ALTERNATIVE TREATMENTS TO TREAT CERVICAL DYSTONIA
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TRANSMITTAL LETTER

APRIL 19, 2016

Massage therapist; Stacey Miller

Essential Balance

227 Mitton Street

Sarnia, Ontario

Dear Ms. Miller,

I have completed a report that investigates the current alternative treatments to treat Cervical Dystonia. The research revealed that three major institutes treat the condition using a natural approach. The patients can do this treatment with a combination of Botox injections or by itself.

I conducted a survey for an online support group which members suffer from the condition in order to find out if they were aware of these institutes that offer the physical rehabilitation program.

I completed an interview for two of the professionals that provide these alternative treatments which led me to the conclusion that for the program to be successful, clients have to commit to it and understand that it is a long process.

Based on these findings, the report recommends that patients should do the following to achieve a better quality of life:

Look for an online support group and family members counseling for them to understand the condition and be a great encouragement for the patient to follow the rehabilitation program with a definite attitude.
Patients should follow the program as prescribed to see positive results.

In most of the cases, patients can benefit to complement the rehabilitation treatment with other therapies to address any other physical and psychological issues that accompany this condition.

It is vital to create and organize a daily activity to find a life purpose.

The goal for this is to get some stamina and good energy to reach a good balanced life style.

Thank you for the opportunity to complete this investigation.

You can contact me at: marleny75@hotmail.com if you have any questions about the report.

Sincerely,

Marleny Sloan

Executive summary

For this Report I tried to research the best alternative treatments to treat people who suffer from cervical dystonia. These people can reach out for any of these treatments to help themselves achieve a state of recovery and learn to manage the debilitated symptoms characterized by this condition.

The institutes that offer the best alternative treatments are:

- S. T. R. Recovery Clinic; Abigail Brown Director
- Dr. Farias, Neuroplasticity Training
The Dystonia Medical Foundation of Canada and the Dystonia Organization of UK are an excellent source of information for people who suffer from different types of dystonia. They offer up to date new treatments, medications, and support for patients and family members.

I conducted a survey to an online support group which has 60 members, and 24 of them completed the questionnaire.

I learned from the survey data how individuals who live with cervical dystonia help themselves to find a way to better cope with the condition. Some of them have been very active on researching alternative therapies. They had tried: Botox as a medical treatment, chiropractors, physiotherapy, massage therapy, stretching, meditation, acupuncture, etc.

Ninety percent of the people are aware of S.T.R. Recovery Clinic whose director is Abigail Brown and 60% of the people know about Dr. Farias neuroplasticity training, but only four people have tried it, and none of the people were aware of L.Cross Institute in Germany.

The interview with the professionals that offer the alternative programs states:

• That people can reach improvement in the condition and control symptoms when they are consistent with the program and follow the recommendations.

• They can complement the treatment with botulinum toxin injection. It is crucial to address other issues for the treatment to be successful.

• These programs work in conjunction with different physicians; they can assist patients where dystonia has affected other parts of the body.

• Family and psychological support are fundamental to achieve an optimal quality of life.


Conclusions

Based on the information provided from these professionals in treating cervical dystonia with alternative treatments we can conclude the following:

• the effectiveness of these approaches and that they are free of side effects and positive results by managing the symptoms of cervical dystonia and obtain, maintain a high quality of life, with Botox as a complementary treatment or without it.
Dr. Farias learned that damage to the cerebellum and frontal lobe were some of the causes of developing the condition. He uses Neuroplasticity to heal these areas of the brain by applying these therapies:

Neurostimulation, Neuromodulation, Neurorelaxation and Neurodifferentiation.

L. Cross therapy uses a unique device called Acromipelvimeter for constant review of statics and pelvis alignment. The patient has to perform the exercises in front of a mirror so he/she can be aware and maintain proper alignment of the head and neck.

Patients interested in this rehabilitation program need two weeks to learn the rehabilitation exercise which takes around 45 minutes.

S.T.R. Recovery Clinic: Abigail Brown, director

Patients can take this course directly in the clinic or as a long distance program. The Director provides a manual which contains all the training exercises printed and a DVD to guide the patient to perform the exercises correctly. She offers a DVD that shows specific Cervical Dystonia massage for patients, water, and gym activities.

The manual contains the recommendations and support to go through the program successfully and achieve recovery.

Based upon literature found on the Internet and periodical databases we conclude that Botulin toxin is the primary treatment for cervical dystonia but when Botox injections stop working, patients can benefit from alternative therapies to manage the symptoms of cervical dystonia and be able to function and perform basic tasks. (stated as see appendix B)

The goal of physical therapy is to increase and preserve range of motion, strengthen weakened muscles and stretching exercises to elongate them.

**Recommendations**

Based on the information obtained from the institutes that treat cervical dystonia and from the experiences of patients that have successfully managed the symptoms from Cervical Dystonia, we can recommend the following:

1. To be successful in recovering from the symptoms of cervical dystonia patients have to adopt a significant commitment towards the training exercises, and be aware of postural habits patterns.

2. Patients have to understand that it is a long process and a lifetime commitment to manage the symptoms and achieve a productive and better quality of life.
3. The patient should keep a positive attitude to be able to continue the program.

4. The rehabilitation training can be a treatment combined with botulinum toxin or without it.

5. Understanding that people who do not use Botox injections, in most of the cases, can achieve faster recovery.

6. It is vital for the patient to address any personality issues, behaviors, thoughts, emotions, anxiety, depression and stress levels to have good mental health, so the body and mind will work in harmony.

7. People who suffer from the condition should look for support for himself/herself and family members to understand and learn more about the condition.

8. It is beneficial and healthy to find an enjoyable activity and have an organized daily routine which can bring happiness and purpose to their lives.

Some of these therapies have been found helpful besides The Rehabilitation exercises:

- Cognitive behavioral therapy
- Pain management program
- Different types of meditation, especially ones that can balance mind and body connection.
- Stress management
- Biofeedback

9. Daily activities to enhance body movements and energy:

Lower stress exercises: such as water exercises, swimming, walking, some yoga postures, low impact aerobics, stationary bike riding, dance classes, and some coordination exercise (stated as see appendix B

In the early stage of the condition, once it is diagnosed, if it is possible, people should start doing some physical rehabilitation to avoid using Botox injections too soon and start learning how to manage the symptoms of Cervical dystonia, before they progress to the point that it is difficult to accomplish the rehabilitation exercises.
INTRODUCTION

The investigation is about Treating Cervical Dystonia with alternative methods.

Cervical Dystonia is a neurological movement disorder. It is most commonly treated medically using oral medications, Botox injections to paralyze the muscle or with surgery. There is no cure, but people can learn to manage the symptoms. Some can recover or go into remission.
I am interested in this topic because I have been living with the condition for five years. Current medical
treatments are not enough to treat and manage the symptoms of the disease, so there is no hope for people
that have to live with the painful and psychological symptoms when these treatments do not work
successfully.

**Objective and scope of the investigation**

The purpose of the study is to research the alternative methods available to treat Cervical Dystonia and find
the persons or facilities that have the expertise to provide the service to treat this type of disorder.

**Rationale/Benefits**

It is important to research and evaluate alternative treatments that will help people cope and live a better
quality of life by managing the symptoms when medical treatments like Botox, or medications have not
worked. There is a lack of awareness of the condition because it is very rare and difficult to diagnose because
symptoms are very variable in different people making it hard to diagnose.

**Methodology**

1. I will begin my investigation of the alternative treatments to treat Cervical Dystonia by going to the
Dystonia Medical Research Foundation of Canada, and The Dystonia Medical Foundation.

2. I want to learn the early symptoms of the disease and the various causes. It is critical to recognize
these signs to see if there is any advantage in implementing alternative treatments before the
condition gets worse, because once the Cervical Dystonia progresses, a person experiences many
adverse physical changes and in most cases, chronic pain.

3. I will then investigate the psychological aspects of Cervical Dystonia, how it has changed the lives of
people affected and locate resources for counseling patients and family members. I will use periodical
databases and the Internet.

4. The reason for looking into this essential points is that a big part of the struggle for the Cervical
Dystonia sufferer is to be correctly diagnosed by medical practitioners because it is rare and there is a
lack of understanding.

5. Once I research the most effective alternative treatments to treat the condition, I will present them to
the online support group, evaluate them, and have the group identify those which have proven most
successful. People will learn and understand more about these treatments and their efficacy to decide
which alternative treatment is worth trying and continue using to achieve/maintain their recovery.

6. I have three significant resources to research these therapies which are as follows:
7. I will be using the Internet and periodical databases

8. I will create a questionnaire for 60 people who belong to the online support group.

9. I will conduct a survey through a Facebook page that the group has created, and then I will collect and analyze data.

10. I will address their concerns using alternative therapies, specifically one which utilized stretching and exercises targeted at treating Cervical Dystonia.

11. I will conduct an interview with two people who have a lot of experience in this condition, and I will share their knowledge with the group. My objective is to interview:

- Gabrielle Hupfeld; Physical Therapist at L. Cross Institute,
- Abigail Brown; Director of the Recovery Clinic for spasmodic torticollis.

RESEARCH

FINDINGS

The results of the investigation evaluate these unique sources for alternative treatments to treat Cervical Dystonia effectively:

1 a) Dr. FARIAS, NEUROPLASTICITY TRAINING

Dr. Farias, who obtained a PhD in medicine and sciences applied to sport and exercise, has applied these self-taught practices to develop an economical and drug-free method to rehabilitate others with the condition. His technique relies on neuroplasticity, the brain’s ability to rewire itself. Teaching clients to move again, he says, helps their brains learn to process motor and sensory signals normally again (Leung, 2015).
His effort has been influenced by his own experience. As a 21-year-old studying to become a professional musician in Spain, he was diagnosed with dystonia in his right hand. His fingers would involuntarily curl into a fist. Progressively, it became very difficult to play the piano (Leung, 2015).

The innovation of the phenomenon of neuroplasticity is also significant for healing of all kinds of brains diseases and brain damage. Norman Doidge's book *The Brain’s Way of Healing* is devoted to this topic. He defines three concepts which consider enable neuroplastic healing and five phases which are often happening in neuroplastic healing Dr. Farias, Neuroplasticity Training applied these therapies: (Visser, 2015)

- **Neuroestimulation**

- **Neuromodulation**

- **Neurorelaxation**

- **Neurodiferenciation**

**Neuroestimulation:** Is a therapy that stimulates brain cells by light, sound, electricity, vibration, movement, or thought so that the making of new connections is stimulated.

Besides this therapy help manages chronic pain and improves the quality of life. Benefits may include:

- A decrease in pain 50% or higher
- Increases activity levels
- It is a therapy that is designed to mask pain by blocking pain signals before they reach the brain (Visser, 2015).

**Neuromodulation:** It is a treatment that regulates nervous activities by mode of controlling the physiological levels of different types of neurotransmitters; this treatment involves stimulus to the body's nervous system for healing purposes. This assistance to modulate a state of target cells as an approach to pain activity and neurological dysfunction by treating movement disorders and spasticity. The overall level of arousal of the brain is reorganize which re-establishes the balance between excitation and inhibition (Visser, 2015).

**Neurorelaxation:** This therapy can assist by relaxing the nervous system the person unwinds and catches up on lost sleep. Therefore, the brain gathers new energy required for additional recovery

**Neurodiferenciation and learning:** New capacities are learned (or old skills are relearned) through a method of training of gradually refined discrepancies in movements, sounds, images, or whatever is relevant for the affected function.

Dr. Farias, assist you with some tips to increase your dopamine levels in your brain (Visser, 2015).
Low dopamine levels on the brain activates nerve damaging, inflammation in the brain, leading to difficulties with learning, memory, decision maker and motor coordination. Neurotransmitters have a particular function in the brain when they work properly (Boeree, 2009).

**Noradrenaline:** This neuromodulator dramatic plays a critical function in inflecting plasticity learning and memory via de hippocampus within the brain (Boeree, 2009).

**Dopamine:** This neurotransmitter is centrally active in reinforcement approaching behaviour, exploration and several aspects of cognition. Change in this neuromodulator function appear to be connected with differences in personality. This dysfunction outcome in changes in relatively steady patterns of behaviour, motivation, emotion and cognition

**Serotonin:** It plays an important part in mood, anxiety and happiness (Boeree, 2009).

**Acetylcholine:** has a function in the control of autonomic functions, but is probable that it also modulate adaptive responses to environmental and metabolic state. The hypothalamus is vital in homeostatic. It is likely to be essential in adjustment to peripheral autonomic signals to the brain, in some brain areas might also be crucial for stress responses (Boeree, 2009).

Dr. Farias, learned that damage to the cerebellum and the frontal part of the brain could be some of the causes of developing the condition.

**The cerebellum** ("little brain") is a structure that is located at the back of the brain, underlying the occipital and temporal lobes of the cerebral cortex. Although the cerebellum accounts for approximately 10% of the brain’s volume, it contains over 50% of the entire number of neurons in the brain. The cerebellum has been considered a motor structure, because injury in the cerebellum leads to deficiencies in motor control and posture and because the majority of the cerebellum’s outputs are parts of the motor system. Motor instructions are not started in the cerebellum; rather, the cerebellum alters the motor controls of the descending pathways to make movements more adaptive and precise (Knierim, 2016).

The cerebellum is responsible for the following functions:

**Conservation of balance and posture.** The cerebellum is vital for making postural alterations in order to keep balance. Through its input from vestibular receptors and proprioceptors, it modulates instructions to motor neurons to compensate for changes in body position or variations in load upon muscles. Patients with cerebellar injury suffer from balance disorders, and they often develop stereotyped postural tactics to compensate for this issue (e.g., a wide-based stance) damage to Cerebellum Produces Movement Disorders (Knierim, 2016).
Patients who have cerebellar damage display clumsy voluntary movements and problems sustaining balance and posture. The following are some symptoms of cerebellar damage:

**Decomposition of movement:** The majority of our movements involve the synchronised activity of numerous muscle groups and different joints to produce a smooth route of the body part through space. Patients with cerebellar dysfunction are incapable to produce these coordinated, fluid movements. Instead, they often interrupt the movements down into their parts to perform the preferred path (Knierim, 2016).

**Intention tremor:** When making a movement to a target, cerebellar patients frequently produce an uncontrolled tremor that grows as they approach closer to the target (Knierim, 2016).

**Frontal lobe:** It contains most of the dopamine-sensitive neurons in the cerebral cortex. The dopamine system links with recompense attention, short-term memory task, planning, and motivation. It is an integral connection between a person's personality and the functions of the prefrontal cortex. This brain region involves planning of complex cognitive behaviour. This vital activity of this brain region is considered to be the organisation of thoughts and actions with inner goals (The Frontal Lobe, 2015).

The frontal lobe is the part of the brain that manage main cognitive skills in humans, such as emotional expression, problem solving, memory, language, judgment, and sexual behavior. It is the hard drive of our personality and our capability to connect. It is also responsible for primary motor function, or our ability to consciously move our muscles, and connection to speech (The Frontal Lobe, 2015).

Dr. Farias also theorises that individuals with hyper-plastic brains – those who are remarkably fast learners – may be more vulnerable to the disorder.

Solving repressed motions can’t be done through talk therapy, but through movement, he believes, since dystonia involves parts of the brain involved in motor function, rather than language (Leung, 2015).

The first stage is to define, and make clients conscious of the motions they have suppressed. Then, he trains them to recuperate those lost movements, and the patient has to repeat them until the movements feel natural, controlling any related sensations of pain or distress (Leung, 2015).

He does this by getting his clients to copy his own movement, to practise in front of a mirror, and to move in different settings. For example, if clients show no signs of dystonia when dancing, Dr. Farias trains them to relocate those movements to walking or standing.

After four following days (at a cost of $1,600 for six hours of sessions), most of his/her clients are able to recover some lost movements after a few months of training,
He declares. The course of getting them to “feel right” while doing those motions, however, may take a long period of time. Even though he started off working with musicians with focal dystonia, he has found his approach has worked on clients with various forms, including general dystonia related to Parkinson’s disease. But he recognizes he is still refining his techniques and has developed only an alternative to traditional therapy, not a cure (Leung, 2015).

1b) S.T.R. RECOVERY CLINIC: ABIGAIL BROWN, DIRECTOR

S.T.R.C, Inc. is a non-profit organization founded in 1986 by Abigail Brown after she developed this program in a desperate attempt to recover from her battle with Spasmodic Torticollis another name for Cervical Dystonia. This program is a natural approach, healthy and risk-free if it is done as prescribed.

This program can be accessed directly or as a long distance program. The clinic provides a manual and a DVD with all the exercises which will help the patients to achieve and ongoing recovery from the symptoms of Cervical Dystonia.

A non-aerobic exercise program specifically geared to address the problems shared by those with S.T., they should adapt the exercise program to their ability and peace, overdoing it or using too much weight will hinder their progress. The program has some suggestions for a balanced nutritional diet to hasten and maintain recovery, as well some tools to cope with some pain that can be experimented during the beginning of the routine, until the body gets adjusted to it.

Most of the exercises requires the chin to be tucked, the continual practice of the "Military Brace" position which realigns the head and neck over the spine. The daily exercise routine is as follows:

- The patient has to stretch both sides of neck
- Elongate shortened side (to which the head turn)
- Increase flexibility
- Target trigger points to defuse spasms

The results are strengthening of the muscles and restoration of voluntary control.

By correct daily habit patterning: how we sit, sleep, work at the computer, etc. the patient will experience good spasms and bad spasms. Bad spasms occur with wrong habits patterns, like sleeping on a contour pillow. Good spasms occur when the patient is following the recovery via the program, and the body is reacting to the realignment process the "good spasms" will eventually disappear as the patient comes into recovery.

The long distance program provides:

- A printed manual with all the information and help for the process of recovering
- A DVD with all the rehabilitation exercises including daily stretching, gym strengthen exercises and pool exercises
- A DVD with specific Massage for CD
- A manual with daily patterns or habits
- Stress management suggestions
- Faith and good attitude encouragement
- Nutrition, and medications to avoid
- Adaptive equipment
- Crisis management

1c) PHYSICAL TREATMENT AND TRAINING L.CROSS INSTITUTE

L. Cross Institute has treated over 35 years mainly musculoskeletal disorders, such as knee and hip joint disease, disc herniation, thoracic, cervical spine and TMJ disorders, and Cervical Dystonia for over twenty years with great success. Cervical Dystonia patients are treated by their physiotherapist and massage therapist daily. This institute is the only one in Germany that deals with this condition, therefore, patients come from all over Germany and abroad to be treated.

The therapists have found that the following treatments are particularly useful:

1- Three Underwater massage for week
2- Physiotherapy based on neurophysiological CNS
3- Electrical stimulation treatment

The Training rehabilitation program is done every day for one hour and a half (five days per week).

Relatively new compared to conventional methods of treatment is the use of a meter Acromiopelvimeter for the differentiation of anatomical and functional leg length differences, as well as for constant review of statics and pelvis alignment.

In the general spine treatments the patient needs about 14 days to learn the exercises, so he/she will be able to perform them at home daily. It is crucial to be consistent with the program to see positive results.

Cervical Dystonia rehabilitation program takes two or 3 visits to the Institute; the first treatment last three weeks and then they will treat the patient twice a year for about a week for further assessments.

The total number of therapies on each patient changes depending on the severity of the condition and the improvement the patient have achieved.
Previously they have only treated patients who had no carried out botulinum toxin, these patients were sufficiently restored mainly after two years that could not be spoken of this condition from a medical perspective.

Since 1993, they have only treated patients who use Botox injections as the first treatment. Unfortunately, these patients take longer to recover.

The Statement of a German University "the intramuscular injection of botulinum toxin A", leads to an irreversible blockage of cholinergic nerve endings in the treated muscle by sprouting of new nerve endings within 3 to 4 months the muscle regains his strength. After the prolonged use of Botox injections, the muscles are significantly impaired. According to their knowledge, these patients recovery time will take between 3 to 4 years.

Several patients who follow the program have been incorporated after years of illness and partial retirement are now back to work.

Their therapy is a holistic treatment; they have an interdisciplinary work that is complemented with doctors that prescribe and guide the treatment, dentist, that treat temporomandibular joint static, Ophthalmologist, and opticians, because the condition in some cases affects the eye alignment and an orthopedic technician who control the feet static.

Their objective and approach of the therapy is that patients can recognize and eliminate their static disorders independently and work consistently in the reconstruction of correct movement patterns.

The cost of each treatment is around 70 EUR and the cost of a Therapeutic accommodation is between 135 EUR for a room and 185-230 EUR for an apartment per week.

L. Cross Institute wishes that the therapy will find more recognition of the insurance companies, and hopefully physiotherapist and some health practitioners develop a greater interest and carry out this interdisciplinary treatment.

Efficacy of evaluation.

Survey Data Analysis:

After determining the analysis of the survey data from 24 participants (the results have been tabulated in Appendix A) the purpose of the survey was to acknowledge if the people on the online support group were
aware of the alternative treatments for Cervical Dystonia and how they have been coping with the condition to manage the symptoms.

The questionnaire revealed the following:

After analyzing the summary of responses, I learned that 60% of the people that answer the survey were women and 40% were men.

50% of the people are between the edges of 46-55 years old

20% 56-65 years

20% 36-45

10% 46-55 years old.

40% of the people got diagnosed after a period of 6 month, 20% in a year and the rest of more than one year.

I learned that: 70% of the people acquired the condition after a whiplash and head injury, 10% family history and the other 10% unknown causes.

Figure 1 Shows the percentage of the different side effects that individuals who use Botox injections experienced.

After analyzing this chart which was obtained from google forms after the 24 responses were received from the Cervical Dystonia online Group survey, we can conclude that the whole group experienced one or more of the side effects listed.
66.7% of people experienced muscle weaknesses and difficulty swallowing for the first weeks following injection; and the rest have other side effects like fatigue, dry mouth, dizziness plus 33.3% experienced other side effects besides the expected one.

Most of the people experienced a combination of side effects with oral medications such as the following:

- Dry mouth, nausea, dizziness, cognitive cognition, weight gain and other side effects.

The group have tried different alternative therapies such as:

- 100% of the people have tried chiropractor adjustment, but just 4 of the people were satisfied with this approach.
- 30% of individuals tried acupuncture and were somewhat satisfied with the treatment.
- 50% of the individuals have tried physiotherapy and are somewhat satisfied, and the other 50% have not tried or are somewhat dissatisfied with it.
- 30% have tried psychotherapy and are somewhat satisfied
- 70% have never tried.
- 90% have tried massage therapy and are satisfied and somewhat satisfied with this treatment, the rest are neutral.
- 98% of people are somewhat satisfied and very satisfied with stretching exercises, just 2% are somewhat satisfied.
- 50% have never tried Mindfulness meditation
- 40% have tried meditation, and they are satisfied.
- 10% are neutral or dissatisfied with it.

Figure 2. Shows the number of the individuals who have tried or heard of these treatments.

- Dr. Farias, Neuroplasticity Training
- S.T.R. Recovery Clinic
- L. Cross Institute
After analyzing this chart which was obtained from google forms after the 24 responses were received from the Cervical Dystonia online Group survey, we can conclude:

Eighteen people knew about Abigail Brown; Recovery Clinic and are very satisfied or somewhat satisfied with the program. The rest are Neutral.

Fifteen people have known of Dr. Farias Neuroplasticity training, but just 3 people had tried it and are somewhat satisfied with the training.

None of the people in the group knew about L. Cross Training Institute in Germany.

Figure 3. Shows how interested are these individuals in these treatments.

- Dr. Farias, Neuroplasticity Training
- S.T.R. Recovery Clinic
- L. Cross Institute
After analyzing this chart which was obtained from google forms after the 24 responses were received from the CD Online Group survey, we can conclude:

Twenty two of the people in the group are somewhat and very interested in trying Dr. Farias Neuroplasticity Training t, the rest are not at all interested.

Eighteen of the individuals are very and somewhat interested in Abigail Brown Recovery Clinic, just a few are not at all interested.

Fifteen of the people in the group are somewhat and very interested in L .cross Training Institute and the rest are not interested or neutral.

Eighteen of the people in the group are interested in trying meditation and the rest are neutral or not very interested.

INTERVIEW SUMMARY

S.T.R Recovery Clinic; Abigail brown, Director.

L. Cross Institute: Gabrielle Hupfeld, Physical therapist.

The unique attributes of the S.T. R recovery clinic are that people can do it directly at the Institute of as a long distance program it includes a manual with all the exercises printed and DVD including an explanation of how they should be performed. A DVD with a massage therapy and recommendations for daily habit patterns.
L. Cross Institute has a unique device called Acromiopelvimeter to control pelvic alignment. As well an intensive routine of training exercises with the purpose of self-correction and functional movements, without muscles power to center the head.

The Recovery Clinic states that the program can be successful and easier to follow with the help of Botox injections. On the other hand, L. Cross Institute learned that it took longer for patients to recover with the use of Botox injection during the program. Patients can benefit more from the rehabilitation program if they get some other issues addressed such as TMJ alignment, an eye therapy or feet orthotics to level the pelvis and relaxation techniques (Meditation and Tai-chi).

Recovery Clinic states that for patients to see positive results all depend on many factors: patient attitude towards the program, awareness of habits patterns, nutrition, and stress management techniques. For those patients that follow the program with consistency there is 100% success rate.

L. Cross Institute noticed that the percentage of patients who have recovered after following the program had changed through the years. Ten years ago, the percentage of patients who were free of symptoms was 70%, and has since gone down to 40%. One of the reasons for this is that some people who had come from abroad are not able to take the time to come to the Institute for two weeks and learn the exercises, and come back for reassessments. On top of that some insurance companies do not pay for it, or patients do no commit to the program.

This rehabilitation program takes a long time for patients to see the results, and unfortunately, some patients quit before they get into a recovery state.

L. Cross Institute and S.T.R. Recovery Clinic agree that this holistic approach is a good choice when Botox stops working or as a combination treatment. Botox injections are very expensive, and some people experience side effects from it, but patients can achieve faster recovery without the botulinum toxin treatment. Unfortunately when the dystonia is severe, patients need the botulinum toxin treatment to be able to do the exercises.

CONCLUSIONS

Based on the information provided from these professionals in treating cervical dystonia with alternative treatments the conclusions are as follow:

1. These holistic-natural approaches are free of side effects and the goal is to help people with the condition to manage the symptoms of cervical dystonia and obtain and maintain a high quality of life, with Botox as a complementary treatment or without it.
2. Dr. Farias, learned that damage to the cerebellum and frontal lobe were some of the causes of developing the condition. He uses Neuroplasticity to heal these areas of the brain by applying these therapies: Neurostimulation, Neuromodulation, Neurorelaxation and Neurodifferentiation.

3. Dr. Farias believes that through movement by creating a unique rehabilitation program with specific exercises patients, the brain can relearn the regular movements that they have lost, and the individuals can recover the function of these two critical brain areas.

4. S.T.R Recovery Clinic: Abigail Brown director states:

5. Patients can take this course directly in the clinic or as a long distance program.

6. The Director provides a manual which contains all the training exercises printed and a DVD to guide the patient to perform the exercises correctly.

7. She offers a DVD that shows specific Cervical Dystonia massage for patients, water, and gym activities.

8. The manual contains the recommendations and support to go through the program successfully and achieve recovery.

9. L. Cross therapy uses a unique device call Acromipelvimeter for constant review of statics and pelvis alignment. The patient has to perform the exercises in front of a mirror so he/she can be aware and maintain proper alignment of the head and neck.

10. Patients interested in this rehabilitation program need two weeks to learn the intensive rehabilitation exercise.

11. It takes 2 or 3 visits to the Institute for two years to further reassess the patient dystonic movements and correction of exercises if it is needed.

12. L. Cross Institute have an interdisciplinary work which they complemented with other physicians to treat other parts of the body related or affected by the condition which are the jaw, eyes, teeth and feet to realign the whole body and reach a complete recovery of the symptoms.

Based on literature found on the Internet and periodical databases the conclusions are as follow:

1. Botulin toxin is the primary treatment for cervical dystonia but when Botox injections stop working patients can benefit from alternative therapies to manage the symptoms of cervical dystonia and be able to function and perform basic tasks.
2. People who have Cervical Dystonia do not have as much connectivity in specific parts of the prefrontal cortex, premotor cortex and superior parietal lobule affecting the sensorimotor and the executive control network and primary visual system. This abnormality is the cause of defective or lack of motor planning and disturbed spatial cognition.

3. Physical therapy will improve motor control in combination with botulinum toxin or oral medications or by itself when patients became resistant to Botox injections.

4. The goal of physical therapy is to increase and preserve range of motion, strengthen weakened muscles and stretching exercises to elongate them.

5. Some patients have found other alternative approaches to complement with physical therapy, some of these therapies such as the following:

   - Acupuncture
   - Electrotherapy
   - Biofeedback training
   - Massage therapy
   - Orthodontic work for jaw alignment
   - Also, brain-based physical rehabilitation and auditory stimulation to influence both of the brain hemispheres and growth neurological command over dystonic muscles.

**RECOMMENDATIONS**

Based on the information obtained from the institutes that treat cervical dystonia and from the experiences of patients that have successfully managed the symptoms from Cervical Dystonia we can recommend the following:

1. People who suffer from the condition should look for support for himself/herself and family members to understand and learn more about the condition.

2. The rehabilitation training can be a treatment combined with botulinum toxin or without it, understanding that people who do not use Botox injections in most of the cases can achieve recovery faster because the muscle does not get impaired.

3. To be successful in recovering from the symptoms of cervical dystonia patients have to stick to the rehabilitation plan and adopt a significant commitment towards the training exercises and be aware of postural habits patterns.
4. To get into a state of recovery, patients have to understand that it is a long process and a lifetime commitment to manage the symptoms and achieve a productive and better quality of life.

5. The patient should keep a positive attitude to be able to continue the program.

6. It is vital for the patient to address any personality issues, behaviors, thoughts, emotions, anxiety, depression and stress levels to have good mental health, so the body and mind will work in harmony.

7. It is beneficial and healthy to find an activity which can bring happiness and purpose to their lives as well to find a support group to relate to when going through hard times and be socially active in the group by learning new therapies and sharing them.

Some of these therapies have been found helpful besides The Rehabilitation exercises:

(Stated as see appendix B)

- Cognitive behavioral therapy
- Pain management program
- Different types of meditation, especially ones that can balance mind and body connection.
- Stress management
- Biofeedback

Daily activities to enhance body movements and energy:

Lower stress exercises: such as water exercises, swimming, walking, some yoga postures, low impact aerobics, stationary bike riding, dance classes, and some coordination exercises.

Recommended Books to Read: Diagnosis Dystonia – Navigating the Journey by Tom Seaman. This book takes you on a personal and educational journey full of valuable information for those newly diagnosed as well as those who have been living with dystonia for years. Tom’s perspective as a long time dystonia patient is invaluable, offering coping skills, healthy living strategies and treatments options. Tom now uses his experience and education as a certified professional life coach to help with dystonia and other life changes. Patients can get the book at www.disgnosisdystonia.com and other information at www.balanceyourlifecoaching.com

Dr. Joaquin Farias will present his next book Limitless how your movements can change your brain In in Toronto. October 30, 2016. 1pm to 3pm.

Thanks to the Dystonia Medical Research Foundation Canada.

The event will be held at Metro Hall in downtown Toronto from 1:00 pm to 3:00 p.m. on October 30th.

Dr. Farias is a leading specialist treating dystonia with movement therapy. He has a doctorate in biomechanics, as well as master’s degrees in neuropsychological rehabilitation and psych sociology

Since 1996 Dr. Farias has helped more than 500 people to have their lives and livelihoods back after being affected by different movement disorders characterized by dystonia, tremors and other problems with coordination. He is the
director of the Neuroplasticity Training Institute Toronto and adjunct professor at the University of Toronto at the Music
and Health Research collaborative. Register for the event by emailing: info@dystoniacanada.org

APPENDIX A

cervical dystonia survey online support group

to research alternative treatments to treat cervical dystonia.
Please complete this survey before March 19, 2016, to be able to collect data and analyzed. By answering these
questions, you are providing us with information which can be used to better understand the disease processes and/or
possible future treatments for cervical dystonia. Thank you for your participation!

1. Name * not required

2. Email address * not required

3. Gender
   60% Female
   40% male

4. Age
1) 50% of the people are between the edges of 46-55 years old
2) 20% 56-65 years
3) 20% 36-45
4) 10% 46-55 years old.

5. **How long did it take to get accurate diagnoses of Cervical Dystonia?**
   1) 40% 2-6 months
   2) 20% 7-12 months
   3) 15% 13-18 months
   4) 10% more than 1 year
   5) 15% other

6. **History Prior to diagnosis?**
   2 people more than one whiplash
   4 people family member with Cervical Dystonia
   5 people whiplash
   7 people head injure
   6 other

7. **Please indicate if there were any of these side effects with Botulinum Toxin Injections? (Check all that apply)**
   5 fatigue
   2 headaches
   5 dry mouth
   5 tiredness
   10 muscles weakness
   6 difficulty swallowing
   3 dizziness
   8 other

8. **Please indicate if there were any side effects with this treatment? Oral medications (check all that apply)**
6 dry mouth
4 Nausea
1 Insomnia
2 Low libido
2 weight gain
5 dizziness
4 cognitive
1 headaches
14 other

9. Which treatments have you tried to deal with the symptoms?

**Chiropractor**
4 somewhat satisfied
9 somewhat dissatisfied
7 very dissatisfied

**Acupuncture**
5 somewhat satisfied
3 very satisfied
2 somewhat dissatisfied
5 very dissatisfied
6 never try

**Physiotherapy**
7 somewhat satisfied
3 very satisfied
3 somewhat dissatisfied
2 very dissatisfied
5 never try
Psychotherapy
15 never tried
5 somewhat satisfied
2 very satisfied
1 neutral

Massage therapy
4 never tried
12 somewhat satisfied
4 very satisfied
2 somewhat dissatisfied

Stretching
13 somewhat satisfied
7 very satisfied
2 somewhat dissatisfied
2 neutral

Mindfulness meditation
12 never tried
4 somewhat satisfied
4 very satisfied
2 very dissatisfied
2 neutral

11. For how long have you tried these treatments?
Chiropractor
3-not applicable
12- 0-3 months
4- 4-6 months
Acupuncture
- 0-3 months
- 3-13-18 months
- 2-more than 18 months

Physiotherapy
- 0-3 months
- 3-7-12 months
- 2-7-12 months
- 2-13-18 months
- 2-more than 18 months

Psychotherapy
- 0-3 months
- 3-7-12 months
- 2-7-12 months
- 2-13-18 months
- 2-more than 18 months

Stretching
- 0-3 months
- 1-4-6 months
- 1-7-12 months
- 3-7-12 months
- 7-13-18 months
- 11-more than 18 months
12. Have you tried or heard of these treatments? (Check all that apply)

**Dr. Farias Neuroplasticity training**

- Never heard of it: 5
- Never tried it: 15
- Very satisfied: 1
- Somewhat satisfied: 1
- Neutral: 2

**Abigail Brown Recovery Clinic**

- Never heard of it: 3
- Very satisfied: 7
- Somewhat satisfied: 11
- Neutral: 3

**L. Cross Training Institute**

- Never heard of it: 17
6 never tried it
1 neutral.

Mindfulness Meditation
10 never heard of it
4 never tried it
3 very satisfied
7 somewhat satisfied

13. How interested are you in these treatments? (Check all that apply)

Dr. Farias neuroplasticity training
15 very interested
7 Somewhat interested
2 not at all interested

Abigail Brown Recovery Clinic
15 very interested
3 somewhat interested
4 not at all interested
2 Neutral

L Cross Training Institute
8 very interested
6 somewhat interested
5 Neutral
2 not very interested
3 not at all interested

Mindfulness meditation
10 very interested
APPENDIX B

INTERNET RESEARCH

**Physical Therapy may be an important component of treating dystonia for many people.**

Under the assistance of a physical therapist an individual can learn the right postures and learn the activities that aggravate symptoms.

Physical therapy will improve motor control, in combination with oral medications /or botulinum injections.

Physical therapy is a long-term commitment by performing the exercises consistently the individual will see positive results, he/she will benefit by managing symptoms and control body movements (Albany & Gordon, n.d.).

The goal of physical therapy is:

Increase and preserve range of motion and mobility required for performance.

Strengthen weakened muscles that may be inactive in the presence of dystonia movements.
Encourage awareness of posture and preservation of the individual optimal body alignment.

Frequent check of the dystonia and re-assessments of the personal necessities of the affected individual are necessary to optimize benefits from the physical therapy program (Albany & Gordon, n.d.).

**Daily Activity and Exercise:**

Lower stress exercises such as water exercise. Walking, yoga, ballet, low-impact aerobics or stationary bike riding.

**Stress Management:**

A stress management program may be combined into a physical therapy program, and relaxation exercises may be personalized to address specific motor problems (Albany & Gordon, n.d.).

**Dystonia in MSA: Non Pharmacological Treatments options:**

A physical therapist can aid in the management of cervical dystonia symptoms mobilizing joints to preserve range of motion and stretching muscles to achieve stable muscles function. Physical Therapy for Cervical Dystonia consist of a method of motor retraining. The individual performs repetitive movements with the neck and head and some stretching exercises to elongate the muscles (The multiple system Atrophy Coalition, 2014).

In some cases Electrical stimulation can help to activate the non-dystonic muscles, the results are decreasing the hyperactivity of the dystonic muscles. This therapy in combination with Botulinum Injections reduced pain levels. The patient benefits from this treatment by achieving good mental health, an increase in energy and positive attitude for active social life. It can take up to 2 years for the individual to recover posture and muscle function, decrease pain and lower the doses of Botox injections (The multiple system Atrophy Coalition, 2014).

**Dystonia Gaining Control through Movement:**

This is a holistic approach that combines relaxation practices, mild physical motion, body-mind connections and posture such as yoga, Tai-chi and Pilates. Breathing exercises deliver more oxygen to the muscles decreasing spasms. Stretching and strengthening exercise relieves stiffness and pain, it prevents dystonic muscles from shortening. Some of these exercises can be perform by lying down, standing or seated. Other physical therapy is moderate aerobics and balance exercises. In addition brain-based physical rehabilitation and auditory stimulation to influence both of the brain hemispheres and growth neurological command over dystonic muscles.

Through handling the brain's natural plasticity trough exercise, movement rectification can be made. Brain-based physical rehabilitation looks to repair the connections that improve motion (Dystonia getting control trough movement, 2011).
This article explains that people who have Cervical Dystonia do not have as much connectivity in specific parts of the prefrontal cortex, premotor cortex and superior parietal lobule affecting the sensorimotor and the executive control network. It concludes that treatments with Botulinum Toxin result in a partial restoration of connectivity abnormalities in the sensorimotor and primary visual system. This abnormality is the cause of defective or lack of motor planning and disturbed spatial cognition.

I find this information fascinating because it is related to Dr. Farias’s findings in the cause of developing the condition; he learned that there is a malfunction of the prefrontal cortex and alterations in the cerebellum. The objective of his rehabilitation is to balance the two brain hemispheres right and left to improve connectivity and connect the multiple neural networks involve in cervical dystonia (Delnooz, Pasman, Beckman & Warrenburg, 2013).

This article describes the benefits of treating Cervical Dystonia using acupuncture versus Botox injections. In this case a patient shows positive results. The acupuncture reduced the pain, and the muscles spasms decreased, she continues with this treatment every 8 to 10 weeks, and she has reduced the regular treatments with Botox injections which are usually every three months.

I find this article relevant to my topic, because, from the survey that I conducted, I learned that some people have found acupuncture somewhat helpful in treating some symptoms (Deepak, Mathew & Koshy, 2010).

REFERENCES

Dr. Farias Neuroplasticity Training


INTERNET RESEARCH REFERENCES

