

# **SICKLE CELL ANEMIA – MEDICAL MARIJUANA RESEARCH OVERVIEW**

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*Sickle cell anemia is an inherited blood cell disorder that primarily affects black Americans in the United States. Studies have shown cannabis is effective at lowering the levels of severe pain commonly associated with the disorder and can help maintain proper blood flow to lower the risk of tissue damage.*

## **OVERVIEW OF SICKLE CELL ANEMIA**

Sickle cell anemia is an inherited condition that causes red blood cells to become misshapen and sticky, preventing them from effectively carrying oxygen throughout the body. Healthy blood cells are round and flexible, designed to travel through blood vessels with ease. In sickle cell anemia, red blood cells are rigid and shaped like crescent moons. As a result, they will commonly get stuck and build up in smaller blood vessels, potentially limiting or blocking normal blood flow.

When the sickle-shaped blood cells get caught and block blood flow, the result is often sudden and severe pain that's referred to as "pain crises." Pain crises often come without warning. According to the National Heart, Lung, and Blood Institute, children with sickle cell anemia are mostly pain free between painful crises. However, adolescents and adults with the disease can suffer from chronic, ongoing pain.

Sickle cell anemia is a lifelong disease. The only potential cure is to undergo a hematopoietic stem cell transplant, which requires a well-matched donor. Therefore,

treatment focus typically involves reducing symptoms and prolonging life. The National Heart, Lung, and Blood Institute reports that the life expectancy of a person with sickle cell anemia to be 40 to 60 years.

## **FINDINGS: EFFECTS OF CANNABIS ON SICKLE CELL ANEMIA**

Cannabis has pain-relieving properties that have long been found to be effective and it's been used to treat pain caused by a variety of ailments and conditions<sup>2</sup>. When examining cannabis' pain-relieving capabilities specifically for sickle-cell anemia, scientists found that medical cannabis is effective<sup>1,4</sup>. A 2005 questionnaire found that sickle cell patients that use cannabis reportedly do so to reduce pain (52%) and to induce relaxation or relieve anxiety and depression (39%)<sup>3</sup>.

Opiates are commonly used to treat the pain associated with sickle cell anemia, but the drugs sometimes have problematic side effects, including sedation, appetite loss, nausea, constipation, respiratory depression, and they're highly addictive<sup>2</sup>. Studies have found that cannabinoids are effective at relieving pain in lower doses and have fewer side effects compared to opioids<sup>2</sup>.

Treating sickle cell anemia pain is important for reasons beyond the comfort of patients. The pain caused by sickle cell anemia is the result of vascular occlusion, tissue infarction and inflammation. Therefore, treating the painful episodes associated with sickle cell anemia with cannabis, which has been found to have anti-inflammatory properties, is important for minimizing tissue damage and for improving the patient's overall health<sup>2</sup>.

## **STATES THAT HAVE APPROVED MEDICAL MARIJUANA FOR SICKLE CELL ANEMIA**

Currently, just [Connecticut](#), [Georgia](#), [Ohio](#), [Pennsylvania](#), and [West Virginia](#) have specifically approved medical marijuana to treat sickle cell anemia. However, several other states approve marijuana for the treatment of chronic pain, a symptom commonly associated with sickle cell anemia. These states include: [Alaska](#), [Arizona](#), [California](#), [Colorado](#), [Delaware](#), [Hawaii](#), [Maine](#), [Maryland](#), [Michigan](#), [Montana](#), [New Mexico](#), [Ohio](#), [Oregon](#), [Pennsylvania](#), [Rhode Island](#), [Vermont](#), and [West Virginia](#). The states of [Nevada](#), [New Hampshire](#), [North Dakota](#), [Ohio](#) and [Vermont](#) allow medical marijuana to treat "severe pain." The states of [Arkansas](#), [Minnesota](#), [Ohio](#), [Pennsylvania](#), [Washington](#), and [West Virginia](#) have approved cannabis for the treatment of "intractable pain."

Other states may allow medical marijuana to be used for the treatment of sickle cell anemia with the recommendation of a physician. These states

include: [Massachusetts](#) (other conditions as determined in writing by a qualifying patient's physician), and [Washington](#) (any "terminal or debilitating condition").

In [Washington D.C.](#), any condition can be approved for medical marijuana as long as a DC-licensed physician recommends the treatment.