

## Information for General Physicians about inclusion body myositis (June/2021).

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**Overview:** Inclusion body myositis (IBM) is the most frequently acquired muscle disease seen after age 50. It is a poorly understood, relentlessly progressive disorder. Characteristic weakness and atrophy of finger flexor and quadriceps muscles develop over months or years, leading to profound disability (wheelchair use). No effective treatment exists. May be an autoimmune disorder, but muscle cells also show degenerative aspects.

**Pathology:** Large numbers of clonal, highly differentiated cytotoxic CD8+ T cells are seen invading muscle cells, as well as, myeloid dendritic cells, macrophages and plasma cells. Rimmed vacuoles are seen with Gomori trichrome stain, Inflammatory response is centered on myofibers. Anti-cN1A antibodies are found in about 50% of patients: does not correlate with clinical parameters except implies more severe dysphagia.

**Causes:** No cause or initial trigger event is known. Major theories: inflammation-immune reaction or degenerative protein disorder. Complex interplay of environment, genetic predisposition and aging is implied. IBM is spontaneous and acquired: not a genetic disorder but may be predisposed by genetic factors.

**Incidence:** IBM is age-related. Typical onset is 61-68 with wide variation: 20% show symptoms before 50, some in the 30's. Prevalence is 46 per million in the overall population but rising with age.

**Presentation:** IBM has unique clinical and pathological features (finger flexor and quadriceps weakness and the presence of CD8+ T cells invading muscle cells). Presentation varies widely: people are affected at different ages, in different ways, to different degrees, and at various rates. Seen more often in men (1.6 m to f ratio). Progression tends to be more rapid in men and in those with later onset. The quadriceps are often affected first; toe drop, unexpected falling, and tripping are common first symptoms. Falls typically result from knee buckling, due to knee extensor weakness, or tripping due to ankle dorsiflexion weakness. For some, IBM begins with the finger flexors causing weakness in wrists and fingers; difficulty pinching, buttoning, making a fist, and gripping objects. Relative sparing of shoulder and hip abductors, and neck muscles. May weaken the diaphragm but does not affect heart muscle. Muscle pain and excess thick mucus are commonly reported by patients.

**Diagnosis:** Usually diagnosed by a specialist (neurologist/rheumatologist) by clinical exam, EMG, biopsy, MRI, and serology. Often initially misdiagnosed as polymyositis: average from symptom onset to correct diagnosis is 4.6 to 5.8 years. IBM weakness comes on over months or years and progresses steadily (polymyositis has a much faster onset). Other muscular dystrophies (e.g. limb girdle, Becker) and ALS must be ruled out. IBM has a unique clinical presentation but is rare: doctors may not be familiar with its presentation.

**Treatment:** Standard of care for most patients with IBM involves strictly nonpharmacological management, including emotional support, physical therapy, exercise, and education on fall precautions. Some physicians prescribe immunosuppressant therapies, however, such therapies result in transient responses at best.

**Management:** Evaluation and ongoing monitoring of potential complications is vital (depression, fatigue, dysphagia and respiratory involvement, etc.). Integration of palliative care is helpful at end stages.

**Progression:** IBM is a progressive disease, on average, from symptom onset, in 7.5-10 years patients require assistive devices (cane, walker, rollator) and within 10-15 years, patients usually require a power wheelchair.

**Complications:** Cause of death commonly relates to respiratory dysfunction, aspiration, or dysphagia. Many patients develop progressive, often severe dysphagia. Dysphagia can be treated transiently with pharyngoesophageal dilatation or cricopharyngeal myotomy. Respiratory dysfunction caused by diaphragmatic weakness may present as sleep apnea—hypoventilation causes hypercapnia. Comorbidities in IBM patients include higher rates of hypertension (66% vs 22%), hyperlipidaemia (47% vs 18%), diabetes mellitus (34% vs 10%), myocardial infarction (13% vs 2%), congestive heart failure (17% vs 5%), pneumonia (11% vs 2%; aspiration pneumonia, 6% versus 0.3%) and anaemia (32% versus 7%).

**More information:** Please see <http://www.ibmmysitis.com> [shorturl.at/dnqJQ](http://shorturl.at/dnqJQ)

References: <https://www.nature.com/articles/s41584-019-0186-x> <https://doi.org/10.1007/s40674-020-00169-4>