The causes of sporadic amyotrophic lateral sclerosis (ALS) are unknown. Several risk factors have been implicated, including a positive family history and increasing age. Others, such as a history of trauma, have been difficult to validate, in part because epidemiological analyses have been hindered by methodological problems, including inadequate selection of control groups, small samples sizes and uncertainties in case ascertainment. A case-control study was performed at Massachusetts General Hospital to examine the role of hypothesized risk factors, such as early head trauma, and to identify additional risk factors. This study included 94 patients diagnosed with ALS, of whom 27 had suffered from head or neck trauma prior to their diagnosis. Sampling into the study required that subjects had experienced onset and diagnosis of ALS prior to study entry, and that they were alive and being followed at study entry. Crude analyses of age of onset for the subgroups with and without history of trauma, without correction for the sequence of events required for being sampled into the study, yield median ages of onset of 55.1 and 55.8, respectively, which are certainly underestimates. We propose two models for sequential truncation that cover the scenarios of interest. Within this framework, we propose nonparametric and semi-parametric estimators for the distribution of age of onset that are consistent. The semi-parametric estimators achieve improved efficiency through flexible parametric modeling of age at death (or end of follow-up) and/or age at study entry. We obtain estimates of the median age of onset of ALS of 63.2 (95% CI: 55.7, 70.4) among ALS patients with prior trauma and 66.3 (95% CI: 55.8, 71.2) among ALS subjects with no prior trauma, suggesting a possible relationship between early trauma and ALS onset.