



# Act 16: Research and Evidence on Qualifying Conditions

## The Pennsylvania Medical Marijuana Act: Research and Evidence on Qualifying Conditions

**Amyotrophic Lateral Sclerosis (ALS):** ALS is a progressive neurodegenerative disease that affects nerve cells in the brain and the spinal cord, progressively reducing the ability of the brain to initiate and control muscle movement. Research indicates that cannabinoids provide neuro-protection, which may delay the progression of this devastating disease. Some ALS patients report that medical marijuana has helped alleviate their symptoms, such as pain, appetite loss, depression, and drooling.

**Autism Spectrum Disorder (ASD):** ASD is a developmental disorder that appears within the first three years of life. ASD most commonly affects communication and social skills. In some cases, it can include self-injurious behavior or aggression. Pennsylvania is the first state to explicitly list autism as a qualifying condition for patients of all ages, although Delaware has allowed it for adult autistic patients with self-injurious or aggressive behavior. While there is little in the way of research at this time, anecdotal evidence suggests that medical marijuana can help autistic patients regulate mood and minimize aggression. It also helps with difficulty sleeping and severe pain.

**Cancer:** Marijuana's active components (cannabinoids) can both stimulate appetite and reduce the nausea, vomiting, and weight loss experienced by patients in many circumstances, including the side effects of drug therapies given for cancer, as well as HIV/AIDS. This is vitally important because 20% of cancer deaths are associated with wasting. Observational studies suggest this may improve treatment adherence among patients experiencing gastrointestinal toxicity from drug therapy.

**HIV/AIDS:** Marijuana can reduce the nausea, vomiting, and loss of appetite caused by both by the illness and its treatments. By relieving these side effects, medical marijuana increases the ability of patients to stay on life-extending treatments.

**Crohn's disease/inflammatory bowel disease:** While there is no cure for Crohn's disease, a recent study from Israel found that it eased suffering in 10 out of 11 patients, with five patients going into complete remission. Similarly, survey data published in *European Journal of Gastroenterology & Hepatology* found, "Cannabis use is common amongst patients with IBD for symptom relief, particularly amongst those with a history of abdominal surgery, chronic abdominal pain and/or a low quality of life index."

**Epilepsy and seizures:** In a 2004 study from *Neurology*, a patient survey of 28 epileptic patients who actively used marijuana found 68% said it improved severity of seizures, and 54% said it reduced seizure frequency. None said their conditions worsened. Anecdotally, parents across the country and in Pennsylvania treating children with seizure disorders have reported that use of medical marijuana has significantly reduced or completely eliminated seizures.

**Glaucoma:** Patients using marijuana to treat glaucoma, a leading cause of blindness in the U.S., have found it can reduce intraocular pressure, relieve pain, slow, and in some cases completely stop further damage to the eyes.

**Multiple sclerosis/damage to the nervous tissue of the spinal cord with objective neurological indication of intractable spasticity:** Clinical trials involving whole-plant marijuana and various marijuana extracts have found that patients reported relief of muscle stiffness, pain, and spasticity. In a 2007 study from the *European Journal of Neurology*, with whole-plant based treatment (with both CBD and THC) compared with a placebo 40% of the subjects saw a reduction of spasticity of more than 30%, while 17.5% of the subjects saw a reduction of more than 50%.

**Parkinson's disease:** Parkinson's disease can be dramatically improved by using medical marijuana. Researchers reported that smoked administration of the drug created "significant" improvement in the symptoms suffered by research subjects including dramatically decreased rigidity, tremors, and pain, and increased ability to properly rest. Patients also reported that the effects lasted for as long as three hours. No adverse effects were reported.

**Post-traumatic stress disorder (PTSD):** Post-traumatic stress disorder is a serious condition that involves a person developing characteristic symptoms — such as flashbacks, numbing, and avoidance — after experiencing an extremely traumatic stressor. Available treatments are often dangerous or ineffective. Thousands of patients have turned to medical marijuana for help, and states are increasingly adding PTSD to their lists of qualifying conditions for medical marijuana. In Israel, an open pilot study found marijuana effective at alleviating combat veterans' symptoms. In addition, other human and animal evidence supports the therapeutic potential of marijuana in treating PTSD.

**Severe pain/neuropathies:** While prescription medicines and surgical procedures work for some patients, others' pain is resistant to treatment. Even for patients who respond to prescription medicines, those medications can be far more dangerous than marijuana, both in terms of toxicity and addictive potential. A series of randomized clinical trials on smoked marijuana and neuropathic pain consistently indicated that marijuana significantly reduced pain intensity. Another clinical trial, conducted in 2011, found that vaporized marijuana augments the analgesic effect of opioids in chronic pain patients. The authors explained, "The combination (of opioids and cannabinoids) may allow for opioid treatment at lower doses with fewer side effects."

**Sickle cell anemia:** The irregularly shaped blood cells found in sickle cell patients block blood flow, which causes pain, fatigue, and organ damage. Like many other conditions that cause severe pain, medical marijuana can provide relief for sickle cell patients. A San Francisco-based clinical study evaluating the effects of vaporization on sickle cell patients was approved by the DEA in 2014.

**Terminal illnesses:** Terminal illnesses often involve numerous symptoms that marijuana can alleviate, including wasting, anxiety, sleep problems, nausea, and severe pain. After enduring grueling extended periods of treatment and significant emotional and psychological distress medical marijuana can provide terminal patients comfort and a better quality of life.