



**European
Reference
Network**

for rare or low prevalence
complex diseases

 **Network**
Neurological Diseases
(ERN-RND)

Diagnostic flowcharts for Paroxysmal Disorder

Introduction to the European Reference Network for Rare Neurological Diseases (ERN-RND):

ERN-RND is a European Reference Network established and approved by the European Union. ERN-RND is a healthcare infrastructure which focuses on rare neurological diseases (RND). The three main pillars of ERN-RND are (i) network of experts and expertise centres, (ii) generation, pooling and dissemination of RND knowledge, and (iii) implementation of e-health to allow the expertise to travel instead of patients and families.

ERN-RND unites 32 of Europe's leading expert centres in 13 Member States and includes highly active patient organizations. Centres are located in Belgium, Bulgaria, Czech Republic, France, Germany, Hungary, Italy, Lithuania, Netherlands, Poland, Slovenia, Spain and the UK.

The following disease groups are covered by ERN-RND:

- Ataxias and Hereditary Spastic Paraplegias
- Atypical Parkinsonism and genetic Parkinsons' Disease
- Dystonia, Paroxysmal Disorder and Neurodegeneration with Brain Ion Accumulation
- Frontotemporal Dementia
- Huntingtons' Disease and other Chorea
- Leukodystrophies

Specific information about the network, the expert centres and the diseases covered can be found at the networks web site www.ern-rnd.eu.

Recommendation for clinical use:

The European Reference Network for Rare Neurological Diseases developed the Diagnostic Flowcharts for Paroxysmal Disorders to help guide the diagnosis of Paroxysmal Disorder patients. The Reference Network recommends the use of this Diagnostic Flowchart.



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METHODOLOGY

The development of the Diagnostic Flowcharts for Dystonia was done by the Disease group for Dystonia, Paroxysmal Disorder and NBIA of ERN-RND.

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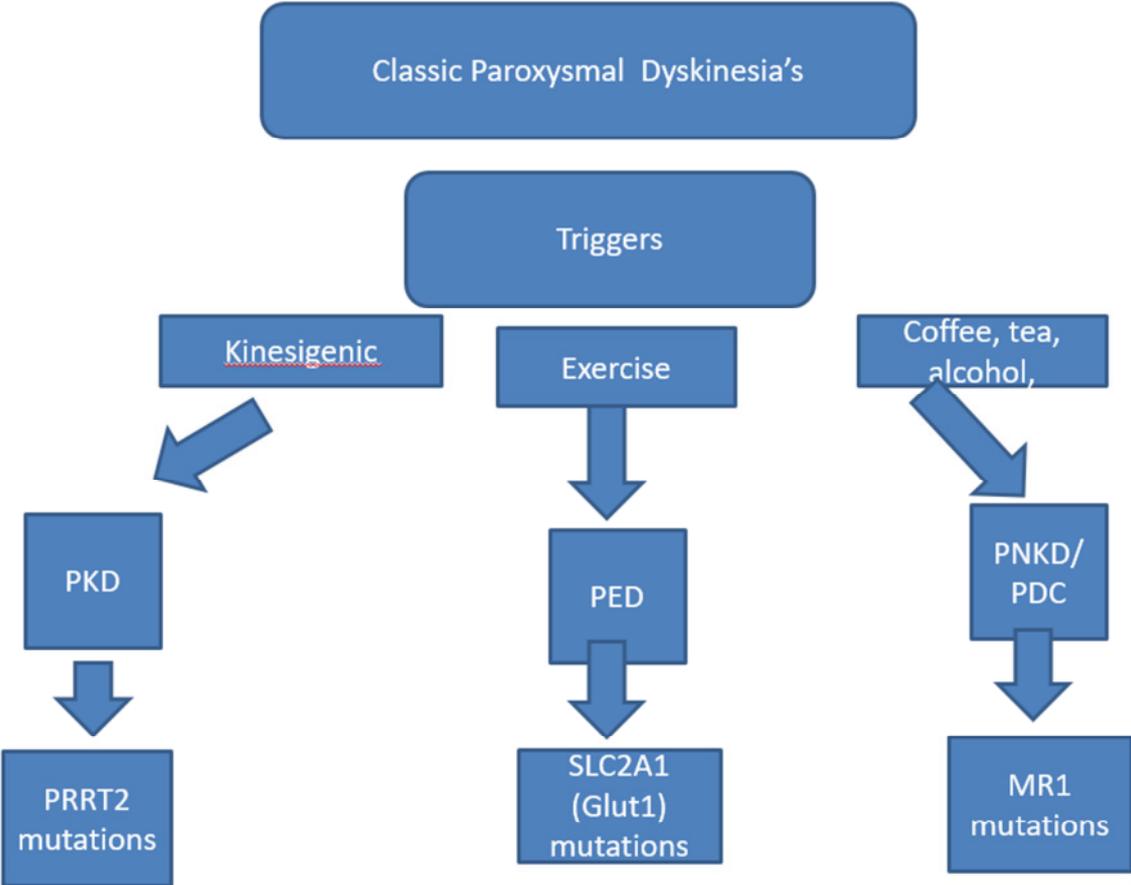
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Flowchart development process:

- Development of flowcharts – June – November 2017
- Discussion/Revision in ERN-RND disease group– November 2017 – June 2018
- Consent on diagnostic flowcharts during ERN-RND annual meeting 2018 – 08/06/2018
- Consent on document by whole disease group – 26/09/2018



Diagnostic flowchart for Paroxysmal Disorders



Abbreviations:

PKD: Paroxysmal kinesigenic dyskinesias

PED: paroxysmal exercise-induced dyskinesia

PNKD/PDC: paroxysmal dystonic choreoathetosis/non-kinesigenic dyskinesia



Secondary Paroxysmal Dyskinesias:

Variety of Causes (Lance 1977, Demirkirin Jankovic 1995, Fahn and Bressman 1988)

- Multiple sclerosis (tonic spasm, other)
- Stroke
- Metabolic disorders
 - Thyroid/Parathyroid
- Basal ganglia lesions
 - Trauma
 - Infections/HIV
- Psychogenic

Complex genetic paroxysmal dyskinesias (usually with inter-ictal signs)

- ECHS1 gene mutations – PED plus other features (Olgiati et al 2016)
- ADCY5 gene mutations – nocturnal (Mencacci et al 2015)
- ATP1A3 gene mutations – painful tonic spasms
- SLC16A2 – shivering tremor like episodes
- KCNMA1 – complex PNKD with epilepsy

