# Unlucky Chops:

*Nick Fife and Joseph D. Johnson, Column Editors*

# Embouchure Syndrome

*by Gabriel Radford*

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## Introduction

I have been a professional horn player and teacher for 25 years. From 2018 to 2023, I navigated the challenges of Embouchure Syndrome (ES) and emerged on the other side, eventually founding The Embouchure Project. I hope this article will assist you, whether you're struggling with ES or are healthy and want to be a better teacher, colleague, or medical professional.

## What is Embouchure Syndrome?

ES is a progressive disorder marked by the loss of control of the embouchure muscles, leading to a significant decline in playing ability. ES encompasses a spectrum of disorders, from mild embouchure dysfunction to embouchure dystonia. ES has no single solution because it manifests differently in each individual. However, there is reason for optimism. Our understanding of ES has advanced, and some treatment methods have shown promising recovery rates, with up to two-thirds of patients experiencing improvement.

**Our community's reliance on simple solutions alienates those who suffer.**

Neurologist Dr. Xenos Mason of the University of Southern California proposed the term Embouchure Syndrome in 2023 to widen the scope of treatable embouchure dysfunction conditions and allow for further research into more than just embouchure dystonia.

## The problem is us

The culture around ES is one of fear and ignorance. We often blame the condition on a lack of proper "fundamentals." We advocate that good air, efficiency, and eliminating tension will solve any issue. While these are vital instructions for a healthy player, those affected by ES frequently feel like outcasts, stigmatized and dismissed when these strategies don't work. Even prominent musicians sometimes deny the existence of ES, writing it off as purely psychological.

There's no one playbook or center of excellence to consolidate research and provide a clear path forward. Expertise spans many disciplines but remains inaccessible or overwhelming for most musicians. Meanwhile, therapists often have conflicting views on the root causes, and their financial interests can mislead them.

## Why you should read this

Athletic coaches once treated a blow to the head as "getting your bell rung" and prescribed a "walk it off" approach. Today, we recognize this as a concussion, with well-established prevention techniques and treatment protocols for Post-Concussion Syndrome.

"It's all in your head. Just relax and blow" is as harmful as "walk it off." Our community's reliance on simple solutions alienates those who suffer. When people hear the same advice repeatedly and do not improve, they assume it's their fault. To extend the concussion metaphor, the coach's message is: "Get over it." Our equivalent is: "Forget about your chops. Just blow."

The solution for a musician suffering from ES may range from a brief period of guided practice to months of defying conventional pedagogy to carefully create new habits before finally returning to a primary focus on music, sound, and air. ES has many potential causes, and we at The Embouchure Project are working on categorizing and quantifying them so that we can guide people toward the appropriate treatment for their specific symptoms. While much work remains, learning about ES cannot cause it. Moreover, while psychological stress, fear, and trauma are contributing factors, "relaxing" is far from a complete solution.

Learning about ES may empower you to interrupt the patterns of behavior and symptoms common to the condition in your own playing, as well as in your friends, colleagues, or students. Furthermore, reading this article will help you better understand the syndrome and contribute to a necessary cultural shift. To solve this problem – and I believe it is solvable – such a shift is essential.

## What happened to me

I won my first full-time orchestral job in 1998 at age 23 and moved to my current position as third horn of the Toronto Symphony Orchestra (TSO) in 2002. In my mid-thirties, my career flourished. I frequently performed chamber music on prominent stages. The TSO was at its busiest, and I also maintained a large studio of students. Every week of summer was filled with teaching or performing. Life was busy, stressful, and wonderful.

Around 2016, I noticed that my chops had less stamina, and I sometimes found myself scared to play prominent parts. I played some of the best concerts of my life, but what was happening in my head was new. It's hard to determine whether the change in technique caused fear or if fear came first. Perhaps my big-mouth, high-mouthpiece pressure technique, which sounded great, was something a young person could get away with – but not someone entering middle age. Perhaps I had just taken on too much for too long, and my body was rebelling.

Fast forward to 2018. I hadn't had more than a few days break in years. The TSO schedule was in overdrive. I had toured with the Boston Symphony and continued playing at multiple summer festivals. I was also preparing for a tour featuring Schumann's Adagio and Allegro and Brahms's Horn Trio. Suddenly, I was stuck. The Schumann wasn't improving – if anything, it seemed to be getting worse. I increased my practice, practicing obsessively in every spare moment. It wasn't working. I was scared. The stress and fear peaked when I invited my wife and kids to listen to a mock performance of Adagio and Allegro two weeks before the tour. It was a disaster. The last page was a mess. I panicked.

Even though I hadn't taken three days off from the horn in a decade, I decided to take three days off for a planned hike the week before my tour. When I returned, playing was a disaster. My chops felt stiff, unresponsive – somehow too big for the mouthpiece – unlike anything I had felt before. I called the organizers and changed the repertoire.

Despite the panic, I played the best Brahms Trio of my career. Two days after the tour ended, I left for Europe with the Boston Symphony Orchestra, where we performed Mahler and Shostakovich. I was desperate to "figure it out." As a long-established professional and teacher with many successful students, who could be more qualified than me to sort this out?

When I returned home, I had three days before starting my 15th season with the TSO, performing Mahler 5. It only took a day to realize I needed help. It's hard to describe what I was experiencing other than to say that something had changed...in my brain.

If I could return to that moment, I would put the horn down and rest for a month. I would recognize that I had done myself damage and that I needed to pause and heal before continuing. I would visit my doctor to treat the stress, then sleep, exercise, meditate, and call in sick. Only after that would I reach out and begin the healing process. I wonder if these actions could have solved the problem in weeks instead of four years. I have spoken to a few wise souls who have done a version of this, appearing to stop ES from progressing.

Instead, this moment marked the beginning of a months-long descent into questions and doubt. I played as many weeks as I could at work, but I called in sick for many others. I practiced obsessively, hoping to "figure it out," but I got worse. I went to my doctor, who referred me to a dentist. The dentist "diagnosed" me with dystonia. He handed me a master's-level music student paper as if it were definitive. I was angry and upset. How dare he? I pulled strings and got into a highly regarded neurological movement disorder practice in Toronto, where the doctor merely stated: "We don't know what this is." At this point, I received the first of two formal diagnoses of focal dystonia.

By spring, I had worked with many pillars of the embouchure dysfunction world. They were each helpful in their own way, but too often, they promoted their techniques as complete solutions rather than as a small piece of the puzzle.

My symptoms had progressed to the point where I was now experiencing swelling in my lips when I played. My jaw always felt out of place and started involuntarily closing when I began a note. One day, while practicing in an office, I noticed pencil erasers on the desk. I shoved one between my teeth, and it was like a miracle – I could play. My jaw bit down on the eraser, stabilizing it and alleviating 90% of the problem.

A neurologist might think they've just confirmed their dystonia diagnosis – I changed the stimulus (made it feel different), and the symptoms disappeared**.** I have my doubts. It felt like the equivalent of a crutch for an injured leg. Whatever it was, it made a huge difference.

What I eventually called my "teeth dampers" became the molar section of a sports mouthguard. It gave me my sound back and allowed me to play reliably from about written low G to high G – the range where that jaw position was approximately correct. This temporary solution allowed me to play full-time through the fall of 2019. *Please don't try putting things between your molars. It is a choking hazard, and biting down is the wrong thing to do before starting a note.*

I sought a more permanent solution, so I contacted Professor Bronwen Ackermann[1], specialist musicians' physiotherapist, musculoskeletal anatomist, and musicians' health researcher at the University of Sydney, who was conducting research in Hannover, Germany with neurologist Dr. Eckart Altenmüller.[2] I arranged to spend an intensive week rebuilding my embouchure from the ground up.

## My solution emerges

Over several days, Professor Ackermann patiently guided me through the proper formation of the embouchure: cheeks hugging the molars, upper lip lifted, chin pointed to the floor, and lips forming an "Oo" shape. She reminded me how to breathe and use my core to support the air – skills I had lost through the months of obsession with my chops. She also helped me with posture.

I had already seen Professor Ackermann for a few sessions online, but many competing outside opinions made it difficult to trust her strategies fully. It was clear she knew her stuff – her expertise in anatomy and physiology and her years of analysis meant that she understood the embouchure on a level I had never encountered.

One practitioner I saw frequently over several years believed that disengaging all muscles and focusing solely on air would naturally form the most efficient embouchure. This practitioner was unwilling to share evidence of the efficacy of their work, but the idea was seductive: play effortlessly! This work may have particular benefits at the beginning stages of ES. Many people who try to "relax everything" see immediate improvement; no wonder, since excess tension makes the horn harder. However, it was far from a solution for me and made my path to recovery longer. Professor Ackermann's method (The Ackermann Protocol) took a different approach:

- Physical therapy exercises to feel, coordinate, and strengthen crucial embouchure muscles.
- Learning how the cheeks, chin, and lips form the embouchure most fine players use.
- Employing good biomechanics for breathing, support, and blowing.
- Playing music, not just individual notes.

The Ackermann Protocol never implies that everyone must have the same embouchure. It is about forming a structure that individuals can interpret as they return to health.

I made significant progress during the week I spent with Professor Ackermann and returned to Toronto on March 9, 2020, excited to head back to work. However, we never got to perform as the first COVID lockdowns took hold.

## Three steps forward, two steps back

I adjusted poorly to pandemic reality. I practiced plenty; I returned to the horn after some weeks off and never stopped. However, I never truly committed to what I had learned.

I knew the Ackermann Protocol worked – it generated my first genuine progress – but I didn't fully trust it. In hindsight, this fact is impossible for me to explain or justify other than to say I was still romanced by the concept of disengaging all of my face muscles; I just needed to relax!

In my best moments, I worked on the Ackermann Protocol with Frankie Lo Surdo, from Western Australia, who has since started Brass Rehab.[3] Frankie helped align the Protocol with familiar terminology and exercises. He also gave me the courage to finally get rid of the "teeth dampers," pointing out that biting down was a movement in the wrong direction to begin a note healthily. He has since built up a wealth of knowledge, assisting countless players to return to health.

In hindsight, I realize I already had the solutions, yet I failed to put it all together. After relapsing, I returned to my pattern of hours and hours of practice with no genuine progress.

## The path to health emerges

As the pandemic abated, work began to ramp up. My first week back was a disaster, but it gradually got better. My music director allowed me to play fourth horn temporarily. In the TSO, we have a player on fourth who was willing and more than able to play third.

Eventually I encountered a device called Stratos, invented by trombonist Marcus Reynolds. Stratos attaches to the mouthpiece shank and includes an adjustable rod with a suction cup that supports the chin while playing. Stratos helped me feel more secure, especially when initiating a note under the stress of work, but it is not a quick fix for ES, nor was it my cure. I have shared the device with others; they have not seen the same (or any) benefit.

What Stratos did was allow me to feel the benefits of the work I had been doing in the Ackermann Protocol – to feel the chin and cheeks as a source of stability for the embouchure mechanism, with the lips free to form an "Ooo." I like to say, "If you can feel it, you can fix it." People who have suffered from ES often explain that they can't *feel* what is wrong. A recent term for this ability to feel individual muscles is *body mapping*. Stratos allowed me to complete my body map.

Additionally, it acted as a crutch similar to the pencil erasers but with a healthier, more sustainable motion. I used Stratos for several months, but eventually I no longer needed it. My muscles had developed, and I did not need the support. As I got stronger, my jaw stopped wanting to close. I had to summon my courage and experience as I transitioned back to third horn. I had to trust that I was healed and could return to focusing on the music. As can be imagined, this was a bumpy road, but most of the time at work, I could do it. When the TSO toured, playing an extensive program in 2023, I found myself thinking about sound, music, colors, blend, and intonation – not my embouchure. I knew it was time to put this all behind me. More recently, just a few weeks back, I played Mahler's Third Symphony the best I had ever played it.

## What worked

Looking back at what I've been through – from the height of my career as a player, touring the world with great orchestras, performing recital tours, and recording chamber music, to barely being able to make a sound, and then back again – I can say that the most important contributing factor was persistence. I persevered until I found solutions that worked for me. I stayed patient and positive more often than I felt defeated, and I never let the idea of giving up enter my mind. I needed persistence because of the many wrong turns I made. The conflicting information outweighed the generosity of colleagues who helped along the way. I made mistakes daily and flailed for years without making noticeable improvements. I hope that future sufferers of ES will not need to be nearly as persistent as I was.

When it was time to get back on stage, I was patient as I managed and coped while finding my feet. The great gift of losing everything is that there's nothing left to lose. I realized that my best had to be good enough. Before long, I was playing better than ever.

Without Professor Ackermann's work, I would not have recovered. I credit her work with creating an embouchure that has significantly lowered the stress of playing the horn. I also would not have gotten better if I had not been honest with physicians about my need for help. I was prescribed an SSRI medication to make my brain more receptive to change by increasing plasticity, and it also helped with emotional regulation. I was also prescribed a benzodiazepine, which helped with the stressful transitions and high-pressure moments.

Marie Luise Neunecker generously gave me her time. Her philosophies aligned with the Ackermann Protocol and helped me trust my work. I still think about her concepts in my daily routine. She beautifully explains her thoughts on embouchure in an interview with Sarah Willis on YouTube, which I recommend.[4]

At the best of times, we need our colleagues to thrive. In the TSO, Neil, Chris, Audrey, and especially Nick were patient and kind beyond all expectations. Thank you. Finally, I wouldn't have stood a chance without my wife, Sarah, who endured years of awful-sounding playing and the emotional roller coasters that ensued.

## The Embouchure Project

Throughout this journey, I have been struck by the lack of knowledge. Physicians generally view ES as an untreatable mystery. Doctors are vital for diagnosis but not for treatment. Important work has already been done by the Leon Fleisher Foundation for Musicians with Dystonia, led by Glen Estrin, and by Dr. Stephen Frucht, who has advocated for research and support of dystonia for decades. Physicians like Dr. Eckart Altenmüller have spent their careers researching and treating dystonia. However, this knowledge has not yet permeated the music business or the allied health professionals who treat us.

I knew I needed to do something about it – to bring together the finest minds in the world to illuminate a path to recovery for those who come after me. We need musicians talking to physicians and other researchers, and potential solutions researched, measured, studied, reviewed, and published.

In the spring of 2024, I launched The Embouchure Project with Professor Ackermann, Dr. Xenos Mason, and Frankie Lo Surdo. We are supported by leaders interested in a better future for ES, including musicians on each wind instrument, physicians, psychologists, and physical therapists. In July 2024, we attended the Performing Arts Medicine Association conference in London, England, where Dr. Mason presented *Beyond "Dystonia": A Grounded-Theory Study of Musicians with Embouchure Syndrome*, and I presented *The Embouchure Project: A Community-Based Advocacy, Education, and Research Organization*.

We launched The Embouchure Project on Facebook and Instagram and have a website and podcast. These platforms support ongoing work, help build a community around solutions, connect musicians with assistance, connect researchers with subjects, and connect allied health with clinical data.

## My advice

Advice is tricky because each case is unique. However, I have gleaned these observations through my experiences, conversations with musicians, and 25 years of teaching and playing. This advice is not a solution, but it may help you create solutions or avoid common pitfalls.

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## How to lower risk of ES

- **Treat anxiety**. Do not suffer. Do not "power through." Get help. Be proactive. See your doctor. Actively de-stress.
- **Accept that your best is your best**. Passionately disassociate yourself from what others might think of your playing. Play for yourself and for the music. From David Krehbiel: Play with "creative not caring."[5] Fall in love with the process of practicing and performing, and be indifferent to the results
- **Take breaks**. Take big breaks away from the horn. Take small, strategic breaks frequently during practice. If you enter an obsessive or fearful practice state, stand up, get a cup of tea, or go for a walk
- **Do not change equipment or embouchure under stress**. Wait until you are in a calm mental state. Practicing while stressed and making changes is a recipe for confusion and fear. Dr. Mark Edwards of King's College, London, refers to this contributing factor of dystonia as the "new tool dynamic."[6]
- **You don't need to be a hero.** If you are overwhelmed, take a break or call in sick.
- **Stop worrying about things going wrong**. If you fear change, your response could be panic. Act like a scientist interested in change. If you are unsure if a change is positive, reach out to someone you trust or The Embouchure Project.

## Finding the path to health

- **Fix the fear**. There are many proven ways to lower stress. The key is to reframe your relationship with playing. If you have been suffering from dysfunction, you have likely picked up a pattern of fearful thoughts. This needs to be addressed. Proven strategies include optimizing sleep, exercising, seeing a therapist, seeing a physician for medication, yoga, meditation, or any other technique that allows you to calm your body and mind. You must practice the horn in this calm state. Without this step, it is very difficult to get better.
- **Address the injury or deficiency with an expert**. Avoid practitioners who claim to have a cure or a complete solution. This does not exist. Find professionals with extensive experience in the field willing to submit their techniques to research and public scrutiny. Reach out to The Embouchure Project for help. Your problem may be related to technique causing pain, numbness, or other issues, or it may be ES, where you have experienced a gradual deterioration of your playing. In all cases, there is a potential path to recovery. An excellent professional can help illuminate that path for you.
- **Practice strategically to create new habits**. I've heard countless times when someone resists the intentional formation of an embouchure that, "I didn't learn that way; I was a natural." You'll need the building blocks of what used to come naturally, and you'll need to practice them repeatedly to make the neural pathways we call *habit*. Build new habits, one step at a time. Use proven techniques such as timers to do focused work with intentional rest. Practice before and after a nap. Do short, frequent sessions where you work on one aspect of the embouchure.
- **Take your time**. As one teacher told me, "The shortest path is patience." Consider stopping for a while. Put the instrument down and address the stress. When you are ready, enter each practice session with a plan. Get your mind in a learning-ready state. Set a timer, and work for a few minutes. Do this a few times daily, and you'll be on the right track. That may mean recovery in a few weeks, months, or years. That will be different for each player, but hoping for your recovery to be faster will slow you down.

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[1]sydney.edu.au/medicine-health/about/our-people/academic-staff/bronwen-ackermann.html

[2]hmtm-hannover.de/de/hochschule/personen/a-d/univ-prof-dr-med-eckart-altenmueller/

[3]Lo Surdo, Frankie, Brass Rehab, facebook.com/profile.php?id=100063928100243

[4]youtube.com/watch?v=59jHJhLf2O8

[5]Krehbiel, David, with R.A. Krause, Through the Door: A Horn-Player's Journey, ©2020, ISBN 978-0-578-73972-4, PO Box 905, Reedley CA 93654

[6]Dr. Mark Edwards, Keynote Presentation, Performing Arts Medicine Conference, London, UK. July 20, 2024

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