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Center for Medicinal Cannabis Research UC SAN DIEGO



Established in **2000**, the Center for Medicinal Cannabis Research (CMCR) has been at the forefront of advancing **science** and **policy** relating to the potential clinical benefits, and limitations, of **cannabis and cannabinoids as medicine**

Director: Igor Grant, MD

Co-Directors: J. Hampton Atkinson, MD;
Thomas Marcotte, PhD

A Cornerstone of Cannabis Research

- **Longest-running** clinical cannabis research center in the United States
- Founded in 2000 via California Senate Bill 847
- Extensive **cannabis research portfolio**
 - Completed 11 clinical studies, including the first of smoked cannabis in over 20 years
 - 21 current studies, including 18 clinical trials
- Rich **biospecimen and data repository** enabling cross-study and future scientific investigations
- Investigators with **cannabis/cannabinoid research expertise**, and integration with the larger **UC San Diego** research and clinical resource

Policy Involvement

Advice to policy-makers at all levels:

- **International** (e.g., Canada, Mexico, Thailand)
- **Federal/National** (e.g., FDA hearing on CBD, House Veterans Affairs Committee, advising legislators, consultation with other States)
- **State** (e.g., Blue Ribbon Commission on Marijuana Policy, Medical Board of California, Veterinary Board, California Highway Patrol, Office on Traffic Safety, Bureau of Cannabis Control, various Legislative offices)
- **Local** (e.g., county supervisors, mayors, councils, law enforcement)

Funding

CMCR funding comes from a variety of sources (National Institutes of Health, State of California, Foundation support)

Key Findings

THC improves spasticity in multiple sclerosis and neuropathic pain

High doses of THC aren't needed to see a benefit, in fact, high doses may exacerbate pain

Users self-titrate when smoking, which may offset the effects of plant material with higher amounts of THC



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Studies

Randomized-controlled trials, observational and mechanistic studies in the following areas:

- **Completed:** Multiple sclerosis*, neuropathic and experimental pain (7 studies)*, essential tremor, driving impairment
- **Current:** Severe autism, early psychosis*, alcohol dependence*, rheumatoid arthritis*, sleep disorders*, anorexia nervosa*, effects of CBG*, metabolic syndrome*, migraine, bipolar disorder, alexithymia, HIV-related antiretroviral pharmacokinetics, neuropathic pain, inflammation, cognition, cannabis/alcohol effects on driving

**Funded by CMCR Grants Program*

CMCR Grants Program

- ✓ Using funds provided by California Proposition 64, CMCR issues funds *annually* for studies in California to evaluate the efficacy and adverse effects of cannabis and cannabinoids
- ✓ Committed \$4.2 million in funding to 7 studies since 2019

CMCR Reference Lab

Established in 2021, serves as an independent reference laboratory for validation of results from licensed cannabis testing laboratories

CMCR Resources

Regulatory Expertise: Federal, State, institutional IRB (human subjects)

Clinical Research Expertise: Study design, statistical analysis, outcome selection, specimen collection, cross-study standardization enabling data aggregation

Study Participant Registry: A registry of individuals who are interested in participating in cannabis research, including healthy controls and individuals with a variety of health conditions

Data Management and Information Systems: Web-based data management and reporting, hardware/software resources, enabling of big data analysis

Specimen Collection, Processing and Storage: Blood, oral fluid, breath, spinal fluid, urine, stool; specimen repository (24-hour temperature monitoring), custom web-based inventory system

Toxicology Services: Mass-spectrometry to evaluate cannabis metabolites in human samples and tissues; plans to develop capability to evaluate plant and other products

Facilities and Equipment: Negative pressure rooms (inhaled cannabis), driving simulation rooms, clinical exam rooms, cognitive testing equipment

In-House Investigative Expertise

- ✓ Psychiatry
- ✓ Pain medicine
- ✓ Neurosciences
- ✓ Neurology
- ✓ Toxicology
- ✓ Neuropsychology
- ✓ Pharmacology
- ✓ Translational science
- ✓ Public health and safety (e.g. driving)



UC San Diego Extended Resources

*Nested within UC San Diego, one of the top research institutions in the country, CMCR has access to **additional experts and patient populations** across a broad range of disciplines*

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