowing who Walter Carrington was, I rang up the Constructive Teaching Centre and was able to book two lessons at short notice – a bit of a miracle. You must not think that anything in my voice changed after those lessons. But I felt secure and self-confident. Those magic hands could guide me to find support – and I realised what I had been missing. This experience drew me to the AT. It may be important information for teachers – working with people who suffer from dystonia – that you may not see a lot of progress in the symptoms very soon, but your work *is affecting a nervous system on a very deep level,* laying the groundwork for healing to take place.

Dystonia is characterised by involuntary muscle contractions or cramps (Jinnah, Factor 2015, p. 1). In my talk I only referred to focal dystonias, that means dystonias which affect only one body part and which are, according to Grifoni et al. (2025, p. 1), 60 times more frequent in musicians compared to other professions.

For a summary of the different types of dystonia and an overview of how dystonia develops please refer to my article in the Berlin *Congress Papers* (Mazek 2023). In that article I have also summarised what scientists have

discovered about the mechanisms,* that are supposed to cause dystonia.

The focus of this article is directed toward:

- Exploring what lies beneath the visible symptoms – the *cramps*, which just represent *the tip of the 'dystonia iceberg'*.
- Drawing awareness to the early warning signs that may precede the onset of dystonia and the importance of their timely identification for prevention.
- Considering whether the *model of predictive processing* can provide insights into what goes wrong in dystonia and how this understanding might guide approaches to work with it.
- Defining what an ideal *framework* for such work might look like.
- Sharing procedures and practices that have proven valuable, both in supporting clients with dystonia and in my own recovery.

Just the tip of the iceberg

It is important to understand that the actual cramps – whether they occur in the eyelids, fingers, lips, tongue, facial muscles, or throat muscles – represent only the tip of the iceberg (fig. 1). Beneath these symptoms you find patterns of great distortions, twists, muscle shortening, and overflow activation of additional muscles, which point to inaccurate body maps and are linked to sensory abnormalities.† Please take note that those inaccuracies and abnormalities were there before, and are not caused by dystonia. Of course, breathing will be affected, and possibly the nervous system will be in a state of sympathetic overdrive; People living with dystonia may therefore experience anxiety, nervousness, excitability, and insecurity; with sleeping problems adding to the burden. The lack of control and low self-efficacy are leading to more anxiety – a vicious circle.

Onset of dystonia – Early warning signs

Scientists still struggle to identify the pathological-anatomical cause(s) of dystonia; it is presumed that focal dystonia involves an underlying genetic predisposition which on its own does not lead to illness; the decisive factor is the occurrence of environmental triggers, e.g. overuse and over-practice, sometimes in connection with change to another instrument, change of technique in musicians (Altenmüller et al. 2015, p. 96), or psychological

* According to Quartarone and Hallett (2013) the loss of inhibition and misprocessing of sensory feedback lead to maladaptive plasticity. Maladaptive plasticity is defined as behavioural loss and even the development of disease symptoms, resulting from aberrant plasticity changes in the human brain.

† Sensory abnormalities: e. g. impaired special discrimination, which means reduced ability to distinguish between two points of contact on the skin (either in space or time) or reduced ability to detect the exact location of a stimulus (e.g. touch); proprioceptive inaccuracy, e.g. the ability to sense joint movement may be impaired or confused. (Konczak & Abbruzzese 2013, p. 2)

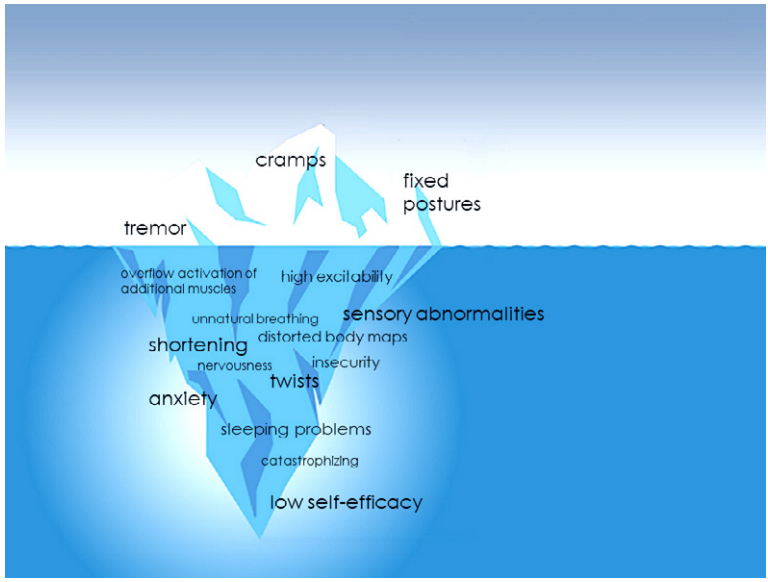

Fig. 1.

triggers (e.g. perfectionism, anxiety, adverse childhood events, and stress) (Altenmüller, Jabusch 2009, p. 151). In my own story you can identify some of these triggers: the ambition, trauma, and conflict. In the case of a client of mine with blepharospasm (spasm of the eyelids), the dystonia appeared after a time of great strain and work overload. The disposition plus the trigger might lead to fatigue and/or the development of sensory symptoms of various kinds.

In focal dystonia, certain symptoms may appear as early warning signs, and musicians and music teachers in particular should be attentive to them:

- Pain and discomfort: e. g. my colleague Christian Steineder, a guitar player, recalls a feeling of heaviness in his right arm long before the dystonic symptoms appeared. (Mazek, Steineder 2019)
- Irritation of eyes and photosensitivity can precede blepharospasm.
- Irritation of the throat can precede spasmodic dystonia, as you can recall from my own story. (Dystonia foundation)
- Sensory abnormalities/altered tactile sense (Konczak, Abbruzzese 2013, p. 2), e.g. feeling of slippage on the string or body of the instrument; strings might feel wet, or unusually thick; fingers seem to stick to the keys.
- Proprioceptive changes, like inaccuracies of sense of position and movement of limbs or fingers. (Ibid., p. 2)
- Among woodwind and brass players, the loss of control of the embouchure in certain registers.

- Other symptoms are irregularity of trills and curling fingers. (Altenmüller et al. 2015)

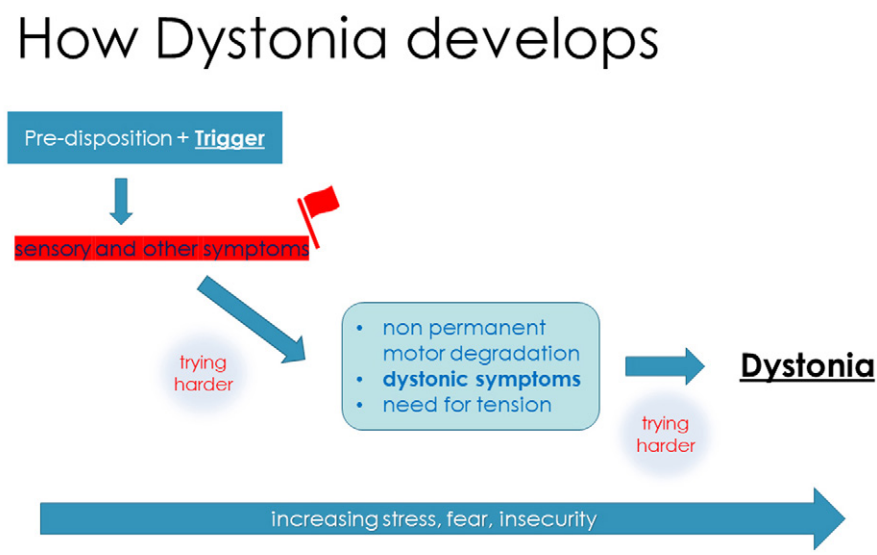

Fig. 2.

Fig. 2 illustrates the timeline from the onset of fatigue and the previously mentioned sensory symptoms, through the intermittent appearance of dystonic symptoms, to the development of focal dystonia, which is characterised by the loss of specific skills and functions.

When the first symptoms appear, it is common – especially among musicians – to persist and attempt to regain control by practising even more; or, as in my case, just to push forward with maximum effort and with complete disregard of the body's warning signals, some of them as simple as tiredness.

Suddenly, instead of the lips closing around the mouthpiece, they are opening; instead of letting the vocal sound out, muscles choke; instead of turning the head, it is pulled down; instead of moving a pen with the fingers, the whole hand goes into spasm, instead of pressing a piano key, the finger moves up. The dystonic symptoms are very individual and highly task specific. They can be triggered by posture, contact with strings, keyboard or mouthpiece, and goal (wanting to perform well, to appear normal).

Feeling safe makes a difference

It is important to understand that even after the onset of dystonia, the normal motor programs are not lost. Moments of normal function are experienced.

My colleague Christian Steineder, the guitarist who developed writers' cramp, told me that he could make all movements of writing as long as his

pen had the cap on, but as soon as the cap was gone, so that writing would have been actually possible, the cramps occurred. I could talk with a pet, but when I wanted to order a coffee, my voice failed me. *Again, on a very general note, I would say that feeling safe is key here.*

Feeling safe allows me to refrain from consciously monitoring my actions and instead letting them happen automatically, relying on subcortical processing rather than prefrontal cortex control.

> *Being inside and outside – eye practice*
>
> *In the workshop, we paused for a moment to explore a procedure. Often eye movement is totally out of alignment with the task in dystonia clients. The following is a useful and simple exercise which can be practised at any moment during the day:*
>
> *Imagine a long and soft feather that extends from your eyes outward and softly touches the surfaces of the things in the room; the idea is to envelop and gently stroke the surfaces with the feather and thus guide our gaze to be soft and smooth.*
>
> *When this practice is established, we can try to become aware of our back, if possible of the movement of breathing, or of the soles of the feet while the eyes are engaged. Looking out and sensing just one part of oneself to start with, is a wonderful practice of broadening awareness and to becoming more present. (Dimon 2015, p. 155)*

One wiring diagram to rule them all

I borrowed that line from Andy Clark, who, in *The Experience Machine* explains how our predictions fuel action: 'Actions', Clark writes, 'are simply the brain's way of making its own proprioceptive predictions come true' (Clark 2023, p. 76). Clark refers to Ideomotor Theory, which also promotes the core idea that the cause of the action is the mental image of the effect of an action. William James wrote, 'It is the anticipation of the movement's sensible effects' that 'determine what our movements shall be' (mouritz.org). In other words, simply thinking about the sensory consequences of an action can automatically trigger the motor action itself.

Think of singing a note. How do you produce it? Please do not read on, just take a second to become aware.

> We hear the note inwardly – and then our lungs, throat, larynx, lips, tongue, and fingers (if you are playing an instrument) produce it.

Or think of painting a circle on the wall or table? Again, please take a second to try.

> You imagine the circle and your hand and fingers make it following the image. Isn't it like that?

The desired result – how it looks, sounds, and feels when the goal is achieved – recruits the set of motor commands. The idea of the completed motor action or sound brings about the movement/sound (fig. 3).

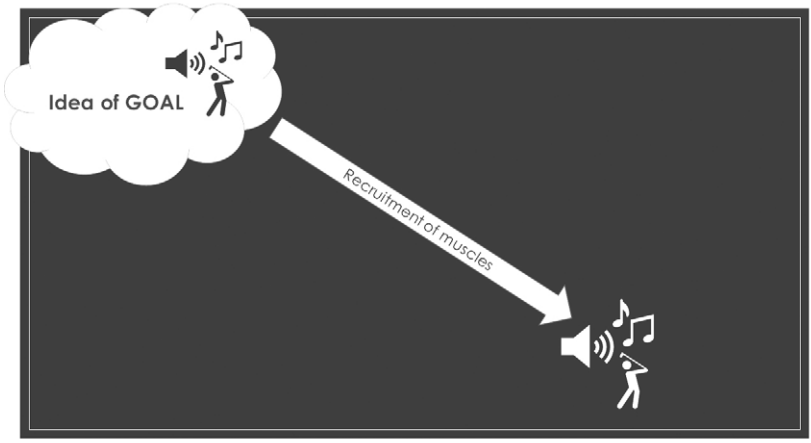

Fig. 3.

But in dystonia, we suddenly experience that our predictions of the sound, the movement, do not elicit the motor actions that would lead to the anticipated/predicted sound or movement. *Remember:* Suddenly, instead of the lips closing around the mouthpiece they open; instead of pressing a piano key, the finger moves up . . . Could it be the case that the *memory of failure now shapes the predictions of future outcomes* and perhaps becomes a main driver behind the maladaptive plasticity?

Here is my guess:

According to predictive processing theory, the mismatch between the goal (a sound, a movement like grasping the glass) and the actual situation (not speaking, not holding glass) will result in an error signal sent up. Action then comes about as the organism's effort to achieve a fit between what is predicted (the sound, holding the glass) and what the sensory evidence suggests. Action would be the result of the effort to eliminate the error and bring sensory evidence in line with the prediction (Clark 2023, p. 76f.).

In people affected by dystonia these correcting mechanisms are (and have been) operating based on

a) confused body maps
sensory abnormalities
(in Alexander Technique the term faulty sensory appreciation sums up both);

b) lack of inhibition on all levels from spinal cord, to brainstem, to frontal lobes
(we could call it a general tendency of trying too hard).

These are flaws that most people have to varying degrees. But in dystonia, what sets in now is an increasing prediction of danger – the experience of the loss of control of certain important functions is experienced as an extreme threat. And it is an evolutionary feature that our attention is being drawn to what seems most dangerous and problematic at the moment (Csikczentmihalyi 1990). Our brains are wired in a way that gives priority to threat.

All attention *is sucked up by the memory of failure and the associated fear.* My colleague Christian Steineder says: 'I could no longer think of what I wanted to write, just of writing and the fear of failure . . .' But remember: he could still do the writing movement when the pen was closed, I could talk to a pet, the pianist can use her fingers normally in everyday tasks. This is very similar to what happens in chronic pain: if the prediction is one of danger the attention starts to screen for signals of danger. The brain misestimates what to take seriously and what not (Moseley 2025).

I wonder if this attention bias is the main driver behind the maladaptive plasticity to set in, because the lack of inhibition, as well as the confused body maps and what scientists call 'sensory abnormalities' were there when things still seemed to work normally.

Now *very quickly, my idea of the sound/movement gets linked to the memory of failed outcome (fig. 4).*

The challenge is to
a) forget and attend away from the expected wrong outcome;
b) re-establish conscious sensory memories of the desired outcome:

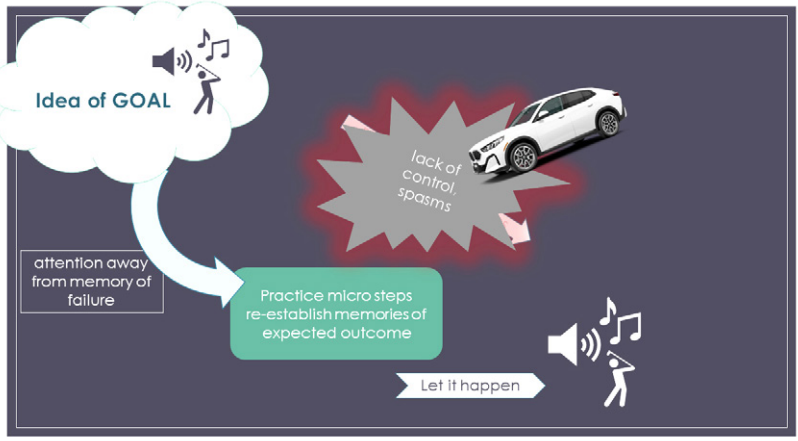

Fig. 4.

1. by correcting the body schema and kinaesthetic sense;
2. through the practice of micro steps that are sufficiently far from the desired outcome to not elicit the memory of failure;

c) and to learn to let it happen ('control' does not work).

This is what I discovered in many years of trial and error with my own dystonia: I had to bypass the memory of my strangled voice when speaking; what worked best was letting go of the idea of 'Me, speaking'. A similar perspective is described in a recent paper (Grifoni et al. 2024, p. 4): focussing the attention on the communicative content rather than the act of performance is suggested as a way to consciously channel attention. The AT directions support this process as a powerful tool.

Let us explore the idea of micro-step practice with a practical example:

I call it the 'Ingrid exercise': I get my client poised, attentively directed, and then ask him to choose a word: Ingrid. My client scrunches up his whole face, retracts his head, pushes the belly out, and shortens his whole trunk.

The first step is to re-establish poise (this means that we have had a number of lessons already in which poise was found, again and again). Now, with this poise breathing can happen more naturally.

Next step: feel the tongue, <u>at all!</u> Just feel the tongue and then notice what it is doing (retracting).

Now we can attend to what it should be doing for an I (E): tip directed forward, middle of the tongue curling up. So, on an outbreath, without tensing the neck and without frowning, without shortening etc. EEEE;

There is still tension accumulating in the throat area. The diaphragm does not kick in properly. Back back, knees releasing away from the pelvis, the tonus around the waistline increases and tension in the throat decreases.

Then the next sound 'ng', and so on.

At the same time the face lightening up, the smile, the release in the neck and shoulders, and legs, and all together.

It is important for teacher and client to understand that the result of this practice may not be immediate. The attention still is very much on the problematic act – the speaking – and it behaves like a cat in front of the mousehole, screening for failure. But the subconscious brain is also on board and learns with each micro-step. When the moment comes, and we forget about the task, this learning kicks in and supports a better outcome.

A framework for teaching to dystonia

Acceptance

As Alexander teachers we are tuned in to constructive change, a fact that was also shown in a recent study on Mindfulness and Alexander Technique (Johnson et al. 2025); and it is easy to forget that whatever I meet in myself and my clients is there for a good reason, and it is the best possible way

this organism has found to deal with its challenges at a given moment. The clients also find it difficult to accept their predicament. They might need to find meaning and a bigger picture through meditation practice, religious belief, or in other ways.

Feeling safe
Feeling safe is a precondition for being present in what we do:
the patterns of tightening,
the fear of being wrong,
the constant pressing of a fast forward button in the brain.

I have told you how feeling safe got me hooked to the AT. Feeling safe has many interconnected layers and is reflected from the gut to the muscles and nervous system, to the mind, emotions and memory. It is also the client's responsibility to re-establish safety. In my own recovery I remember becoming aware that my habit of being overly critical of others had added to my own fear and feeling of insecurity with others.

Only when we feel safe enough, will we be able to direct our attention.

Attention is key – the client needs to get a hold on his/her capacity to attend away from the memory of a failed outcome. Directing the Alexander way is a very useful tool!

Attention practice

I teach the process of inhibiting and directing as a practice of attention. This approach builds on the suggestion by Dimon (Dimon 2020). Much like in mindfulness practice, the aim is to observe when the mind wanders as we attempt to give directions in a pre-planned order. First, we go through the directions, e.g. 'support from below, head balancing freely, back expanding, legs falling away from torso, shoulders widening'. We lay out a formula, so to say. Then we give ourselves the task of five minutes practice, to keep attending to these directions in the order we chose and to notice when the mind drifts away. If we prioritise attention

a) it becomes easier to avoid actively 'doing' the directions;
b) we develop the ability to recognise when attention has drifted;
c) in this process we learn about our ourselves;
d) with practice we notice the drifts sooner and get a better hold on our attention.

Practice
In focal dystonia the insight that the idea of movement becomes linked to the memory of a failed outcome is critical and has important implications for re-training strategies.

- The teacher and the client should be aware that practice is important but will not lead to immediate results. It may happen that after the lesson, the condition is somewhat worse because our consciousness

is on high alert and trying to detect 'wrong'.

- Decoupling the intended movement from memory of failure by creating new positive movement experiences (Christian Steineder recalls the experience of being guided by the teacher to passively do writing movements as a game changer).
- Micro-steps:
  * Gradual exposure: retraining should proceed in small, achievable steps that can be performed without dystonic symptoms (just getting close to the trombone with the lips or touching strings).
  * Errorless learning: designing tasks where the client rarely fails helps avoid reinforcing the memory of failure, supporting positive plasticity.
- Be bold and be wrong – the opposite of the above: let the client do something difficult and observe what goes wrong and then proceed with micro steps ('Ingrid exercise').
- Do not think that movement is learned by analysing and then putting together each component. But understanding the components will help the brain to retrieve the necessary motor commands for a certain goal. 'When you are good at something, you are using top-down control very little . . . phylogenetically older brain regions . . . can serve task performance so much more efficiently than can prefrontal cortex.' (Dimon 2020)
- Cognitive strategies: using mental imagery of the successful movement/sound.
- Learn to ignore 'mistakes' and not to react to the sensory impressions (for example, of what we hear or feel): ignore how the voice sounds, ignore the involuntary movements, ignore the breathy sound from the trombone etc., and do not allow the awareness to narrow down on that aspect. It is very similar to pain: When our predictions are coloured by 'danger mode' we tend to interpret whatever we hear and feel in a way that prioritises what is wrong. The feedback loops that normally help to minimise errors are not working.
- Get the client to trust the process and develop a scale that is very differentiated, with many points between the categories of 'doesn't work at all' and 'works well': e.g. feeling a bit lighter, less pain, feeling more secure.
- For this purpose, it might be useful to establish a practice of evaluating together with the client once in a while what has changed.
- Learn to better understand inner states: e.g. a racing heart is normal when we have a higher flow of adrenaline and it does not mean that this forebodes failure.
- Think 'I am not doing this': I am not playing, I am not speaking, I am not walking, I am not writing. Just as Alexander advised to 'not get out of the chair'.

- Do not work directly on the dystonic muscles.

For those interested in literature on re-training for dystonia Kamo et al. (2025, p. 32) provides an open-access evaluation of various methods. See also Konczak (2013), citing Candia et al. 2005: 'In summary, these studies suggest that . . . Musician's Dystonia specifically can be reversed by context-specific training protocols. The spread of symptoms might be prevented by avoiding training of movement patterns similar to the main affected task, and by reducing the amount of task-associated movement behaviour.'

Frucht et al. give an interesting table on occupational therapy strategies found to be useful in functional dystonia (Frucht et al. 2021, p. 19); many of the strategies are very similar to what is done in an Alexander lesson (e.g.: 'demonstration of normal movements', 'teaching awareness of the patient's contractions and posturing', 'use of mirrors . . . to resolve the discrepancy in perceived vs. actual joint or body part posturing', 'diverting attention to normalise movement patterns').

The overall framework

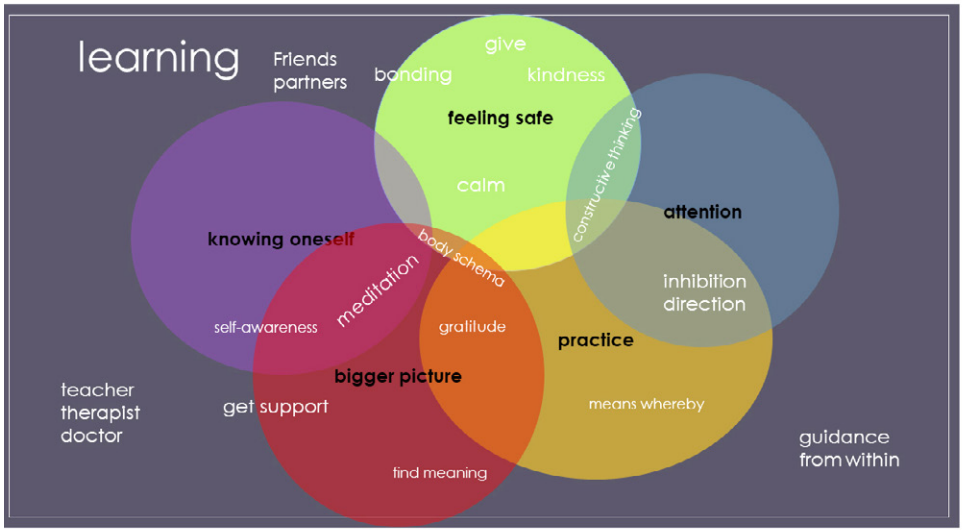

Fig. 5.

In this table, I have brought together aspects of an overarching framework for healing: I have emphasised previously the importance of feeling safe, of cultivating the ability to direct one's attention and practising according to some defined rules.

Equally important is the capacity to know oneself better (including a clearer perception of one's own reactions), to look beyond the immediate situation, and to gain perspective from a broader stance.

In each circle I have included my own associations and the reader is invited to expand on them. It is also vital to be open to the fact that help can come from many different directions. There is a growing network of professionals dedicated to working with people affected by dystonia, especially musicians.*

Conclusion

Preventing dystonia is very important: Warning signs precede its onset and, if e. g. musicians and music teachers recognise these signals and take preventive steps rather than simply 'pressing on', the trajectory of the condition can change.

We have looked into the role of *predictions* and how the idea of the movement brings about the recruitment of motor commands. Just as in chronic pain, the expectation of failure/the prediction of danger, can drive the maladaptive change in the nervous system and the brain.

From this perspective, the importance of feeling safe and learning to direct attention away from the memory of failure becomes essential for structuring effective practice.

The breakdown of functions seen in dystonia may also be interpreted as a call of the self – a signal to connect with one's hidden needs and aspirations that we are not consciously aware of. The body expresses this in ways we may resist or dislike, yet these expressions can serve as guidance to a life richer and more meaningful than expected.

AI tool Perplexity was used to enhance the language and to search for latest treatment approaches.

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