

## 2015 Ice Bucket Call for Clinical Projects

### SCM-ALS - *Spinal cord metabolism in Amyotrophic Lateral Sclerosis*

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<b>PROJECT VALUE</b>	<b>328.135,50 euro</b>
<b>DURATION</b>	<b>24 months</b>
<b>PROJECT OBJECTIVES</b>	<p>The project aims to evaluate for the first time the spinal cord metabolism in 50 patients with Amyotrophic Lateral Sclerosis (ALS). To this purpose a new software able to automatically recognize the spinal canal and to locate the spinal cord starting from images obtained by Positron Emission Tomography (PET) and CT will be created. The software will be evaluated in the first place on images created with the most widely used PET tracer (the fluorodeoxyglucose or FDG). This will allow to obtain information on both nervous spinal tissue metabolism, as neuronal activity index, and spinal cord structure and morphology. The same analysis will be also performed on a group of healthy subjects of similar age and sex of ALS patients, selected from a database previously developed by the research group. Preliminary data obtained from ten patients showed an increased spinal cord metabolism in ALS.</p> <p>The development of this innovative methodology will be useful not only to deepen the knowledge related to the neuronal metabolism alteration in ALS, in particular for what concerns spinal cord damages, but also to evaluate the efficacy of therapeutic treatments used today or in the testing phase. Similarly, it may also be applied to images obtained with other tracers able to highlight different functions of the spinal cord. For this reason, the software created for this analysis will be made available online for free.</p>