



## Early Onset Torsion Dystonia 1

### Service Description

## 1 Background

DYT1 - OMIM number 128100

Early onset torsion dystonia is an autosomal dominant disorder due to a deletion mutation in the TOR1A gene on chromosome 9q34.

Penetrance is low: around 30% of individuals with a mutation express the disease. However penetrance varies between families. A 3-bp GAG deletion (c.904\_906delGAG) in the Exon 5 region of the TOR1A gene is the only mutation so far detected in a large number of patients from different ethnic backgrounds. DYT1 represents only one of a clinically and genetically heterogeneous group of idiopathic torsion dystonias. Most patients with atypical presentation for DYT1 do not have the GAG deletion.

Primary torsion dystonia usually begins in childhood or adolescence with involuntary posturing of the trunk, neck, or limbs. Early-onset primary dystonia (DYT1) is considered a primary dystonia because it is not associated with other neurologic abnormalities.

## 2 Standard service

### A Essential referral information

In addition to supplying standard patient identification and referral information (see Section I below), the following should be clearly indicated:

1. Patient's symptoms
2. Any family history, including names, dates of birth, relationship, and genetic test results if available.

It is the responsibility of the referring clinician to ensure consent has been obtained for testing and storage.

### B Samples required

Generally 5-10ml of EDTA blood (FBC bottle) is required. Sample identification policy is detailed at (see Section I below).

Blood specimens must be appropriately packaged (see Section I), and preferably sent by courier to arrive as soon as possible. Do not freeze prior or during postage.

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## National Centre for Medical Genetics

Dublin, Ireland

### Division of Molecular Genetics

Please note that extracted DNA is stored from patient's samples at the National Centre for Medical Genetics, and kept indefinitely unless a written request for its disposal is received from the patient or their parent/guardian.

#### **C Restrictions on testing**

Testing would not normally be considered for asymptomatic children under the age of 16. This policy is consistent with international guidelines for genetic testing of children.

#### **D Tests offered**

Standard analysis is to test for a 3-bp GAG deletion (c.904\_906delGAG) in the Exon 5 region of the TOR1A gene. Testing performed includes the following:

- Diagnostic tests for patients with clinical symptoms suggestive of DYT1.
- Predictive tests / presymptomatic diagnosis may be possible in families, but only where an index case has previously been identified. A referral to Clinical Genetics is recommended prior to presymptomatic testing

Prenatal testing must be arranged in advance with the laboratory, through a Clinical Genetics department if possible.

*Analysis methodology based on Ozelius et al. 1997, Nature Genet. 17, 40-8*

#### **E Diagnostic Sensitivity of tests**

Diagnostic testing of DYT1 is carried out to reveal the presence or absence of a 3 bp deletion, c.904\_906delGAG, in affected individuals. Other forms of torsion dystonia are not excluded by this analysis.

Please contact the laboratory if it is appropriate to perform other tests.

#### **F Interpretation:**

Results are given in the form of a written interpretative report to the referring clinician.

#### **G Target reporting times:**

As reporting times are constantly evolving, please refer to [www.genetics.ie/molecular](http://www.genetics.ie/molecular), or contact the molecular genetics laboratory, to receive up-to-date information on anticipated reporting times for your referral.

The following are current target reporting times for each category of test offered (information correct as of 11/01/2010): Target reporting time for DYT1 is up to 6 months. Analysis is performed in batches due to low supply of positive control.

- Please contact the laboratory if you have not received a report within a week of your patient being due back in clinic.
- Please note it is our policy not to issue verbal results.
- Request for copies of reports on the day that your patient is in clinic cannot normally be accommodated. We usually require 24 hours notice in which to fax a copy of a report.

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**H Further tests**

Please contact the laboratory to discuss any other tests, e.g. possible linkage studies for large families with no 3bp GAG deletion in DYT1.

**I Web Links to Related Documents**

Standard referral information/NCMG request form  
Sample/Patient identification policy  
Packaging of specimens for transport

[http://www.genetics.ie/pir/2006\\_NCMG\\_Referral\\_Form.pdf](http://www.genetics.ie/pir/2006_NCMG_Referral_Form.pdf)  
<http://www.genetics.ie/pir/SampleIdentificationPolicyWeb.pdf>  
[http://www.genetics.ie/pir/sending\\_samples.pdf](http://www.genetics.ie/pir/sending_samples.pdf)

Please note that hard copies of the above documents may be requested from:

*Division of Molecular Genetics, National Centre for Medical Genetics, Our Lady's Children's Hospital, Crumlin, Dublin 12. Tel: 01 4096733; Fax: 01 4096971*

*The NCMG Molecular Genetics laboratory participates in external QA schemes run by the UK NEQAS for Molecular Genetics, the European Molecular Genetics Quality Network (EMQN), and the Cystic Fibrosis European Network. Results of assessments are available for inspection upon request.*

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