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Institute of Brain Science Graduate School of Medical Sciences Nagoya City University

## Exploring functional similarities between neurodegeneration in progressive myoclonus epilepsies and the aging brain



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The term "progressive myoclonus epilepsies" (PME) refers to a category of conditions characterized by epileptic seizures that begin in adolesce nce. In addition to seizures, PME patients exhibit a progressive deterio ration of neurological features such as ataxia, muscular atrophy, deme ntia, psychosis, and hallucinations. Interestingly, these neurological dis orders are also widespread in older people, which raises the possibility of a shared underlying mechanism for neurological deficiencies. Most PMEs are loss-of-function mutations, and the gene products are know n to participate in pathways that mediate stress responses. According to our hypothesis, the PME-related genes are neuroprotective, their lev el of expression in the brain declines with aging, and their gradual loss may result in neurodegeneration and neurological impairments. On the other hand, we also proposed that some of the typical neurological def iciencies found in PMEs are brought on by aging. Using mice models, w e investigated this theory and showed that the PME gene might contrib ute to brain aging.

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