**Limb-Girdle Muscular Dystrophy: Deletion/Duplication Panel**

**Test Code:** MD212  
**Turnaround time:** 2 weeks  
**CPT Codes:** 81161 x1, 81228 x1, 81404 x1, 81406 x1

### Condition Description

Limb-girdle muscular dystrophy (LGMD) is a descriptive term applied to a clinically and genetically heterogeneous group of childhood- or adult-onset muscular dystrophies. LGMD is characterized by weakness and wasting restricted to the limb musculature, proximal greater than distal. Most individuals with LGMD show relative sparing of the heart and bulbar muscles, although exceptions occur, depending on the genetic subtype. Onset, progression, and distribution of the weakness and wasting vary considerably among individuals and genetic subtypes. Serum creatine kinase (CK) levels in individuals with LGMD are usually elevated, and muscle biopsy reveals dystrophic changes. Immunohistochemistry (IHC) testing of a muscle biopsy sample can be used to determine the presence or absence of specific proteins, and confirmatory genetic testing is available in some cases. LGMDs are distinct from the much more common X-linked dystrophinopathies, which include Duchenne and Becker muscular dystrophy (DMD/BMD).


### Reference:

- [OMIM](http://www.ncbi.nlm.nih.gov/omim)

### Genes

- ANO5  
- CAPN3  
- CAV3  
- COL6A1  
- COL6A2  
- COL6A3  
- DAG1  
- DES  
- DMD  
- DYSF  
- EMD  
- FHL1  
- FKRP  
- FKTN  
- FLNC  
- GAA  
- GNE  
- ISPD  
- LMNA  
- MYOT  
- PLEC  
- POMGNT1  
- POMT1  
- POMT2  
- SGCA  
- SGCB  
- SGCD  
- SGCG  
- SYNE1  
- TCAP  
- TRIM32  
- TTN

### Indications

This test is indicated for:

- Confirmation of a clinical diagnosis of limb-girdle muscular dystrophy (LGMD).

### Methodology

**Deletion/Duplication Analysis:** DNA isolated from peripheral blood is hybridized to a gene-targeted CGH array to detect deletions and duplications. The targeted CGH array has overlapping probes that cover the entire genomic region. Please note that a "backbone" of probes across the entire genome are included on the array for analytical and quality control purposes. Rarely, off-target copy number variants causative of disease may be identified that may or may not be related to the patient's phenotype. Only known pathogenic off-target copy number variants will be reported. Off-target copy number variants of unknown clinical significance will not be reported.

**Detection**

**Deletion/Duplication Analysis:** Detection is limited to duplications and deletions. The CGH array will not detect point or intronic mutations. Results of molecular analysis must be interpreted in the context of the patient's clinical and/or biochemical phenotype.

### Specimen Requirements

Submit only 1 of the following specimen types:

#### Type: Whole Blood

Specimen Requirements:

In EDTA (purple top) tube:  
- Infants (2 years): 3-5 ml  
- Older Children & Adults: 5-10 ml

Specimen Collection and Shipping: Ship sample at room temperature with overnight delivery.

#### Type: Isolated DNA

Specimen Requirements:

In microtainer: 10 ug

Isolation using the Qiagen™ Puregene kit for DNA extraction is recommended.

Specimen Collection and Shipping: Refrigerate until time of shipment in 100 ng/ul of TE buffer. Ship sample at room temperature with overnight delivery.
Related Tests

- Single-gene tests.
- Neuromuscular Disorders Panel.
- Limb-Girdle Muscular Dystrophy: Sequencing Panel.