

# Public Health Consequences of Changes in the Cannabis Policy Landscape:

## Related Activities and Priorities of the National Cancer Institute

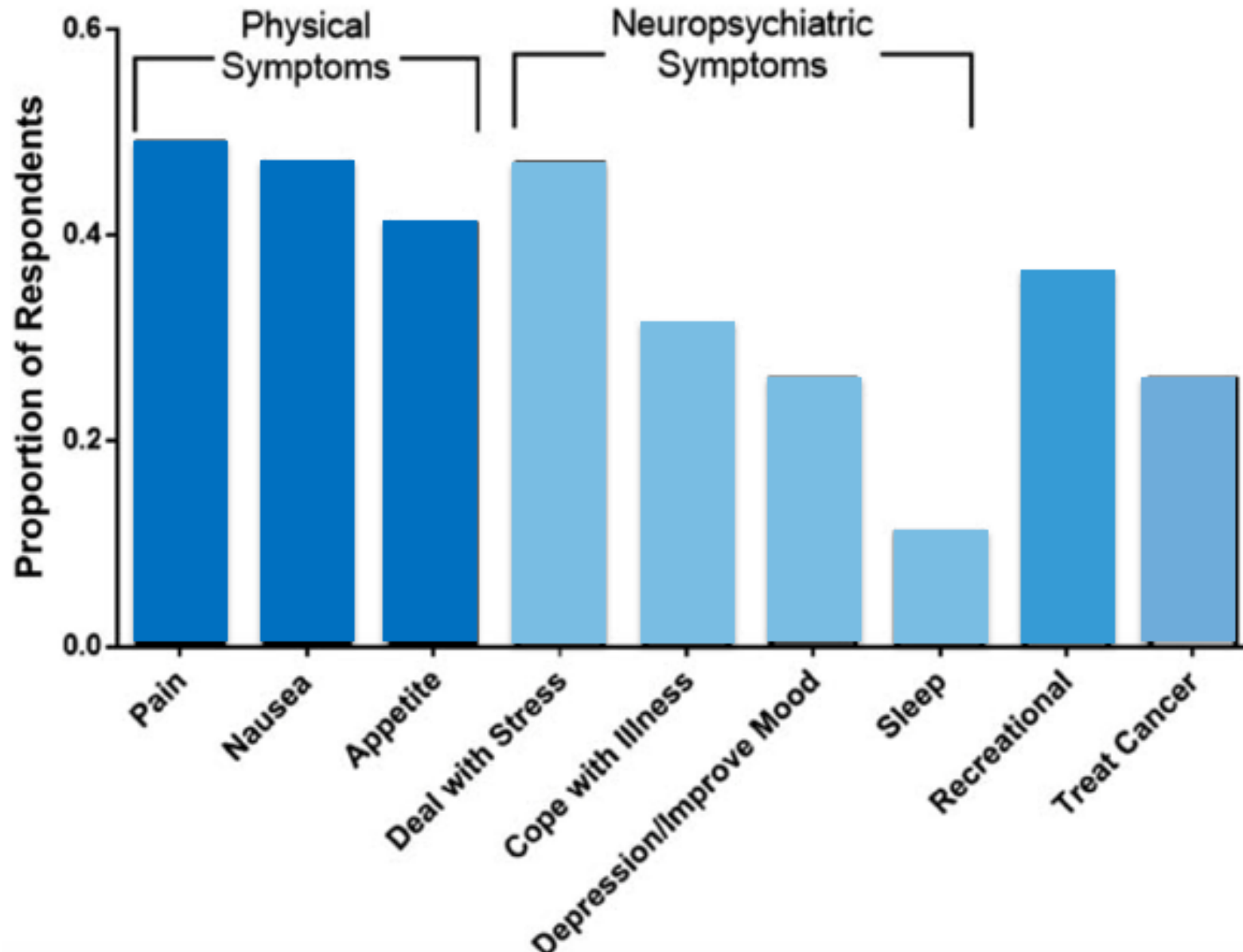
# Overview

- Cannabis related activities at NCI
  - Previous research on cannabis and cancer
  - Cannabis and Cancer Research Interest Group (CCRIG)
    - Products
    - Initiatives
- Current and future questions of interest

# Why is cannabis use relevant for NCI?

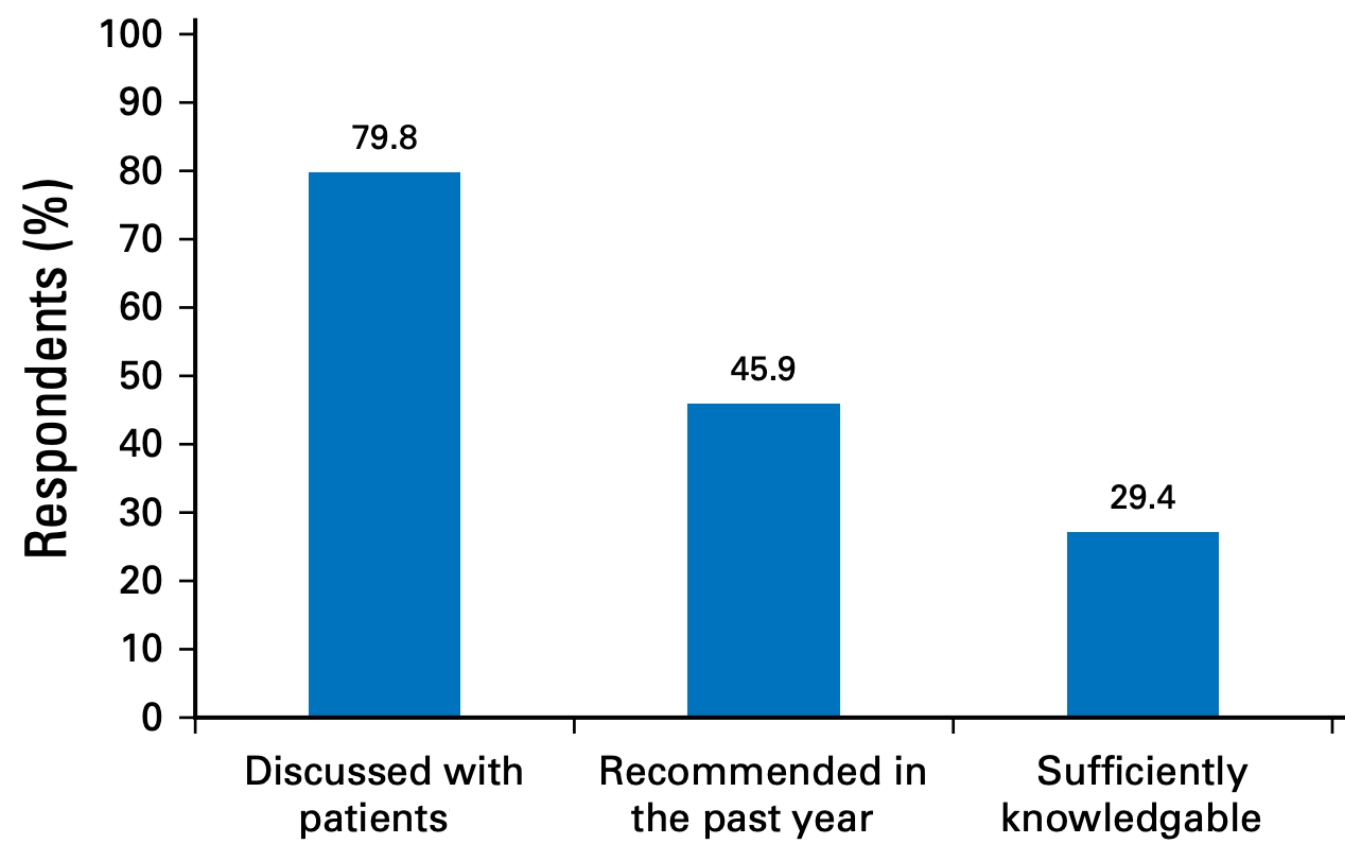
REFERENCE	STUDY POPULATION	% ACTIVE CANNABIS USERS
Pergam et al. (2017)	Seattle Cancer Care Alliance N= 926 patients with cancer	24%
Saadeh & Rustem (2018)	Community Cancer Center in Michigan N=175 patients with cancer	18%
Blake et al. (2019)	Clinics affiliated with University of Southern California and University of Colorado N=225 patients with gynecologic cancer	26.7%
Macari et al. (2020)	Beaumont Health in Michigan N=188 patients with cancer	24.5%
Weiss et al. (2021)	Members of Breastcancer.org N=612 patients with breast cancer	42%
Salz et al. (2023)	Memorial Sloan Kettering Cancer Center N=1258 patients with cancer	31%

# Reason for cannabis use among the survey respondents



24% of patients with cancer used cannabis to manage their symptoms

# Oncologist's practices and knowledge on medicinal cannabis



## Can it help?

- Do studies show that cannabis can improve my symptoms?
- Can cannabis help to treat my cancer?

## Is it safe?

- What are the risks of using cannabis?
- Is cannabis safe to use with opioids?

## Is it available?

- What are the laws and in my state?
- What types of products are available?

# Potential Interaction Between Cannabis and Immunotherapy

Reference	Study Population	Cancer Type	Immunotherapy Drug	Outcomes
Taha et. al. (2019)	140 patients	Advanced melanoma, non-small cell lung cancer, and renal clear cell carcinoma	Nivolumab	Decreased Response Rate
Bar-Sela et. al. (2020)	102 patients	Advanced-stage malignancy	Nivolumab, Ipilimumab, Durvalumab, Atezolizumab, Pembrolizumab	Decreased Time to Tumor Progression  Decreased Overall Survival
Biedny et al. (2020)	104 patients	Advanced-stage malignancy	Nivolumab, Pembrolizumab	Decreased Overall Survival

# Knowledge Gaps

- How and why cancer patients are currently using cannabis?
  - Mode, dosage, frequency, and product type
- What are the benefits/harms of cannabis use among cancer patients:
  - Cancer and its treatments
  - Comorbidities
  - Other medications (prescribed, complementary, and alternative medicines)
- Does cannabis use alter cancer risk?
  - Does it interact with other substance use known to cause/increase cancer risk?

# Cannabis and Cancer Research Interest Group

- Working group co-led by
  - Gary Ellison, PhD, MPH
  - Andy Freedman, PhD, FISPE
- Spans four divisions within NCI
- Expertise across the cancer control continuum
  - Cancer etiology, prevention, treatment, survivorship, end of life



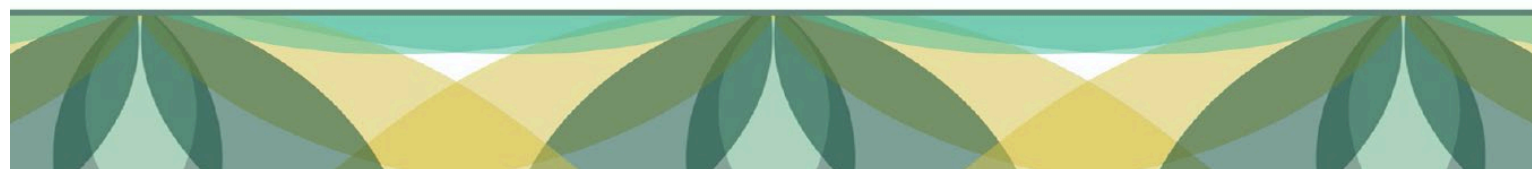
# Cannabis Research Symposium

- Non-medical cannabis use and cancer epidemiology
- Cannabis and the cancer patient
- Cancer symptom/treatment side effects management – preclinical
- Cancer symptom/treatment side effects management – clinical
- Cancer biology and prevention
- Cancer treatment – preclinical and clinical
- Navigating research challenges for cannabis research
- Panel discussion to discuss research directions



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<https://events.cancer.gov/nci/cannabisresearch/agenda>

# Cannabis Research Symposium



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Opening Remarks

NCI Cannabis, Cannabinoids, and Cancer Research Symposium

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events.cancer.gov/cannabisresearch

## National Cancer Institute Cannabis, Cannabinoids, and Cancer Research Symposium

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Opening Remarks

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13:15

### Welcome

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Charge to Symposium

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1:03:04

### Cannabis Policy, Epidemiology, and Research in an Era of Legalization

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Session One: Non-medical Cannabis Use and Cancer Epidemiology

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1:41:16

### Session One: Non-medical Cannabis Use and Cancer Epidemiology

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Session Two: Cannabis and the Cancer Patient

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1:54:28

### Session Two: Cannabis and the Cancer Patient

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Session Three: Cancer Symptom/Treatment Side Effect Management – Preclinical

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2:18:23

### Session Three: Cancer Symptom/Treatment Side Effect Management – Preclinical

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Session Four: Cancer Symptom/Treatment Side Effect Management – Clinical

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2:34:21

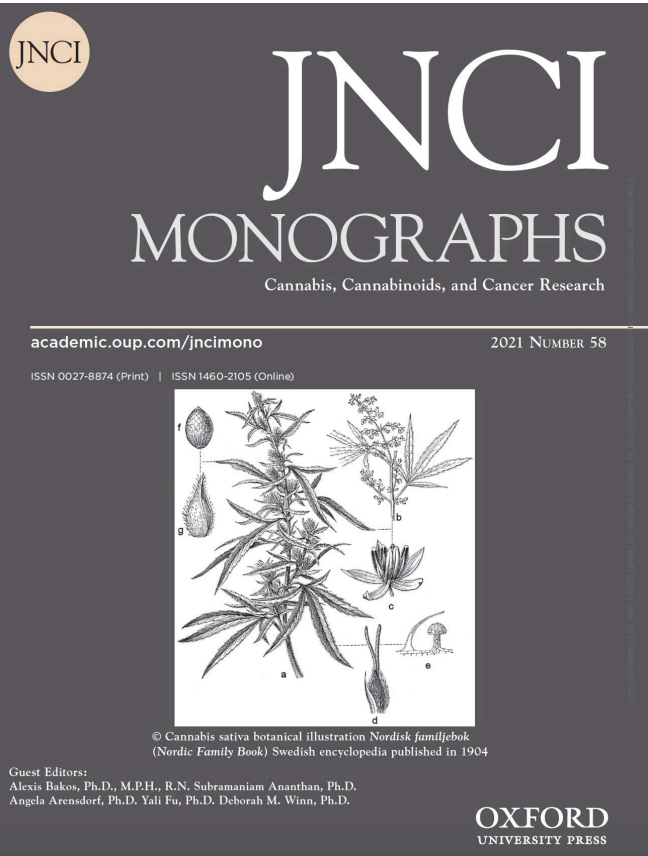
### Session Four: Cancer Symptom/Treatment Side Effect Management – Clinical

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Session Five: Cancer Biology and Prevention

### Session Five: Cancer Biology and Prevention

# Cannabis Research Symposium



<https://www.ncbi.nlm.nih.gov/search/journals/9011255/>

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Questions to Ask about Your Treatment

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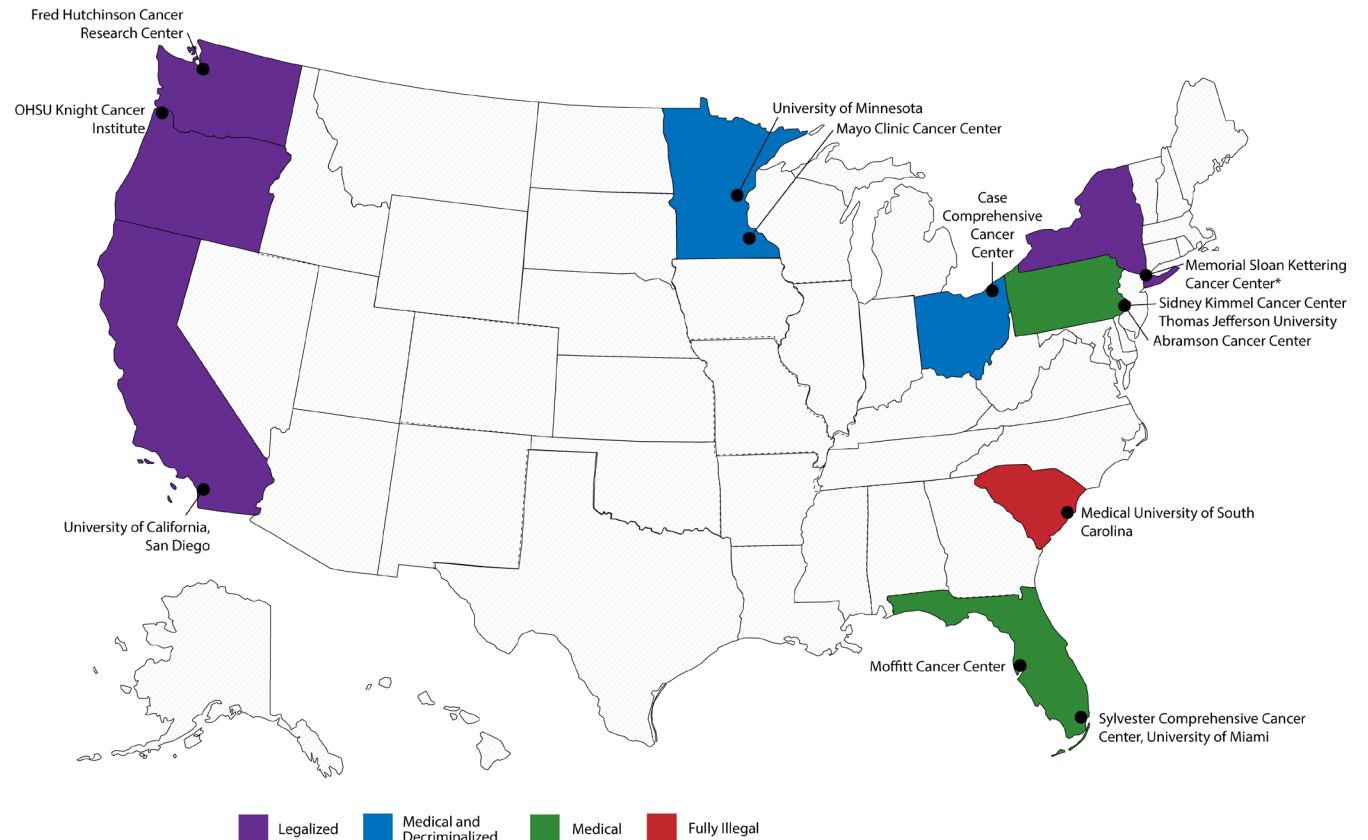
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<https://www.cancer.gov/about-cancer/treatment/cam/patient/cannabis-pdq>

# P30 Cancer Centers Administrative Supplement Awards

- 12 cancer centers with various levels of legality
- Data were collected from September 2021 to October 2022
- Most centers drew probability samples from patient lists in catchment area
- Goal was to collect 1,000 surveys per cancer center



\* In early 2021, New York legalized marijuana for recreational use. However, since implementation lags, the legalization status change will not affect this survey.

# Core components of survey

- Current and past use of cannabis
- Frequency and duration of use
- Mode(s) of use
- Therapeutic reasons for use
- Perception of benefit or harm
- Discussion of use with clinical providers
- Recommended use by clinical provider



Other elements include:

- Tumor Type
- Age of Cancer Diagnosis
- Current and Past Treatment
- Demographic Data

# Cannabis Related Funding Opportunities

## **NOSI (NOT-CA-22-070)**

### **Administrative Supplements for Examining Patterns of Tobacco and Cannabis Use**

- To examine patterns of tobacco and cannabis use in adults and/or youth, especially among unrepresented, underserved, and/or vulnerable groups (e.g., socioeconomically disadvantaged populations, cancer patients/survivors). Studies that examine behavioral and policy factors are also highly encouraged
- Permitted for 1 year of support; applies to due dates on or after May 26, 2022.

## **NOSI (NOT-CA-22-085)**

### **Basic Mechanisms of Cannabis and Cannabinoid Action in Cancer**

- To promote research in understanding the mechanisms by which cannabis and cannabinoids affect cancer biology, cancer interception, cancer treatment and resistance, and management of cancer symptoms
- Applies to due dates on or after June 5, 2022, and subsequent receipt dates through May 8, 2027
- R01, R03, R21, K01, K08, K22, K99/00

## **RFA (RFA-CA-22-052)**

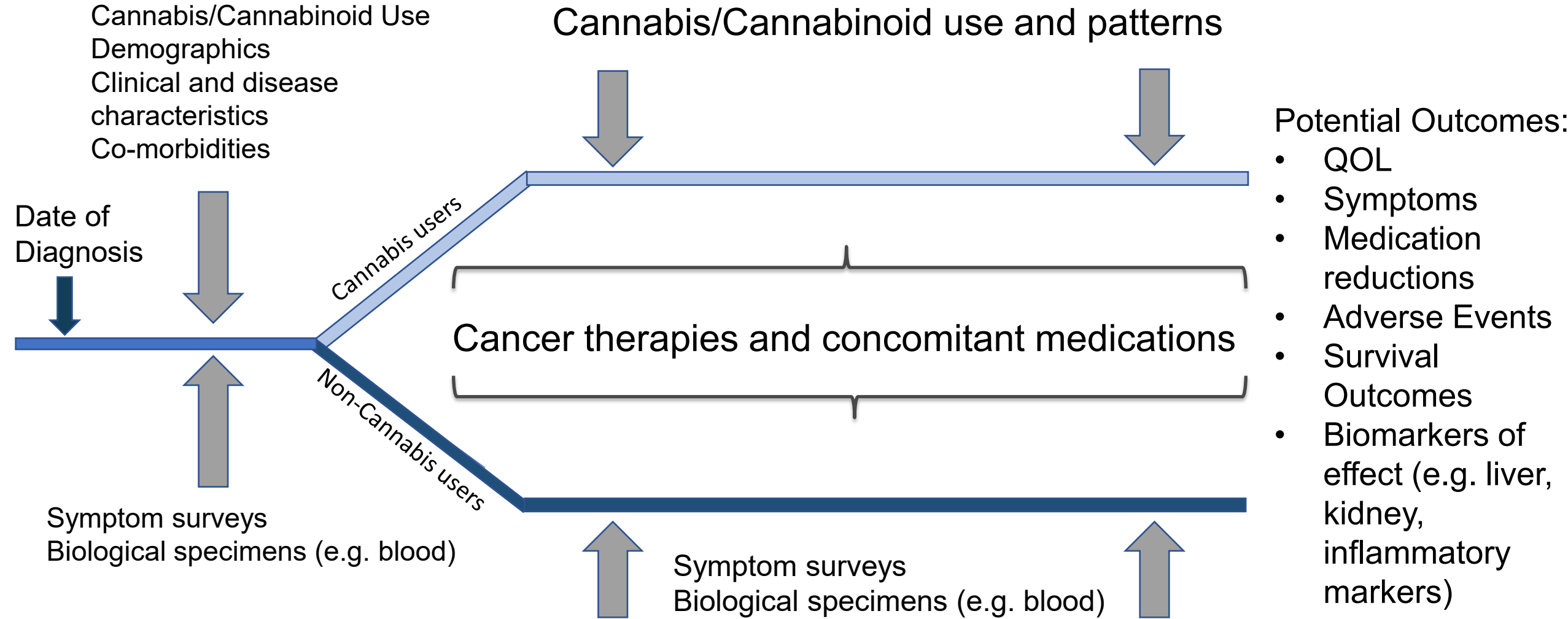
### **Cannabis and Cannabinoid Use in Adult Patients During Active Treatment: Benefits and Harms**

- To support observational research studies to assess the benefits and harms of cannabis and cannabinoid use among cancer patients in active treatment
- FY 2023 Funding (5 years): U01 grants (4) and U24 Coordinating Center (1). Total Costs: \$15M

# Purpose of RFA (RFA-CA-22-052)

- Critical need for studies on cannabis and cannabinoid use
  - Rapidly increasing availability and use of cannabis by people with cancer
  - Lack of available evidence base
  - Challenges to mounting clinical trials due to federal regulatory issues
- **To support observational research assessing the benefits/harms of cannabis and cannabinoid use among those with cancer who are in active treatment**
  - Provide evidence of the benefits and harms
  - Information required for future clinical trials







# RFA (RFA-CA-22-052)

- Funding five prospective cohorts including
  - Breast, colorectal, NSCLC, multiple myeloma, non-Hodgkin Lymphoma, and melanoma patients
  - States with legalized medical-only and medical and adult use
  - Systemic chemotherapy and immunotherapy treatment
  - Subjective and objective measures of cannabis use
- Co-funding from NCCIH: \$250k/year

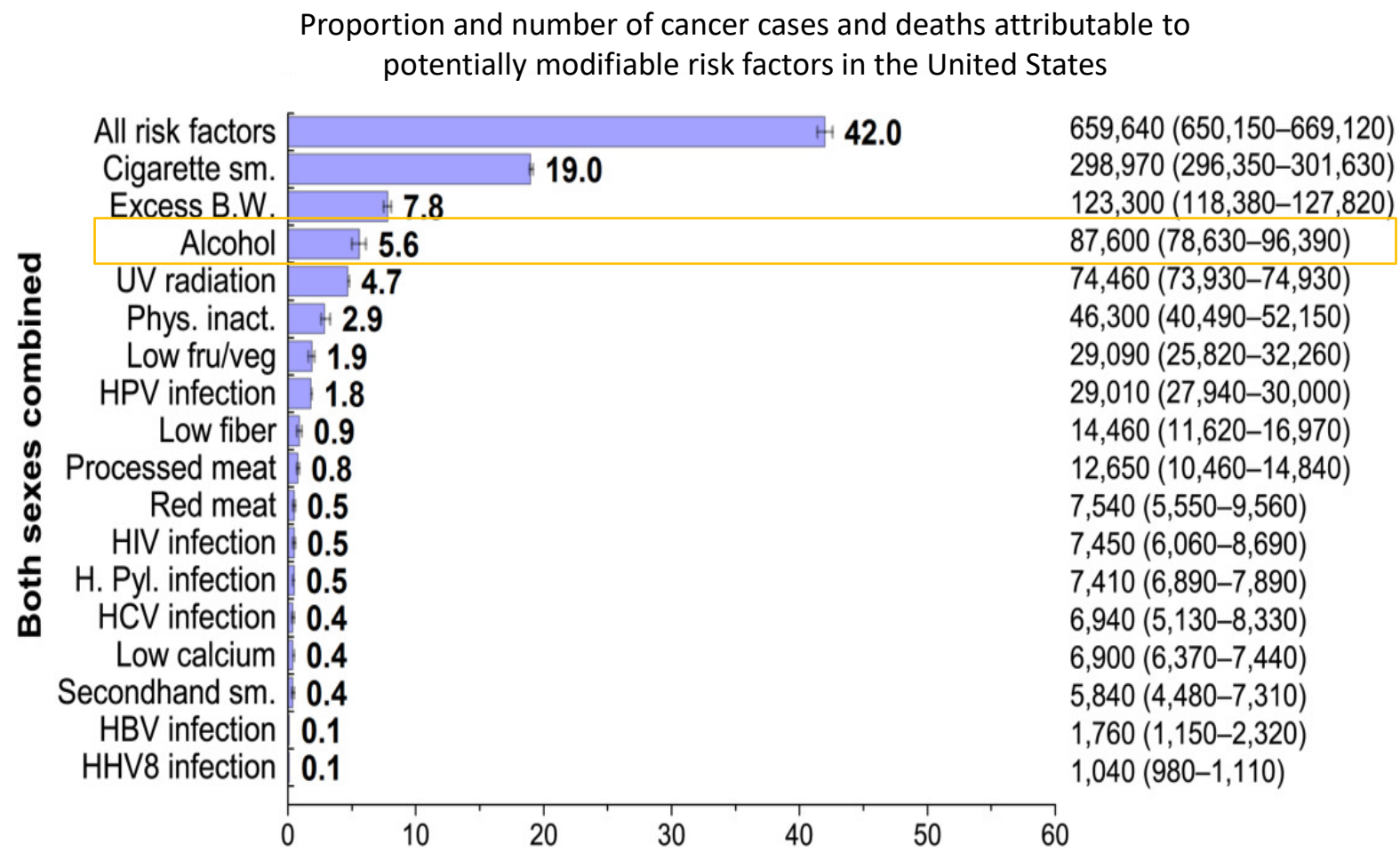
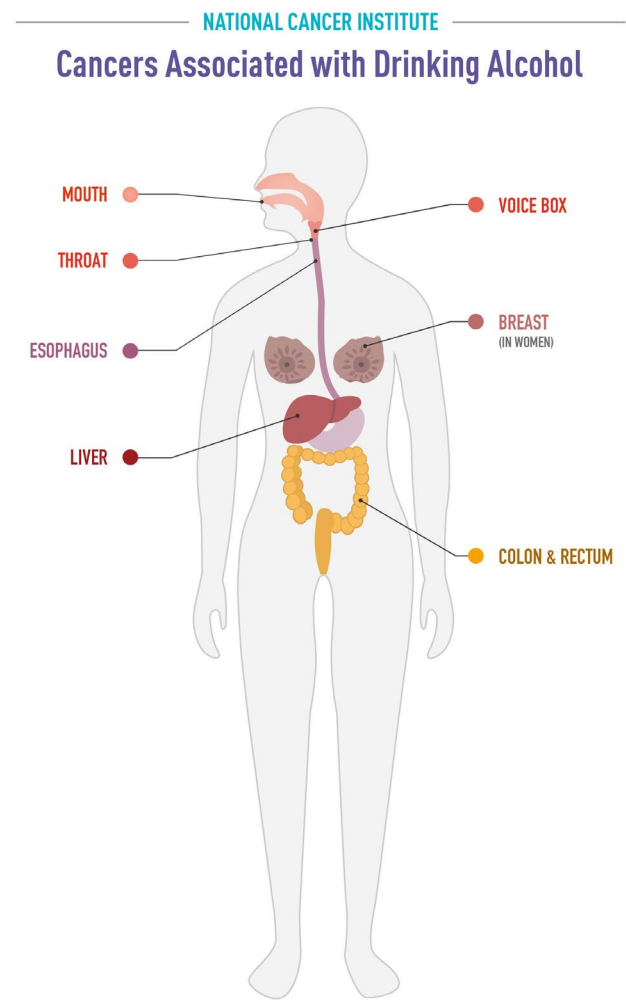
# Current and Future Questions of Interest

- Patterns of polysubstance use
  - Cannabis and tobacco/nicotine
  - Cannabis and alcohol
  - Cannabis and tobacco/nicotine and alcohol
- Policy considerations
  - Examining cannabis policy with respect to current and past tobacco and alcohol regulations and control

# Patterns of Polysubstance Use

- Cannabis and tobacco/nicotine
  - Approximately 30% of adult tobacco users also regularly use cannabis
  - Rates are similar among youth
  - Data on initiation, modes of use, switching, substitution, maintenance, and cessation are needed
- Cannabis and alcohol

# Alcohol Causes Increased Risk of Cancer at Seven Sites and is the Number Three Modifiable Risk Factor for Cancer



CA A Cancer J Clinicians, Volume: 68, Issue: 1, Pages: 31-54, First published: 21 November 2017

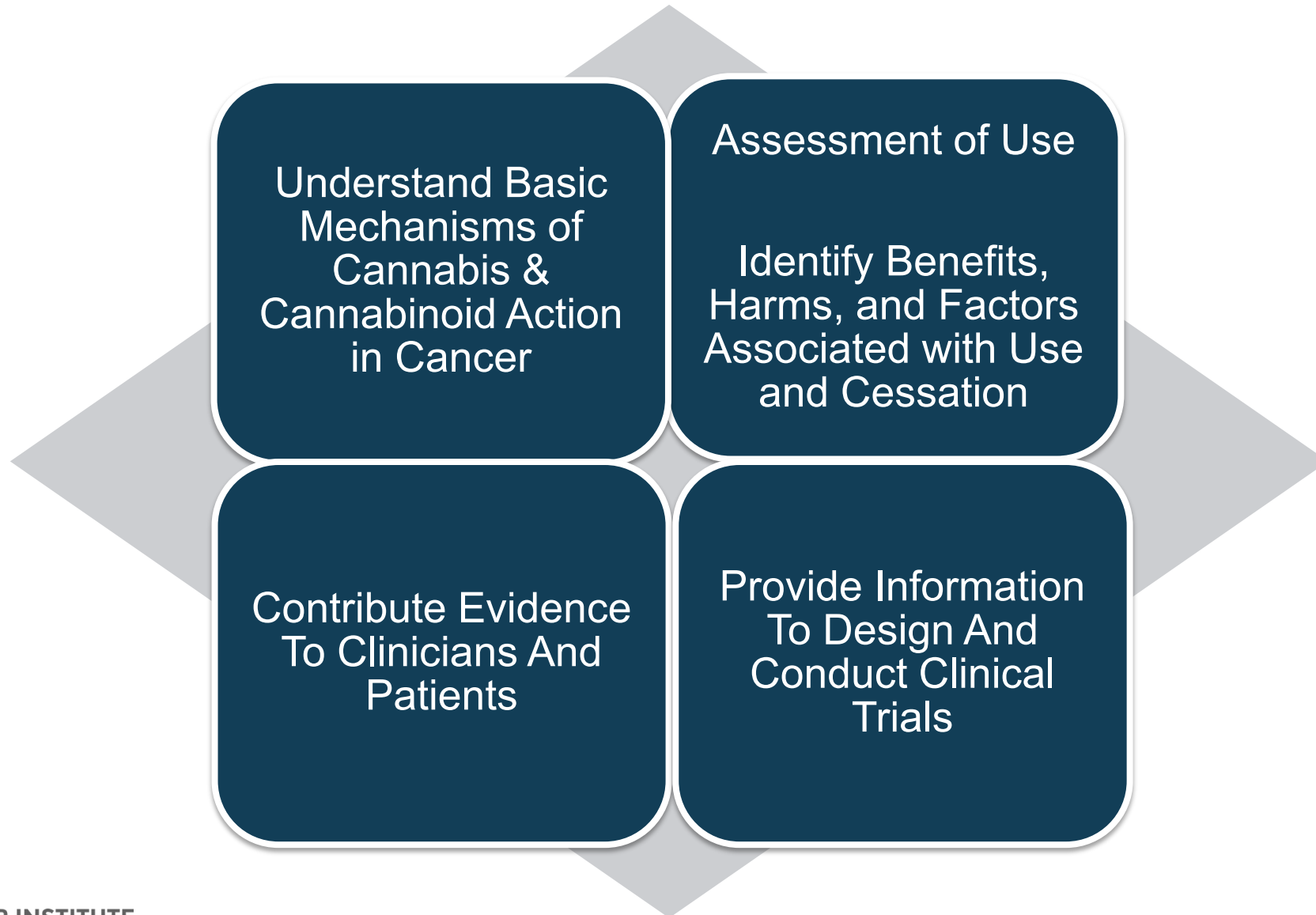
# Patterns of Polysubstance Use

- Cannabis and alcohol
  - Estimated 8% among adults; higher rates among youth (20-30%)
  - Similar gaps in research: substitution, complement, etc.
- Cannabis and tobacco and alcohol
  - Increased likelihood of same day use of all three substances after using one substance
  - Variation in method (e.g., vaping nicotine/cannabis) and timing (e.g., same day vs. weekly) of use

# Policy Considerations: Tobacco and Alcohol

- Consideration to policy level and its effects
  - Prevention, cessation, clean air, and taxes
  - Product exposure and access: limits on licenses, zoning, consumption location, marketing, high potency products
    - Impact of product cost and its potential relationship to the illicit market
    - Regulations that are congruent with the substance's properties
- Conflicts of interest
  - Policies created in collaboration with industry

# NCI Ongoing Activities: Needs and Potential Impact





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