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### ***Interview: Practice Management and Injury Prevention in Trumpet Players***

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# **Interview: Practice Management and Injury Prevention in Trumpet Players**

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## **Abstract**

This interview explores the intricate relationship between trumpet playing, practice management, and preventing injuries in performers. The discussion delves into the development of neuro-motor automatisms during practice, emphasizing their impact on biomechanisms and the potential for injuries. The most common injuries in trumpet players, including skin lesions and temporomandibular joint inflammation, and the role of excessive mouthpiece pressure are examined. The importance of efficient habits, teacher guidance, and a holistic mental and physical health approach in trumpet playing is highlighted. Additionally, the interview sheds light on the significance of understanding the unity of body and mind for optimal performance.

*Keywords:* trumpet pedagogy, injury prevention, neuromotricity, practice management.

## **Abstract (Spanish)**

Esta entrevista explora la relación compleja entre la interpretación de la trompeta, la gestión de la práctica y la prevención de lesiones en los intérpretes. La discusión se centra en el desarrollo de automatismos neuromotores durante la práctica, enfatizando su impacto en los biomecanismos y el potencial de lesiones. Se examinan las lesiones más comunes en los trompetistas, incluyendo lesiones cutáneas e inflamación de la articulación temporomandibular, y el papel de la presión excesiva de la boquilla. Se destaca la importancia de hábitos eficientes, la orientación de los profesores y un enfoque holístico de la salud mental y física en la interpretación de la trompeta. Además, la entrevista arroja luz sobre la importancia de comprender la unidad entre cuerpo y mente para un rendimiento óptimo.

*Palabras clave:* pedagogía de la trompeta, prevención de lesiones, neuromotricidad, gestión de la práctica.

## Introduction

In this insightful interview, the expert sheds light on the crucial aspects of trumpet playing, focusing on managing practice hours and preventing injuries. The conversation unfolds into discussions on common injuries, the impact of excessive mouthpiece pressure, and the often-overlooked influence of mental health on a trumpeter's performance. The interview addresses issues such as temporomandibular joint inflammation and the importance of efficient techniques. It provides valuable insights for trumpet players seeking a safe and healthy approach to their practice.

## Interview

*1. Practicing the trumpet can become repetitive, especially in high performance. Do you think the management of practice hours is crucial to preventing injuries in performers?*

Yes, without a doubt. This is because even though the movements are relatively small and involve little force, any practice on a musical instrument involves the development of neuro-motor automatisms. In addition to the constant repetition that training generally provides, the development of these automatisms generates that the biomechanisms developed continue to be present during the execution of the instrument without attention to the procedure.

This means that practically every moment of the study is mediated by these automatisms and by the characteristic repetitive structure of the training. Thus, actions will be repeated numerous times because they are being repeated for training and because the automatism triggers this bio mechanism. Therefore, it is important to highlight that managing the time used during practice is essential to avoid injuries. Still, how automatisms are developed will also be vital to preventing injuries. This means that an inefficient —although effective— automatism, which uses more force than necessary, may contribute to developing an injury in the long term.

*2. We have more and more information from health professionals interested in music. This gives us a broader perspective of our state of health. Could you explain the most frequent injuries in trumpet players?*

Lesions on the lip skin are the most common, but not all result from trumpet practice. The majority, such as sores or herpes, are unrelated to playing the instrument. However, some may be caused by external micro lesions from the mouthpiece rim or internal ones from rubbing the mucous skin with the teeth. Injuries not directly related to playing but caused by an accident or other external circumstances are termed supervening injuries. Understanding this distinction is important to manage and prevent potential injuries.

For those that are related to professional practice, we could simply call them professional injuries. The most common are skin lesions due to excessive mouthpiece pressure on the lips. The former usually produce permanent lesions or scars that are easily observable because they are generally shaped like an arch, marking the circumference of the mouthpiece rim (Lambruschini et al., 2020; Goldstein & Kim, 2023). Also is remarkable the incidence of inguinal or abdominal hernias. The latter are usually perceived by the trumpet player in its initial stages as discomfort during or after playing in the inguinal, abdominal, or testicular area (in the case of men).

*3. One of the most common injuries in trumpet players is temporomandibular joint inflammation. Could you briefly explain what it is, how to prevent it, and if it is recoverable?*

Although it is a widespread affliction in trumpet players, its impact on trumpet practice or the quality of training is not widely understood. TMJ muscle inflammation can occur for various reasons, with bruxism being the most common. However, it is important to note that this condition can be prevented with proper knowledge and practice.

Sufferers of this condition press hard on their teeth or perform chewing-like movements during the night and, in some cases, during the day as well.

It is common for this problem to be associated with tension of the tongue musculature. All this additional work that the musculature exerts during the day without utility and with significant accumulation of time produces inflammation of the tissues in the temporomandibular joint. This inflammation, subsequently, affects the practice of the trumpet in different ways: it adds unnecessary tension in the orofacial musculature, hinders the precision of the movements, and produces displacements of the jaw that, in turn, generate modifications in the configuration of the embouchure. On the other hand, the trumpet practice itself and the automated setup by the trumpet player may include a jaw position outside the relaxed position of the joint. Every minute of practice will place unnecessary stress on the temporomandibular joint and, consequently, possible injury. That is to say, bruxism and alterations in the occlusion affect the practice of the trumpet as much as the practice of the trumpet can produce tension in the temporomandibular joint.

Any of these conditions or even the manifestation of some simultaneously will produce inflammation. During my practice as a specialist in the field, I have observed that on many occasions, students who have a technique with great tension in the temporomandibular joint have bruxism (Yeo et al., 2002).

This could be explained in two different ways. First of all, it could be understood that this trumpet player had an accumulation of tension in the temporomandibular joint due to the bruxism he suffered.

Nevertheless, I have also observed trumpet players who have made a change in technique and are soon using a more significant amount of tension in the TMJ. Subsequently, these trumpet players have reported bruxism problems and have even been diagnosed.

Once inflammation is present, it is crucial to seek the help of a specialist in physiotherapy dedicated to treating these conditions. This professional care is instrumental in improving the health of our temporomandibular joint. Additionally, a maxillofacial surgeon can help diagnose the reasons for joint inflammation, providing further reassurance and a clear path to recovery.

Finally, the trumpet teacher should support the student in developing an efficient technique on the instrument that does not involve excessive tension in the temporomandibular joint and that, in any case, starts from a healthy technique.

*4. Many trumpet players apply excessive pressure on the mouthpiece, a common issue that can lead to serious problems in playing the instrument. Are you aware of these potential problems?*

This is probably one of the best-known concerns in trumpet and other brass instruments. The amount of pressure that the arms and hands generate on the mouthpiece on the lips has caused me to say on many occasions that there is much more embouchure in the arms than in the mouth itself. This pressure exerted through the mouthpiece rim impacts the lips because the lips are trapped between the teeth.

Following the previous answer, we could say that automatism or automatisms, which allow the mouthpiece to be positioned over the mouth and exert a certain pressure level, are essential for the instrument's perspective. This will be developed during the different trainings and practices of the instrument. However, it happens very often, that a trumpet player has automated a higher-pressure level than is necessary and still produces sound. This would be an excellent example of an automatism that, although effective, is not entirely efficient. In that case, the trumpet player will receive tremendous pressure on a tiny lip from the mouthpiece.

This pressure will impact the lip tissues, which are highly complex due to the different types of skin that exist on the lip (Halata & Munger, 1983). In addition, nerve and venous endings will be impacted.

This can produce lesions in both the skin and the different tissues that can be temporary or permanent. Given all this, the common belief that the practice and production of sound can provide a balance tailored to each individual is largely open to criticism.

The guidance of a teacher can help the student develop effective habits, that is, habits that produce sound but also efficient automatisms. Thus, the student will be able to continue advancing in the curriculum or learning process safely and healthily.

*5. Many trumpet streams invest significant effort in positioning the mouthpiece in the center of the lips. Do you consider this effort important in your experience as a teacher and researcher? What disadvantages could it have?*

In theory, the center of the mouth can concentrate the most significant amount of muscular effort and is where all the air flowing into the oral cavity will exit into the mouthpiece.

However, the "center of the lips" will depend on the physiology of the dental arch, the tongue position, and the lips' shape of each trumpet player. Generally, this point does not differ much from the "theoretically symmetrical" center of the mouth.

However, the system dispersing the rim pressure over different lip areas is more complex. That is, the mouthpiece rim usually rests on both the lower and upper dental arch. In these rests, it meets the distal edges when they lose contact with the consecutive tooth and leave the dental arch.

Thus, the support of the mouthpiece on the proximal edges of the teeth and not on the labial face results in the mouthpiece feeling supported on different points rather than on one surface.

In cases where the dental arch is very unstructured, proprioceptive information will make the body tend to avoid these points and consequently seek support on flat surfaces or on distal edges that do not produce pain.

In this way, the body finds positions other than the center of the mouth in a "natural" way, self-regulated by practice.

*6. In recent decades, mental health's importance in day-to-day and high-performance activities has been greatly emphasized. What advice would you give to a professional trumpet player who studies several hours a day to take care of his mental health?*

The advice would be: "Mental health is simply health." We have to take care of it just as we brush our teeth three times a day. I believe that daily meditation practices and, in general, a life that balances personal and professional life is the key for a trumpet player to have a healthy attitude towards the practice of the instrument.



However, we must consider that there are professionals who attend to this field of health. Just as I rely on maxillofacial surgeons to diagnose bruxism or, even more, to intervene on a dental arch, I look for psychologists or psychiatrists so that the students who train with me can enjoy mental health.

It is a necessary practice in the world of trumpet learning and teaching. It is hard to imagine a psychologist teaching a trumpet class, just as trumpet players should not try to address mental health issues in trumpet class.

In the near future, the key will be to start working as a team with psychologists, medical specialists, high-performance instrument teachers, etc.

*7. In relation to the previous question, health is increasingly understood as something holistic, involving both the physical and the mental. After all, the brain is part of the body. Do you consider that these two elements can influence interpreting skills directly?*

I agree; the brain is part of the body. The brain is an organ that essentially regulates our neuronal activity and, consequently, our behavior and emotions. But it also happens to the stomach, the sexual organs, and the respiratory system. There is brain in the whole body and body in the brain. The dissociation between body and mind must be overcome in the pedagogy of musical instruments to reach a sufficiently general vision of the practice of the instrument. The body (with its brain included) and the instrument become a tool for music. Hundreds of thousands of actions are activated at once for instrument practice.

In this sense, the functioning of flow has been studied both in the brain and in the different biomechanical activations. At this point, it seems that both the efferent nerves process and send signals to the muscles more efficiently (the brain works better), and the afferent nerves (which, among others, send proprioceptive signals, which we would understand as the body) are more efficient.

This state of flow is, in turn, reached with a liberation of the rational-cognitive apparatus but with a liberation of the control of sensory perception, which would be understood as liberating the mind and the body.

Thus, flow expresses the maximum expression of the body-mind unit in action for music practice. Considering all this, it is convenient to understand, from the beginning, that we must train the unity of all body organs in a state of flow.

### **Conclusion**

The interview underscores the intricate relationship between trumpet playing, physical health, and mental well-being. It emphasizes the need for mindful practice management to prevent injuries, especially those related to excessive mouthpiece pressure. The expert's insights into the most frequent injuries in trumpet players, the significance of proper technique, and the role of mental health contribute to a holistic understanding of the challenges faced by musicians. The call for collaboration between instrumental teachers, health professionals, and psychologists reflects a forward-looking approach to nurturing the complete well-being of trumpet players, acknowledging the interplay between body and mind in the pursuit of musical excellence.

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