

Amyotrophic Lateral Sclerosis (ALS)

Amyotrophic lateral sclerosis (ALS), also known as Lou Gehrig's disease, is a fatal neurodegenerative disorder that is characterized by the selective loss of motor neurons in the spinal cord, brain stem, and motor cortex. An estimated 30,000 Americans are living with ALS, which often arises spontaneously and afflicts otherwise healthy adults. More than half of ALS patients die within 2.5 years following the onset of symptoms.

A review of the scientific literature reveals an absence of clinical trials investigating the use of cannabinoids for ALS treatment. However, recent preclinical findings indicate that cannabinoids can delay ALS progression, lending support to anecdotal reports by patients that cannabinoids may be efficacious in moderating the disease's development and in alleviating certain ALS-related symptoms such as pain, appetite loss, depression and drooling.[1]

Writing in the March 2004 issue of the journal *Amyotrophic Lateral Sclerosis & Other Motor Neuron Disorders*, investigators at the California Pacific Medical Center in San Francisco reported that the administration of THC both before and after the onset of ALS symptoms staved disease progression and prolonged survival in animals compared to untreated controls.[2]

Additional trials in animal models of ALS have shown that the administration of other naturally occurring and synthetic cannabinoids can also moderate ALS progression but not necessarily impact survival.[3-4] One recent study demonstrated that blocking the CB1 cannabinoid receptor did extend life span in an ALS mouse model, suggesting that cannabinoids' beneficial effects on ALS may be mediated by non-CB1 receptor mechanisms.[5]

As a result, experts are calling for clinical trials to assess cannabinoids for the treatment of ALS. Writing in the *American Journal of Hospice & Palliative Medicine* in 2010, a team of investigators reported, "Based on the currently available scientific data, it is reasonable to think that cannabis might significantly slow the progression of ALS, potentially extending life expectancy and substantially reducing the overall burden of the disease." They concluded, "There is an overwhelming amount of preclinical and clinical evidence to warrant initiating a multicenter randomized, double-blind, placebo-controlled trial of cannabis as a disease-modifying compound in ALS." [6]

REFERENCES

- [1] Amtmann et al. 2004. Survey of cannabis use in patients with amyotrophic lateral sclerosis. *The American Journal of Hospice and Palliative Care* 21: 95-104.
- [2] Raman et al. 2004. Amyotrophic lateral sclerosis: delayed disease progression in mice by treatment with a cannabinoid. *Amyotrophic Lateral Sclerosis & Other Motor Neuron Disorders* 5: 33-39.
- [3] Weydt et al. 2005. Cannabinol delays symptom onset in SOD1 transgenic mice without affecting survival. *Amyotrophic Lateral Sclerosis & Other Motor Neuron Disorders* 6: 182-184.
- [4] Bilsland et al. 2006. Increasing cannabinoid levels by pharmacological and genetic manipulation delay disease progression in SOD1 mice. *The FASEB Journal* 20: 1003-1005.
- [5] Ibid.
- [6] Carter et al. 2010. Cannabis and amyotrophic lateral sclerosis: hypothetical and practical applications, and a call for clinical trials. *American Journal of Hospice & Palliative Medicine* 27: 347-356.