

How Do I Rehabilitate Patients with Cervical Dystonia Remotely?

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ABSTRACT: In literature there is a growing evidence that in cervical dystonia (CD) rehabilitation, both in person and remotely, is an efficacious add on treatment to botulinum neurotoxins (BoNT) injections, but there is no consensus about protocols. We present here two rehabilitation programs implemented by our neuro-rehabilitative multidisciplinary team. The enclosed video clips show exercises to be performed at home as self-rehabilitation program, and exercises presented by a physiotherapist for a telerehabilitation program. These two protocols may be helpful for integrating rehabilitation with BoNT treatment in CD.

The goal of rehabilitation is to control CD symptoms: painful muscle contractions, involuntary postures and movements, poor perception of neck muscle recruitment and head alignment, and low performance in daily activities.¹ A physical self-management program is considered useful for most dystonia patients. In CD patients, motor learning techniques focused on biofeedback can restore both sensorimotor altered body perception and motor control and improve the quality of life.² Telerehabilitation in movement disorders can be a valid tool for motor and non motor abilities improvement and for daily life activities increase.³

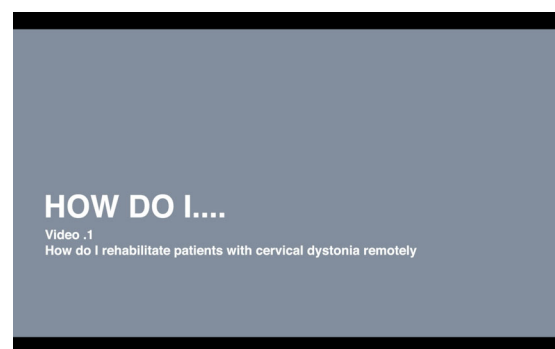
We provide here a program of exercises directed to colleagues, neurologists and PMR doctors, to explain to their cervical dystonia (CD) patients how to perform specific rehabilitation at home. This program can be performed in association with botulinum neurotoxin injections but also when this treatment is not available.

The program is administered in 2 different modules: (1) self-rehabilitation (20-min sessions, at least 3 sessions/week according to the patient's needs); and (2) telerehabilitation (20–45-min sessions, 3 sessions/week).

The self-rehabilitation program includes exercises for breathing awareness, stretching of hyperactive and contracted painful neck muscles, and training of recruitment of the antagonistic and contralateral neck muscles. Specific indications are given for different cervical dystonia (CD) phenotype.

The telerehabilitation program includes 6 perceptive physiotherapist-guided exercises focused on the recovery of postural head alignment and body motor control. The sequence and exercise modality (sitting—standing—lying on the floor) are patient-tailored.

The 2 programs are independent but can be also performed in association. Home exercises can become an additional proposal for the multidisciplinary CD patient's treatment.



Video 1. Self-rehabilitation exercises
Video content can be viewed at <https://onlinelibrary.wiley.com/doi/10.1002/mdc3.13212>

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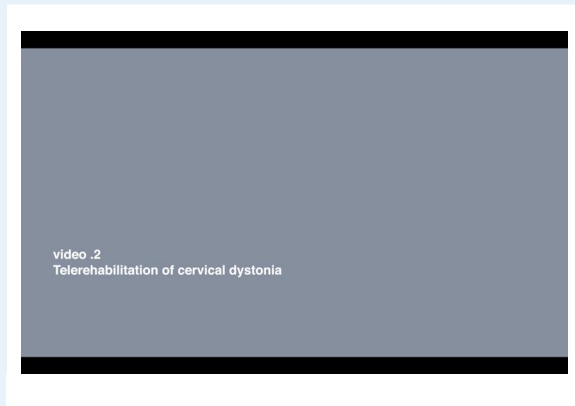
Keywords: cervical dystonia, motor learning, telerehabilitation, botulinum neurotoxin, biofeedback.

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Video 2. Telerehabilitation exercises
Video content can be viewed at <https://onlinelibrary.wiley.com/doi/10.1002/mdc3.13212>

Video1 is divided into 3 segments; one is dedicated to exercises on breathing awareness, the second is focused on stretching of hyperactive and contracted painful neck muscles, and the third is centered on improving the recruitment ability of the antagonistic and contralateral muscles that are usually weak in CD. Some exercises can be performed in a sitting position with a pillow leaning on the wall to enhance head sensory perception during muscle activation. Regarding the second and third segments, specific indications are given for each different CD phenotype.

Video 2 is focused on telerehabilitation and shows a series of 6 perceptive physiotherapist guided exercises focused on the recovery of postural head alignment and body motor control. Every CD phenotype can easily perform these exercises.

Authors Roles

(1) Research Project: A. Conception, B. Organization, C. Execution; (2) Statistical Analysis: A. Design, B. Execution, C.

Review and Critique; (3) Manuscript Preparation: A. Writing of the First Draft, B. Review and Critique.

A.C.: 1A, 1B, 1C, 3A, 3B

M.R.: 1A, 1B, 3A, 3B

E.S.: 1A, 1B, 1C, 3B

Disclosures

Ethical Compliance Statement: Informed patient consent was not necessary for this work because no patient has been involved in the video. The name of the institutional review board or ethics committee that approved the study is the Fondazione Don Carlo Gnocchi Onlus Ethical Committee: 4_24/02/2016. We confirm that we have read the Journal's position on issues involved in ethical publication and affirm that this work is consistent with those guidelines.

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