

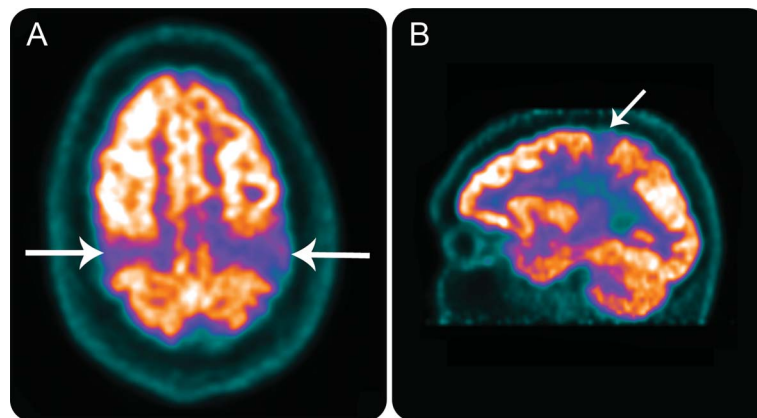
Teaching NeuroImages: Hypometabolism of the primary motor cortex in primary lateral sclerosis

The stripe sign

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Figure FDG-PET demonstrates hypometabolism in the primary motor cortex



The stripe sign: selective vulnerability of motor neurons within the primary motor cortex (white arrows) demonstrated by severe hypometabolism on axial (A) and sagittal (B) FDG-PET at a time when brain MRI had normal results.

A 47-year-old patient developed progressive upper limb weakness and hyperreflexia over 4 years. Lower limb examination had normal results. Nerve conduction, EMG, and brain and spine MRI had normal results. FDG-PET demonstrated severe bilateral hypometabolism in the primary motor cortex (figure, A and B). In the correct clinical context, this stripe of hypometabolism supports a diagnosis of primary lateral sclerosis (PLS)¹—a rare motor neuron disease characterized by degeneration of upper motor neurons only. However, this pattern of hypometabolism can also occur in amyotrophic lateral sclerosis (ALS)²—therefore, FDG-PET cannot be used to differentiate between ALS and PLS.

AUTHOR CONTRIBUTIONS

Jeremy Cosgrove: drafting/revising the manuscript, study concept or design, accepts responsibility for conduct of research and final approval. Stuart Jamieson: drafting/revising the manuscript, accepts responsibility for conduct of research and final approval, acquisition of data. Fahmid Chowdhury: drafting/revising the manuscript, study concept or design,

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