



## ORIGINAL ARTICLE

# Focal dystonia in musicians: Phenomenology and musical triggering factors<sup>☆</sup>



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### KEYWORDS

Focal dystonia;  
Musician;  
Treatment;  
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Sensory training;  
Occupation

**Abstract** Dystonias are defined as a joint sustained and involuntary contraction of agonist and antagonist muscles, which can cause torsion, repetitive abnormal involuntary movements, and/or abnormal postures. One special group of dystonias are those known as occupational, which include dystonia disorders triggered by a repetitive motor activity associated with a specific professional activity or task. Musicians are a population particularly vulnerable to these types of dystonia, which are presented as a loss of coordination and voluntary motor control movements highly trained in musical interpretation. Our aim is to describe a clinical series of focal dystonias in musicians evaluated and treated in our centre.

**Patients and methods:** Data are presented on a clinical series of 12 musicians with occupational dystonia. Their history and phenomenology are described, as well as their outcome after therapy.

**Results:** Demographic details: Mean age  $34.8 \pm 11.8$  years, 10 males (83.3%) and 2 females (16.7%). Clinical history: History of trauma in dystonic segment, 6 patients (50%); family history of neurological diseases in first-degree relatives, 6 patients (50%). Occupational history according to music category: 8 patients (66.6%) were classical musicians and 4 patients (33.3%) were popular musicians.

**Phenomenology:** Dystonia syndrome was characterised by having a mean age of onset of  $28.2 \pm 11.3$  years (range 18–57 years). The segment affected was the hand (91.7%) in 11 patients. Of all the musicians seen in the clinic, 9 of them (75%) received therapy. The majority of patients appeared to have triggering factors specific to musical execution and linked to the requirement of fine motor control. It should be mentioned that 50% of the musicians treated maintained their professional activity or position in the orchestra to which they belonged.

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**PALABRAS CLAVE**

Distonía focal;  
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sensorial;  
Ocupación

**Conclusions:** The majority of our phenomenological findings are consistent with those reported in the current literature. However, it is worth mentioning the presence of triggering factors attributed to the specific requirements of performing music, linked to the participation of fine motor control.

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### Distonía del músico: fenomenología y desencadenantes vinculados a la ejecución musical

**Resumen** Las distonías se definen como una contracción conjunta, sostenida e involuntaria de músculos agonistas y antagonistas, que puede causar torsión, movimientos involuntarios anormales repetitivos y/o posturas anormales. Un grupo especial de distonías son las conocidas como ocupacionales, que incluyen trastornos distónicos desencadenados por una actividad motora repetitiva, relacionada con la actividad profesional o tarea específica. Los músicos son una población especialmente vulnerable a este tipo de distonías que se presentan como una pérdida de coordinación y control motor voluntario de movimientos altamente entrenados en la interpretación musical. Nuestro objetivo es describir una serie clínica de distonías focales en músicos evaluados y tratados en nuestro centro.

**Pacientes y métodos:** Se presentan los datos de una serie clínica de 12 músicos con distonía ocupacional; se describen sus antecedentes y fenomenología, así como su evolución después de de la terapia.

**Resultados:** Antecedentes demográficos: edad promedio  $34,8 \pm 11,8$  años, 10 hombres (83,3%) y 2 mujeres (16,7%). Antecedentes médicos: antecedentes traumáticos en segmento distónico, 6 pacientes (50%); antecedentes familiares de enfermedades neurológicas en parientes de primer grado, 6 pacientes (50%); antecedentes laborales según categoría musical, 8 pacientes (66,6%) eran músicos clásicos y 4 pacientes (33,3%) eran músicos populares.

**Fenomenología:** El cuadro distónico se caracterizó por presentarse a una edad promedio de inicio de  $28,2 \pm 11,3$  años (rango 18–57 años). En 11 pacientes el segmento afectado fue la mano (91,7%). De todos los músicos consultados, un total de 9 (75%) recibió terapia. En la mayoría de los pacientes se describen desencadenantes específicos de la ejecución musical, asociados a requerimientos de control motor fino. Cabe mencionar que el 50% de los músicos tratados mantuvo su actividad laboral o puesto en la orquesta a la que pertenecía.

**Conclusiones:** La mayoría de nuestros hallazgos fenomenológicos son coherentes con la literatura actualmente disponible. Sin embargo, nos parece destacable la presencia de desencadenantes atribuibles a requerimientos específicos de la ejecución musical, ligados a la participación del control motor fino.

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## Introduction

Dystonias are defined as joint sustained and involuntary contractions of agonist and antagonist muscles which often cause torsion, involuntary and repetitive abnormal movements, and abnormal posture.<sup>1–3</sup> Occupational dystonias are a special subgroup that includes dystonia disorders triggered by a repetitive motor activity associated with a specific professional activity or task. Musicians are especially vulnerable to this type of dystonia, which manifests as a loss of coordination and voluntary motor control over the frequently repeated movements employed in playing instruments.<sup>4–6</sup>

Musicians' dystonia is a form of focal dystonia and its prevalence ranges from 0.5% to 1% in musicians.<sup>7,8</sup> However, prevalence rates vary substantially depending on the instrument and the level required for performance (dystonia is more prevalent among soloists). The purpose of the present study is to describe a series of musicians with occupational

dystonia, characterising the phenomenon itself (including impact on musical performance) and examining demographics, previous occupations, and therapeutic approaches.

## Materials and methods

We conducted a prospective, descriptive study of 12 musicians with occupational dystonia who attended the Movement Disorders Centre (CETRAM) at Universidad de Santiago de Chile between January 2008 and January 2012. Participants completed a semi-structured interview inquiring about their demographic data and medical and employment histories. We collected the following data in all cases:

- (1) Academic and employment history: professionals (soloist or accompanist) or students, musical genre

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